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Article

Can Overtourism at Heritage Attractions Really Be Sustainably Managed? Lights and Shadows of the Experience at the Site of the Alhambra and Generalife (Spain)

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Abstract: For a number of years heritage resources have suffered the negative effects of tourist pressure. Overtourism has been generating a wide-ranging debate on this issue. This work focuses on the strategies and measures adopted to address overtourism during the last 30 years in heritage attractions, which are much less studied than urban heritage centres. Specifically, it analyses measures relating to the management of site capacities, based on the concept of tourist carrying capacity, using the content analysis as a methodology. We have used the Alhambra in Granada as a case study, as one of the most visited Spanish World Heritage Sites. The results obtained reflect a strong consensus on the need to introduce measures to restrict tourist activity, although these measures imply a great effort in terms of management and tend to be taken advantage of by some stakeholders for their own benefit. The extensive time frame of the measures adopted allows us to reflect on the possibilities and limitations of dealing with overtourism by using capacity management strategies, and to extract useful conclusions for other heritage sites with similar problems.

Keywords: heritage sites; cultural resources management; overtourism; tourism carrying capacity; sustainability; Alhambra

1. Introduction

Every year millions of tourists visit historic heritage sites. Tourism has become an important theme in the discourse of heritage organisations, and the management of tourist visits is a key component of managing heritage sites. The influx of visitors helps preserve the heritage and provides income for local communities. However, it also endangers the safeguarding of the heritage in situations of high tourist pressure. On these occasions, sustainable management means adopting measures to contain and redistribute tourist flows within the framework of agreements backed by a broad variety of stakeholders.

The first reflections on the need to control heritage tourism came from ICOMOS (Cultural Tourism Charter 1976 and 1999 [1,2]). They were taken up again many years later by organisations such as the World Heritage Centre and the World Tourism Organisation. Within the academic world, there is a sizable number of works that apply the concept of tourist carrying capacity to heritage attractions, and also to historic cities like Venice and Oxford [3] (pp. 221-223). At present, the nomination dossier for entry to the World Heritage list must include references to tourist pressure. It must describe the carrying capacity of the heritage site and explain whether the site in question can absorb the current or probable number of visitors without negative effects.

Recently, the debate on the negative effects of tourism and its management on heritage sites has revolved around "overtourism". In 2018, the Oxford English Dictionary defined this word as "an excessive number of tourist visits to a popular destination or attraction". The term achieved significant popularity in the context of the rapid growth of tourist flows before the COVID-19

pandemic. It gave rise to an extensive production of academic works and was incorporated into the agenda of international bodies, while receiving significant media interest. Nevertheless, reflections on overtourism are in fact linked to an older line of work on tourism sustainability, and in particular carrying capacity [4]. Whether it is a new phenomenon or simply a new term for a phenomenon that has been known and studied for years [5,6], considerations on overtourism have extended to heritage sites [7–10] and were reflected in the UNWTO/UNESCO World Conference on Tourism and Culture (Istanbul, 2019).

Within a short time a significant amount of academic production has been generated on overtourism in art cities such as Venice, Dubrovnik, Krakow and Santiago de Compostela, as well as the historic centres of large metropolises such as Amsterdam, Barcelona, Berlin and Budapest, on which much has been written. However, there are far fewer studies focused on heritage attractions. There are some references to iconic sites like Machu Pichu and the Taj Mahal [11], Versailles [12], the top ten cultural and heritage attractions in Paris [13], Angkor Wat [14] and the museums of Krakow [15].

For a long time, the problems associated with an excess of visitors in these spaces were addressed in terms of congestion and overcrowding, including the negative effects on the physical conditions for conservation of the assets and the quality of the visitors' experience. In contrast with these traditional approaches, using the idea of overtourism enriches the debate on heritage management, as it means recognising: 1. the responsibility of tourism (as congestion and overcrowding derive mainly from growth in the number of tourists and excursionists); 2. the multi-faceted nature of tourist pressure (which is the result of a variety of causes, has multiple effects and is addressed in different ways); 3. the complexity of spatial relations in play (between the parts of the attraction with different levels of tourist use, between attraction and destination, and the destination and tourism markets); and 4. the plurality of stakeholders and the complexity of relations between them.

With respect to these approaches, this article examines the strategies and measures adopted to tackle overtourism in heritage attractions, specifically those relating to the management of the site's capacities. To do so, we review the literature to identify the main types and approaches used in the measures adopted, arrange those related to the management of capacity according to their main objective (limiting or extending the site's capacity) and provide a reflection on aspects such as difficulties of implementing measures, the stakeholders involved and time horizons. This outline is examined with respect to the tourism management of the *Alhambra and Generalife* in Spain, a World Heritage Site (UNESCO) with high visitor numbers which has been applying measures to manage its capacity for 30 years. It is a diachronic study that covers from 1998 to 2019, which analyzes the evolution of the site's tourism management policy based on the treatment of a vast documentary corpus. Logically, and for reasons of space, the presentation of results is concise. However, an attempt has been made to synthesize the problematic aspects and the key moments of the site's tourism policy, trying to simplify the complex management system of the monument with a view to its presentation in such a short text.

The extensive time frame (30 years) allows a reflection on the possibilities and limitations of applying different measures for managing overtourism and its effects, allowing us to extract useful conclusions for other heritage sites. The results cover a significant gap in the literature with respect to two aspects: the scope of the work and the effectiveness of the measures. Most existing works reflect the vision of stakeholders on the strategies and measures to address overtourism, but they rarely provide real experiences of applying measures for a period of time as long as in the Alhambra. In addition, there are barely any studies on the results obtained and the effectiveness of applying these measures at the level of heritage attractions.

2. Management of overtourism and handling capacities in heritage sites

The literature on overtourism contains many references to measures adopted to limit its more negative effects on heritage sites. It includes a large academic production that offers general reflections based on case studies, in general based on interviews with stakeholders and documentary review. And it also includes reports from bodies such as the UNWTO [16], the European Parliament

[10], the World Travel & Tourism Council, the European Cities Marketing-ECM and the World Tourism Forum Lucerne-WTFL [17]. In contrast with the more critical views, which are close to the approaches in favour of reducing tourism by theoretical academic discourse, at the institutional level what predominates is a position that aims to improve management as a formula for responding to the more negative impacts of the success of tourism by establishing measures and strategies for sustainable growth [18].

Institutional reports and academic works suggest grouping measures in response to overtourism by using a variety of criteria. Weber et al. [17] distinguish between social, economic and environmental measures. They also differentiate between measures that affect the core of the destination's tourism system and those related to the local micro environment. Postma et al. [19] associate strategies and tactics to combat overtourism with one or more of the following types: physical capacity, environmental capacity, economic capacity, perceptual or psychological capacity, sociocultural capacity and political capacity. The report by ROLAND BERGER GMBH [18] differentiates between proactive and reactive approaches. Proactive measures apply when sites can plan in advance; while reactive measures apply when sites are already experiencing overtourism problems and rapid action is needed, as a form of defence mechanism. Kohl [20] locates the strategies within a quadrant with two dimensions: individual-collective and interior-exterior. Based on his experience in protected areas, Wall [21] notes that two main approaches to management are common: managing the resource (site management) and managing the visitors. With respect to visitors, he differentiates direct and indirect techniques, the former requiring compliance by the visitors, whereas the latter are more subtle ways of influencing their behaviour [4]. Along similar lines, Eckert et al. [22] talk about "soft and indirectly regulating factors" and "hard control instruments". And finally, Abbasian et al. [23] group together measures according to their main target: infrastructure-oriented, tourist-oriented, local authority-oriented, and tour operator-oriented or similar solutions.

However, the most common criterion for classifying measures corresponds to their main objective. In general, two main objectives are identified: 1). Management of the site capacities; and 2). Search for alternatives that allow a better distribution of tourist flows. This article focuses on measures related to the first objective. It is an aspect that is extensively dealt with in the bibliography (Table 1). The starting point is that each heritage site has a load capacity. Once the limits of this capacity are determined two types of strategies are adopted: 1. Limitation of visits and tourist activities according to the thresholds that have been determined; and 2. Increase in the site's capacity to absorb more visits and tourist activities. However, these strategies are applied together with measures related to the second objective (better distribution of flows): decentralisation, improvement in time distribution, diversification, etc. Although all of them are related, in each site a specific set is chosen according to the heritage characteristics, the size and profile of the tourist influx, the problems identified and the capacity for intervention.

Table 1. Strategies for managing tourist site capacities.

References	Capacity management strategies	
	Limitation	Extension
Bouchon & Rauscher (2019) [24]	Regulatory (containment)	
De Luca et al. (2020) [8]	Regulation	
Dodds & Butler (2019) [25]	Limiting numbers, impositions of controls	Facility provision
Frey (2021) [25]	Temporal and local administrative restrictions	
Eckert et al. (2019) [22]	Restrictions	
EUROPEAN CITIES MARKETING (2018) [27]	On-the-ground visitor management / Taxes, caps and limitations	On-the-ground visitor management
Jamieson & Jamieson (2019) [28]	Physical design and constraints / Restriccions / controls	

Koens & Postma (2016) [29]	Regulation	Improve city infrastructure and facilities
Koens et al. (2018) [19]	Review and adapt regulation	Improve city infrastructure and facilities
MCKINSEY & COMPANY - WORLD TRAVEL & TOURISM COUNCIL (2017) [30]	Regulate accommodation supply / Limit access and activities	Improve capacity and efficiency of infrastructure, facilities and services
Milano (2018) [31]	Decongestion	
Murzyn-Kupisz & Holuj (2020) [15]	Monitor and limit informal tourism services and tourism sharing economy / Limit expansion of existing tourism facilities / Limits and restriction on access to particular sites or on particular day	
Peeters et al. (2018) [10]	Laws and law enforcement directed at tourists; prevent uncontrollable development	Increasing capacities of the destination to deal with higher numbers of people
ROLAND BERGER GMBH (2018) [18]	Regulation of capacities / Active management of the sharing economy / Limitation of access	
Verissimo et al. (2020) [32]	Limit the numbers of visitors / Regulate short-term accommodation	Improve public and supporting services / Make current destinations more capable of accommodating the growing number of visitors
Weber et al. (2017) [17]	Policies & regulations	Infrastructure facilities

Source: Own work.

Limiting visits and tourist activities is a strategy widely mentioned in works on managing overtourism. It ties in with the approaches on load capacity and involves determining a limit to visitors and/or tourist activities, although in specific situations tourist activity can be totally prohibited. Limits can be established for days, weeks, months or other periods of time. Moratoria can also be established that last until tourist pressure is stabilised. The restrictions may affect different types of visitors (group visitors, cruise passengers, excursionists, etc.) and either the whole site or only parts of it. In fact, zoning schemes allow these measures to be applied according to aspects such as heritage fragility or the influx of visitors, who tend to focus on the iconic tourist attractions in each site. Limitations of this type have been very common in natural protected areas such as Maya Bai (Thailand) and the Galapagos Islands (Ecuador); and as tourist demand increases, so does their use in cultural heritage sites, such as cave painting sites (Lascaux, France), archaeological zones, monuments and gardens (Park Güell, Spain), sacred sites (Uluru Rock, Australia) and even some urban sites (Dubrovnik, Croatia; Venice and Cinque Terre, Italy).

In urban heritage sites the limitation also affects companies that provide services to tourists, in particular the accommodation sector [33]. It can also be applied indirectly by restricting access to the destination, adapting the capacity of access infrastructures and establishing restrictions on transport companies that move tourists.

In heritage sites, the limitation on visitors and tourist activities forms part of the approaches inherent to heritage management, although specific competition to regulate these matters include other areas of government [16]. In fact, many of the measures adopted are regulatory in nature and emanate from different levels of government according to what is being regulated. In addition, they tend to be accompanied by communication measures (for the purpose of informing the targets of the limitations in place and the reasons for them), infrastructures (to make tourist flow controls effective),

prices (a pricing policy adapted to conservation needs) and/or tourist intelligence (to monitor the tourist impact in real time and adapt the measures adopted).

Most literature considers that limitation is the most drastic strategy, which is only recommendable for sites where tourist pressure threatens the safeguarding of the heritage [21]. There are also many practical problems involved in implementing limitations. First, setting the optimal thresholds for visitors and tourism activities is a problem that has still not been resolved. Second, even if these thresholds are adopted, visits can only be limited in enclosed sites with clearly defined entry points. Moreover, in the case of restricting tourist activities moratoria on granting new operational licences tend to be used, and these do not affect the rights of established companies. This means that tourist pressure is not necessarily reduced and, in contrast, situations of privilege are generated in favour of established companies to the detriment of new operators. These situations generate market distortions and lead to the appearance of parallel markets for the purchase and sale of licences, making innovation difficult. At a geographical level, the restriction of visits and activities may increase the problems in other areas that are less prepared for tourism [17].

In general, the limitation measures tend to be opposed head-on by tourism companies [30], which see their business possibilities reduced. Many heritage attractions may even be afraid of restricting visits and activities if their operational budget depends on large tourist flows. The opposition of tourist companies is echoed in the DMOs [22], which always prefer another type of measure; or in order to gain time, they propose that the subject should be studied more in depth or that time should be spent on learning from the experience of other places. Local tourism lobbies may have a significant influence on public opinion, above all in places where the economy depends on tourism. Moreover, their discourse can be aligned with neoliberal political trends which are as a matter of principle against public intervention in the economy. In this respect, the adoption of limitation measures implies a strong leadership prepared to confront its vision of heritage and tourism with that of other stakeholders.

The second strategy for handling of site capacities has the opposite sense to that just mentioned: it aims to increase the site's capacity to absorb more visits and tourist activities. This increase may occur in three ways: 1). By expanding the physical capacity of the heritage attraction (for example, increasing the area for visiting); 2) By increasing the capacity of the facilities that make visits easier (parking and welcome services, accommodation and restaurants, etc.); and 3) by improving the site's operational capacity to control tourist flows (signage, security, tracking visitors using smart solutions, etc.)

If restrictive measures are linked to a certain extent with the approaches of reducing tourism, the strategy for increasing capacities represents the neoliberal response to growth in tourist demand. The adaptation of supply means increasing business opportunities. It is therefore the preferred option of the business organisations and has even been noted as the preferred response by the resident populations of some locations suffering from overtourism [29]. Its greatest limitation lies in the fact that often there is no real possibility of extending the physical capacity of the site without altering its heritage value. Therefore, increasing facilities and infrastructures may be counterproductive, as it may put additional pressure on heritage attractions whose extension is not viable. Given this situation, the possibility has also been considered of creating physical or virtual replicas of the most popular sites [34]. Of all strategies to combat overtourism, this one is perhaps the most difficult to put into practice: first of all, it means having significant financial resources to undertake civil works; and second, it involves the long-term engagement of many government departments and stakeholders outside heritage and/or tourism [16]. All this means having medium and long-term horizons that do not adapt to the resolution of problems generated by sudden tourist growth.

3. Methods and case study

The Alhambra and Generalife (Spain), a World Heritage Site since 1984, is one of the oldest tourist attractions in Spain. Currently it is one of the most visited heritage sites in the country (2.7 million visitors in 2019). It is a historic museumised royal citadel made up of palaces, fortifications, streets, cemeteries and fields with crops. It is located in Granada which in the 13th and 14th centuries

was the capital of the last Muslim kingdom on the Iberian Peninsula. In 1492, following the conquest of the city of Granada by the Catholic Monarchs, the space became the property of the Crown of Castile and later was integrated into the Crown of Spain, of which it was part until 1868. That year, the new liberal State took over the Royal Site. It became part of the National Heritage and in 1870 it was declared a National Monument. In the 19th century the first visitors began to arrive in the Alhambra. The writer Washington Irving (1783-1859) ensured that this heritage site would have a place in the imagination of Romantic travellers. The seduction of Orientalism was initially transmitted to high-society tourists and then to mass tourism. Since 1895, the Patronato de Alhambra and Generalife (hereinafter, the "Trust") has been the managing body of the site, answering to the Regional Government of Andalusia.

The Alhambra is a space whose administration is particularly complex. It is an urban space that is clearly differentiated within the city of Granada. It occupies more than 660,000 m² and includes a variety of elements: monuments, museums, archaeological zones, gardens, etc., but also private residences, a church, hotels, shops and even bars and restaurants not linked to the management of the heritage. Tourist, cultural, accommodation, residential and commercial functions therefore coexist. Two types of spaces can be differentiated: an urban space that is freely accessible (although located within the walls) and a space whose access is restricted by payment of an entry fee.
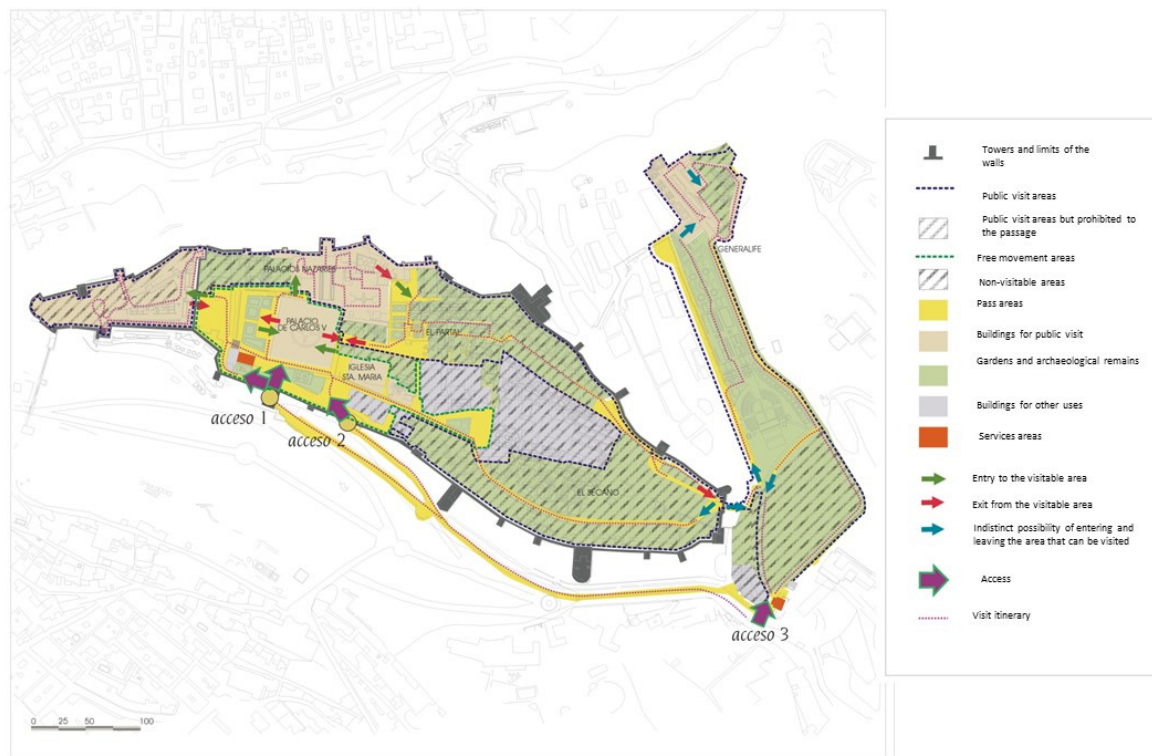

Figure 1. Alhambra and Generalife Monument Site Map. Source: Troitiño et al. 1999 [39]

(**a**)   (**b**)

Figure 2. (**a**) General view of the Alhambra citadel from the Generalife gardens; (**b**) Visitors in the Court of the Mexuar (Nasrid Palaces).

As regards the research methodology, both the initial theoretical contextualisation of the issue and the case study have been approached from a qualitative perspective guided by the bibliographic review of secondary sources. The first section, the theoretical approach, is focused on a review of academic literature. The section in which the results of the applied research (the case study) are included is based on an analysis of a broad set of documents issued by the management of the Heritage Site of Alhambra and Generalife over the last 30 years. The documentation included and analysed is listed in order according to its type in Table 2. The case study is supplemented by simple descriptive statistical analyses carried out using information from ticket sale records.

Table 2. Alhambra and Generalife Monument Site, documentation analysed.

Plans	**Urban plan:**
	• *Plan Especial de Protección y Reforma de la Alhambra y los Alixares* (Special Plan for the Protection and Reform of the Alhambra and Alixares) (1989)
	Strategic plans:
	• *Plan Director de la Alhambra y el Generalife 2007-2020* (Master Plan for the Alhambra and Generalife 2007-2020). Granada: Patronato de la Alhambra y el Generalife. ISBN: 978-84-86827-27-4. Retriewed from https://www.alhambra-patronato.es/patronato/informacion-institucional/plan-director-2007-2020
	• *Plan de Innovación de la Visita* (Innovation Plan for Visits) (2011-2014). Unpublished (archives of the Alhambra)
	• *Plan de Marketing y Comercialización del Conjunto Monumental de la Alhambra y Generalife* (Marketing and Commerce Plan for the Site of the Alhambra and Generalife) (2011-2014). *Unpublished (archives of the Alhambra)*
Laws	**Statutes of the Trust:**
	• DECRETO 59/1986, de 19 de marzo, por el que se aprueban los Estatutos del Patronato de la Alhambra y Generalife (BOJA nº 30 de 10 de abril de 1986). DECRETO 59/1986, de 19 de marzo, por el que se aprueban los Estatutos del Patronato de la Alhambra y Generalife (BOJA nº 30 de 10 de abril de 1986). DECRETO 136/1999, de 1 de junio, por el que se modifica el Decreto 59/1986, de 19 de marzo, por el que se aprueban los Estatutos del Patronato

de la Alhambra y Generalife, dando nueva redacción a éstos en materia de órganos del Patronato (BOJA nº 77 de 6 de julio de 1999).

Public visits and marketing regulations for the site: https://www.alhambra-patronato.es/patronato/normativa/normativa-de-visita-publica and https://www.juntadeandalucia.es/boja.html

- ORDEN de 6 de Noviembre de 1995 por la que se fijan y revisan los precios públicos que han de regir el Conjunto Monumental de la Alhambra y Generalife (BOJA núm.157 de 12 de Diciembre de 1995)
- ORDEN de 20 de febrero de 1998, por la que se revisan los precios públicos que han de regir en el ejercicio 1998 en el Conjunto Monumental de la Alhambra y Generalife (BOJA núm. 29 de 14 de Marzo de 1998).
- ORDEN de 23 de Mayo de 2000, por la que se modifican los precios públicos del Conjunto Monumental de la Alhambra y Generalife (BOJA núm. 74 de 29 de Junio de 2000).
- RESOLUCIÓN de 24 de Enero de 2003, por la que se aprueba la Normativa de Visita Pública del Conjunto Monumental de la Alhambra y Generalife (BOJA nº 30 de 13 de febrero de 2003).
- RESOLUCIÓN de 24 de junio de 2008, del Patronato de la Alhambra y Generalife, por la que se acuerda publicar la normativa de desarrollo de los procesos de comercialización y visita pública en el recinto del Conjunto Monumental de la Alhambra y Generalife. (BOJA, nº 148 de 25 de julio de 2008).
- RESOLUCIÓN de 17 de junio de 2011, del Patronato de la Alhambra y Generalife, por la que se acuerda publicar el texto modificado de la normativa de desarrollo de los procesos de comercialización y visita pública en el recinto del Conjunto Monumental de la Alhambra y Generalife (BOJA nº 255 de 31 de diciembre de 2011).
- RESOLUCIÓN de 26 de septiembre de 2016, del Patronato de la Alhambra y Generalife, por la que se publica la normativa de visita, comercialización y otros usos públicos del Conjunto Monumental de la Alhambra y el Generalife y en sus bienes adscritos (BOJA nº 192 de 5 de octubre de 2016).
- RESOLUCIÓN del 5 de octubre de 2016 por la que se aprueba la instrucción del desarrollo de la normativa para la visita al Patronato de la Alhambra y Generalife y sus bienes adscritos.
- RESOLUCIÓN de 5 de octubre de 2016 por la que se aprueba la instrucción por la que se establece el desarrollo de la normativa para el funcionamiento del canal de grupos organizados por agentes autorizados.
- RESOLUCIÓN de 28 de marzo de 2018 por la que se aprueba la instrucción por la que se establecen medidas adicionales en la normativa para el funcionamiento de la gestión de las entradas puestas a disposición de los agentes autorizados.
- RESOLUCIÓN del 20 de julio de 2018 por la que se modifica el punto 7 de la instrucción de desarrollo de la *Normativa para la Visita al Patronato de la Alhambra y Generalife y sus Bienes adscrito*s aprobada por resolución de 5 de octubre de 2016.
- RESOLUCIÓN del 30 de septiembre de 2019 por la que se modifica el punto 6: "condiciones para la visita" de la instrucción de desarrollo de la normativa para la visita al Patronato de la Alhambra y Generalife y sus bienes adscritos aprobada por Resolución de 5 de octubre de 2016.
- RESOLUCIÓN de 16 de Enero de 2020 del Patronato de la Alhambra y Generalife, por la que se acuerda publicar la *Normativa de Visita,*

	Comercialización y Otros Usos Públicos del Conjunto Monumental de la Alhambra y el Generalife y sus Bienes adscritos. (BOJA nº 16 de 24 de enero de 2020).
Management reports	**Anual management reports**: PATRONATO DE LA ALHAMBRA Y GENERALIFE (de 2007 a 2019). *Memoria Anual*. Retriewed from: https://www.alhambra-patronato.es/patronato/portal-de-transparencia/memorias-anuales
Studies of Visitors	Studies of the Alhambra Sustainability Laboratory. (1999-2016). Retrieved from https://www.alhambra-patronato.es/patronato/portal-de-transparencia/estudios-visitantesdata
Archival documentation	Archival documents from the office of the Secretariat General for the Alhambra until 2014 (reports, studies and resolutions of the management bodies of the Board of the Alhambra)

Source: Own work.

4. Results. Management of tourist visits to the Alhambra and Generalife Site

The Alhambra and Generalife was the second Spanish heritage site to which a visit limitation strategy was applied. The first measures were taken in 1993 following the spectacular increase in visitors in the wake of the 1992 Universal Expo of Seville. The number of 450 was decided as the maximum number of visitors who could access the Nasrid Palaces within each time band of 30 minutes. This figure was reduced to 400 within a few months. Depending on this parameter and the visiting hours in the particular season, a maximum daily capacity was fixed of 8,400 people in high season and 7.200 in low season. With these limits the annual capacity was 2,850,000 visitors.

In 1998 a study was carried out to estimate the tourist carrying capacity of the site. The Nasrid Palaces were taken as a reference for this calculation as they were the most fragile part of the complex with the greatest visitor demand. As a result a maximum load limit was set for the Palaces of 535 people (minimum available space of 3.94 m² per person). These figures were calculated according to the total space available in the itinerary for visiting the Palaces (2,100 m²), the average duration of the visit (45 minutes), the criteria of optimal visitor mobility, the behaviour of the visitors and the site's conservation needs. To guarantee that the estimated carrying capacity was not exceeded, in 1999, the number of tickets sold for each day pass was reduced to 350 every half hour. In 2002 this number was again reduced to 300. Moreover, the visitable space was extended to 2,250 m², the size of the groups was limited to 30 people, access to the Palaces was staggered (50 visitors every 5 minutes) and precise locations were fixed for the explanations given by tourist guides.

Following the application of these measures the maximum annual capacity was set at 2,785,000 visitors. This capacity has not varied since 2003. However, in recent years small changes have been introduced which have led to a *de facto* increase in the capacity of the complex. Due to the continuous increase in the influx of visitors, the 2016 regulations on visits removed from the total capacity some forms of visit (educational and social programmes). The demand for visits is so high that in 2019 the annual number of visitors amounted to nearly 98% of the capacity.
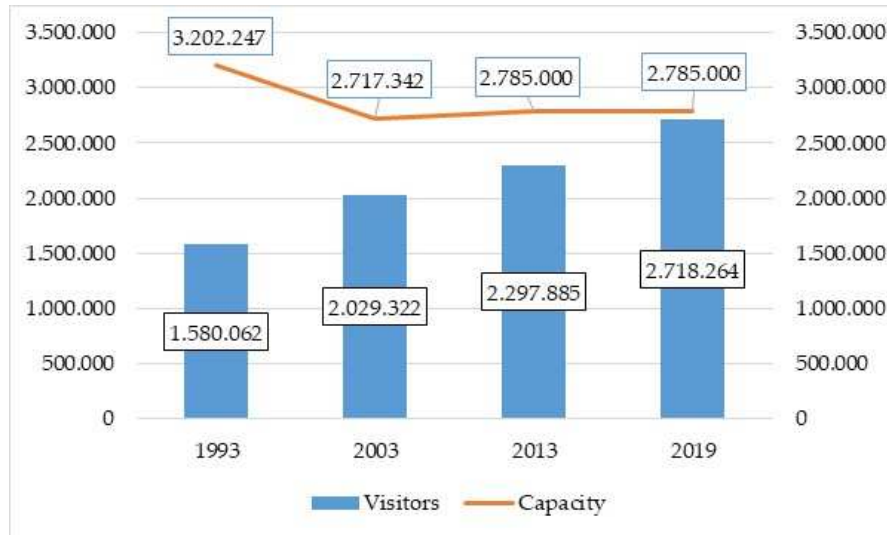
Figure 3. Alhambra and Generalife Monument Site, number of visitors with respect to capacity (1993-2019). Source: Patronato de la Alhambra y Generalife. Regulations on visits (2003, 2008 and 2020) Annual reports (2015-2019). Innovation Plan on Public Visits (2014).

The documentation analysed shows a constant concern to increase the site capacity, although always with respect for the maximum numbers established according to the carrying capacity of the Nasrid Palaces. In fact, the pressure of growing demand for visits has led to the implementation of successive measures to this end. For example, in the early 2000s an attempt was made to offset the reduction in the total capacity of the complex resulting from the successive reductions of the total capacity of the Nasrid Palaces. As a result, from 2000-2002 the following actions were taken: 1). The opening hours of the site were extended; 2) A "day visit to the Gardens" ticket was put on sale (not including the visit to the Palaces); 3) The number of visitable spaces within the itinerary of the general visit was extended (the Arab baths of the Mosque, the Partal Alto Gardens, the San Francisco Gardens); and 4) Tickets were put on sale for visits using the same spaces at different times (e.g., "Night visit to the Nasrid Palaces"). Moreover, between 2005 and 2014, in an attempt to improve the operational management of the internal tourist flows, work was done to: 1). move the ticket reception site to the monumental site (2005); 2) organise a different entry point for tourist groups to the Nasrid Palaces and install a mechanised and computerised system to control entry and respect the regulations (2008); and c) limit the maximum time which individual visitors and organised tourist groups could remain inside the Nasrid Palaces (between 40 and 50 minutes) to avoid overcrowding (2011).

But the extension of the site capacity was also related in the Alhambra to a number of physical actions that allowed the incorporation of new visitable spaces and extended the capacity of the services offered to visitors. These are actions with a high economic cost, because they involved government expropriation and/or acquisition of buildings located within the walled site or in its immediate area. Between 1985 and 2015, the Trust acquired the Alixares, Carmen de Chirimías, Carmen de los Catalanes and Carmen de Bellavista properties, and also recovered ownership of 12 homes located within the site which were in private hands. Some of these buildings are today used for cultural purposes and to store equipment for visits.

The second measure in order of importance for the management of visits in the Alhambra was setting quotas within the maximum total capacity. From 2000 to 2008 the following visitors' quotas were used: 35% of available tickets for each hourly/day/month pass was reserved for individual visitors, a maximum of 35% for agency groups and the remaining 30% for visits and activities of an educational and scientific nature. This distribution of quotas was modified in 2008 by increasing to 39% the quota for visitors in agency groups, to 39% for the quota for individual visitors and reducing to 22% the quota for cultural use. At the same time as the reassignment of the quotas for large groups, in 2008 a system of internal subdivision of the quota for of group visits began to be designed. This

subdivision responded to the very specific needs of selling tickets. The sub-quotas were distributed according to the notice for confirming the reservations needed by the different types of authorised agencies (tourist intermediaries such as tour operators and local receptive travel agencies). See Table 3.

Table 3. Redistribution of the capacity of the Group quota by sub-quotas, General Day Visit, 2013.

Type of groups	No. tickets available	Percentage
Long-term advance sales entry	129,695	15%
Cruises	43,232	5%
Medium-term advance sales	43,232	5%
Short-term advance sales	129,695	45%
Asian agencies	*116,725*	*13%*
Agencies offering day visits from the coast	*155,633*	*18%*
Local agencies	*116,725*	*13%*
Other agents	259,389	30%
Total Group Capacity	864,630	100%

Source: Patronato de la Alhambra y Generalife. Sales Administration Service (own work).

In 2016, as a result of pressure from the tourist agencies, two important decisions were taken: the management of sub-quotas was removed and the total number of tickets that could be acquired by authorised agents was increased. Although formally the quota percentages approved in the regulations governing visits in previous years were maintained (39%, 39% and 22%), the share assigned *de facto* to authorised agents increased (to 49%), as there was an admission of "the right of travel agencies to acquire tickets from the quota assigned to individuals, up to a maximum of 10% of the individual tourism channel". This situation led to the hoarding of tickets by some agents and triggered complaints before the Competition Agency of Andalusia. For this reason, in 2020 the Trust once more modified the regulations on visits, introducing the most disruptive changes of the last two decades into the system of selling tickets. The channel reserved for organised tourism has been removed, as is the possibility of authorised agents reserving tickets with a system of payment by instalment and deposit. The sale on commission or resale of tickets is also expressly prohibited and only two distribution channels are now included: the general sales channel (with 82% of the total maximum capacity) and institutional channel (18% of permitted capacity).

The successive modification of the measures related to the creation of quotas and sub-quotas is related to the need to manage the growing demand for tickets for group visits. Between 1993 and 2019 the number of visits of this type multiplied by a factor of five (from 186,761 to 843,240). These visitors have for years nearly taken up their allocated capacity, particularly with respect to tickets for the general day visit (the type with highest demand).
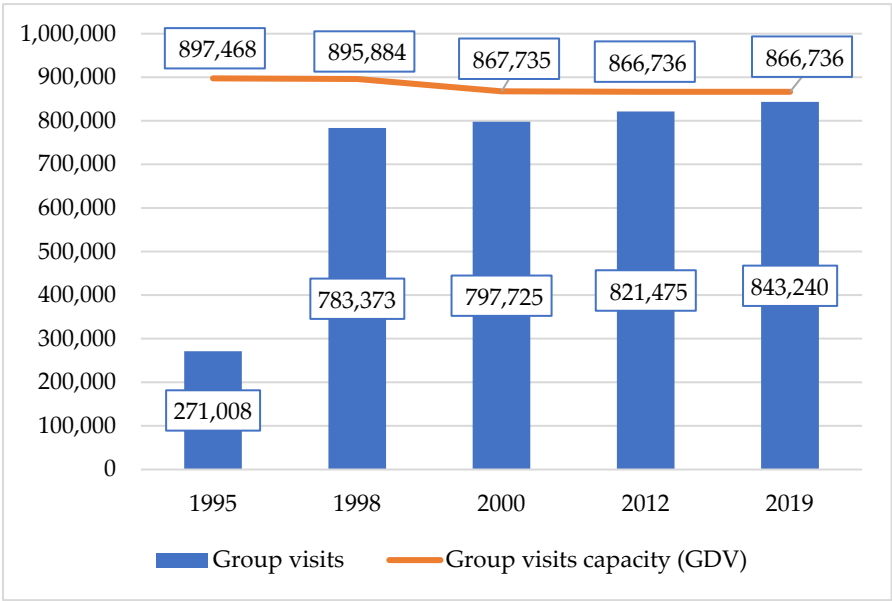
Figure 4. Alhambra and Generalife Monument Site, General Day Visit, number of group visits (1995-2019) Source: Patronato de la Alhambra y Generalife. Regulations on visits (2003, 2008 and 2020) Annual reports (2015-2019). Innovation Plan on Public Visits (2014).

Table 4. Alhambra and Generalife Monument Site. Visit quota system (2000-2020).

2000-2008	2008-2016		2016-2019	2020 and after	
Quotas	Quotas	Sub-quotas	Quotas	Quotas	
35% individual visits	39% individual visits		39% individual visits	82% General channel	70% direct sale, 12% institutional agreements
30% cultural visits	22% cultural visits		22% cultural visits	18% Institutional channel	
35% group visits	39% group visits	Long-term advance sales Cruises	39% group visitors (extendible to 49%)	Out of the quotas: groups from universities, government and other institutions	
		Medium-term advance sales			
		Short-term advance sales			
		Other			

Source: Patronato de la Alhambra y Generalife. Rules on visits (2003, 2008, 2016 and 2020) and annual reports (2015-2019).

5. Discussion

From 1990 the Patronato de la Alhambra y Generalife has implemented a system of heritage and tourist management with a threefold objective: guarantee the conservation of the heritage, the quality of visitor experience and sustainable and fair management of tourist visits [28–30]. Measures have been adopted to manage tourist flows and resolve the challenges raised by the situation of overtourism, in an attempt to respond in real time to changing situations. These measures respond to strategies for managing the site capacity, diversification, deseasonalising and decentralisation. All

these use feedback and have created a complex management system supported by the concept of carrying capacity.

Of particular importance in the Alhambra is the management of the capacity of the site, which has included the application of measures related to the limitation of the time of visits and visitor type (capacity and quotas), as well as other initiatives related to the extension of the capacity for visits (extension of opening hours, incorporation of more visitable spaces, improvement of installations and visitor reception services, etc.). This set of measures is similar to that included in the literature on heritage attractions [38]. However, it is far from the "ambidextrous model" of Versailles, which combines attracting a greater number of visitors with more innovative visiting formulas [12].

Estimating the site's carrying capacity is the cornerstone of the Alhambra's tourist management system. This concept was initially applied intuitively and then systematised in 1999 [39–41]. It was formulated as an instrument that could make operational the concept of sustainability, which as an approach entered strongly into the debate on tourist development in the 1990s. As with other heritage sites, the assignment of capacity to the Alhambra has had to face problems related to the difficulty of justifying and managing maximum limits set for tourist use. It is an issue that the most recent debate on overtourism has returned to. Capacity is a number that is difficult to estimate and subject to controversy, because it involves taking decisions that apply value judgments [5]. That is why the thresholds for the general capacity of the site have been the subject of a number of modifications in a continuous process of readjustment adapted to changing levels and behaviour of demand and the requirements of local stakeholders.

The outcome of the strategies for limiting visits seems to have been positive in many respects. The Trust has managed to explain to the local community the need to limit entry to the heritage site in order to safeguard its legacy. In addition, limiting capacity has regulated and controlled tourist pressure on the monument, thus complying with the core objectives of its management. Nevertheless, limiting tickets has also had undesirable effects and been the source of conflict. Once the need to put a limit on the number of visitors is accepted, the key issue is how to distribute the tickets. Initially, the system of quotas and sub-quotas for tickets was proposed to guarantee that different types of visitors could access the monument within a balanced distribution by hours, and above all avoid mass and concentrated access of group visitors, whose behaviour raised problems related to conservation [42]. The system of prior booking allowed better planning of visits, reduced the number of tickets sold at the ticket office, thus reducing the queues of individual visitors at the entry point; while the professional operators, after registration, could have direct access to advance ticket booking [42].

However, these advantages have had a less positive side derived from abuse of the system by some tour operators. The limitation on capacity has made tickets a scarce resource and the raw material for private business dealings. Some operators have manoeuvred to increase the total percentage of tickets they have available (as reflected by successive changes of the regulations) and lobbied to obtain tickets at the time of day and in the months with the greatest demand. The arrival of digital agents has been key in this process. These agents make purchases tickets in bulk and even usurp the image of the site to resell them for higher prices [42]. They represent a disruptive change, equivalent in its effects to the arrival of platform companies into urban destinations suffering from overtourism. Here too, there is the displacement effect alluded to in works on tourist gentrification. In the Alhambra there has been a displacement of tourists travelling independently and some social groups by agency groups. But the traditional tour operators have also been displaced by digital operators who operate as ticket resale offices. This phenomenon also involves many judicial procedures and has endangered fair and equal access to the heritage, corroborating the warnings of the literature on measures to combat overtourism.

The literature also mentions constantly the need for agreement between stakeholders and the extension of sources of social participation to allow opinions and perspectives to be heard from outside the traditional circles which take management decisions. In the Alhambra and in Granada a consensus has been reached on the need to limit visits to the site, although some people question the limit to the number of visits that has been adopted. Safeguarding the heritage is guaranteed, although

the lines of confrontation between economic and heritage interests and local and global outlooks persist. In fact, the management of the site has been overinfluenced by some of the stakeholders with a great capacity to influence the site and destination managers to a much greater extent than that of other actors who represent less formal interests (tourists, the local community, friends of the heritage, etc.) [42].

The positive and negative results related to the implementation of the capacity and quota systems for the Alhambra are also very closely related to some of the measures for increasing the carrying capacity of the site. The reasons behind the application of these measures are the need to improve the quality of visitor experience and extend the total number of the tickets available for sale. In this respect some "soft" measures have been implemented related to the management of supply and flows (extension of hours, new types of visits, etc.), whose cost can be assumed and which are easy to implement. But much more complex operations have been undertaken related to the increase of the spaces available, both for visits and to provide services to visitors. These operations have a high cost and their implementation is over the medium or even long term; they do not serve to resolve immediate problems, as noted by Koens et al. [16]. However, the experience of the Alhambra demonstrates that the increase in the site's capacity has limits in terms of managing overtourism. The physical capacity of the most fragile and popular space on which the calculation of the capacity of the whole site pivots (the Nasrid Palaces) cannot be extended. In fact, if the overall limit of the whole is increased (diversification of the range of visits offered) the levels of pressure and demand for visits to the Palaces is not reduced. There is therefore a major imbalance between the economic and technical efforts aimed at diversification and the results obtained.

6. Conclusions

The Alhambra has been suffering from a situation of overtourism for years. To deal with it a complex model has been designed based on the general principles of heritage sustainability, which is half way between the most extreme approaches of unrestricted growth and those of a tourism decrease (undertourism). This model has been subject to continuous adjustments over a period of 30 years and its results are the object of discussion between managers and stakeholders.

As in the case with the Alhambra, many heritage sites have to deal with a growth in tourist pressure which endangers the preservations of the heritage and the quality of visiting conditions. Uncontrolled tourist growth tends to produce congestion and overcrowding, as well as favouring more extensive processes of the touristification of urban space. The case studied in this work contributes to a reflection on the management of heritage attractions from the perspective of overtourism and extends the range of the debate on their management. It allows an assessment of the possibilities and limitations of the application of measures in a context marked by case studies for which most of the literature gathers the opinions and positions of stakeholders and managers related more to the possible presentation of strategies than with their effective implementation. The interest of a broad set of stakeholders put great pressure on decision making on the site. The measures related to the control/limitation of visits are not merely a technical question related to the internal running of the monument. They are also a key issue for the destination and even the region in which it is located. This means involving a set of actors with a variety of visions and the capacity to influence at a local (Granada), regional (Andalusia), national (Spain) and even global (UNESCO, WTO, ICOMOS, etc.) level.

The interpretation of the results also questions the overall suitability of management models based on regulation. These models are difficult to impose if there is no explicit commitment by some key stakeholders, who will have to manoeuvre to make use of the system for their own benefit. This question leads directly to the debate on the management of the newly created tourist apartments in urban centres [43–45], with models strongly based on regulation (difficult to apply and with uncertain results) rather than other more flexible models based on low-level agreements with some key operators such as Airbnb.

There are still questions pending that can enrich the debate and provide innovative solutions in a new overtourism context (the post-COVID tourism recovery). First, it is necessary to identify,

analyse and assess the strategies and measures related with the second of the great goals of the management of overtourism: to improve the distribution of tourist flow (decentralisation, diversification, etc.). Second, it is important to tackle a systematic assessment of the measures according to their scale, the size of the problems, tourist and heritage contexts and also the perspective of the different stakeholders. In this context, adapting the model tested by Postma et al. [19] at the urban level to the scale of heritage attractions is of particular interest. This model reviews of strategies according to their level of robustness, acceptability, feasibility, risk and scalability.

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References

1. ICOMOS. *Cultural Tourism Charter*, 1976. Available online: URL https://www.icomosictc.org/p/1976-icomos-cultural-tourism-charter.html (accessed on 28-08-2023).
2. ICOMOS. *Cultural Tourism Charter*, 1999. Available online: URL https://www.icomos.org/images/DOCUMENTS/Charters/INTERNATIONAL_CULTURAL_TOURISM_CHARTER.pdf (accessed on 28-08-2023).
3. García Hernández, M.; Calle Vaquero, M. de la; Mínguez García, C. Capacidad de carga turística y espacios patrimoniales. Aproximación a la estimación de la capacidad de carga del Conjunto Arqueológico de Carmona (Sevilla, España) [Tourist carring capacity and heritage sites. Archaeological site of Carmona (Seville, Spain)]. *Boletín de la Asociación de Geógrafos Españoles* **2011,** 57 (1), 219-242. https://bage.age-geografia.es/ojs/index.php/bage/article/view/1382.
4. Wall, G. From carrying capacity to overtourism: a perspective article. *Tourism Review,* 2020, 75(1), 212–215. DOI: 10.1108/TR-08-2019-0356.
5. Dredge, D. "Overtourism" Old wine in new bottles?, **2017**. Available online: URL https://www.linkedin.com/pulse/overtourism-old-wine-new-bottles-dianne-dredge (accessed on 28-08-2023).
6. Capocchi, A.; Vallone, C; Amaduzzi,, A.; Pierotti. M. "Is "overtourism" a new issue in tourism development or just a new term for an already known phenomenon?". *Current Issues in Tourism*, **2020**, 23(18), 2235–2239. DOI: 10.1080/13683500.2019.1638353.
7. Adie, B. A.; Falk,M.; Savioli, M. Overtourism as a perceived threat to cultural heritage in Europe. *Current Issues in Tourism,* **2020**, 23(14): 1737–1741. DOI: 10.1080/13683500.2019.1687661.
8. De Luca, G.;Dastgerdi, A.S.; Francini, C.; Liberatore. G. Sustainable cultural heritage planning and management of overtourism in art cities: Lessons from Atlas World Heritage. *Sustainability*, **2020**, 12(9): 1–11. DOI: 10.3390/su12093929.
9. Maclaren, F. T. Cultural heritage resources in National Parks in North America – The challenge to maintain historic structures and sites in the face of increasing demand and decreasing budgets. In *The overtourism debate: NIMBY, nuisance, commodification*, Oskam, A. (Ed.), Emerald Publishing, **2020,** pp. 191–210. DOI: 10.1108/978-1-83867-487-820201013.
10. Peeters, P.; Gössling, S.; Klijs, J.; Milano, C.; Novelli, M.; Dijkmans, C.; Eijgelaar, E. et al. *Research for TRAN Committee-Overtourism: impact and possible policy responses.* European Parliament, Policy Department for Structural and Cohesion Policies, **2018**. DOI: 10.2861/919195.
11. Hugo, N. C. Overtourism at heritage and cultural sites. In *Overtourism. Causes, Implications and Solutions*, Seraphin, T.H.,. Gladkikh, T, Vo Thanh, T., Eds. Palgrave Macmillan, **2020**, pp. 169–187. DOI: 10.1007/978-3-030-42458-9.
12. Charlet, N., and F. Dosquet. Overtourism—The Case of the Palace of Versailles. Seraphin, T.H.,. Gladkikh, T., Vo Thanh, T., Eds. Palgrave Macmillan, **2020**, pp 249–265. DOI: 10.1007/978-3-030-42458-9.
13. Yu, J., Egger, R. Tourist experiences at overcrowded attractions: A text analytics approach. In *Information and Communication Technologies in Tourism 2021*, Wörnd, W, Ed., Springer International, **2021**, pp. 231–243. DOI: 10.1007/978-3-030-65785-7

14. Caust, J.; Vecco, M. Is UNESCO World Heritage recognition a blessing or burden? Evidence from developing Asian countries. *Journal of Cultural Heritage,* **2017,** 27: 1–9. DOI: 10.1016/j.culher.2017.02.004.

15. Murzyn-Kupisz, M.; Holuj. D. Museums and coping with overtourism. *Sustainability,* **2020,** 12(5). DOI: 10.3390/su12052054.

16. Koens, K.; Papp, B.; Postma. A. Management strategies growth in eight European cities. In *'Overtourism'? – Understanding and Managing Urban Tourism Growth beyond Perceptions,* Madrid: UNWTO, **2018,** pp. 27-43. DOI: 10.18111/9789284419999.3.

17. Weber, F. et al. *Tourism Destinations under Pressure: Challenges and innovative solutions*. Lucerne University of Applied Sciences and Arts, **2017** Available online: URL https://static1.squarespace.com/static/56dacbc6d210b821510cf939/t/5906f320f7e0ab75891c6e65/1493627704590/WTFL_study+2017_full+version.pdf (accessed on 28-08-2023).

18. ROLAND BERGER GMBH. *Protecting your city from overtourism. European city tourism study* **2018**. Available online: URL https://www.rolandberger.com/en/Insights/Publications/''Overtourism''-in-Europe's-cities-Action-required-before-it's-too-late.html (accessed on 28-08-2023).

19. Postma, A.; Koens, K.; Papp, B. Overtourism: carrying capacity revisited. In *The overtourism debate: NIMBY, nuisance, commodification*, J. A. Oskam, J.A., Ed., Emerald Publishing, **2020,** pp. 229-249. DOI: 10.1108/978-1-83867-487-820201015.

20. Kohl, J. Managing overtourism through a holistic lens. In *Overtourism. Excesses, discontents and measures in travel and tourism*, Milano, C., Cheer, J.M., Novelli, M., Eds., Wallingford: CABI, **2019,** pp. 224-227.

21. Wall, G. Perspectives on the environment and overtourism. In Overtourism. *Issues, realities and solutions*, Dodds R., Butler, R.W., Eds., De Gruyter, **2019,** pp. 24-45. DOI: 10.1515/9783110607369-003.

22. Eckert, C.; Zacher, D.; Pechlaner, H.; Namberger, P.; Schmude, J. Strategies and measures directed towards overtourism: a perspective of European DMOs". *International Journal of Tourism Cities* **2019,** 5(4): 639–655. DOI: 10.1108/IJTC-12-2018-0102.

23. Abbasian, S., G. On; Arnautovic. D. Overtourism in Dubrovnik in the eyes of local tourism employees: A qualitatitve study. *Cogent Social Sciences*, **2020,** 6(2): 1–14. DOI 10.1080/23311886.220.1775944.

24. Bouchon, F.; Rauscher, M. Cities and tourism, a love and hate story; towards a conceptual framework for urban overtourism management". *International Journal of Tourism Cities*, **2019,** 5(4), pp. 598-619. doi: 10.1108/IJTC-06-2019-0080.

25. Dodds, R.; Butler, R.W. Conclusion. In Overtourism. *Issues, realities and solutions*, Dodds, R, Butler, R.W., Eds., De Gruyter, **2019,** pp. 262-276. DOI: 10.1515/9783110607369-018.

26. Frey, B. S. *Overcoming Overtourism. Creating Revived Originals*. Springer International Publishing, **2021**. DOI: 10.1007/978-3-030-63814-6.

27. EUROPEAN CITIES MARKETING. *Managing Tourism Growth in Europe: The ECM Toolbox*, **2018,** Available online: URL https://www.europeancitiesmarketing.com/city-marketing/managing-tourism-growth-in-europe-the-ecm-toolbox-cover/ (accessed on 28-08-2023).

28. Jamieson, W.; Jamieson, M. 2019. Managing overtourism at the municipal/ destination level. In Overtourism. *Issues, realities and solutions*, Dodds, R, Butler, R.W., Eds., De Gruyter, **2019,** pp. 217–233. DOI: 10.1515/9783110607369-015.

29. Koens, K.;Postma, A. *Understanding and managing visitor pressure in urban tourism*. *A study to into the nature of and methods used to manage visitor pressure in six major European cities.* CELTH-Breda University of Applied Sciences, **2016,** Available online: URL https://www.celth.nl/sites/default/files/2018-09/Voorkomen%20van%20bezoekersdruk%20in%20Europese%20steden.pdf (accessed on 28-08-2023).

30. MCKINSEY & COMPANY - WORLD TRAVEL & TOURISM COUNCIL. *Coping with success: Managing overcrowding tourism destinations*, 2017, Available online: URL https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/coping-with-success-managing-overcrowding-in-tourism-destinations (accessed on 28-08-2023).

31. Milano, C. Overtourism, malestar social y turismofobia. Un debate controvertido. *PASOS. Revista de Turismo y Patrimonio Cultural* 18, **2018,** (3), pp. 551–564. DOI: 10.25145/j.pasos.2018.16.041.

32. Verissimo, M.; Moraes, M.; Breda, Z; Guizi, A.; Costa, C. Overtourism and tourismphobia: A systematic literature review. *Tourism*, **2020,** 68(2), pp. 156–169. DOI: 10.37741/T.68.2.4

33. Calle-Vaquero, M. de la.; García-Hernández, M.; Mendoza de Miguel, S. Urban planning regulations for tourism in the context of overtourism. Applications in historic centres. *Sustainability*, **2021,** 13(1): 1–21. DOI: 10.3390/su13010070.

34. Frey, B. S.; Briviba, A. Revived Originals – A proposal to deal with cultural overtourism. *Tourism Economics*, **2020**, DOI: 10.1177/1354816620945407.

35. Revilla Uceda, M. Turismo y patrimonio arquitectónico. Accesibilidad y regulación de flujos de visitantes en la Alhambra. *Cuadernos de la Alhambra*, **2001**,37, pp. 111-132.

36. Chamorro, V. *La Alhambra. El lugar y el visitante* [Alhambra. Place and Visitor]. Granada: Patronato de la Alhambra y Generalife, Tinta Blanca Editor and Editorial Almuzara, **2006**.

37. Villafranca Jiménez, M. M., Gutiérrez-Carrillo, M.L. The Alhambra master plan (2007-2020) as a strategic model of preventive conservation of cultural heritage. *Vitruvio. International Journal of Architecture Technology and Sustainability*, **2019**, 4(2), pp. 59-72. DOI: 10.4995/vitruvio-ijats.2019.12642.

38. Enseñat-Soberanis, F.; Frausto-Martínez, O.; Gándara-Vázquez, M. A visitor flow management process for touristified archaeological sites. *Journal of HeritageTourism*, **2019**, 14(4): 340–357. DOI: 10.1080/1743873X.2018.1529179

39. Troitiño Vinuesa, M.A. et al. *Estudio previo para la revisión del Plan Especial de la Alhambra y Alijares. Documento de Síntesis y Diagnóstico* [Preliminary study for the revision of the Special Plan of the Alhambra and Alijares. Synthesis and Diagnosis Document]. Granada: Patronato de la Alhambra y Generalife, **1999**.

40. García Hernández, M. *Turismo y conjuntos monumentales: Capacidad de acogida turística y gestión de flujos de visitantes* [Tourism and monumental sites: Carring capacity and management of visitor flows]. Valencia: Tirant lo Blanch, **2003**.

41. García Hernández, M; Calle Vaquero, M. de la; Ruiz Lanuza, A. Capacidad de carga y gestión turístico-cultural. Aplicaciones en la Alhambra de Granada (España) [Carring capacity and tourist-cultural management. Applications in the Alhambra - Granada (Spain)]. In *Innovación turística para el desarrollo*, Gómez Hinojosa, C., Palafox Muñoz, A. Eds., Tuxtla Gutiérrez: Universidad Autónoma de Chiapas – AMIT, **2014**, pp. 336-356.

42. PATRONATO DE LA ALHAMBRA Y GENERALIFE. *Plan de Innovación para la Visita*. [*Innovation Plan for the tourist visit*]. Granada: Patronato de la Alhambra y Generalife, **2011**.

43. Aguilera, T.; Artioli, F.; Colomb, C. Explaining the diversity of policy responses to platform-mediated short-term rentals in European cities: A comparison of Barcelona, Paris and Milan". *Environment and Planning*, **2019**, pp. 1–29. doi: 10.1177/0308518X19862286.

44. Nieuwland, S.; Melik, R. van. Regulating Airbnb: how cities deal with perceived negative externalities of short-term rentals. *Current Issues in Tourism*, **2018**, 23(7), pp. 811–825. DOI: 10.1080/13683500.2018.1504899.

45. Palombo, D. A tale of two cities: The regulatory battle to incorporate short-term residential rentals into modern law". *American University Business Law Review*, **2015**, 4(2), pp. 287-321. https://ssrn.com/abstract=3156798