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RESEARCH LETTER



Strategies for beach management during the COVID-19 pandemic*

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ABSTRACT

The aim of this paper is to study the policies developed by local authorities in Spain to provide a safe environment on beaches in order to identify the strategies behind as well as the measures applied to enforce them. Our results, based on a survey of over 200 municipalities responsible for the 646 beaches awarded an ecolabel certification, the Blue Flag, reveal that the policies revolve around three axes: beach organization, reduction of items that could be a source of risk, and reduction of some types of services.

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Beach management; COVID-19; Spain; Safety strategies; Coastal tourism; Events

Introduction

The COVID-19 pandemic has required authorities to implement actions that modify the normal lives of their populations. Summertime, when the use of beaches for recreation is more intense, presented a serious challenge in 2020 regarding how to organize their use so that they would be safe for visitors (Gössling et al., 2021; Hall et al., 2020) in a context without any specific indications from either the World Health Organization or national health authorities beyond general instructions. The responses of countries have differed (Organisation for Economic Co-operation and Development, OECD, 2020) and they have gone beyond the closure of the beaches to guarantee social isolation and physical distancing to limit the risk of contagion on the beach, although in many of the cases it was unclear whether they were responding to defined strategies. Basically, all countries have worked on equipment and facilities, biosafety and hygiene measures, reorganization of spaces, beach access, level of occupancy, beach monitoring and signage to avoid contagion among the population. However, the application of such measures in most developed countries (Kane et al., 2021, in the USA; Epelde et al., 2021, in Spain; Clark, 2021, in Australia) with intensive use of technology (drones or camera systems) or the use of higher quality materials to guarantee social distancing on beaches has contrasted with the case of less developed ones (Moreno-Casasola et al., 2021, in Mexico; Milanés et al., 2021, in Cuba; Pereira et al., 2021, in Brazil; Okuku et al., 2021, in Kenya), in which there were also differences in management between beach resorts and natural or urban beaches (Milanés, 2020).

The pandemic has not only highlighted the need to combine recommendations at a global level but also boosted research on many aspects of beach management and planning. But studies are still scarce, with few papers based on empirical models (Gössling et al., 2021; Jeon & Yang, 2021) and inconclusive so far.

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The aim of this paper is to present and systematize the measures implemented by beach managers in Spain to regulate the use of beaches and to establish whether these measures configure valid strategies for efficient beach management.

Spain is one of the world leaders in international tourism (UNWTO, 2020) and beach tourism is a large part of it. Consequently, it is not surprising that Spain was the most popular country on Twitter with regard to beach tourism when the pandemic broke out (Carvache-Franco et al., 2021). The large number of domestic tourists expected and the need to provide a safe environment motivated local authorities to take the most effective measures to provide a safe environment on the beaches when recreational use was possible (Botero et al., 2020; Zielinski & Botero, 2020).

Despite advances in vaccination, COVID-19 remains, and thus a presentation of the implemented strategies will be of interest for all those in charge of beach management. Additionally, this information provides a basis for further research where the cost and effectiveness of the different strategies can be evaluated.

Methodology

We developed a survey focused on the measures implemented regarding visits to beaches in the situation created by COVID-19, the subsequent regulations developed by health authorities, and the tools used to enforce them. The set of possibilities was established based on visits to beaches by technicians from ADEAC-FEE (the Spanish branch of the Foundation for Environmental Education) during the summer, information collected from the media, and the researchers' knowledge on this issue.

The survey was developed in October 2020 and was addressed to the technical manager of the beach and coastal areas from each local council monitored by ADEAC-FEE, which also answered any questions to the respondents. The survey was included on the form for the renewal of the Blue Flag award for the next season. All of this process provided information on 656 beaches across 241 localities along the whole of the Spanish coast.

Results

As Table 1 shows, extra cleaning at lifeguard posts and controls and capacity limitations were the two most widely used measures; less common was a reduction in temporary businesses, which can be explained by the existence of specific regulations for bars or other businesses (e.g. rentals of aquatic devices) and the impact on the local economy. Smoking bans are a policy that was already being developed to reduce tobacco use and minimize disturbance to nearby people.

Table 1. Measures & policies to manage recreational beach use in Spain Blue-Flag beaches (% of beaches that implemented them).

	Total	Area			Size	
		Urban	Half-urban	Natural	Small	Large
<i>Number of beaches</i>	656	416	151	89	420	239
Entrance/exit separation	55.5	59.4	53.6	40.4	55.0	56.4
Controls/limits to assistance	77.0	78.6	73.5	75.3	76.4	78.0
Additional indicated footpaths	36.0	42.3	27.2	21.3	32.4	42.4
Modification on bath support for handicapped people	43.6	51.7	31.1	27.0	36.9	55.5
Additional cleaning of the sand	71.0	72.6	70.9	64.0	69.3	74.2
Extra cleaning in lifeguard posts	88.9	90.6	85.4	86.5	88.3	89.8
Waste bins reduction	29.6	32.0	27.8	21.3	32.1	25.0
Suppress waste bins in the sand area	32.0	30.8	28.5	43.8	32.6	30.9
Reduction in WC	41.9	45.9	34.4	36.0	42.9	40.3
Reduction in showers	45.1	39.7	52.3	58.4	49.0	38.1
Reduction in feet showers	46.5	41.8	53.0	57.3	49.3	41.5
Reduction in temporary businesses	27.7	31.7	20.5	21.3	25.7	31.4
Smoking ban	24.8	23.1	24.5	33.7	28.6	18.2

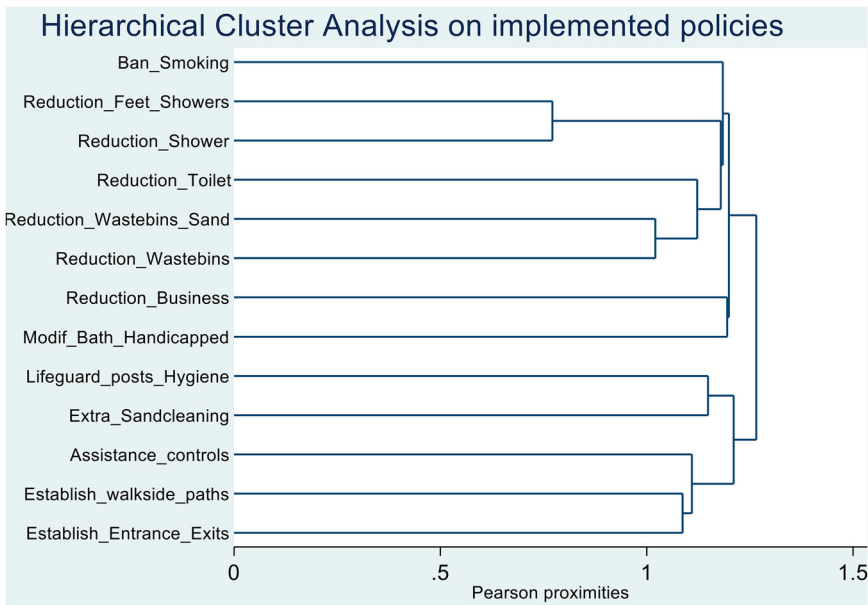


Figure 1. Hierarchical cluster to determine strategies from the adopted measures.

According to the beach characteristics, modifications of bathing support for people with disabilities, separation between the entrance and exit, and differentiation of indicated footpaths were more common on beaches located in urban environments than on those in natural environments. On the contrary, a reduction of showers was more common in natural areas.

The hierarchical clustering of the variables indicates whether these thirteen measures constitute strategies. The results, reported in Figure 1, reveal not only the existence of a statistical association among them but also that all these measures actually form part of clearly defined strategic lines. The first strategy refers to 'beach organization' (separation of entrance and exit, establishment of indicated footpaths, attendance control), which is strongly associated with the cleaning/hygiene strategy (additional cleaning of the sand and extra cleaning of lifeguard posts). The other strategy refers to the reduction of conflict points (showers, waste bins, and, to a lesser extent, toilets); results reveal that this strategy is associated to measures related to beach services (businesses, bathing support for people with disabilities). Finally, the ban on smoking emerges as a measure that is independent of the other ones.

Table 2 reports the tools used to enforce the adopted measures. While some of the measures do not require any special procedure, others (such as monitoring the attendance and the distance

Table 2. Tools and procedures to enforce the adopted measures (% of beaches that used them).

	Total	Area			Size	
		Urban	Half-urban	Natural	Small	Large
<i>Number of beaches</i>	656	416	151	89	420	239
Apps to reserve lot spaces	16.0	17.3	18.5	5.6	11.7	23.7
Assistance controlled by drones	17.1	17.3	15.2	19.1	15.0	20.8
Assistance controlled by CCTV	9.0	9.1	9.9	6.7	8.8	9.3
Connected guards to control ins/outs	39.6	43.8	36.4	25.8	36.4	45.3
Guards controlling manually	25.2	25.5	25.8	22.5	25.2	25.0
Lots established by the local authorities	22.6	24.3	23.8	12.4	21.2	25.0
Lots to be established by the user	6.4	7.0	6.6	3.4	5.5	8.1
Technological solutions (app + drones + CCTV + web)	41.5	43.8	41.7	30.3	37.1	49.2

between people) do. We collected information on seven possibilities: four make reference to control procedures (drones, CCTV, guards at the entrance/exit points connected to one another by mobile phones or walkie-talkies, or guards without such connections, each responsible for one part of the beach), two to the establishment of lots in the sand to maintain social distancing (by the authority or by the user with devices such as ribbons or ropes), and one to facilitate the procedure (apps reporting attendance levels that even allowed to reserve beach lots).

On urban beaches, the use of guards/caretakers was the most frequently used option and was combined, on more than 40% of the beaches, with technological solutions.

Conclusions

We have developed a survey of 656 beaches in Spain to study the measures taken regarding beach use during the pandemic. The results reveal that all these measures configure two strategies: beach organization (consisting of separating entrances and exits, monitoring attendance, indicating foot-paths, and extra cleaning) and reduction of conflict points (showers, toilets, or waste bins). The measures differ between beaches in urban and natural areas. To enforce those strategies, the use of technology has been quite common on large beaches (against small) and urban beaches (against natural), although the use of guards has also been very important. These results provide a valuable reference for beach managers as well as indicating avenues for further research concerning their effectiveness and evaluation of their cost.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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