Anthropocene Coasts

RESEARCH ARTICLE

Open Access

Best beaches of the world: a critique of web-based rating

Elaine Baroni de Oliveira[1*], Alice Newton[1] and Camilo M. Botero[2,3]

Abstract

This study analyzes the content of internet ratings of beaches to identify the indicators used. The methodology used an exploratory internet survey using the term 'best beaches' in five languages. For each site, the ranking method used was extracted and the indicators considered were listed, where applicable. Of the 70 websites analyzed, 47 ranked the beaches (67%) but less than 50% used indicators. The remaining were based on the opinion of the editorial board, personal experience, and users' perceptions. The most used indicator was the color of water, followed by the color of the sand. These results show that the majority of 'best beaches' lists are based on subjective criteria. They are an overview of places that appeal to the person that wrote the page and are not scientifically or analytically based. Even when indicators are considered, these are mostly a reflection of the idea of an idealized beach, crystal blue waters with white or gold sand. The actual quality of the beach, including water quality, carrying capacity, and ecosystem balance, is not addressed. Although visual attractiveness is a key element for the public, these rankings should incorporate a wider range of indicators to fully assess the quality of a beach.

Keywords Best beach, Ranking, Paradise, Beach quality, Indicator

1 Introduction

Sun, beautiful beaches, and warm ocean waters have become standard vacation requirements for many tourists (Miller and Hadley 2019). Tourism is one of the principal means of the global commodification of natural and cultural resources, turning these ecosystem services into abstract exchange values in the shortest time possible (Gössling 2002). Coastal tourism is one of the key sectors of the Blue Economy (EC 2021) and involves both natural and cultural resources (Miller and Hadley 2019), but consists mostly of beach tourism.

To truly comprehend coastal tourism, it is fundmental to define the key aspect: the beach. A beach can be defined as a wave deposited accumulation of unconsolidated sediment, ranging in size from very fine sand up to boulders, deposited between the upper swash limit and wave base (Bird 2008; Short and Jackson 2013). Transitioning from this geological definition, a tourist beach can be better understood as a socio-ecological resource located mainly on coastal destinations, which is developed and managed for the primary purpose of attracting tourists interested in Sun, Sea, and Sand (3S) activities (Botero et al. 2018a). 3S tourism is a unique attribute that, in combination with climate and calm seas, characterizes tourism in many coastal and especially island destinations (Alipour et al. 2020).

Next, the concept of 'beach quality' must be considered. Beach environmental quality is defined by Botero et al. (2018b) as "*the state of the beach as a socio-natural system in a certain time, concerning its ecosystem functionality and satisfaction of human needs*". Using the aesthetic appeal of Sun, Sea, and Sand, the coastal tourist industry applies a variety of aesthetic scales, rating

*Correspondence:
Elaine Baroni de Oliveira
elaine.bo@hotmail.com
[1] ARNET-CIMA – Gambelas Campus, University of Algarve, Faro 8005-139, Portugal
[2] Coastal Investigation Group, CIF-PLAYAS, Santa Marta, Colombia
[3] Faculty of Management, Dalhousie University, Halifax, Canada

Springer

© The Author(s) 2024. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/.

recreational areas to inform the public where the 'best beaches' are located (Williams and Micallef 2009). Beach ratings are the ranking of beaches according to their performance against a checklist of different criteria, based on physical, biological, and human use attributes (Cagilaba and Rennie 2005). The evaluation results in an ordered ranking with the 'best' beach at the top. An example of a famous rating scheme is one used by *TripAdvisor*, a platform that provides a list of the best beaches based on the preferences of the tourists. *TripAdvisor* Beaches' Ranking appears to be a reference, with its content replicated by several pages. However, many other websites have their own list of best beaches around the world.

The internet has become the main platform for seeking and disseminating information (Lin and Huang 2006) and it is considered the least expensive and fastest way to reach international travelers (Stepchenkova and Morrison 2006). Studies of the relationship between internet and tourism have been focusing on the influence of internet in the construction of destination image (Pavlovic and Belullo 2011; Abodeeb et al. 2015; Wang et al. 2021; Guo et al. 2022); on the potential of social media as a marketing tool for tourism (Živković et al. 2014; Caro et al. 2015; Varga and Gabor 2021); on the evaluation of content to identify the linguistic, techniques and efficacy of websites (Stepchenkova and Morrison 2006; Gómez-Martín et al. 2017; Malenkina and Ivanov 2018; Juanna et al. 2022); and on the role of mobile travel apps to promote tourism and services (Corrêa 2013; Mayordomo-Martínez et al. 2019). The connection between beach rankings, tourism and destination images, however, has not yet been pursued.

McKenna et al. (2011) affirm that beach awards enhance the popularity of a beach. Moreover, promotion strategies like the 'best beaches' lists also contribute to the popularity of a destination as they play an important role in image construction (Mendes et al. 2011; Li et al. 2015). Since travelers are likely to use travel intermediaries in their destination selection process (Echtner and Ritchie 1991; Baloglu and Mangaloglu 2001), these rankings can be considered a source of information when choosing the next beach to visit. However, the information provided on how these rankings are performed is often unclear or missing. This lack of information raises some research questions. What is the 'best' beach based on? How was the ranking made? Can these rankings be considered reliable and objective? The aim of this study is to analyze the content of internet beach ratings, identifying the indicators used and the data that underpin the ratings including the general characteristics of the rated beaches.

2 Method

A literature review was undertaken to evaluate the ranking of best beaches, detecting the approach and indicators considered by each ranking. The procedure was divided into three main steps: a systematic examination of "best beaches"; a comprehensive analysis of the compiled data; and a comparative assessment against scientific information. The systematic review was conducted in Google using the term 'best beaches' in several languages (English, French, Portuguese, Spanish, and Italian). Over 200 websites were checked based on the following criteria (i) focused on beaches, (ii) more than five beaches, (iii) original content. Websites that merely replicate or translate other rankings were disregarded.

The websites that fulfilled the requirements ($n=71$) were selected and their content was analyzed according to (i) the method used to rate the beaches (e.g., indicators, personal experience, opinion of the editorial board, etc.) and (ii) the indicators considered, where applicable. The indicators were summarized based on (i) if they are described or not, (ii) frequency of appearance, and (iii) the average number considered by the site. The information gathered was systematically documented in a spreadsheet, recording the name, ranking position, and coordinates of each beach. Moreover, a thorough review of website content was conducted to identify recurring terms. After a previous analysis, 26 specific words were identified, and the prevalence of each term across websites was recorded. This data was then utilized to generate a word cloud using a free online tool (https://www.freewordcloudgenerator.com/).

The top beach of the world for each website was plotted into a map using a combination of Google Earth (GE) and QGis. Firstly, the coordinates of every beach were input as a position mark into GE and exported as a *kmz* file. Next, the kmz file was converted to shapefile in QGis and plotted as a map using the Google Satellite layer available at Quick Map Services Plugin. Additionally, GE was used to characterize the beaches and extract common features (turquoise water, white sand, high vegetation cover, pocket shape, presence of rocks or promontories, presence of facilities, localized in an island). The information collected was organized into a spreadsheet using 1 if the beach met the parameter and 0 if it did not. Finally, the values were added up and the percentages calculated.

To compare the results of the general websites with the scientific literature, a search was conducted in the Google Scholar (GE) and Science Direct (SD) journal databases. The search, utilizing the terms 'beach' AND 'quality' in the title, abstract or keywords, returned 95 articles in SD and 771 in GS. The titles of all articles in SD and of the initial 100 articles in GE were filtered to identify the

alignment with the theme and to check the full article availability. Duplicate articles were excluded. Finally, 17 peer-reviewed journal articles, proposing indices for the holistic evaluation of overall beach quality, were identified. The content of the selected articles was examined based on the number and area of indicators, as well as the methodology employed. The results were recorded in a table.

3 Results

The systematic review returned 71 websites containing some type of 'best beaches' ranking. The majority presented a list of 'best beaches of the world', but some of them exhibited the best beaches of a country (Portugal, Spain, Mexico, Colombia, Brazil, EUA) or a region (Algarve, Sardegna, Europe, Caribe). The name and link of each site is shown at the end of references. Of the 71 websites analyzed, 47 (66%) ordered the beaches according to their position on the list. The others presented just a list with the beaches that satisfied their checklist. Since a rating scheme needs to have some order, sites that do not present the beaches by an increasing order cannot be considered as a 'ranking'.

Regarding the method used, only 39% (28 sites) considered indicators in their assessment, as shown in Fig. 1. The rest are the opinion of the editorial board (21 sites), personal experience (14), users' perception (11), opinion of travel specialists (5), and Instagram popularity (2). Only one site used certification and awareness schemes, such as blue flag, and the results of previous scores. Finally, 11 sites did not specify what

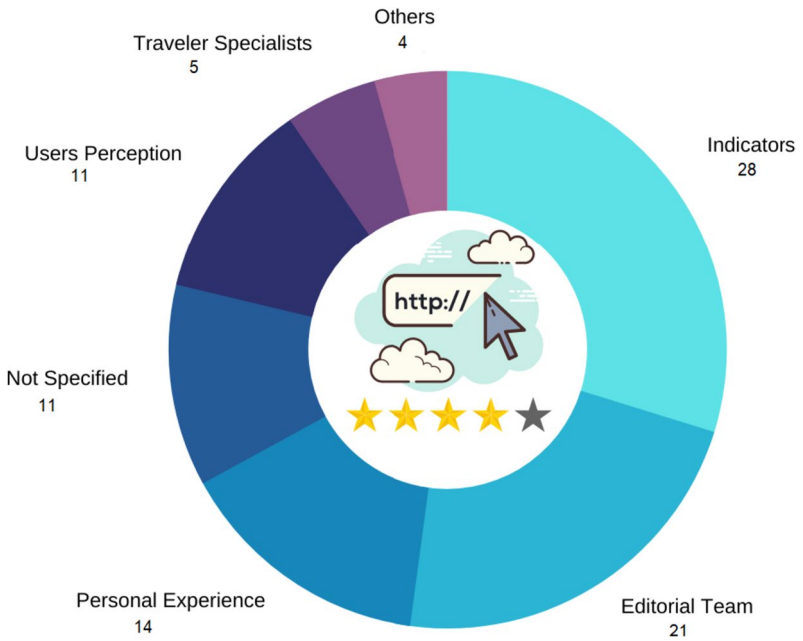

Fig. 1 Ranking methods used by websites to rank the 'best' beaches ($n = 71$ websites)

Table 1 Explanations of ranking methods used by the websites

Ranking method	Overview
Indicators	Use of characteristics, such as the color of the water, to rank the beaches
Editorial team	Judgement of the group responsible for the subject of a specific website
Personal experience	Content of a singular individual that owns a blog or social media
User's perception	General, public opinion
Specialists	Websites that consider the opinion of traveler specialists, such as journalists, bloggers, editors and travelling agencies, rather than just from the owners of the webpage
Instagram	Websites that are interested in the popularity numbers of this social media
Previous scores	Previous critic reviews and former beach winners from other media results are incorporated into the ranking
Certification/Awareness	The consideration of official recognition, such as Blue Flag, granted to a location
Not specified	Websites where the assessment could not be identified

information was used. Some rankings used more than one approach in the process, e.g. indicators plus public opinion. The different approaches are explained in Table 1.

The '*Users' perception*' is normally based on popular vote (like *US News*) or evaluation of beaches (like *TripAdvisor*); however, other options are pursued, for example, *Kiwi.com* promotes a world championship to decide the best. The process involves duels, with the result decided by votes on Instagram. *Money.co* delivers the best beach according to the amount of Instagram posts per meter. *World Beach Awards* collects popular votes to reward the best beach destination.

Concerning '*indicators*', the total number considered by site ranged between 2 and 17 with an average of 8. Whereas the indicators of some sites are explicit, in others the indicators were extracted from the text, e.g., beaches with turquoise waters. A total of 49 indicators were found. The most cited indicator was the color of water (considered by 21 out of 28 sites), followed by the color of the sand (20). Scenic value (15), well-kept vegetation (13), access (13), and turbidity (11) were also

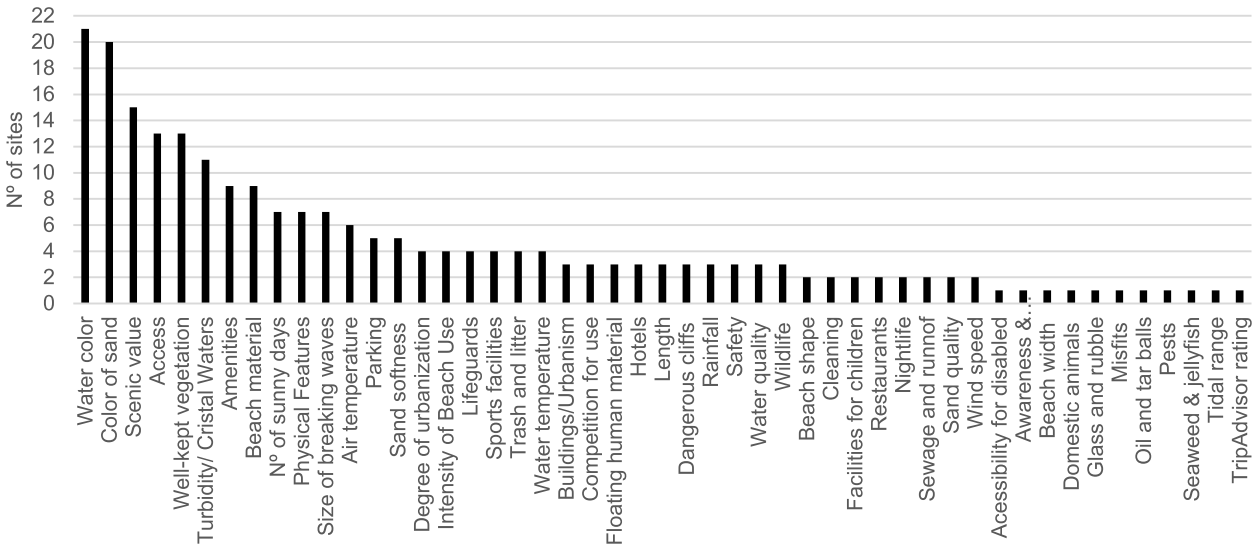

Fig. 2 Number of websites that consider each indicator identified

Table 2 Indicators grouped by thematic area

Thematic Area	%	Indicators		
Recreational	32.7%	Access Accessibility for disabled Amenities Awareness & certifications Competition for use	Facilities for children Hotels Intensity of Beach Use Lifeguards Nightlife	Parking Restaurants Safety Sports facilities TripAdvisor rating
Sanitary	20.4%	Cleaning Domestic animals Floating human material	Glass and rubble Pests Oil and tar balls Trash and litter	Sewage and runoff Sand quality Water quality
Physical	20.4%	Beach material Beach shape Beach width Color of sand	Color of water Cristal waters Dangerous cliffs Length	Sand softness Size of breaking waves Tidal range
Environmental	16.3%	Buildings & Urbanism Degree of urbanization	Misfits Physical Features Scenic value	Seaweed & jellyfish Well-kept vegetation Wildlife
Meteorological	10.2%	Air temperature Nº of sunny days	Rainfall	Water temperature Wind speed

highlighted. Figure 2 shows that many of the indicators (75%) are used by less than 5 websites.

Organizing the indicators into thematic areas (Table 2), it becomes evident that 32% are associated with recreational attributes, emphasizing services, amenities, and overall safety. Another 20% addresses sanitary issues, mostly the presence of litter and sewage. The physical characteristics of the beach, including the grain size, beach width and wave parameters, comprise 20% of total. A detailed examination of this category reveals a predominant association with scenic evaluation Environmental considerations make up 16% of the indicators, yet these also accentuate scenic and urbanization aspects. Climate conditions, such as rainfall and number of sunny days, contribute 10%.

The word cloud (Fig. 3) was generated using 26 words. The majority of them are from the aesthetic and paradisiac vocabulary (beautiful, special, unique, stunning, picturesque, perfect, amazing, paradise, idyllic, wonderful, postcard, instagrammable, outstanding, breathtaking, must-see, unforgettable, spectacular, extraordinary, unspoiled); a few are related with attributes of the beach (white sand, golden sand, crystal waters, turquoise, blue water); and two words (sustainable, quality) were included to identify if quality and sustainability are mentioned by them. The word that appears the most (in 62 out of 71 websites) is 'beautiful', followed by 'paradise' (56). Characteristics of the beach also have a high frequency among the lists: 'white (sand)' and 'crystal (water)' are cited by 51 websites, 'blue (water)' by 47, 'turquoise (water)' by 40 and 'golden (sand)' by 33 websites. 'Quality' is quoted by 15 websites, whereas 'sustainable' for only two.

From the 47 websites that assessed the beaches, 21 were worldwide lists. The top-ranked beach of each site was plotted onto a map (Fig. 4). Beaches on Bora Bora, Zakynthos (Greece), and Seychelles won the first position in more than one site. La Digue Island, in Seychelles, was the front-runner in five cases. Looking into the distribution and characteristics of the winners it is possible to find some similarities. First, all of them are located on islands or archipelagos, have turquoise or emerald waters and very white sand. They are also surrounded by vegetation, that can be either a dense forest or jungle (majority of the cases) or a well-preserved dune or coastal vegetation. Promontories, cliffs, or mountains fence the top beaches, giving them a pocket-protected shape. Facilities are not mandatory and, when present, they are scattered and well-distributed.

The survey of beach quality in the scientific literature returned 17 indices (Table 3) applied by diverse authors all over the world in beaches with different stages of development. Weights were assigned in almost all assessments through the evaluation of experts or users. The involvement of stakeholders, mostly beach experts and users, is recurrent in the methodologies. Although, the authors adopted different approaches for the definition of scores during the rating of indicators, the majority evaluated the indicators based on previous scores established in the literature.

4 Discussion

The results show that beaches in mostly pristine areas are considered the best. Even those that are more urbanized, such as Grace Bay and St. Catherine's, have a good vegetation cover. Despite the element of naturalness, beaches seem to be valued more from an aesthetic point

Fig. 3 Word cloud with recurrent terms used by the 'best beaches' lists. The bigger the word, the higher the frequency of appearance among websites

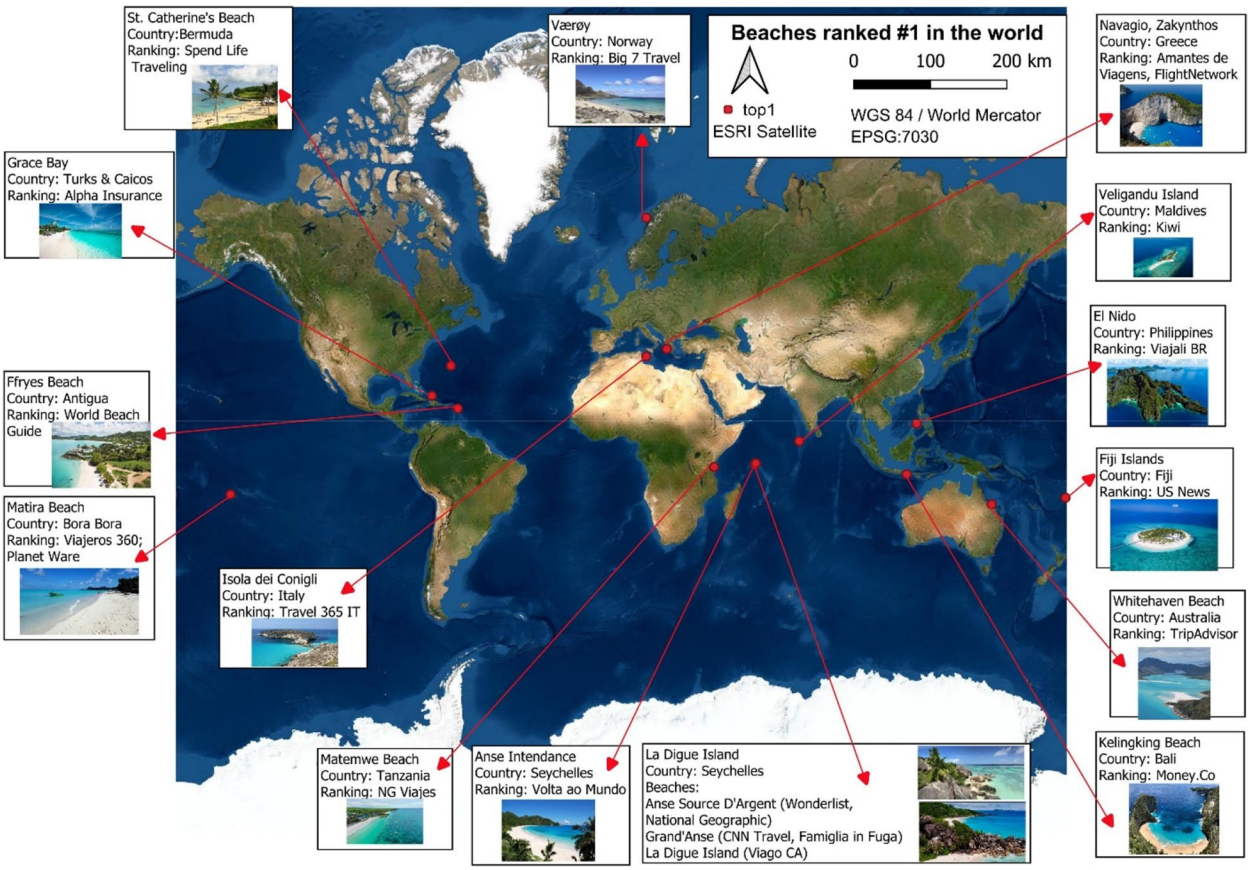

Fig. 4 Location of the beaches classified as the best (#1) in the world by different websites

of view, indicating that the rankings of best beaches are judging beauty rather than beach environmental quality as defined by Botero et al. (2018b). The importance given to water and sand color supports the visually appealing aspect since those parameters are elements that compose scenic evaluation studies (Ergin et al. 2004; Anfuso et al. 2014; Cristiano et al. 2020; Mestanza-Ramón et al. 2020). Furthermore, the word cloud supports these affirmatives once the words used to describe the beaches are mainly from the aesthetic vocabulary (Fig. 3). 'Quality' was found in 15 websites, however, only three of them use the word refering to a high beach quality. The others associate the word with water/sand quality, accommodation quality or certification schemes. The word 'sustainable', meanwhile, was identified in only two sites, in both of which the word referred to commercial establishments that have sustainable production seals rather than the beach.

A significant observation is that the majority of beaches featured on these websites align with the stereotypical notion of 'paradise'. The imagery of a tropical paradise is characterized by white sandy beaches, blue waters, and green palm trees (Gössling 2002). Those characteristics (turquoise waters, white sand, and high vegetation nearby) are recurrent in the beaches analyzed and at the promotional language used in the lists (Fig. 3). According to Costa (1998), the concept of a Western paradise discourse traces its origins to the works of Homer, Greeks, and Romans, characterized by terms like warm, pleasant, idyllic, and maritime; over time, this notion evolved into an earthly paradise, akin to the Garden of Eden in the Judeo-Christian worldview, with an unspecified and isolated location. The narrative further transformed during European expansionism, redefining the earthly paradise as the newly discovered Pacific Islands (Costa 1998). To this day, travelers continue to regard islands as paradisiacal destinations due to their inherent beauty, isolation, warmth, and exotic allure (Costa 1998; Prayag 2011). This association might be why the winning beaches (Fig. 4) are consistently located on islands or archipelagos.

Humans respond to some colors associations in a biologically based tendency (Elliot and Maier 2007). Kaya and Epps (2004), while studying the emotional response of college students to different colors, discovered that blue, white, and green (the combination of paradisiac beaches) are associated with feelings of relaxation and calmness, followed by happiness, comfort, peace, and

Table 3 Beach quality indices found in the literature (Nº is referring to the number of indicators considered by the author)

Index	Authors	Nº	Dimensions of indicators	Countries/ Regions
Environmental Quality of Coastal Areas	Cendrero and Fischer (1997)	77	Resources; Hazards; Occupancy	Spain
Beach Rating Scale	Leatherman (1997)	50	Physical; Biological; Human use and impacts	USA
User-based Rating system	Morgan (1999)	49	Physical; Biological; Human uses	UK
Bathing Area Registration & Evaluation	Micallef et al. (2004)	49	Safety; Water quality; Facilities; Scenery; Litter	Croatia
Beach Quality	Sealeum et al. (2007)	50	Physical; Social; Pollution; Biological	Thailand
Environmental Quality Indicators	Araújo and Costa (2008)	60	Natural; Socioeconomic	Brazil
Integrated Beach Value Index	Cervantes and Espejel (2008)	74	Ecological; Socioeconomic	USA, Mexico and Brazil
Beach Quality index	Ariza et al. (2010)	69	Recreational; Natural; Protective	Spain
Environmental Function Analysis	Amyot and Grant (2014)	21	Ecological; Socio-economic	Canada
Coastal Scenic Assessment	Ergin et al. (2004)	26	Physical; Human	Turkey, UK and Malta
Index of Environmental Quality in Tourist Beaches	Botero et al. (2015)	30	Sanitary, Ecological, Recreational	Colombia
Multi-criteria evaluation	Chen and Bau (2016)	20	Cleanliness; Safety; Protection & Management; Facilities & Services	Taiwan, China
Beach Evaluation Index	Lucrezi et al. (2016)	131	Physical; biological and environmental; infrastructure and services; socio-cultural and religious/spiritual; conservation	South Africa
Integrated Beach Quality Index	Semeoshenkova et al. (2016)	8	Environmental; Human welfare & health	Italy
Beach Health Index	Todd and Bowa (2016)	13	Beach Health Goals	Australia
Multi-dimensional recreational quality	Peña-Alonso et al. (2018a)	69	Accessibility; Water; Environmental; Comfort; Scenic; Human activity & infrastructure; Safety; Facilities;	Spain
Double-Looped Beach Quality Index	Bombana and Ariza (2019)	16	Economics; Morphodynamics; Recreational; Ecology & natural heritage;	Spain

hope. Moreover, white tended to be related to purity and cleanliness. In this sense, Pranzini et al. (2016) affirm that beaches with lightest sands are the preference of tourists and that the change of the original sand color by nourishment can impact the perception of the users toward the beach. Hartmann and Apaolaza-Ibáñez (2010), while studying consumer behavior and landscape advertisement, noticed that advertisements containing images of clear water and lush green vegetation evoked the most favorable emotional responses. These preferences are supported by an evolutionary origin, as habitats with these characteristics offer advantages crucial for survival and reproduction. In essence, contemporary society appears to have inherited an evolutionary predisposition to favor areas with green vegetation and clear waters. At the same time, biological programming leads us to gravitate towards beaches with specific characteristics, as the associated feelings of freedom and relaxation are intrinsically linked to specific colors (green, blue and white). Consequently, we perpetuate the same image of the perfect beach, potentially explaining the remarkable similarity in the content of various beach rankings.

Images are the result of a complex and creative process, where a mental construct is developed (elaborated, embellished, and ordered) based on the impressions of a flood of information (Reynolds 1965). Regarding destination, individuals create images based not just on the perception of the destination attributes, but also on the holistic impression made by the place itself (Echtner and Ritchie 1991; Urbis et al. 2019). According to Echtner and Ritchie (1991), the flood of information used to generate destination images is influenced by promotional literature, (travel brochures, posters); opinions, (of family, friends, and travel agents); and general media (television, magazines, movies). Additionally, historical, political, economic, and social factors influence these perceptions. Since media has a huge influence on the creation of an image by the public, the rankings of best beaches, where all chosen locations have similar characteristics, will help to disseminate the paradisiac discourse. In agreement, Costa (1998) affirms that movies, television shows, and books, as well as the stories and photographs of friends and relatives, stimulate homology since the images promoted are consistent with the Western concept of paradise.

Another clear finding is the importance of user perception, as evidenced by the incorporation of users in various websites. This involvement is manifested through the integration of personal opinions (from the writers, the editorial board, or specialists) or through public voting

mechanisms, as shown in Fig. 1. Additionally, the websites often use online reviews, while beach surveys are the predominant method in scientific research (Roca and Villares 2008; Lucrezi et al. 2018; Peña-Alonso et al. 2018b; Cabezas-Rabadán et al. 2019). It is important to note that the users who took part in these scientific studies were physically present on the beach when their opinions were requested, which implies that they were actively enjoying the beach environment during the evaluation. On the other hand, individuals voting on websites may not have direct knowledge of the subject, which could affect the outcome. The absence of familiarity or direct experience with the beach in question may contribute to a distorted perception, shedding light on the notable influence of scenic elements on site ratings. Echtner and Ritchie (1991) affirm that it is important to separate the images of those individuals who have visited and those who have not, since there are changes in destination image before and after visitation. Hence, users who have personally visited the beach are likely to shape their perception based on their unique experiences, while those unfamiliar with the destination may perpetuate an idealized image influenced by external impressions.

The results found here support that the websites and the scientific studies differ on their respective foci. While the scientific literature is trying to understand what factors drive users to choose a beach and how geography, culture, and social aspects can influence it; the webpages are more interested in extracting which beaches are most appealing for tourists. This is demonstrated by the use of terms from the aesthetic vocabulary, like 'beautiful', 'paradise' and 'picturesque' (Miller and Hadley 2019), as seen in Fig. 3. Furthermore, the dissimilarity is reflected by the indicators used. Whereas water and sand color are the priority for users in websites, cleanliness is cited as the most valued feature in scientific articles (Peña-Alonso et al. 2018b; Roca and Villares 2018; Lucrezi et al. 2018). Cleanliness, together with safety, is also considered the most important parameter in a beach for most of the existing awards, such as Blue Flag, Seaside Award and National Healthy Beaches Campaign.

The disparity between the evaluations of websites and journal articles is mainly due from variations in the content and nature of the indicators used in the ranking processes. Whereas websites use an average of 8 indicators (with a maximum of 17), in journal articles the average reaches 47 (with a maximum of 131). This significant difference highlights the scientists' concentrated effort to thoroughly examine the quality of a beach, considering all relevant factors. Regarding type, indicators in websites concentrate mostly on the recreational use, physical characteristics of the beach, and sanitary aspects (Fig. 3). However, it is clear that beach user satisfaction is at the forefront of these rankings and even when other aspects are included, such as environmental and physical characteristics, they aim to promote recreation as well (Bombana and Ariza 2018). Scientific articles, on the other hand, embrace a broader spectrum of indicator areas, including not only physical and human welfare but also ecological, economic, sanitary, and management indicators (Table 3). Williams and Micallef (2009) affirms that ratings should cover many aspects of the theme addressed, instead of just one or two, as is the case with several websites ratings.

Although some websites use indicators to rank the beaches, the prevailing method in compiling rankings relies significantly on personal experiences and opinions, as illustrated in Fig. 1. However, given that user preferences are susceptible to influences such as interests, lifestyle, motivation, age, education, geographic location, nationality, and marital status (Prayag 2011; Bimonte and Faralla 2012; Dodds and Holmes 2019), the ultimate ranking is subject to the profile of the writer. As a result, the position or even the names of beaches in the ranking may change depending on the authorship. Supporting the role of the profile in the outcomes, Phillips and House (2009) discovered that various user groups rank the same beaches differently due to the prioritization of indicators. For instance, surfers tend to prioritize physical criteria, conservationists lean towards ecological and biological considerations, wheras families place emphasis on human indicators, particularly safety. The published ranking, therefore, is a reflection of the context and beliefs of the writer at the time the list was written and does not provide the environmental quality status of the beaches.

Another divergence is the ranking itself. Unlike the majority of websites, the articles are just qualifying the beaches, rather than ranking them. A beach index describes and evaluates the beach, allowing the detection of attributes that do or do not favor the recreational value of any beach (Cervantes and Espejel 2008). According to Espínola and Marques Júnior (2021), indices are created to help the management of beaches, and not to rank the best ones or help the tourist to decide their destination. Besides, Botero (2018) explains that ratings (assessment process) and certifications (recognition of a desired level of quality) are not differentiated in the literature.

As a final point, we must recognize that a standardized beach ranking demands a transparent methodology, comprising measurable indicators that respect a beach's ecosystem functions and services. To align with sustainable tourism goals, these indicators must adopt a holistic perspective, encompassing social/cultural, economic, governance, and environmental dimensions. Furthermore, employing a predetermined scoring system to measure

these indicators is essential. Utilizing a specific scale facilitates meaningful comparisons between beaches, providing users with a comprehensive understanding of strengths and weaknesses in each case. Another crucial aspect is considering and differentiating beach typologies, avoiding generalization or inaccurate classification (Williams and Micallef 2009). Recognizing the inherent diversity among beaches is vital, and assessments should be tailored accordingly. Finally, the classification system should be designed for effective communication with society (Fischhoff 2019). Therefore, presenting results in an easily comprehensible and visually appealing format is essential, enabling the interpretation of a substantial amount of information. With those requirements in mind, a new scientific framework for ranking beach quality based on sustainable tourism and management effectiveness is currently being implemented (Oliveira et al. 2023, submitted article).

5 Conclusions

The analysis of the internet revealed that the existing web-based rankings are mostly subjective. The majority of 'best beaches' lists are either an overview of places that appeal to the person that wrote the webpage or the winners of social contests. They seem to be judging beauty rather than quality, since they are relying on the aesthetic component to rank the beaches, as evidenced by the characteristics of the beaches included and the promotion vocabulary used to create the content. Even when indicators are considered, those are mostly a reflection of the notion of a paradisiac beach (crystal blue waters with white sand).

Although attractiveness is a key element for the public, the perpetuation of these lists can have a major impact on coasts. To begin with, these lists establish and enforce a standard that is nearly unattainable, given that such criteria hinge on factors like climate, geology, or dynamics. Consequently, the distinctive and natural attributes of beaches that fall short of these challenging standards are being overlooked. Simultaneously, those beaches featured on the lists may face a heightened influx of visitors. This not only exacerbates the customary impacts of tourist activities, such as increased waste production, wastewater generation, and water consumption but also necessitates additional facilities, leading to land modifications. Beach rankings with a scientific basis can play an important role in sustainable tourism since they can be used not only to inform the public about the best beaches, but also to support beach management by assessing their socio-ecological state and primary weaknesses. The assessment of beach quality from a comprehensive perspective is critical to ensuring and safeguarding the health of the ecosystem and bridging the gap with scientific investigations.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1007/s44218-023-00034-6.

Additional file 1. List of websites analyzed.

Acknowledgements

Elaine Oliveira acknowledges CIMA, Proplayas Network, Grupo de Sistemas Costeros and Liana McManus. Alice Newton acknowledges Future Earth Coasts, IMBeR and Ocean KAN. Camilo M. Botero acknowledges Proplayas Network.

Authors' contributions

Conceptualization, E.B.O.; methodology, E.B.O., A.N. and C.M.B.; validation, E.B.O., A.N. and C.M.B.; formal analysis, E.B.O.; investigation, E.B.O., A.N. and C.M.B.; data curation, E.B.O.; writing—original draft preparation, E.B.O.; writing—review and editing, A.N. and C.M.B.; supervision, A.N. and C.M.B. All authors have read and agreed to the published version of the manuscript.

Funding

This research was supported by a grant funded by the European Commission under the Erasmus Mundus Joint Master Degree Program in Water and Coastal Management in the 2020/2022 class (WACOMA; Project num. 586596-EPP-1-2017-1-IT-EPPKA1-JMD-MOB). ARNET-CIMA is funded by LA/P/0069/2020 and UID/00350/2020 CIMA by Fundação para a Ciência e Tecnologia, Portugal.

Availability of data and materials

Data will be available under request.

Declarations

Competing interests

The authors have no competing interests to declare that are relevant to the content of this article.

Received: 9 July 2023 Revised: 10 December 2023 Accepted: 11 December 2023
Published online: 08 January 2024

References

Abodeeb J, Wilson E, Moyle B (2015) Shaping destination image and identity: insights for Arab tourism at the Gold Coast Australia International Journal of Culture Tourism and Hospitality Research 9(1):6–21. https://doi.org/10.1108/IJCTHR-06-2014-0051

Alipour H, Olya HGT, Malek P, Dalir S (2020) Behavioral responses of 3S tourism visitors: evidence from a Mediterranean island destination. Tour Manag Perspect 33:1–10

Amyot J, Grant J (2014) Environmental function analysis: a decision support tool for integrated sandy beach planning. Ocean Coast Manag 102:317–327

Anfuso G, Williams AT, Cabrera Hernández JA, Pranzini E (2014) Coastal scenic assessment and tourism management in western Cuba. Tour Manage 42:307–320

Araújo MCB, Costa MF (2008) Environmental quality indicators for recreational beaches classification. J Coastal Res 24(6):1439–1449

Ariza E, Jimenez JA, Sarda R, Villares M, Pinto J, Fraguell R, Roca E, Marti C, Valdemoro H, Ballester R, Fluvia M (2010) Proposal for an integral quality index for urban and urbanized beaches. Environ Manage 45:998–1013

Baloglu S, Mangaloglu M (2001) Tourism destination images of Turkey, Egypt, Greece, and Italy as perceived by US-based tour operators and travel agents. Tourism Management 22(1):1–9

Bimonte S, Faralla V (2012) Tourist types and happiness a comparative study in Maremma, Italy. Ann Tour Res 39(4):1929–1950
Bird ECF (2008) Coastal geomorphology: an introduction. Chichester: John Wiley & Sons Ltd, Second edition
Bombana B, Ariza E (2018) Clarifying some assumptions of coastal management: analysis of values and uncertainties embedded in beach quality indexes. Ecol Ind 91:376–385
Bombana B, Ariza E (2019) A double-loop process for beach quality index construction: approaching the complexity of the Catalan coast. J Environ Manage 240:177–189
Botero CM (2018) Beach awards and certifications. In: Finkl C, Makowski C (eds) Encyclopedia of coastal science, 2nd edn. Springer
Botero C, Pereira C, Tosic M, Manjarrez G (2015) Design of an index for monitoring the environmental quality of tourist beaches from a holistic approach. Ocean Coast Manag 108:65–73
Botero CM, Manjarrés G, Márquez E, Pereira CI (2018b) Beach environmental quality. In: Finkl CW, Makowski C (eds) Encyclopedia of coastal science, 2nd edn. Springer, Switzerland, pp 232–234
Botero CM, Cabrera JA, Zielinski S (2018a) Tourist beaches. In: Finkl C, Makowski C (eds) Encyclopedia of coastal science
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
Cagilaba V, Rennie HG (2005) Literature review of beach awards and rating systems. Environment Waikato. https://www.waikatoregion.govt.nz/assets/WRC/WRC-2019/tr05-24.pdf. Accessed 12 Dec 2023
Caro JL, Luque A, Zayas B (2015) Nuevas tecnologías para la interpretación y promoción de los recursos turísticos culturales. PASOS. Revista de Turismo y Patrimonio Cultural 13(4):931–945
Cendrero A, Fischer DW (1997) A procedure for assessing the environmental quality of coastal areas for planning and management. J Coast Res 13(3):732–744. https://www.jstor.org/stable/4298668
Cervantes O, Espejel I (2008) Design of an integrated evaluation index for recreational beaches. Ocean Coast Manag 51(5):410–419
Chen C-L, Bau Y-P (2016) Establishing a multi-criteria evaluation structure for tourist beaches in Taiwan: a foundation for sustainable beach tourism. Ocean Coast Manag 121:88–96
Corrêa C (2013) Mobile marketing of the Brazilian Tourist Board: Case study of Brazil Mobile application. https://agrilife.org/ertr/files/2014/02/enter2014_RN_45.pdf. Accessed 14 Dec 2023
Costa JA (1998) Paradise discourse: a critical analysis of marketing and consuming Hawaii. Consum Mark Cult 1(4):303–346
Cristiano SC, Rockett GC, Portz LC, Souza Filho JR (2020) Beach landscape management as a sustainable tourism resource in Fernando de Noronha Island (Brazil). Mar Pollut Bull 150:1–13
Dodds R, Holmes MR (2019) Beach tourists; what factors satisfy them and drive them to return. Ocean Coast Manag 168:158–166
EC (2021) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a new approach for a sustainable blue economy in the EU transforming the EU's blue economy for a sustainable future. COM/2021/240 final
Echtner CM, Ritchie JRB (1991) The meaning and measurement of destination image. J Tour Stud 2(2):2–12
Elliot AJ, Maier MA (2007) Color and psychological functioning. Color Psychol 16(5):250–254. https://doi.org/10.1111/j.1467-8721.2007.00514
Ergin A, Karaesmen E, Micallef A, Williams AT (2004) A new methodology for evaluating coastal scenery: fuzzy logic systems. Area 36(4):367–386
Espínola RS, Marques Junior S (2021) Índices de qualidade para praias turísticas: uma revisão de literatura para estudos de turismo (2014–2019). Ateliê do Turismo 5(1):1–21. https://periodicos.ufms.br/index.php/adturismo/article/view/12153. Accessed 12 Dec 2023
Fischhoff B (2019) Evaluating science communication. Proc Natl Acad Sci U S A 116(16):7670–7675. https://www.pnas.org/cgi/doi/10.1073/pnas.1805863115
Gómez-Martín M, Arnesto-López XA, Martinez-Ibarra E (2017) Tourists Weather and Climate. Official Tourism Promotion Websites as a Source of Information Atmosphere 8(12):255. https://doi.org/10.3390/atmos8120255
Gössling S (2002) Human-environmental relations with tourism. Ann Tour Res 29(2):539–556
Guo X (2022) Explore the Characteristics of Destination Image in the New Era of Information Technology Case of Online Travel Reviews. Matkailututkimus 18(1):76–81. https://doi.org/10.33351/mt.120966
Hartmann P, Apaolaza-Ibáñez V (2010) Beyond savanna: an evolutionary and environmental psychology approach to behavioral effects of nature scenery in green advertising. J Environ Psychol 30:119–128
Juanna A, Kusuma CA, Ningrum S, Lapalanti MZ (2022) A Survey Study on the Efficacy of a Tourism Website: a Case of Botutonuo Beach in the Province of Gorontalo. International Journal of Scientific and Management Research 05(07):147–155. https://doi.org/10.37502/IJSMR.2022.5712
Kaya N, Epps HH (2004) Relationship between color and emotion: a study of college students. Coll Stud J 38(3):396–405
Leatherman SP (1997) Beach rating: a methodological approach. J Coast Res Tech Commun 13(1):253–258. https://www.jstor.org/stable/4298614
Li JJ, Ali F, Kim WG (2015) Reexamination of the role of destination image in tourism: an updated literature review. E-review of Tourism Research 12
Lin YS, Huang JY (2006) Internet blogs as a tourism marketing medium: A case study. Journal of Business Research 59(10-11):1201–1205. https://doi.org/10.1016/j.jbusres.2005.11.005
Lucrezi S, Saayman M, van der Merwe P (2016) An assessment tool for sand beaches: a case study for integrating beach description, human dimension, and economic factors to identify priority management issues. Ocean Coast Manag 121:1–22
Lucrezi S, Geldenhuys LL, Van der Merwe P, Saayman M (2018) Utility of users data and their support for differential beach management in South Africa. Beach management tools-concepts, methodologies and case studies. Springer, Cham, pp 933–960
Malenkina N, Ivanov S (2018) A linguistic analysis of the official tourism websites of the seventeen Spanish Autonomous Communities. Journal of Destination Marketing & Management 9204–233. https://doi.org/10.1016/j.jdmm.2018.01.007
Mayordomo-Martínez D, Sánchez-Aarnoutse JC, Carrillo-de-Gea J, García-Berná JA, Fernández-Alemán JL, García-Mateos G (2019) Design and Development of a Mobile App for Accessible Beach Tourism Information for People with Disabilities. International Journal of Environmental Research and Public Health 16(12):2131. https://doi.org/10.3390/ijerph16122131
McKenna J, Williams ATJ, Cooper AG (2011) Blue Flag or Red Herring: Do beach awards encourage the public to visit beaches? Tourism Management 32(3):576–588. https://doi.org/10.1016/j.tourman.2010.05.005
Mendes J, Valle PO, Guerreiro M (2011) Destination Image and Events: A Structural Model for the Algarve Case. Journal of Hospitality Marketing & Management 20:3-4:366–384. https://doi.org/10.1080/19368623.2011.562424
Mestanza-Ramón C, Anfuso G, Chica-Ruiz JA, Mooser A, Botero CM, Pranzini E (2020) Coastal scenic evaluation of continental Ecuador and Galapago islands: human impacts and management issues. J Mar Sci Eng 3(468):1–18
Micallef A, Williams AT, Radic M, Ergin A (2004) Application of a novel bathing area evaluation technique – a case study of Croatian island beaches. World Leis J 46(4):4–21
Miller ML, Hadley NP (2019) Tourism and coastal development. In: Finkl C, Makowski C (eds) Encyclopedia of coastal science, 2nd edn. Springer
Morgan R (1999) Preferences and priorities of recreational beach users in Wales, UK. J Coast Res 653–667. https://www.jstor.org/stable/4298982
Pavlovic DK, Belullo A (2011) Internet-an agent of tourism destination image formation: Content and correspondence analysis of Istria travel related websites. Ekonomska Istrazivanja 24(1):541–555
Peña-Alonso C, Ariza E, Hernández-Calvento L, Pérez-Chacón E (2018a) Exploring multi-dimensional recreational quality of beach socio-ecological systems in the Canary Islands (Spain). Tour Manage 64:303–313
Peña-Alonso C, Ariza E, Hernández-Calvento L (2018b) User's perception of beach characteristics and management in summer and autumn seasons: the case of Gran Canaria Island (Spain). Beach management tools-concepts, methodologies and case studies. Springer, Cham, pp 913–932
Phillips MR, House C (2009) An evaluation of priorities for beach tourism: case studies from South Wales, UK. Tour Manag 30(2):176–183
Pranzini E, Anfuso G, Botero CM, Cabrera A, Campos YA, Martinez G, Williams AT (2016) Sand colour at Cuba and its influence on beach nourishment and management. Ocean & Coastal Management 12651–60. https://doi.org/10.1016/j.ocecoaman.2016.03.013

Prayag G (2011) Paradise for who? Segmenting visitors' satisfaction with cognitive image and predicting behavioral loyalty. Int J Tour Res 14(1):1–15
Reynolds WH (1965) The role of the consumer in image building. Calif Manage Rev 7(3):69–76
Roca E, Riera C, Villares M, Fragell R, Junyent R (2008) A combined assessment of beach occupancy and public perceptions of beach quality: A case study in the Costa Brava, Spain. Ocean & Coastal Management 51(12):839–846
Roca E, Villares M (2018) Integrating social perceptions in beach management. Beach management tools-concepts, methodologies and case studies. Springer, Cham, pp 875–893
Sealeum S, Chankaew K, Inkapattanakul W, Navanugraha C (2007) Environmental quality assessment criteria for recreational beach: a case study of Cha-Am beach, Petchburi Province. Environ Nat Resour J 5(1):69–79
Semeoshenkova V, Newton A, Contin A, Greggio N (2016) Development and application of an integrated beach quality index (BQI). Ocean Coast Manag 143:74–86
Short AD, Jackson DWT (2013) Beach morphodynamics. In: Shroder JF (ed) Treatise on geomorphology, vol 10. Academic, San Diego, pp 106–129
Stepchenkova S, Morrison AM (2006) The destination image of Russia: From the online induced perspective. Tourism Management 27(5):943–956. https://doi.org/10.1016/j.tourman.2005.10.021
Todd DJ, Bowa K (2016) Development of beach health index for the Gold Coast, Australia. J Coast Res SI 75:710–714
Urbis A, Povilanskas R, Newton A (2019) Valuation of aesthetic ecosystem services of protected coastal dunes and forests. Ocean Coast Manag 179:1–13
Varga IE, Gabor MR (2021) The Influence of Social Networks in Travel Decisions Abstract. ECONOMICS 9(2):35–48. https://doi.org/10.2478/eoik-2021-0015
Wang J, Li Y, Wu B, Wang Y (2021) Tourism destination image based on tourism user generated content on internet. Tourism Review 76(1):125–137. https://doi.org/10.1108/TR-04-2019-0132
Williamns A, Micallef A (2009) Beach management principles & practice. Earthscan
Živković R, Gajić J, Brdar I (2014) The impact of social media on tourism. Singidunum Journal of Applied Sciences 758–761. https://doi.org/10.15308/SInteZa-2014-758-761