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Cabezas-Rabadán, C.; Rodilla, M.; Pardo Pascual, JE.; Herrera-Racionero, P. (2019). Assessing users' expectations and perceptions on different beach types and the need for diverse management frameworks along the Western Mediterranean. *Land Use Policy*. 81:219-231. <https://doi.org/10.1016/j.landusepol.2018.10.027>



The final publication is available at

<https://doi.org/10.1016/j.landusepol.2018.10.027>

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Additional Information

1 Assessing users' expectations and perceptions on different beach types and the need for diverse
2 management frameworks along the Western Mediterranean.

3 **Abstract**

4 Beach management follows a homogeneous and rigid decision-making process that tries to fulfill
5 expectations assumed from mass tourism without really getting to know the real users' perception.
6 Decisions are usually taken without considering the diversity of values of the beaches, causing high
7 environmental, economic and recreational impacts. In this study, users' profiles, expectations and
8 perceptions have been defined on six Valencian beaches with both different degree of artificialization and
9 sediment type. This has allowed a comparison between semi-natural and urban beaches, and between
10 pebbly and sandy beaches. Differences between beach types have been observed, and a critical analysis of
11 the current management framework and practices has been carried out. Therefore, decision-making should
12 take greater account of users, and actions should be adapted to the diversity of beaches and their
13 particularities, leading to a differential beach management.

14 **Keywords:** Beach management; User perceptions; Differential management; ICZM; Coastal planning
15 INTRODUCTION

16 Beaches present a great diversity in their degree of development, anthropogenic pressure, touristic
17 exploitation, conservation, sediment type and geomorphology. Some characteristics, such as physical
18 aspects, landscape, flora and fauna can enhance the potential attractiveness of the beaches (Micallef and
19 Williams, 2002). They bring great economic benefits to society because of their recreational value
20 (Gormsen, 1997; Sardá et al., 2009), by developing a tourism sector based on the "sun and beach" resource.
21 In the Mediterranean, 500 million tourists per year are forecasted for 2030 (World Tourism Organization,
22 2013). This means that on coasts such as Valencian, in the Western Mediterranean, tourism constitutes an
23 absolutely essential economic product (Obiol-Menero and Pitarch-Garrido, 2011; Yepes and Medina, 2005)
24 that guides the coastal policies and decision-making.

25 This takes place in a context in which climate change and rising global temperatures are altering
26 hydrodynamics and rising sea levels, affecting coastlines and increasing beach erosion (Bird, 1996; Gössling
27 and Hall, 2006; Nicholls and Cazenave, 2010; Slott et al., 2006). That is the case of Valencian coast, affected
28 by erosion over 26% of its length. (European Commission, 2009). These phenomena affect the basic resource
29 that sustains tourist activity since the beach width required for user comfort is reduced or disappears
30 (Valdemoro and Jiménez, 2006). Given their importance, and in order to maintain the benefits of the
31 recreational use of beaches (Alexandrakis et al., 2015), erosion processes receive great attention from
32 coastal managers. There are numerous nourishment projects and implementation of hard structures as
33 protection measures against coastal and beach erosion, which entail the consequent economic cost and
34 environmental impact (Aragonés et al., 2015; Peterson and Bishop, 2005; Rumbold et al., 2001; Speybroeck
35 et al., 2006). In Spain, competences over the coast are distributed at local and national level (defined by the
36 Spanish Coastal Law 2/2013). The physical maintenance of the beaches is taken at a national level, with
37 nourishments focused on maintaining the beach size (Hanson et al., 2002). On the contrary, municipalities
38 are responsible for managing the facilities and supplying the equipment, usually following beach award
39 standards (Mir-Gual et al., 2015). Management may affect both the recreational function of the beaches
40 (Ariza et al., 2010; Roca and Villares, 2008; Williams and Micallef, 2009) and the environment. As an
41 example, this may happen with the seagrass residues removal (Cocozza et al., 2011; Duarte, 2004).

42 Beaches should be managed as the complex systems they are, guaranteeing the integrity of their natural
43 values while ecological services are provided (Sardá et al., 2015), following an Ecosystem Approach (Olsen
44 et al., 2009). Nevertheless, in many cases the current management does not accomplish the environmental
45 policy principles (Katsanevakis et al., 2011), and decisions are taken exclusively from the recreational point

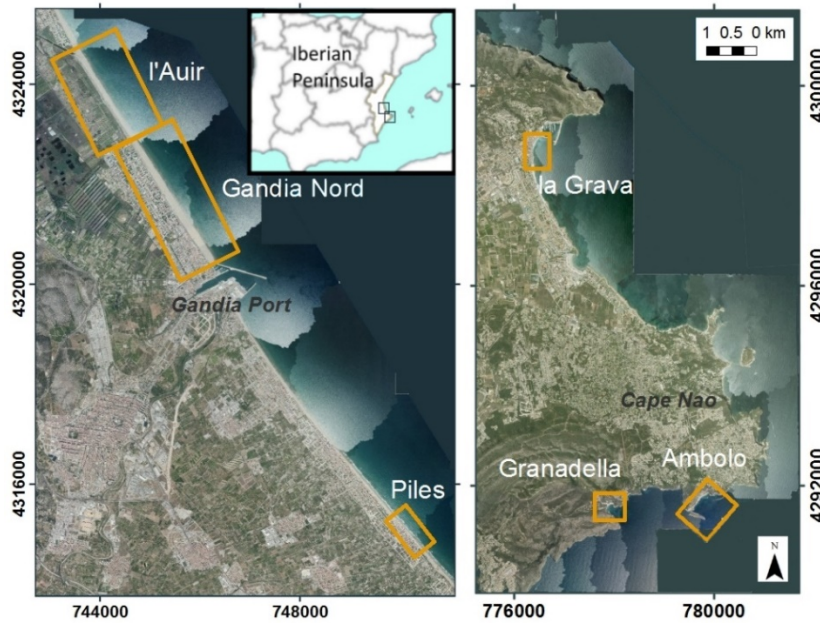
46 of view (Ariza et al., 2008a; James, 2000; Sardá et al., 2015). A priori, the offer of facilities and equipment is
47 made according to users' attendance, preferences and needs (Peña-Alonso et al., 2018). However,
48 managers infer users' desires without really knowing their opinion before adopting changes (Nelson et al.,
49 2000). Therefore, decision-making follows a non-inclusive and rigid process (Areizaga et al., 2012) with local
50 vision and short-term perspective. Decisions try to please the mass tourism industry, receiving important
51 pressure from the private sector and other influential stakeholders policy (Bramwell, 2011). This
52 management model entails homogenization of the beaches (Lozoya et al., 2014), applying similar measures
53 despite the diverse nature and different sediment type of the beaches. These actions promote a tourism
54 model where environmental care is a secondary concern (Obiol-Menero and Pitarch-Garrido, 2011),
55 damaging and overexploiting the coast (Amelung and Viner, 2006; Sardá et al., 2009).

56 Therefore, for a management adapted to beaches' diversity it is fundamental to have more information
57 about their environment and users. Regarding the beach as a physical space, an up-to-date knowledge of
58 the width is essential for determining the available surface area, the carrying capacity (Cifuentes, 1992;
59 Williams and Micallef, 2009) and, thus, to deal with density and overcrowding issues. With regard to users,
60 it is necessary to know their affluence, but also their profile, interests, expectations, and opinions about the
61 management measures adopted (Rodella et al., 2017). As stakeholders, their participation is essential for
62 an Integrated Coastal Zone Management (ICZM) (Areizaga et al., 2012) with sustainable results (Milligan et
63 al., 2009; Schmidt et al., 2013). Different studies have tried to answer the previous questions: some works
64 have been carried out on recreational quality of beaches (Ariza et al., 2010; Peña-Alonso et al., 2018;
65 Williams and Micallef, 2009), and dealing with users' density, frequentation and crowding (Chen and Teng,
66 2016; DeRuick et al., 1997; Pereira da Silva, 2002; Roig-Munar, 2003; Sardá et al., 2009). Other authors have
67 tried to define their opinions, perceptions and expectations (Alves et al., 2014; Cervantes et al., 2008;
68 Lozoya et al., 2014; Marin et al., 2009; Mas-Parera and Blázquez-Salom, 2005; Monioudi et al., 2017; Roca
69 and Villares, 2008; Rodella et al., 2017; Vaz et al., 2009). However, the vast majority of the studies focus on
70 urban sandy beaches, without considering beaches with different substrate or artificialization degree. On
71 the Valencian coast, despite the importance the tourism has for the region's socioeconomics, studies of this
72 nature are extremely scarce.

73 The objectives of this study are to identify differences in the expectations and perceptions of the users on
74 different beach types, as well as to determine whether the current management responds adequately to
75 this diversity.

76 DESCRIPTION OF THE BEACHES

77 Six Valencian beaches, on the Eastern coast of the Iberian Peninsula, were selected as representatives for
78 this study. All six beaches have both different sediment size and artificialization degree in order to allow a
79 comparison between different beach types (Fig. 1, 2).



80
 81 Fig. 1. Location of the six beaches assessed in this study. Valencian coast, Western Mediterranean
 82 (ETRS89 UTM30N).



83
 84
 85 Fig. 2: Studied beaches: l'Auir, Gandia Nord, Piles, la Grava, Ambolo and Granadella.

86 Beaches were classified based on beach features, facilities and surroundings. These aspects were defined
 87 from the information available in the Spanish Catalogue of Beaches (MAPAMA, 2017), by fieldwork, and by
 88 a GIS analysis of the land use in the coastal hinterland (Tab. 1). Urban and semi-natural beaches were
 89 distinguished according to their degree of artificialization. Urban beaches were defined as those located in
 90 dense urban areas, with easy access and touristic accommodations, high level of services, and limited by a
 91 promenade. On the contrary, semi-natural beaches are those with scattered settlements in the hinterland,
 92 low level of touristic facilities and accessibility, and without promenade. These criteria are in line with
 93 previous beach classifications (Ariza et al., 2008a; Roca and Villares, 2008; Vaz et al., 2009). At the same
 94 time, beaches also have been classified according to the sediment size between sandy and pebbly beaches.

95 Tab 1. Beach classification and main characteristics. The information has been partly obtained from the
 96 Catalogue of beaches (MAPAMA, 2017).

Beach	l'Auir	Gandia Nord	Piles	La Grava	Ambolo	Granadella
Municipality	Gandia	Gandia	Piles	Xàbia	Xàbia	Xàbia
Sediment	Sand	Sand	Sand	Pebbles	Pebbles	Pebbles

Artificialization degree	Semi-natural	Urban	Urban	Urban	Semi-natural	Semi-natural
Coastal front	Dunes	Dense urbanization	Dense urbanization	Dense urbanization	Cliff	Mountains
Length x mean width (m)	1760 x 70	3000 x 80	1160 x 25	500 x 16	150 x 15	200 x 20
Blue Flag	No	Yes	Yes	Yes	No	Yes
Promenade	No	Yes	Yes	Yes	No	No
Barrier-free	No	Yes	Yes	No	No	No
Public transport	No	Yes	Yes	Yes	No	No
Zoning	Nudist, dog-friendly	No	No	No	Nudist	No

97 From North to South, the first three beaches are sandy. The first one, l'Auir is a semi-natural wide beach
98 located at the northern end of the municipality of Gandia, with a coastal front not urbanized and with dunes.
99 It offers minimum services and activities related to water sports (like windsurfing and kitesurfing) and has
100 a nudist area and a dog-friendly area. To the South, it borders on Gandia Nord, a very wide urban beach
101 with a highly developed coastal front. The beach is delimited by a promenade, with numerous
102 establishments, terraces, hotels and apartments. This beach also offers a wide range of services, activities,
103 sports areas and kiosks. Some kilometers to the South, Piles is another urban beach, bordered by a
104 promenade with few establishments, followed by low-rise apartments. It is a relatively narrow beach with
105 erosive problems (Cabezas-Rabadán et al., 2018).

106 In the South, three pebbly beaches are considered. La Grava is an urban beach supported by the port of
107 Xàbia and the promenade, in front of low buildings. The last two beaches are located on the coast of Cap
108 de la Nao. They are both semi-natural, surrounded by a scattered low-density urbanization, and “Penya-
109 segats de la Marina” Site of Community Importance and Special Protection Area (CMA, 2015). Ambolo
110 shows a mixture of pebbles and coarse sand, supported by a cliff. Access is complicated and only possible
111 on foot. The beach does not offer services or Blue Flag, and nudism is common in one area. Finally,
112 Granadella is surrounded by mountains, offers services and aquatic activities, and has Blue Flag.

113 As they are located close to each other, the main regional socioeconomic and environmental conditions are
114 similar. Nevertheless, some differences appear on the tourist sector: it is developed more focused on the
115 so-called quality tourism in the southern part of the study area, apparently more linked to natural values
116 and the landscape, while on the contrary Gandia Nord constitutes an example of tourist resort oriented to
117 the sun and beach mass tourism (Cambrils-Camarena and Nácher Escriche, 2005).

118 METHODS

119 Questionnaires

120 Questionnaires were conducted in order to assess user’s profile, the reasons for choosing a certain beach,
121 activities carried out, priorities and perceptions. A simple random sampling following a zigzag pattern was
122 carried out on each beach after determining the sample size with a confidence level of 95%, maximum
123 variance (0.5) and an error of 15% (Camarero, 2006). A total number of 264 useful oral interviews, 44 for
124 each beach, were carried out between July 15th and August 15th, in the middle of the peak season.
125 Questionnaires took between 10 and 15 minutes and were conducted mainly in Spanish, but also in English,
126 French and Catalan. Questions were grouped into the following sections:

127 (a) Basic questions oriented to the definition of users’ profile such as their age, origin, educational level,
128 residence, companions and aspects related to their visit to the beach;

129 (b) Users’ main reason for choosing the visited beach;

130 (c) Recreational activities on the visited beach;

- 131 (d) Prioritized characteristics when choosing a beach, as well as identifying the most important one;
132 (e) Perception of facilities supply and environmental aspects.

133 Afterward, a descriptive analysis for each beach was carried out employing frequency diagrams. With the
134 aim of assessing differences between beach types, the results of urban, semi-natural, pebbly and sandy
135 beaches were aggregated. The proportion of answers in different beach types was conducted using a Z-test
136 (Fleiss et al., 2004; Zar, 1999). Finally, users' perceptions were also analyzed through frequency diagrams,
137 and a weighted arithmetic mean was calculated in order to assess the perception of facilities supply.

138 Frequentation measures

139 During the same days the interviews were conducted, the number of users at each beach was determined
140 between 12 a.m. and 3 p.m., as this time slot registers the greatest number of people on Mediterranean
141 beaches (Breton et al., 1996; Mas-Parera and Blázquez-Salom, 2005; Roig-Munar, 2003). On each beach,
142 and perpendicularly to the shoreline, 5-meters-wide stripes were defined covering both emerged and
143 submerged beach areas. It was identified that the vast majority of users were located in a narrow stretch of
144 25 m close to the shore, which was defined as the useful beach area from the recreational point of view.
145 This corresponds with the findings of previous studies (Alemany, 1984; Sardá et al., 2009; Yepes and
146 Medina, 2007). Therefore, beach surface was defined up to that distance or, in narrower beaches, up to
147 their inner limits. For this purpose, GIS software and PNOA orthophotos were used. From the number of
148 users and the useful beach area an average beach density was calculated.

149 RESULTS

150 Users' profile

151 The answers of 44 questionnaires allowed describing users' profiles through their age (Fig. 3a), companions
152 (Fig. 3b), origin (Fig. 4a), residence (Fig. 4b), educational level (Fig. 5a), usual beach (Fig. 5b), travel time (Fig.
153 6a) and time spent on the beach (Fig. 6b). Each beach showed a particular user profile.

154 L'Auir was mostly visited by adults (64%), who attended in pairs (46%), mostly from other parts of Spain
155 (52%), or the municipality of Gandia (23%). Several users expressed that they came "from the coastal urban
156 area of Gandia" where they stayed at their second residence (48%) or temporary residence as hotels or
157 rental apartments (21%). However, they preferred to visit this beach instead of Gandia Nord. For the
158 majority (71%), it was their usual beach and the time spent there was about 3-4 hours.

159 Gandia Nord received a large number of elderly (23%) and young people (48%), most of them from outside
160 the Valencian Community (75%). The majority stayed in hotels and apartments (50%), although some users
161 reported "long trips in public transport" for a beach day trip (11% spent more than 60 min). People spent
162 long days on the beach (50% more than 5 h) and considered it as their usual beach (60 %).

163 Piles hosted a high percentage of users that considered it as their usual beach (80%), mainly families (71%)
164 from Valencia province (68%). They came from their second residences (39%), habitual homes (34%), or
165 rented close to the beach (27%).

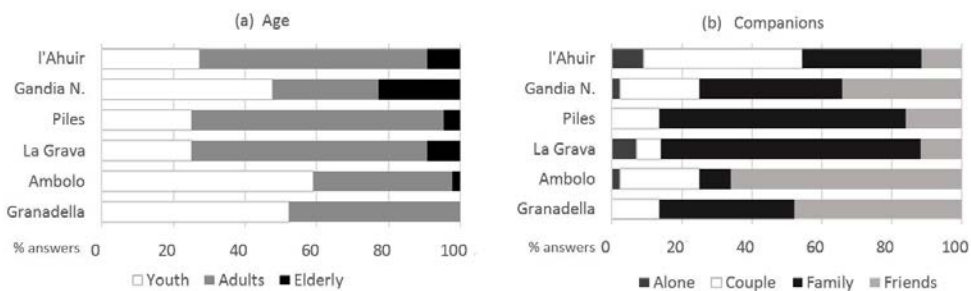
166 La Grava was frequented mainly by families (73%), inhabitants of the municipality (23%), that made short
167 trips (77% less than fifteen minutes) from their habitual residence (34%) to spend little time on the beach
168 (46% less than 2 h). There were also foreigners and people from the Valencian community in second homes
169 or temporary residences.

170 Ambolo was mainly frequented by young people (59%), possibly due to its complicated access, without
171 considering it as their usual beach (91%). They came with friends (66%), from the Valencian community

172 (66%), directly from their home to spend a day at the beach, with no other accommodation nearby (75%).
 173 moving from long distances (66% of travels longer than one hour).

174 Granadella was mainly visited by young (52%) groups of friends (48%), itinerant visitors attending to spend
 175 the day from their usual homes (20%), in the Valencian Community (34%). There were also visitors staying
 176 in hotels, campsites and apartments (41%), or in second homes (30%), many of whom were foreigners
 177 (18%).

178 Considering the different beach types, differences appeared in users' profile: Young people preferred semi-
 179 natural and pebbly beaches, while elderly preferred the urban and sandy ones. Regarding the company,
 180 more families appeared on urban beaches, while groups of friends attended to semi-natural and pebbly
 181 beaches such as Ambolo and Granadella. Urban and sandy were chosen as the most visited beach, while on
 182 the contrary, foreigners and long day trips were linked to semi-natural and pebbly beaches. These
 183 differences are probably related to the particularities, services and activities that can be carried out on each
 184 beach and that may condition the beach choice.



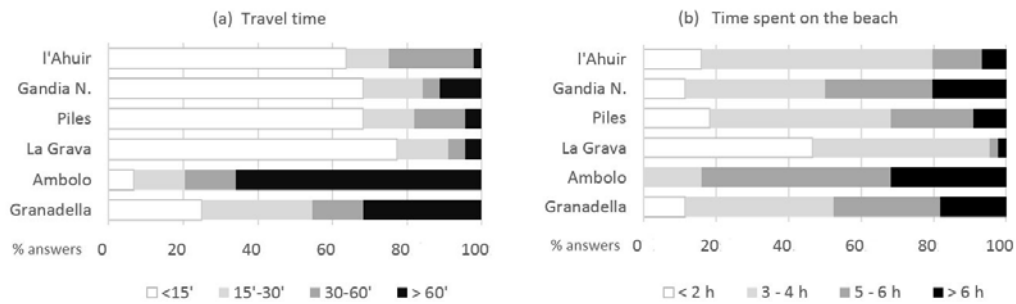
185
 186 Fig. 3. (a) Users' age: youths (<30 years old), adults (30-60 years old) or elderly (>60 years old). (b)
 187 Companions: alone, couple, family or friends.



188
 189 Fig. 4. (a) Hometown: same municipality, province, community or country where that beach is located, or
 190 abroad. (b) Residence or accommodation while they are visiting the beach.



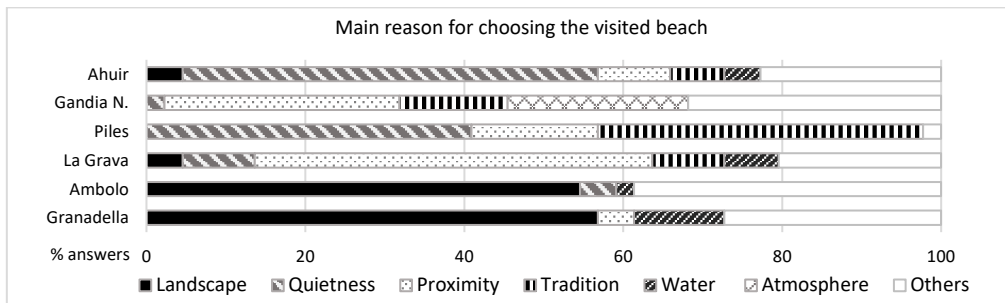
191
 192 Fig. 5. (a) Educational level: primary, secondary or post-secondary. (b) Usual beach.



193
 194 Fig. 6. (a) Travel time to the beach (minutes): Less than 15, between 15 - 30, between 30-60, and more
 195 than 60. (b) Time spent on the beach (hours): less than two, three - four, five - six, more
 196 than six.

197 The main reason for choosing the visited beach

198 Users expressed their main reasons for choosing one beach, which differed a lot between them (Fig. 7).
 199 People attended to l'Ahuir mainly because of the quietness, being the only semi-natural beach in the area
 200 (52%). Gandia Nord users were attracted by its proximity and easy access (30%), and the atmosphere and
 201 "ease of meeting people and partying" on the beach and surrounding areas (23%). The tradition of attending
 202 every year was also very common, in several cases related to owning a holiday home (14%). Due to this
 203 same reason, the tradition was also the main reason for choosing Piles (41%), in addition to quietness (41%)
 204 and proximity (16%). La Grava received most of their users because of its proximity to their dwellings (50%),
 205 while tradition and quietness also played an important role (both 9 %). Ambolo and Granadella attracted
 206 users mainly because of their landscape (55% and 57% respectively).



207
 208 Fig. 7. Users' main reason for attending to the visited beach. >>>Datos_encuestas_paper.xlsx

209 There were also other remarkable reasons for several users in certain beaches. Among them, some people
 210 visited l'Ahuir due to its dog-friendly (20%), while others went to pebbly beaches just because they prefer
 211 that type of sediment (7% on la Grava and Granadella). Other users chose the beach due to friends'
 212 recommendations (11% Granadella), the flora and the fauna (9% Ambolo), or the quality of the sand (16%
 213 Gandia Nord).

214 Recreational activities on the visited beach

215 The comparison between the proportion of activities in each beach type was carried out with a Z-test. Table
 216 2 highlights statistically significant differences between semi-natural and urban beaches, and between sand
 217 and pebbly beaches.

218 Tab. 2. Results of the Z-test comparing the proportions of the main activities carried out in different beach
 219 types. Differences have been identified with 95% of confidence (*).

Activity	Proportion of users:			Proportion of users:			
	Semi-natural	Urban	p-value	Sand	Pebbles	p-value	Significantly higher

Relax & sunbathing	0.2045	0.4697	0.0000*	0.3258	0.3485	0.6965	urban
Walking	0.1591	0.2045	0.3371	0.3561	0.0076	0.0000*	sand
Playing with kids	0.0530	0.0530	1.0000	0.0909	0.0152	0.0000*	sand
Beach paddle ball	0.0303	0.1439	0.0011*	0.1591	0.0152	0.0000*	urban, sand
Aquatic sports	0.0379	0.0000	0.0238*	0.0076	0.0303	0.1770	semi-natural
Snorkeling & diving	0.4848	0.0530	0.0000*	0.0000	0.5379	0.0000*	semi-natural, pebbles
Volleyball/football	0.0000	0.0379	0.0238*	0.0379	0.0000	0.0238*	urban, sand

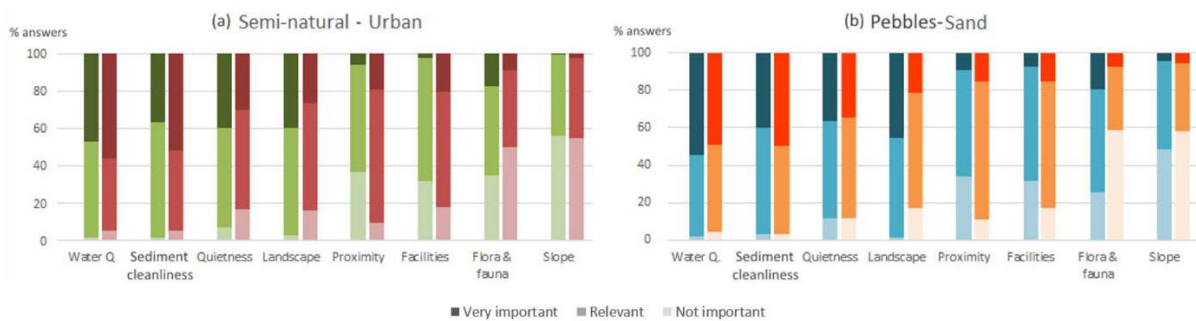
220 Recreational activities are often linked to different beach characteristics. Significant differences were found
 221 in sand sports, such as volleyball and football (4%) and beach paddle ball (14%), besides relax and
 222 sunbathing (47%), all of them much more common in urban beaches. Meanwhile, semi-natural beaches
 223 fostered in higher proportion aquatic sports (as windsurfing and kite surfing) (4%) and snorkeling and diving
 224 (49%). Comparing sediment types, snorkeling and diving only appeared in pebbly beaches, such as volleyball
 225 and football on sandy ones, where there were also far more popular walking (36%), beach paddle ball (16%)
 226 and playing with kids (9%).

227 **Prioritized characteristics when choosing a beach**

228 Beach users consider some elements when they choose a certain beach. They classified each characteristic
 229 as very important, relevant or not important (Fig. 8). In general, the most valued characteristics were water
 230 quality and sediment cleanliness, while facilities, the presence of flora and fauna, and seashore slope did
 231 not have that much importance. Differences appeared in certain characteristics when comparing the users
 232 of different beach types.

233 Urban beach users prioritized more water quality and sediment cleanliness, proximity from their residences,
 234 and the facilities offered by the beach more than semi-natural ones. On the contrary, semi-natural users
 235 paid more attention to quietness, landscape and the presence of flora and fauna. With regard to pebbly
 236 beach users, they paid closer attention to water quality, landscape, and the presence of flora and fauna,
 237 while users on sandy beaches considered sediment cleanliness, proximity and facilities.

238



240
 241 Fig. 8. Priorities when choosing a beach: water quality, sediment cleanliness, quietness, landscape,
 242 proximity, facilities, flora and fauna, and slope on different beach types: (a) semi-natural vs. urban, (b)
 243 pebbly vs. sandy beaches.

244 In order to determine if there were significant differences between diverse beach types, each user identified
 245 their most valued characteristic. Table 3 compares the proportions of users on each beach type, and the Z-
 246 test allows identifying differences for some characteristics.

247 Tab. 3. Results of the Z-test with 95% (*) and 90% (**) of confidence, comparing the proportion of users
 248 that chose each characteristic as the most valued when choosing a beach.

Characteristic	Proportion in:	p-value	Proportion of users:	p-value	Significantly higher:
----------------	----------------	---------	----------------------	---------	-----------------------

	Semi-natural	Urban		Sand	Pebbles		
Sediment cleanliness	0.11364	0.25000	0.00410*	0.25000	0.11364	0.00410*	urban, sand
Water quality	0.35606	0.20455	0.00614*	0.12121	0.43939	0.00000*	semi-natural, pebbles
Quietness	0.25758	0.18939	0.18352	0.31818	0.12879	0.00022*	sand
Slope	0.00000	0.01515	0.15560	0.00000	0.01515	0.15560	-
Flora & fauna	0.00758	0.00000	0.31732	0.00758	0.00000	0.31732	-
Landscape	0.15909	0.05303	0.00512*	0.04545	0.16667	0.00138*	semi-natural, pebbles
Facilities	0.00758	0.05303	0.03156*	0.03788	0.02273	0.47152	urban
Proximity	0.03788	0.06061	0.39532	0.06061	0.03788	0.39532	-
Atmosphere	0.00758	0.03788	0.09894**	0.02273	0.02273	1.00000	urban

249 The proportion of users who chose sediment cleanliness (25%), facilities (5%) and atmosphere (4%) as the
250 most important element was significantly higher on urban beaches, while on semi-natural the most
251 important factor was water quality (35%) and landscape (16%). In relation to sediment, sandy beach users
252 paid significantly more attention to sediment cleanliness (25%) and quietness (32%), while pebbly users
253 focus their choices on water quality (44%) and landscape (17%).

254 **Frequentation** and density

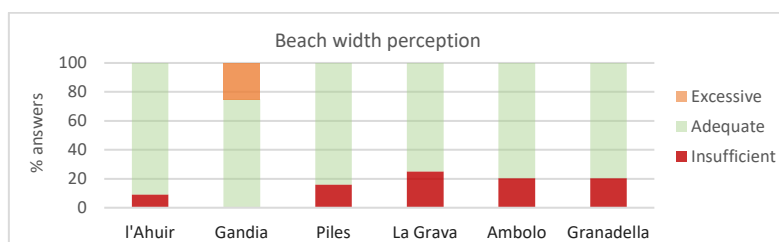
255 Table 4 shows the affluence of users and the density during the peak periods. There were important
256 differences in user density between the different beaches. L'Auir had the lowest occupancy level
257 (24.5 m²/user), while Gandia Nord had the highest (2.3 m²/user). The lowest amount of users was detected
258 on Ambolo and Granadella, both semi-natural, small and narrow beaches. However, due to their little
259 available surface area their densities were higher than expected (7.6 and 5.1 m²/user respectively),
260 comparable to the urban beaches of la Grava (4.5 m²/user) and Piles (7 m²/user).

261 Tab. 4. Useful beach area (m²), estimation of the total amount of users and the density (users/m² and
262 m²/users).

Beach	Useful beach area (m ²)	Total No. users	Density (users/m ²)	Density (m ² /users)
l'Auir	44000	1795	0.04	24.5
Gandia Nord	75000	32700	0.44	2.3
Piles	25600	3642	0.14	7.0
la Grava	4229	941	0.22	4.5
Ambolo	2049	270	0.13	7.6
Granadella	2567	507	0.20	5.1

263 Beach width perception

264 Figure 9 shows users' perception of the beach width, sometimes inadequate for the recreational
265 functions.



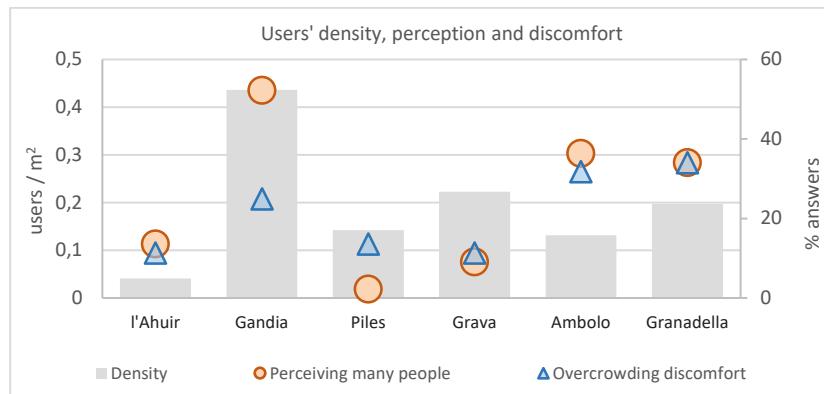
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267 Fig. 9. Users' perception of beach width.

268 On pebbly beaches (La Grava, Ambolo and Granadella), between 20% and 25% of the users considered the
269 beach as too narrow. Those are small pebbly beaches and users occupy a large part of their surface during
270 peak seasons. Piles, a sandy beach with erosive problems, registered similar answers and 16% of its users
271 stated that it did not present appropriate dimensions. On the contrary, 25% of the users on Gandia reported
272 that the beach was too wide, "making uncomfortable to reach the seashore".

273 Users' density and overcrowding perception

274 Users were asked to classify the perceived amount of people as "many", "quite a lot", "few" or "very few",
275 as well as if they experienced discomfort because of overcrowding. Figure 10 compares the densities with
276 the percentage of users perceiving "many people" and overcrowding discomfort.



277

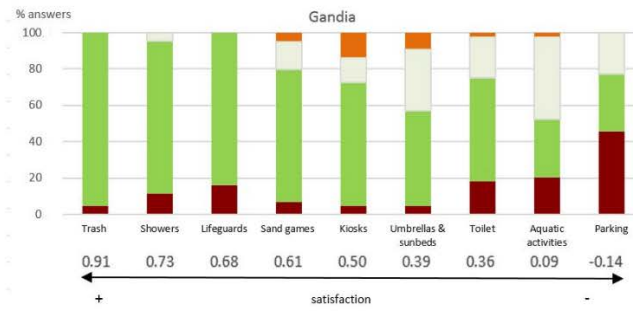
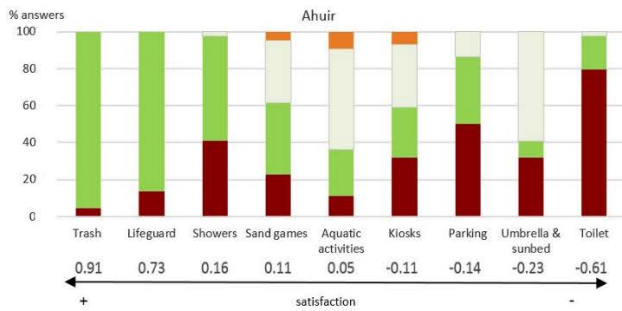
278 Fig. 10. On the left axis: density of users (users/m²). On the right axis: percentage of users perceiving
279 "many people" and overcrowding discomfort.

280 Apparently, users' density was not necessarily related to the perception of crowding, or at least to the
281 discomfort it caused. Gandia Nord reported a very high density (0.44 users/m²), and a large proportion of
282 the users was aware of this situation, and 52% perceived many people. Nevertheless, they were not so
283 dissatisfied with that as only 25% perceived overcrowding. On the contrary, the highest proportions of
284 overcrowding perception were recorded on the semi-natural beaches of Ambolo (36%) and Granadella
285 (34%), although the densities (0.13 and 0.20 users/m² respectively) were considerably lower than on Gandia
286 Nord. The situation was similar on the other beaches: l'Ahuir experienced the lowest density (0.04 users/m²),
287 but the percentage of users perceiving many people and overcrowding was similar and higher than on Piles
288 and la Grava, that on the contrary showed far higher densities (0.14 and 0.22 users/m² respectively).
289 Therefore, considering the actual densities and the beach type, semi-natural users showed a higher
290 perception of people on the beach and higher overcrowding discomfort, while urban users were more
291 satisfied with the situation.

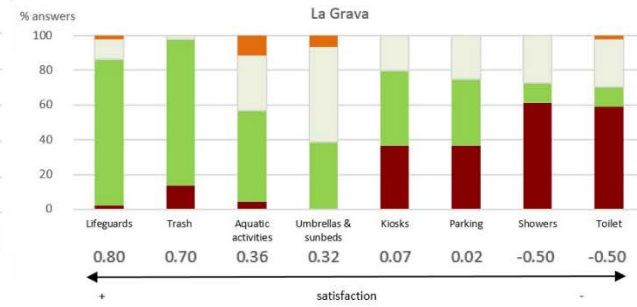
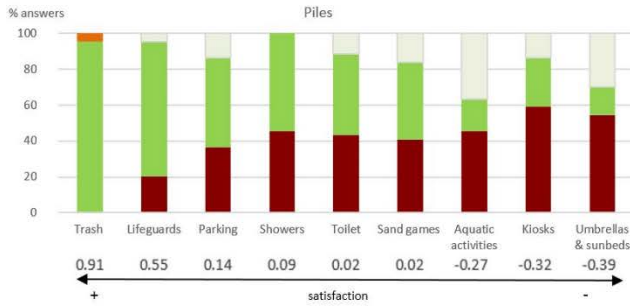
292 Facilities perception

293 For each service, users classified the offer into four categories. Values were assigned to each category:
294 excessive (-1), unimportant (0), adequate (+1), insufficient (-1). They allowed assessing the suitability of the
295 offer, penalizing in equal measure if the offer is perceived as excessive or insufficient. From these values
296 and the proportions of users associated with each category, a satisfaction score was calculated as a
297 weighted average (ranging from +1 to -1). Figure 11 ranks the facilities according to the satisfaction score.

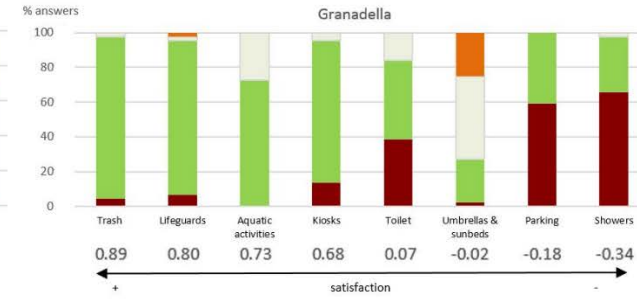
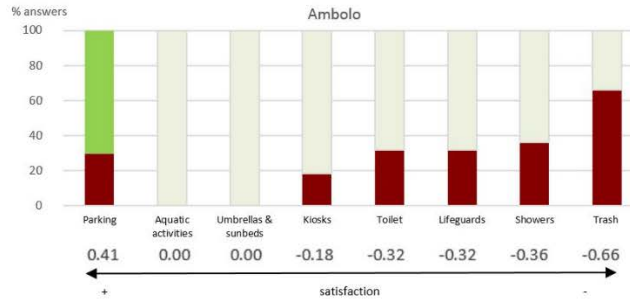
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Fig. 11. Facilities offer perceived as insufficient, adequate, not interested and excessive. The facilities are ranked from left to right according to their satisfaction score.

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The differences in facilities supply on each beach were reflected in users' perceptions. However, other factors seemed to influence this perception, impeding the assertion that the more services are provided, the better the satisfaction. The users of Gandia, a mass tourism-oriented beach that offers a huge amount of services, appeared as very pleased, and only complained about the insufficient parking (48%). The situation was different on Piles, where several users complained about the lack of services (more than 50% perceived insufficiency of kiosks and umbrellas). Ambolo, without facilities on the beach, had some users complaining the same way, although the majority showed no interest in the facilities and considered their presence as unimportant. The lack of certain facilities could also be identified on l'Auir (80% considered a lack of toilets), la Grava (more than 60% considered insufficient showers and toilets) and la Granadella (showers and toilets, but also the lack of parking). On the contrary, on Granadella a significant proportion (25%) complained about the excessive number of parasols and sunbeds, also registered on Gandia Nord (9%) and la Grava (7%). Similarly, on l'Auir (9%) and la Grava (11%), the aquatic activities caused complaints about altering the tranquility, one of the most valued characteristics of those beaches.

317

Blue Flag perception

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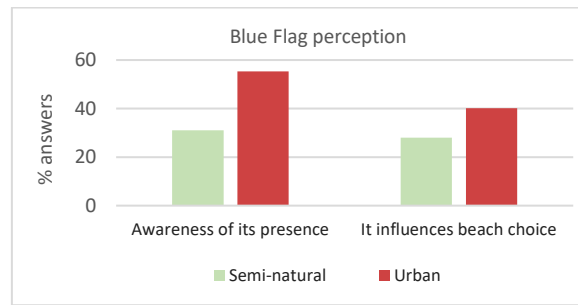
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Users showed a significant lack of knowledge with regard to beaches' possession of Blue Flag: only 43.2% knew if the beach had the award. The perception of Blue Flag differed between beach types (Fig. 12). For example, urban users were more conscious about the presence of Blue Flag on the beach (55%) than semi-natural users (31%). This lack of knowledge was in line with the low influence that the award had in people's

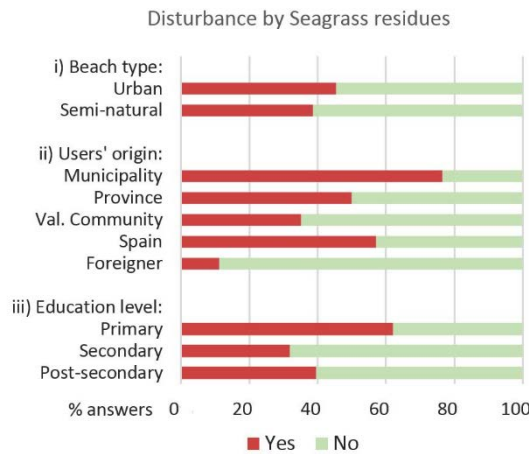
322 beach choice: only 40% on urban and 28% on semi-natural beaches considered it. At the same time, it is
 323 important to point out that several users asserted not knowing the function of that award.



324
 325 Fig. 12. Beach users' awareness and perception regarding the Blue Flag.

326 Seagrass residues perception

327 The presence of *Posidonia oceanica* residues on the shore is common on the three southern beaches, and
 328 they are routinely removed as solid waste. Figure 13 shows users' perception about seagrass residues on
 329 those beaches.



330
 331 Fig. 13. Perception of disturbance by residues of the seagrass *Posidonia oceanica*, according to i) Type of
 332 beach where the survey was done, ii) Users' origin in relation with that beach, iii) users' education level.

333 Most people were not bothered by the presence of residues (57%), especially on semi-natural beaches
 334 (61%). About users' origin, disturbances affected fewer foreigners (11%) and visitors from distant places in
 335 the Community (35%) than those coming from shorter distances, such as locals (77%) or people from other
 336 parts of Spain (57%). Disturbances have also been compared considering the level of education, and greater
 337 rejection was found among people with primary level (62%), compared to secondary (32%) and higher
 338 education (40%).

339 DISCUSSION

340 Users' profiles, expectations, activities and perceptions have been defined on different types of beach.
 341 Some results were similar on all the studied beaches, and therefore some general trends can be identified.
 342 Most users attended the beach in order to relax and sunbathe, and to walk in the case of sandy beaches.
 343 This is consistent with previous studies, which show that majority of users tend to be restful, and only a
 344 small proportion engage other activities (Alves et al., 2017; Breton et al., 1996; Lozoya et al., 2014).
 345 Nevertheless, each beach has different values, either environmental or recreational, that may constitute
 346 users' main reason for attending to a certain beach. Sometimes they are linked with specific recreational

347 activities as certain sports. The tradition was another common reason, with users attending to the same
348 beach every year. In many cases, that was related to the proximity of their residence, which reduces the
349 time to reach the beach. This issue can be especially remarkable for people attending with their families. In
350 the study area, approximately two-thirds of the users (except those on Ambolo) were accommodated either
351 in a temporary or in second homes. It is linked to the common presence of second residences on Western
352 Mediterranean coast (Roca et al., 2008; Yepes and Medina, 2005), also reported in other Mediterranean
353 beaches (Rodella et al., 2017). Thus, practical criteria such as the distance to the beach nearby act several
354 times as the main reason for the election. However, these reasons must be differentiated from the most
355 prioritized or valued elements on a beach. In this sense, water quality and beach quality and cleanliness are
356 the most common prioritized elements when choosing a beach (Fig. 8). This matches other recent studies
357 according to which water quality and cleanliness are essential factors in the choice (Rodella et al., 2017; Vaz
358 et al., 2009). Despite this, they are not the ultimate reason for choosing one beach over another (Nelson et
359 al., 2000; Vaz et al., 2009).

360 Differences between beach types

361 Regardless of these general trends, differences appear when grouping beaches with the same degree of
362 artificialization (urban or semi-natural) and sediment size (sand or pebbles). Differences in users' profile
363 may be observed, with more youths and groups of friends on semi-natural beaches, and more elderly people
364 and families on urban beaches. This is probably related with the level of comfort that children require. On
365 urban beaches, users attended on foot to their usual beach, in short trips, commonly from their second
366 residence, while on semi-naturals travels were longer and more time was spent there. That was especially
367 remarkable on Ambolo, where 66% of the users spent more than 60 min traveling to spend the day there.
368 Probably that constitutes the motivation for considering it as a complementary beach, chosen "from time
369 to time to have different experiences".

370 Sediment size constituted a basic conditioner of the activities carried out. Therefore, a significantly higher
371 percentage of users went to sandy beaches to walk, play with children or practice sports like beach paddle,
372 volleyball or football. On the contrary, many users visited pebbly beaches to practice diving and snorkeling,
373 which is a widespread activity. With regard to the degree of artificialization, relaxation and sunbathing were
374 the most common activities and took place significantly more frequently on urban beaches, followed by
375 beach paddle and sand sports. On the other hand, semi-natural beaches were dominated by water sports
376 such as windsurfing and snorkeling.

377 Prioritized characteristics are also different on each beach type. On pebbly beaches, a significantly higher
378 number of users considered water quality and landscape as their most prioritized characteristic. At the same
379 time, flora and fauna, were apparently also more valued (Fig. 8). On sandy beaches, sediment cleanliness,
380 facilities and quietness were strongly prioritized, with more interest also in proximity. Semi-natural users
381 appreciated more water quality, landscape, quietness, flora and fauna, while on urban beaches sediment
382 cleanliness, facilities and the atmosphere were preferred.

383 Our results show how urban beaches have a fairly defined and more traditional user profile that gives more
384 priority to comfort, in line with previous works (Lozoya et al., 2014; Vaz et al., 2009). Furthermore, on semi-
385 natural beaches, we found a particular user profile attracted to environmental values. These natural
386 features, not available in the nearest beaches, seem to justify longer displacements, and lead us to think
387 these users give a greater value to this type of beach, something defended by other authors (Lozoya et al.,
388 2014; Peña-Alonso et al., 2018; Rodella et al., 2017; Vaz et al., 2009). This could be related to growing public
389 interest in nature and other aspects beyond facilities and infrastructure (Lucrezi and Saayman, 2014), as
390 well as the existence of different segments of tourist demand for coastal destinations that pay different
391 attention to the environment (Onofri and Nunes, 2013).

392 It is important to note that, in the Valencian coast, sandy beaches have constituted the main recreational
393 resource and attraction for the sun and beach tourism (López-Olivares, 2003). Pebbly beaches traditionally
394 have a lower level of artificialization, urbanization, and exploitation, linked to a lower level of accessibility,
395 and have focused less attention on managers, offering fewer services and comfort. All this causes that
396 certain similarities between pebbly and semi-natural beaches may be observed.

397 Individually, each beach shows specific values, either environmental or recreational, that may constitute
398 the main reason for attending to it (Fig. 7). The landscape was the most important reason for attending to
399 certain beaches (55% on Ambolo, 57% on Granadella), as well as the practice of diving and snorkeling
400 associated with the presence of interesting aquatic flora and fauna (9% on Ambolo). The socio-economic
401 environment surrounding each beach also played an essential role. The leisure possibilities on Gandia Nord,
402 with music and parties in kiosks, as well as the nightlife in the surroundings, constitutes a good attraction
403 for certain type of user. Other authors have described similar phenomena in Catalan (Roca et al., 2009),
404 Italian (Rodella et al., 2017) and Mexican resorts (Cervantes et al., 2008). Sometimes management responds
405 or encourages specific interests, creating great success in the affluence to the beach: the possibility of
406 attending with pets justified the attendance of some users to l'Auir (20%). Similarly, the presence of several
407 users practicing nudism in the authorized areas on l'Auir and Ambolo leads us to think that this practice is
408 an important motivation for many users.

409 Therefore, getting to know individuals' preferences and perceptions, together with site characteristics
410 becomes an important issue for tourism management, as they determine beach choice (Halkos and
411 Matsiori, 2012), and they are not as homogeneous as traditionally considered.

412 Beach width, density and overcrowding perception

413 Widths were sometimes perceived as insufficient on the pebbly beaches, naturally narrow (15-20 m), but
414 also on Piles (25 m width) and even on l'Ahuir (70 m wide). Users seem to be quite demanding about the
415 width of the beach and perceive the current situation as negative for their enjoyment. Previous works do
416 not define a preferred beach width, and differences have been found in different study areas (Rodella et
417 al., 2017). Nevertheless, it is assumed that width must be maintained over 30 – 35 m for the proper
418 recreational use (Jiménez et al., 2011; Sardá et al., 2009). Either way, the physical maintenance of a surface
419 capable of accommodating users and recreational functions constitutes an essential issue for managers
420 (Rodella et al., 2017), and therefore, widths' perception is essential to define the need for actions. The
421 insufficient width on Piles associated to erosive processes, familiar to all Valencian coast (European
422 Commission, 2009) hinders a stronger development of the economy in these areas, closely linked to sun and
423 beach tourism (Gormsen, 1997; Sardá et al., 2009). This has led to different nourishment actions by the
424 Spanish Ministry of Environment (Dirección General de Costas, DGC) in order to maintain the width during
425 the tourist season. When width starts to be perceived as insufficient, the private sector and local
426 governments force coastal managers to take measures to confront erosion, sometimes leading to
427 emergency actions without long-term planning or perspectives (Jiménez et al., 2011), sometimes ineffective
428 after a short period. In general, these interventions are associated with important economic cost and
429 environmental impacts (Aragonés et al., 2015; Hanson et al., 2002; Peterson and Bishop, 2005; Speybroeck
430 et al., 2006). Considering the high attractiveness of pebbly beaches for some users, on irremediably erosive
431 beaches it could be proposed to increase the sediment size during nourishments as a more durable
432 alternative.

433 However, on Gandia Nord, (wider than 80 m) the opposite situation was registered, and 25% of the users
434 identified it as excessive, forcing them to walk more to reach the shore. This possibility has only been
435 superficially explored (CEDEX, 2000; Villares, 1999) and contrasts with the current management, that does
436 not consider this possibility and even suggests nourishments to exceed 60 m wide (Hanson et al., 2002).

437 Users' perceptions should be included for more efficient decision-making. At the same time, the
438 identification of beaches exceeding the acceptable width may be proposed and, given the shortage of sand
439 along the coastline, they may be defined as donors of sediment.

440 Users' density is another key parameter for the management, as it conditions the facilities that must be
441 offered and can cause discomfort due to crowding (Breton et al., 1996; Rodella et al., 2017; Yepes, 2002).
442 Several authors have suggested the saturation or overcrowding limit around values of 4-5 m², while under
443 2 m²/user would be unacceptable (Alemany, 1984; MOPU, 1970; Yepes, 2002; Yepes and Medina, 2007). In
444 our study area, L'Auir registered a very low density (24.5 m²/user) comparable to the natural beach of Son
445 Saura, in Menorca (Roig-Munar, 2003). Ambolo (7.6 m²/user), Piles (7 m²/user) y Granadella (5.1 m²/user),
446 were also over the comfort threshold. On the contrary, la Grava (4.5 m²/user) was under the comfort level,
447 and Gandia Nord, with about 2 m²/user was overcrowded. This value is lower than those registered in other
448 Spanish urban beaches (Mas-Parera and Blázquez-Salom, 2005; Roig-Munar, 2003; Sardá et al., 2009), and
449 comparable to Lloret de Mar (2.14 m²/user) (Roca et al., 2008), constituting an example massive tourism
450 beach. Piles is a beach suffering significant erosion, unable to recover in the absence of nourishments. A
451 decrease in its width may increase the density and consequently affect its recreational use (Jiménez et al.,
452 2011; Valdemoro and Jiménez, 2006). It can also occur on the pebbly beaches of Granadella and la Grava:
453 Although they are stable, sea level rising or increased frequentation can increase their density, already in
454 the overcrowding limit, reducing their recreational attractiveness.

455 It is generally assumed that less crowded and less dense beaches are perceived as calmer and therefore
456 more attractive (Vaz et al., 2009). Nevertheless, the problems associated with high density are ultimately
457 defined by users' overcrowding perception, and this one seems to be different depending on the type of
458 beach. On semi-natural beaches, high densities seem to be perceived, and they generate overcrowding
459 discomfort. On the other hand, this relation is not appreciated on urban beaches, and higher densities of
460 users are not perceived and/or do not generate disturbances (Fig. 10). This could be due to the different
461 users' prioritization of beach characteristics: while users of semi-natural beaches value tranquility very
462 much, on urban beaches this is not such an important aspect. In fact, one of the main motivations for coming
463 to Gandia Nord, which has the highest density, is its atmosphere. Hence, as perceptions regarding density
464 and comfort are not the same on all beaches and each one presents different characteristics, managers'
465 responses should not be the same either.

466 The highest perception of overcrowding appeared on Ambolo and Granadella (more than 30% of the users).
467 They are both semi-natural and pebbly beaches with high environmental value. There, measures should be
468 aimed at reducing the number of users, and in no case at increasing their width. Nevertheless, this is not
469 usually contemplated on sandy beaches, where nourishments are typically considered. However, given their
470 economic and environmental cost, measures should not systematically or exclusively focus on increasing
471 the width so that it can accommodate all the desired users. An alternative solution is to reduce density by
472 lowering the frequentation. The difficulty of access already acts as an efficient regulator on Ambolo,
473 maintaining acceptable densities despite its small size. On the contrary, higher densities on la Grava and
474 Granadella were related to their facility of access. In fact, a car restriction measure has recently been
475 adopted on Granadella together with the implementation of public transport. This difficulty in accessing
476 and parking has been shown to be related to lower frequentation (Pereira da Silva, 2002; Roig-Munar,
477 2003). Indirectly, it is possible to act on the tourist offer in the surroundings of the beaches, either by limiting
478 the offer as it happens in the Balearic Islands (Mas-Parera and Blázquez-Salom, 2005) or with environmental
479 taxation measures (Sanz-Blas, 2006). However, the most direct option is to implement an entrance fee, that
480 at the same time can generate an economic resource for its environmental protection and maintenance
481 (López-del-Pino and Grisolia, 2017). The acceptance of a fee has recently been assessed through the
482 Willingness to Pay (WTP) (Alves et al., 2014; Lozoya et al., 2014).

483 Facilities

484 The analysis of perceptions has allowed the identification of facilities causing discomfort between users (Fig.
485 11). Different perceptions appeared between beach types. On urban beaches, a greater number of facilities
486 were perceived as a positive aspect and their absence as an unfavorable factor. On the contrary, several
487 users on semi-naturals showed indifference or rejection towards the facilities: they described the offer as
488 excessive, generating rejection for altering the landscape or the tranquility. This lack of interest in facilities
489 was also observed when analyzing the prioritized characteristics for choosing a beach. Considering this, the
490 current management strategy is inadequate: Despite managers' efforts to increase beach facilities, users
491 did not necessarily perceive it as a positive issue, and it even entails the risk of discomfort. This occurs
492 because the decision-making process is carried out without user feedback to verify the adequacy of the
493 measures taken.

494 This contrasts with the homogeneous management carried out based on mass tourism, which seeks to offer
495 as many services as possible on the beaches, trying to satisfy all users, and entails a very significant financial
496 expense. Municipalities have the autonomy to implement measures for managing beaches related to leisure
497 and recreational activities, services or facilities. Theoretically, the provision of infrastructures and facilities
498 is determined by users' attendance, preferences, and expectations (Peña-Alonso et al., 2018), at least. As
499 the particular management practices carried out on each beach cause differences on users' perception and
500 recreational experience (Ariza et al., 2010; Peña-Alonso et al., 2018; Roca et al., 2008) the analysis of
501 perceptions carried out in this work appears as a useful tool to highlight facilities that beach managers
502 should pay more attention to.

503 Blue Flag

504 The Blue Flag is a performance award that attempts to guarantee a certain level of beach quality (Ariza et
505 al., 2008b) in order to attract users. Nevertheless, results showed a high lack of knowledge and
506 consideration of the award status of the visited beach, and several users did not know its purpose (Fig. 12).
507 The Blue Flag also showed a small influence on beach choice, both on semi-natural and urban beaches. This
508 is in line with previous studies, that reported a general lack of awareness (CREM, 2000; Dolch and
509 Schernewski, 2002; Lucrezi et al., 2015). The higher awareness on urban beaches may be linked, on one
510 hand, to a higher number of regular users and, on the other hand, to a higher prioritization of characteristics
511 such as "cleanliness" and "safety and access" (Lucrezi and Saayman, 2014). Coastal towns compete for this
512 award (Mir-Gual et al., 2015) due to its apparent effectiveness attracting foreign tourists (Capacci et al.,
513 2015). Nevertheless, that contrast with the division in academic literature, with recent studies indicating a
514 small influence attracting visitors and revenues (McKenna et al., 2011; Nelson et al., 2000).

515 The award is criticized due to not consider the heterogeneity of users' expectations and perceptions
516 (Morgan, 1999). It may contribute to the implementation of undesired facilities (Lucrezi and Saayman, 2014)
517 as it has happened in the studied beaches (Fig. 11). The Blue Flag, similarly to other performance awards, is
518 highly focused on the recreational function, leaving aside important environmental and ecosystem aspects
519 of the beaches (Ariza et al., 2008b). The associated management practices carried out have received critics,
520 as they may bring environmental costs and contribute turning beaches into "solariums" (Mir-Gual et al.,
521 2015). There are doubts about the usefulness of this award as an indicator of good environmental condition
522 (Lucrezi et al., 2016) and, in fact, awarded beaches sometimes have lower environmental values (Roig-
523 Munar et al., 2018). These award schemes consider the same quality standards on any type of beach (Roca
524 and Villares, 2008) leading to homogenization, and therefore they should not be taken as a reference
525 standard in the management of these spaces.

526 Seagrass offshore residues

527 An example of the confrontation between the recreational function and the environment is the mechanical
528 cleaning of the beaches, carried out to please the users (Lucrezi and Saayman, 2014). This practice removes
529 seagrass residues, as it occurs with *Posidonia oceanica* (Roig-Munar et al., 2018), bringing negative effects
530 by removing nutrients from the system and affecting the stability of beaches and the shallow meadows
531 (Díaz-Almela and Duarte, 2008; Roig-Munar, 2001). Nevertheless, the results showed that the majority of
532 users did not consider it as a nuisance. Differences appeared related to the type of beach, and rejection was
533 higher on urban beaches (Fig. 3). About users' origin, those from the municipality perceived the highest
534 rejection while, on the contrary, foreigners registered the lowest percentage. The idea that foreigners may
535 be attracted by the natural values when choosing their tourist destination (Onofri and Nunes, 2013) is
536 possibly linked with higher levels of environmental awareness (CREM, 2000). Furthermore, seagrass
537 residues were considered as a nuisance by a lower percentage of users with post-secondary than primary
538 education. It may be caused by their higher knowledge of seagrass environmental values, in line with the
539 relationship between educational level and environmental awareness already defined by different authors
540 (Aminrad et al., 2011; Santos et al., 2005).

541 That confrontation between rejection of seagrass residues and environment shows how users' preferences
542 should be included in decision-making, but with caution. Some pretensions are based on the imaginary of
543 sun and beach tourism, and they are short-sighted, misinformed, impossible to accomplish, or conflict with
544 the environment (Lozoya et al., 2014). Environmental consciousness may play a very important role in the
545 perception of the seagrass, especially significant considering the general unawareness of *Posidonia's*
546 functions (Roig-Munar, 2001). Environmental education could bring a higher knowledge of seagrass
547 importance, reducing users' rejection and constituting an alternative to the withdrawal.

548 Public awareness and differential beach management

549 Coastal management should aim to satisfy beach users, but also to educate and raise their awareness of
550 environmental values. Education and public awareness have been proved as effective tools for handling the
551 relation of tourists with the environment (Orams, 1997; Padua, 1994) and can raise public awareness about
552 coastal problems and ICZM (Koutrakis et al., 2011). Once users are informed, their opinions and perceptions
553 are undeniably valid and can be integrated into management processes (Lozoya et al., 2014). This is essential
554 in order to avoid the current rigid and top-down approach that sometimes conflicts with users (Prati et al.,
555 2016), as well as to supply guidelines for management schemes (Lucrezi et al., 2016). Users, together with
556 local managers and formal stakeholders are necessary for implementing an Ecosystem Approach (Ariza et
557 al., 2012; Sardá et al., 2015). It is currently the dominant paradigm (Olsen et al., 2009) attempting a
558 sustainable use of natural resources while maintaining their ecosystem integrity. Schemes as Blue Flag
559 award have proven not to be useful for guiding the management, and they should act as complementary
560 tools in order to take advantage of their educational component (Lucrezi and Saayman, 2014). More
561 integrated systems with a holistic vision should be adopted for monitoring and managing the beaches
562 (Lucrezi et al., 2016; Sardá et al., 2015). These tools should be able to consider all the characteristics of these
563 ecosystems, as well as users' opinions, favouring a management adapted to the diversity of beaches,
564 promoting their natural values and enhancing or emphasizing their particularities (Lozoya et al., 2014; Peña-
565 Alonso et al., 2018; Vaz et al., 2009). However, it should be noted that the higher number of visitors on the
566 urban beaches, Gandia Nord in particular, suggests that mass tourism-oriented management is now
567 meeting the interests of many more beachgoers. Spanish Coastal Law 2/2013 supports a differentiation
568 between the exploitation of urban beaches and the preservation of values on those isolated from urbanized
569 areas. Managing the coast as a whole and strategic zoning (Lucrezi et al., 2016) can help in this task, and
570 emphasizing values as landscape, flora and fauna can increase its attractiveness (Lozoya et al., 2014;
571 Micallef and Williams, 2002). This can bring tourist benefits since the existence of beaches with different

572 characteristics can enhance the diversity of experiences offered and attract different segments of visitors
573 (Onofri and Nunes, 2013).

574 Conclusions

575 Management must maximize recreational use and tourism benefits without sacrificing environmental
576 values. In order to do it, it must be adapted to the values of each beach and to its users. Our results
577 demonstrate that users' interests are not homogeneous, and management is based on assumptions
578 sometimes uncertain that compromise the environment. Therefore, a change in the policies adopted and
579 in the decision-making is mandatory. It is necessary to adopt mechanisms to get to know stakeholders'
580 opinions, instead of inferring and assuming them. This makes essential to study not only the generalist
581 expectations and perceptions typical in sand mass tourism but also those related to the diversity of beaches
582 and users.

583 In order to respect the environment, a more diversified and individualized management has to be
584 developed, considering the coast as a whole, and its diversity as a potential. Moreover, when recreational
585 interests are in conflict with natural values, education may be a great ally increasing environmental
586 awareness and changing users' expectations. All this may lead to a better conservation of the coast,
587 especially important considering the value these areas have for our society.

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786 **Acknowledgements**

787 This study integrates findings and results obtained within the framework of the FPU15/04501 granted by
788 the Ministry of Education, Culture and Sports to C. Cabezas-Rabadán, and by the funds of the research
789 project RESETOCOAST (CGL2015-69906-R) supported by the Ministry of Economy, Industry and
790 Competitiveness.

791

792 **Highlights**

793 Semi-natural and urban, and pebbly and sandy beaches showed differences in users' preferences,
794 expectations and perceptions.

795 The results contrast with the homogeneous and rigid decision-making practices that take place

796 Management should be diversified and adapted considering the diversity of beaches and their values.

797 Mass tourism conflicts with environmental interests, and environmental education may help to raise users'
798 awareness

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