

Systematic Revision of the Literature on Satisfaction in Marinas and Nautical Ports



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Abstract In recent years, the development of nautical tourism has been experiencing growth in the area of the Mediterranean countries and the European Atlantic coast, being a tourism sector with a high potential for both spending and developing innovative products involving technological development. Nautical tourism focuses its operations on the network of leisure ports and marinas scattered along the coastline and inland in rivers and lakes, with a heterogeneous variety depending on the type, size, public or private management, the services provided to users, and their involvement with the tourism development of the area where it is located. Likewise, there is no uniform definition of the characteristics and functions that a marina should have, despite the existence of international institutions and associations that regulate this activity, presenting the sector with a lack of unified criteria and procedures. This work presents a Systematic Literature Review (SLR) with a selection of 60 studies and references from 2005 to August 2022 using the bases of World of Science and Scopus. Exploring the types of questionnaires and methodologies used in the sector of marinas with the aim of finding homogeneous directions of study facilitates analysis based on the use of advanced statistical methodologies and helps to understand this sector for future studies in this area.

Keywords Sailing tourism · Marina user satisfaction · Nautical tourism marketing · Tourism sustainability · Systematic literature review (SLR)

JEL Classification L83: Sports · Gambling · Restaurants · Recreation · Tourism

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1 Introduction

The nautical tourism sector is studied from three different perspectives according to its industry: the boarding of sailboats and motorboats owned, the rental of boats (charter), and the cruise industry (Luković, 2012). All of them have experienced high growth over the last thirty years (Çakıroğlu, 2019; Vlastic et al., 2019), with the service activity of marinas closely associated with boat rentals and yacht owners (Luković, 2012), in such a way that the traditional yacht clubs (Chen et al., 2016) focus their activity toward yacht owners while the business of the new marinas is more oriented toward yacht charter tourism (Nowacki, 2015).

Europe has a coastline of 68,000 km (European Environment Agency, 2020¹), with a total of 4.500 marinas, 1.75 million berths, and 6.3 million yachts (Vlastic et al., 2019) with around 222.000 berths in France, 130.000 in Spain, as well as a similar number in Italy, 14.000 in Croatia, and 9.000 in Greece (Chen et al., 2016) as the most prominent countries within the European Union.

Basically, the European marina market is concentrated in five different areas, which different port configuration characteristics given the differences in coastline and climate (Kizielewicz & Luković, 2013):

- The Mediterranean Sea (the European coastline)
- European Atlantic coast (below the Arctic Circle)
- The Baltic Sea and countries around the Arctic Circle
- Continental European part (inland waters/freshwaters)
- The Black Sea.

The term “Nautical” comes from the Greek ναυτικός (naftikós) which means boat or sailor. In turn, the adoption of the word marina to define this type of facility is a term of Italian origin and means *a small port that receives recreational boats* (Klarić et al., 2015). An accurate definition of a marina related with the basic services required by this type of user is that offered by the “National Association of Motor and Boat Manufacturers”² in 1928 as a place where boaters can properly moor their boats, launch them, service them, stock up on of fuel and other navigational needs, taking a hot shower, eating on land, and being close to commercial, communications, and traffic infrastructure (Luković & Bilić, 2007, 116).

Nautical tourism is not limited to the possession of a boat and the use of marine resources, but can be framed with all those other forms of tourism that have an economic, social, and environmental impact on local development (Bizzarri & Foresta, 2011), positively affecting the economies of nearby towns with the generation of direct and indirect income (Kopke et al., 2008). For this reason, the indicators limited to the number of berths of the infrastructure of a port are insufficient to know the real and potential value of the marina. There are two determining factors related to the maritime area where it is located, which are the depth of the water in the

¹ <https://www.eea.europa.eu/themes/water>.

² <https://www.nmma.org/about-us>.

moorings and the effect of the tides: the minimum depth must be 2,44 m, which will affect the number of boats and type of these that can be moored in each marina.

Therefore, a full service marina requires (Smythe, 2010):

- appropriate depth of water for the draft of sailboats,
- sufficient land for dry boat storage,
- repair services,
- parking access,
- complementary services.

There is no uniform definition of the characteristics and functions that a marina should have, despite the existence of international institutions and associations that regulate this activity, presenting the sector with a lack of unified criteria and procedures. In the same way, the works developed on this subject are scarce and present diverse approaches, most of them observed as case studies aimed at various topics such as user experience (Benevolo & Spinelli, 2021; Paker & Vural, 2016; Silveira & Santos, 2014), the sustainability of facilities and their integration into the environment (Andres et al., 2017; Yang et al., 2014), the application of new technologies (Maglić et al., 2021; Rafał et al., 2022), tourism capacity (Benevolo & Spinelli, 2021; Payeras et al., 2011; Vlastic et al., 2019), or the situation within the legal framework where they fit (Alcover et al., 2011; Škorić et al., 2012).

The main objective of this work is to find works related to the general satisfaction of the services of the users of marinas that have been published in recent years with the idea of establishing solid elements that favor future quantitative and qualitative studies, supported by scientific methods that support advanced statistical techniques and predictive methods. In this direction, the following specific objectives are described as follows:

SO1: Find works on satisfaction in marinas based on quantitative studies and surveys

SO2: highlight the impact of the publications made on this topic.

SO3: Find consistent study factors on which to base further studies.

2 Literature Review

2.1 Satisfaction in Marinas

Users of Nautical Ports and marinas demand a series of services that are essential for the practice of their activity in this type of facility. They are usually described as a series of attributes that rather do not allow user dissatisfaction (Shen et al., 2021), which are grouped into the services intrinsic services of the marina, destination experiences on land, charter products, products of support to marina, and basic destination attributes (Mikulić et al., 2015), being essential the degree of perceived satisfaction even considering the bad weather conditions that are not usually an obstacle to the

activity enjoyment (Arabadzhyan et al., 2021; Jovanovic et al., 2013), basically with attributes such as nature, the feeling of freedom, and flexibility that navigation brings (Butowski, 2018).

Scientific works on satisfaction in marinas such as those by Gracan and Uran (2002); Mikulic et al. (2015) and Lam-González (2020) have focused on the degree of functionality using Likert scales without understanding how different marina attributes influence boating experiences (Shen et al., 2021) and that the combination of these in a destination within the user experience drives the level of tourist satisfaction (Albayrak et al., 2013; Toro-Sánchez, 2022). According to Pizam et al. (2016), Likert scales tend to offer positive-biased responses and assume the linear relationship between satisfaction and dissatisfaction when the use of advanced statistical methodologies such as structural equations, observing that this relationship is not linear (Jin et al., 2015).

There are study models on tourist satisfaction that seek to solve the combined analysis of the attributes of the experience, distinguishing these into three types:

- (a) *Basic attributes* that determine the minimum requirements of the experience so that if they are not met, dissatisfaction appears gradually, in the same way that if these attributes appear in the appropriate utility, the degree of satisfaction remains stable (Jin et al., 2015) bearing in mind that dissatisfaction generally causes negative word of mouth (Alegre & Garau, 2011). Specifically, in the case of marinas, it would be the sanitary services, the qualities of the employees, the water and electricity connections on the pontoons, as well as the cleanliness of the waters on which they are located and the space conditions applicable to these.
- (b) *One-dimensional attributes* that improve the experience to the extent that the user can enjoy it (Palumbo, 2015) such as the activities offered by the port in the form of restaurants, supermarkets, tourist information offices, and recreational activities.
- (c) *Attractive attributes* which are not expected by users, so that they do not show dissatisfaction if they do not appear within the experience (Alegre & Garau, 2011; Jin et al., 2015). These attributes are more linked to external infrastructures in relation to the destination such as means of transport, connectivity, cultural offer as well as the existence of social networks linked to the experience that facilitate and expand communication as well as the use of new technologies and digital usability in the user experience.

In the same context, the services provided by the marinas can be classified as *primary*—related to the mooring itself, *secondary*—electricity and water connections, administrative procedures, gasoline supplies, parts, and management of sailors, and additionally *entertainment and tourist activities*—supermarket (Klarić et al., 2015). In spite of the degree of quality with which they are appreciated in this series of services, they influence the perception of satisfaction, especially in the education of the port staff and their friendliness as the main factor (Margariti et al., 2017) together with the dimensions that describe the quality of the berths and guarantee of the equipment (Gracan et al., 2016).

It is important not to forget crucial aspects such as those related to the prices of both general and adjacent services and the legislation related to navigation that concerns each harbor (Škorić et al., 2012), which can clearly present themselves as barriers to demand due to the heterogeneity shown in both aspects, even presenting as a differential factor in both flexible pricing policies and those adapted to the required services (Vlasic et al., 2019), as well as more lax legislation and permissive legislation toward the enjoyment of nautical experiences (Alcover et al., 2011). The price can distinguish between *ordinary* and *privileged* services, the most important factor for owners being an applicable and understandable fee base based on a calendar scheme (Çakırglu, 2019).

An accentuated dissatisfaction or even frustration is normally more expressible than satisfaction (Mikulić et al., 2015); for this reason it is important to determine the critical factors in the experiences of marinas, beyond the models that simply focus on levels of satisfaction, and satisfaction and exceeding expectations, given the high component of basic service that characterizes them. Therefore SERVQUAL (Parasuraman et al., 1985), ECOSERVE (Khan, 2003), and RENTQUAL (Ekiz et al., 2010) models measure the different dimensions of the quality of a service treating them as a global satisfaction of the service instead of the individual satisfaction of each one of the attributes of the global service, so the expectation and improvement of each attribute in particular cannot be explained with the use of these models (Shen et al., 2021).

Kuzma (2003) offers a more primal view of services in marinas, although it is shown at a practical level dividing services specifically in terms of destinations of use—boats, people, and transport—in such a way that it can be oriented toward the target audiences in question and matter of its use, depending on the degree of development and its integration in the environment and the real needs of the users. On the other hand, the degree of professional preparation (Lam-González, 2019) is really destined toward the provision of the specific service, managing resources efficiently and with user orientation (Fig. 1).

2.2 Sustainable Development

In the tourist context, the Marinas offer to the local entities a great opportunity for development that can benefit from them and a growth model (Luković, 2012), with a diversity of types of marinas depending on how they are integrated or not in the environment in which they are framed. Basically, two types can be schematized by classification (Kizielewicz & Luković, 2013):

- *Non-Integrated Marina Models*: Marinas on the Island of Greece
- *Integrated Marina Models*:
 - within the city (Frapa, Horta (Azores), Split (Croatia), Marinas in the city of Athens, Italian Marinas)

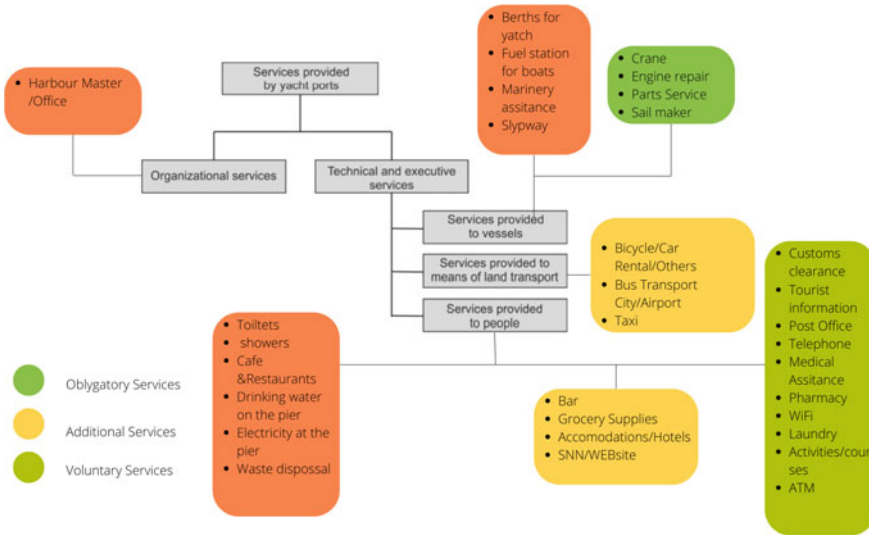


Fig. 1 Service in Marina model. *Source* Kuzma (2003), Lam-Gonzalez (2019) and authors' own elaboration

- within a tourist environment (Benalmádena, Puerto Sherry, Costa Azul in France, Palma de Mallorca).

Functionally, the most used development model is through the transfer of public bodies—who generally hold ownership of the coastal land—transferred to other public and private government bodies that jointly or may not manage the activity of the port as a natural asset. (Clark & Munro, 1994). Thus, service management toward a tourism market orientation with a focus on boaters and the destination’s own tourists, affected or not to navigation, is presented as crucial for the development of the marina as a tourist product (Luković & Bilić, 2007) and continuous development in improving the quality of life and employment opportunities of the integrated social environment in the geographical area where it is located (Klarić et al., 2015). Manifestly, this development model is expressed in the EU’s 2020 objectives in The European Strategy for Coastal and Maritime Tourism³ where it concludes that:

Coastal and maritime tourism needs an ambitious policy framework. The Commission, Member States, regional and local authorities, industry and other stakeholders must take targeted action in coherence with EU policies that have an impact on this sector.

The assessment of the environment by opinion groups and managers dismisses the importance of the attractiveness of the landscape and neighboring tourism resources and does not give it much importance (Yang et al. 2014).

³ <https://www.eea.europa.eu/policy-documents/a-european-strategy-for-more>.

2.3 *Touristic Development*

Despite the perspective of the marina as a tourist destination (Luković, 2012), it is possible to approach the nautical tourism offer from a purely product-service approach (Benevolo & Spinelli, 2021) with a multi-offer vision (Silveira & Santos, 2014) and poly-functional activities (Luković & Bilić, 2007). Specifically, nautical tourism in marinas, both as regular boaters-owners and as charter yachts (Besteiro Rodríguez, 2004), offers a great opportunity given its level of spending compared to other types of tourism (Payeras et al., 2011) and very similar to another source of tourism with high potential such as golf (Alcover et al., 2011) with high levels of daily spending—94% more than traditional tourism—and longer stay in destination—11,8 days compared to 8,9 days of traditional holiday tourism in Spain (Payeras et al., 2011), which allows it to be classified as a premium product.

Frequently, the marina and sports port sector is limited to a single value proposition (Heron & Juju, 2012) ignoring the possibility of approaching new markets, while the destination concept does not respond to the real needs of nautical tourism (Lam-González, 2019), so a vision of segmented marketing—lacking in this sector (Paker & Vural, 2016)—is presented as an essential tool within tourism development.

The yachting tourism experience is significantly influenced by five attributes, including basic marina services, destination experiences on land, rental products, marina support products, and basic destination attributes (Mikulić et al., 2015). Curiously, this type of user does not value the tourist offer around the port in a consistent way (Yang, L et al., 2014), with which the need to establish a segmentation of the different users when tourism development actions are established in the marinas and that they are not limited, especially taking into account the public ownership of the land where they are located.

Benevollo and Spinelli (2021) argued that the segmentation in the different users of the marinas can be based psychologically on the benefit it brings to the user in their motivations or based on the attributes of the service itself, so it is important again to detect which of the elements of the marina offer are important for each type of user and how they are identified by them as essential, appreciated, or indifferent. In the same way, changes in user behavior are the forces that should direct the tourist offer (Poon, 1993) and in this case nautical (Silveira & Santos, 2014) given its ascetic and fun potential. For tourism development, it is necessary to generate links between the marina and its surroundings with strategies that connect the outstanding attractions of nearby cities (Nebot et al., 2017) as well as their natural environment together (Martín & Yepes, 2019).

Another solution that appears open to lower-income users is the yacht rental market (Chen et al., 2016), which allows the growth of nautical tourism in marinas, together, on the other hand, with the mega-car sector, yachts (Pallis & Lekakou, 2004), where the marinas require both technical and legal specifications to be able to provide such services and the cooperation of the different stakeholders for the development of this business (Corres, 2007).

3 Methodology

The research method used is the Systematic Literature Review (SLR) (Ramey & Rao, 2011; Schaller et al., 2019) and in particular following the guidelines of similar studies related to recent dates in the tourism field (Abarca et al., 2020; Perdomo-Verdecia et al., 2022; Rojas-Sánchez et al., 2022). In recent years, more and more articles have been found on the user satisfaction in marinas, although in a number certainly scarce and with diverse methodologies and generally focused only on expert panels (Martín & Yepes, 2019, 2022; Payeras et al., 2011) and few of them taking into consideration the opinions of marina users (Jovanovic et al., 2013; Mikulić et al., 2015; Shen et al., 2021). The heterogeneity of the bibliography and the thematic focus of the articles especially in the case study lead us to justify the use of SLR based on the following points (Abarca et al., 2020; Ramey & Rao, 2011) (Fig. 2).

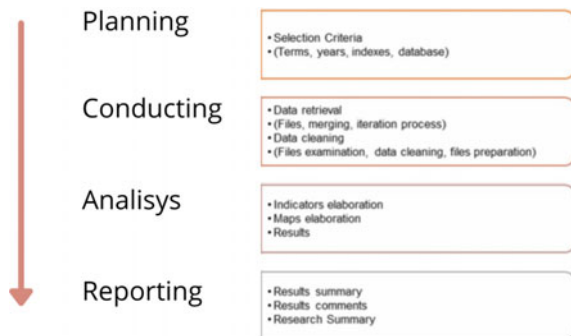
This work raises the following questions to give rise to research (RQ):

- RQ1: What are the main areas and topics of current research in Marina user satisfaction?
- RQ2. What are the main constructs that have been investigated in current research on Marina user satisfaction?
- RQ3. What are the gaps in existing research and possible areas for future research?

Then, we use the secondary sources of data through the search in the different platforms, Web of Science (WoS) and Scopus, where we use the search terms related to the objective of the work that deals with the satisfaction of users in marinas and marinas, finding few or no references using such terms. Using the terms of searches terms more amplios give the scarcity of publications found generating a pilot search as detailed:

- WoS: marina satisfaction + nautical tourism marinas + yacht tourism: 27 documents from 2011 to August 2022
- Scopus; (TITLE-ABS-KEY (marinas AND tourism) AND TITLE-ABS-KEY (nautical AND tourism) AND TITLE-ABS-KEY (Yacht AND tourism) 35 documents from 2005 to August 2022

Fig. 2 Research methodology SLR. *Source* (Abarca et al., 2020; Ramey & Rao, 2011; Schaller et al., 2019)



In addition to the references taken from the first analysis on the publications found, we consider including a number of 8 more references from the Google Scholar reference base. The Google Scholar search also ensured that no important work had gone undetected in the WoS and Scopus searches, summarized in 60 publications. The results obtained were analyzed using the same terms as in the other searches.

In a first view, we observe the existence of a large number of articles directly related to a specific topic that is the Sustainability of Marinas. The most profound analysis of these publications does not lead to the conclusion that the vast majority focus on technical studies far from the purpose enunciated on the satisfaction of users, although obviously, sustainability and social commitments are the aspects to be considered within our objective although far from the service perception of the users.

Specifically, it is a total of 33 articles. Although we discard our work objectives, 8 of them are mentioned as relevant due to the relationship they may have in different studies more focused on the sustainability of marinas and as a complement to our theme addressed (Table 1).

Table 1 Relevant articles on Marina sustainability

Data Base	Authors	Article title	Citations
Wos	Favro and Grzetic (2008)	Nautical tourism—the advantages and effects of development	5
Wos	Bizzarri and La Foresta (2011)	Yachting and pleasure crafts in relation to local development and expansion: Marina di Stabia case study	7
Wos	Andres et al. (2017)	Marine pollution in the nautical seaports in Croatia by the effluent of tourists	57
Wos	Kovacic et al. (2016)	Construction of nautical tourism ports as an incentive to local development	12
Scopus	Rojo (2009)	Economic development versus environmental sustainability: The case of tourist marinas in andalusia	7
Scopus	Carević et al. (2014)	Basic plan dimensions of marinas in Croatia	4
Wos	Martín and Yepes (2019)	The concept of landscape within marinas: Basis for consideration in the management	15
Wos	Dinwoodie; Tuck	Sustainable development of maritime operations in port	62

4 Results

The publications obtained from the databases will be later analyzed according to the aspects they deal with. First of all, we observe the scarcity of articles found in a broad reference deal with user satisfaction in marinas. The following graph shows the number of articles found in the last twelve years (Fig. 3).

Likewise, of the articles found, the important weight of the issuing of Croatian origin stands out—46% of the number of publications—in relation to the rest of European countries, of which Spain, Italy, and Poland also stand out; the latter very much focused on articles related to inland navigation (Fig. 4).

Specifically, the table shown below details the articles obtained through the methodology described and on the basis of data used with the indicated search terms, where a list of 39 publications is offered. This relationship affects the description of some

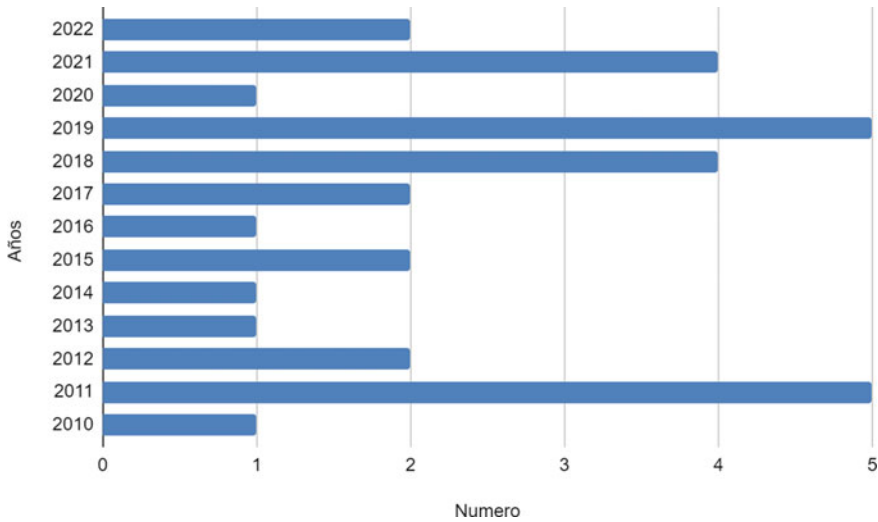
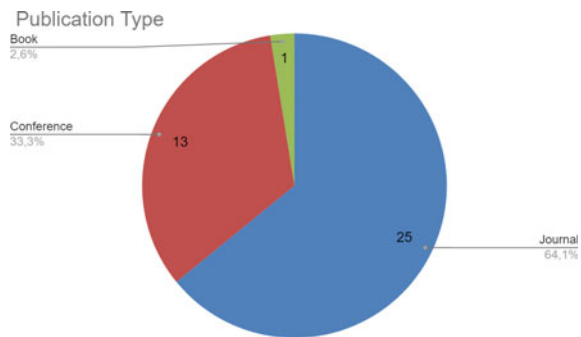


Fig. 3 Number in publications in Marina satisfaction from 2010

Fig. 4 Percentage of publications in Marina satisfaction in the from 2010 by type



of the specific objectives initially set in this study, such as how the publication deals with a specific type of study, quantitative or qualitative, while detailing the type of methodology used in each of the studies. On the other hand, the relationship between the existence of a questionnaire within the study also stands out, given the importance revealed for the study by deciphering the indicators and constructs for future studies (Table 2).

The table below shows, in order of importance, the relationships of impact journals and decreasing order that contain articles and the number of them, on the subject of user satisfaction in marinas (Table 3).

5 Discussion and Conclusions

In this section, we propose to answer the different questions raised in our analysis.

Q1 What are the main areas and topics of current research in Marine user satisfaction?

Table 1 shows publications highlighted in this research along with the development of sustainability itself; within the specific analysis filter applied to the satisfaction of marina users, we find six groups of study areas, specifically: confidence in the service, quality of the service, supply and demand, sustainability but understood as a component of satisfaction and in relation to social responsibility, tourism and technology, and social networks. They are detailed in the following table and related to the articles that deal with the different areas (Table 4).

Trust in the service is shown above all in studies developed in panels of experts and descriptive analyzes (Santos & Perna, 2018; Mundula et al., 2020) and above all the aforementioned work by Parker and Vural (2016) that proposes the segmentation of users that are addressed with quantitative analysis with main components by Benevolo and Spinelli, (2021) and (Shen et al., 2021) in the Kano satisfaction model, both implementing user questionnaires in their analysis. At this point, it is interesting to cite the work of Jovanovic et al. (2013) who, with quantitative methods, address dissatisfaction closely related to the area of service quality, also using questionnaires in their analysis.

The quality of the services, different from the trust in which more personal factors are appreciated (Margariti et al., 2017; Mikulić et al., 2015), is addressed in the selection in comparative studies either between different case studies or in reference to the applicable regulations. As a work where quantitative methods are used, mention the one by Mikulić et al. (2015).

Sustainability is especially addressed in the case studies and in its impact on the local population (Ugolini & Ivaldi, 2017; Mundula et al., 2020) and in the degree of user satisfaction, although not showing it as representative (Shen et al., 2021).

Several articles on supply and demand are also detailed, addressing different sectors, highlighting Lam-González, (2019) and Haas and Heiner (2011), specifically where the niche of large yachts is contemplated.

Table 2 List of articles that address the theme of Satisfaction in Marinas

Data base	Authors	Article title	Test	Tech. type	Methodology	Article title–SciELO
1	Wos Santos and Perma (2018)	Yachts Passing by the West Coast of Portugal—What to Do to Make the Marina and the Destination of Figueira da Foz a Nautical Tourism Reference?	N	DELPHI	SWOT	5
2	Wos Mundula et al. (2020)	Smart Marinas. The Case of Metropolitan City of Cagliari	N	Descriptive	Cluster	0
3	Wos Lazarus et al. (2021)	Yachts and marinas as hotspots of coastal risk	N	Descriptive		2
4	Wos Haas and Heiner (2011)	Marina Management for Super Yachts and Cruise vessels	N	Descriptive		4
5	Wos Dowling (2013)	Nautical Tourism in the Pacific	N	Descriptive	Generalistic	0
6	Wos Rafal et al. (2022)	Conceptual framework of a Global Yacht Positioning System in Poland	N	Descriptive	Case	0
7	Wos Benevolo and Spinelli (2021)	Benefit segmentation of pleasure boaters in Mediterranean marinas: A proposal	Y	Quantitative	CPA	5
8	Wos Parker & Vural	Customer segmentation for marinas: Evaluating marinas as destinations	Y	Qualitative	Cluster	87

(continued)

Table 2 (continued)

Data base	Authors	Article title	Test	Tech. type	Methodology	Article title-SciELO
9	Wos Kovacic et al. (2018)	Nautical Tourism in Croatia and in Portugal in the Late 2010's: Issues and Perspectives	N	Descriptive		2
10	Wos Vukovicand Mišura (2019)	Croatian Maritime Code Reform - Charter and Contract of Nautical Berth	N	Descriptive	Legal	0
11	Wos Ugolini and Ivaldi (2017)	Tourist Ports and Yachting: The Case of Sardinia	Y	Descriptive	Case	1
12	Wos Martin-Vazquez and Yepes (2022)	Impact Analysis of Marinas on Nautical Tourism in Andalusia	Y	DELPHI	SWOT	1
13	Wos Shen et al. (2021)	Perceived importance of and satisfaction with marina attributes in sailing tourism experiences	Y	Quantitative	Kano model	4
14	Wos Almendarez-Hernandez et al., 2020	Economic valuation of sportfishing in the surroundings of Cerralvo Island, Baja California Sur, Mexico using the travel cost method	Y	Qualitative	Travel cost method	1

(continued)

Table 2 (continued)

Data base	Authors	Article title	Test	Tech. type	Methodology	Article title-SciELO
15 Google Scholar	Payeras et al. (2011)	THE YACHTING CHARTER TOURISM SWOT: A BASIC ANALYSIS TO DESIGN MARKETING STRATEGIES	Y	Descriptive	SWOT	15
16 Google Scholar	Alcover et al., 2011	The economic impact of yacht charter tourism on the Balearic economy	Y	Descriptive		69
17 Google Scholar	ÇAKIROĞLU (2019)	A PROPOSED PROJECTION OF THE MARKETING TOOLS FOR THE TRNC MARINAS IN THE INTERNATIONAL MARKETS	N	Descriptive	Generalistic	
18 Google Scholar	Dikeç, and Töz (2017)	The impact of perceived service quality on satisfaction: An application on Marina customers in Turkey	Y	Quantitative	LINKERT 5	3
19 Wos	Mikulić et al. (2015)	Critical Factors of the Maritime Yachting Tourism Experience: An Impact-Asymmetry Analysis of Principal Components	Y	Quantitative	CPA	41

(continued)

Table 2 (continued)

Data base	Authors	Article title	Test	Tech. type	Methodology	Article title-SciELO
20	Jovanovic et al. (2013)	WHAT DEMOTIVATES THE TOURIST? CONSTRAINING FACTORS OF NAUTICAL TOURISM	Y	Quantitative	component exploratory factor analysis (EFA),	65
21	Pojžičak et al. (2022)	Nautical Tourism-Case Study in the Republic of Croatia	N	Qualitative	Regression	
22	Bulum et al. (2021)	Competition Issues in the Croatian Seaport Sector Regarding the Provision of Nautical Tourism Services	N	Qualitative	Description	
23	Maglič et al., 2021	Application of smart technologies in croatian marinas	N	Qualitative	Generalistic	3
24	Luković et al. (2021)	Marina business in SME approaches [Poslovanje marina u pristupima malog i srednjeg poduzetniva]	N	Qualitative	Generalistic	
25	Popielarczyk (2019)	Using a small UAV for nautical ports inventory	N	Qualitative	Case	
26	Benevolo and Spinelli (2019)	The use of websites by Mediterranean tourist ports	Y	Qualitative	2QCV3Q	7
27	Padovan and Voglar (2019)	Marina operator liability insurance in croatian and Slovenian law and practice	N	Qualitative	Classification	

(continued)

Table 2 (continued)

Data base	Authors	Article title	Test	Tech. type	Methodology	Article title-SciELO
28 Scopus	Petrinović and Mandić (2019)	Can marinas qualify as places of refuge?	N	Qualitative	Description	
29 Scopus	Padovan et al. (2018)	Security and enforcement of marina operator's claims: Croatian, Italian and Spanish law perspectives	N	Qualitative	Description	1
30 Scopus	Ivanić et al. (2018)	Nautical tourism: Generator of Croatian economy development	N	Qualitative	Classification	6
31 Scopus	Monteiro et al. (2017)	A microcluster approach applied to the case of the nautical tourism sector of the Algarve region (Portugal)	Y	Qualitative	Cluster	1
32 Scopus	Lam González and De León-Ledesma (2015)	European nautical tourists: Exploring destination image perceptions	Y	Quantitative	LINKERT 5	13
33 Scopus	Stipanović et al. (2012)	The development concept in function of the competitiveness of marina frapa rogoznica [Konceptija razvoja u funkciji konkurentnosti marine Frapa Rogoznica]	Y	Quantitative	Case	2

(continued)

Table 2 (continued)

Data base	Authors	Article title	Test	Tech. type	Methodology	Article title-SciELO
34 Scopus	Franjić et al.	System concept of experience in nautical tourism	N	Qualitative		
35 Scopus	Kasum et al. (2011)	Nautical tourism	N	Quantitative	Correlations	2
36 Scopus	Mateos et al. (2010)	The marinas as infrastructures of it supports of the nautical recreational activities in Andalusia [Los puertos deportivos como infraestructuras de soporte de las actividades náuticas de recreo en Andalucía]	N	Descriptive	Generalistic	9
37 Scopus	Horak et al. (2006)	Competitiveness of Croatian nautical tourism	N	Descriptive		12
38 Scopus	Miočičey et al. (2006)	Internet business of the Croatian marinas	Y	Descriptive		
39 Scopus	Stipanović et al.	Development strategies functioning as ACI marina Umag competitiveness	Y	Descriptive	Case	2

Table 3 List of impact journals of Satisfaction in Marinas. Source: Observatorio de Calidad y Rendimiento de la Universidad de Salamanca

Group authors	Number	ISSN	JCR	WoS	CES indicators	SJR	Scopus	Cat scopus
Journal of Travel & Tourism Marketing	2	10,548,408	1,741	Q2	Social sciences-general	3,49	Q1	Business, Management-Accounting
International Journal of Tourism Research	1	10,992,340	1,095	Q3	Social sciences-general	1,064	Q1	Business, Management-Accounting
Tourism Economics	2	13,548,166	0,392	Q4	Social sciences-general	0,674	Q1	Business, Management-Accounting
Journal of Coastal Research	1	0,749,008	0,852	Q4	Environment-ecology	0,672	Q2	-Earth-Planetary Sciences-Environmental Sciences
Journal of Marine Science and Engineering	1	10,232,796	0,298	Q4	Engineering	0,235	Q3	-Earth-Planetary Sciences-Environmental Sciences

Table 4 Main subjects related in each publication

	Confidence of service	Service quality	Offer and demand	Sustainability	Tourism	TIC & SSN
1	x	x	x	x	x	
2	x	x	x	x	x	x
3	x	x	x			
4		x	x		x	
5		x	x		x	
6		x	x	x	x	x
7	x	x	x		x	
8	x	x	x	x	x	
9			x	x	x	
10		x				
11			x	x		
12		x		x	x	
13	x	x	x		x	
14		x	x		x	
15					x	
16		x	x	x	x	
17			x		x	
18	x	x	x	x		
19	x	x	x	x	x	
20	x				x	
21			x		x	
22		x	x		x	
23		x		x		x
24		x	x	x		
25		x		x	x	
26		x			x	x
27	x					
28		x		x		
29	x	x				
30		x			x	
31			x		x	
32						
33			x		x	
34	x		x		x	
35		x			x	

(continued)

Table 4 (continued)

	Confidence of service	Service quality	Offer and demand	Sustainability	Tourism	TIC & SSN
36		x	x	x	x	
37						
38					x	x
39		x			x	

Technology and the use of social networks is a little-cited area of work, although many articles point out the need to promote work in this line (Mundula et al., 2020; Paker & Vural, 2016). It is worth highlighting the interesting work on positioning by Rafał et al. (2022) as a proposal that connects the activity of several freshwater ports and the use of social networks by Benevolo and Spinelli (2019).

Q2. What are the main constructs that have been investigated in current research on Marina user satisfaction?

As previously mentioned, the satisfaction of the user of the marinas is observed by variables above all related to the quality of the service and the confidence generated, with indicators closely related to the specific services offered by the marina, as detailed above in Fig. 1, and above all those related to essential services such as the quality of the moorings, sanitary services, water quality, attention and professionalism of the staff, etc. It seems correct that any study model should approach the different indicators progressively in terms of satisfaction or dissatisfaction with the services to the extent that the user identifies them as essential or not within their recreational navigation activity.

The different constructs have been contemplated in the studies using different methodologies that are detailed in Table 2 and that we summarize in this Fig. 5

Q3. What are the gaps in existing research and possible areas for future research?

The following figures show the types of analysis carried out (Fig. 6) and which of them contemplate questionnaires (Fig. 7).

In general, it is observed that few studies are carried out with quantitative analyzes and the vast majority of these are based on panels of experts. In general, a deficit is observed in the proposal of questionnaires toward the users of the marinas and even propose new data sources with more segmented users of origin while the satisfaction indicators are extended toward the proposals of tourist services and related to the social interaction (social networks) and the use of technologies in the sector.

The selection of the literature shows, as a whole, a scarce development of the theme, especially focused on the application of advanced study methodologies that require more exhaustive previous developments, such as an account where the ideal indicators are determined that explore the satisfaction of the users of the marinas.

Contemplating the users of the marinas as a diverse and segmented compendium (Paker & Vural, 2016) in the face of both economic and environmental sustainability of the tourist offer (Bizzarri & Foresta, 2011) of the marinas and marinas, the studies focused on these. These objectives require a user orientation beyond the opinions

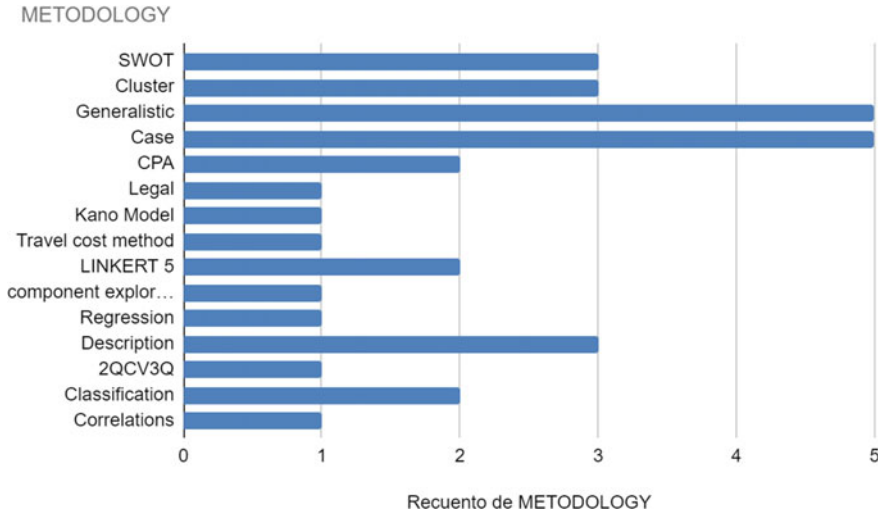


Fig. 5 Frequency of methodologies used in the different studies. Source authors

Fig. 6 Analysis types

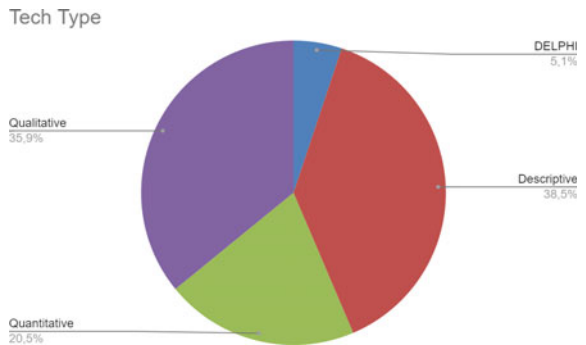
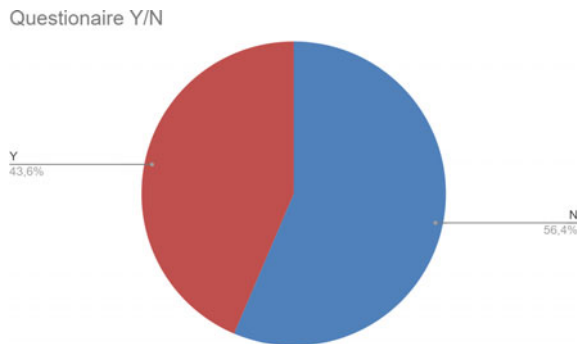


Fig. 7 Frequency of questionnaire



of experts and stakeholders based on Delphi-type methodologies and descriptive analyzes of the sector, which are the basis of the bibliography found in this study. Also, a clear distinction and cl of the services at the time of being assessed within a questionnaire expressed a clearer vision of the critical points in the final assessment of user satisfaction with a clear vision toward the use of statistical methodologies advanced as structural equations and partial least squares with extensive development already in social sciences.

In the same way, the systematic review developed in this study fails to observe a specific work model on which to determine studies on satisfaction, although there are references that can be very encouraging for future methodological development, such as works already developed in the hotel sector (Alcover et al., 2011) or the similarities found with another niche in the tourism market such as golf tourism (Payeras et al., 2011), both endowed with extensive literature.

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