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Perceived importance of and satisfaction with marina attributes in sailing tourism experiences: A kano model approach

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ABSTRACT

The goal of this research was to analyse the factors that are important to sailing tourists in assuring satisfying marina destination experiences. The analysis applied Kano's model to classify attributes that influence tourist satisfaction with marinas. The research was conducted in Denmark and the United Kingdom, two well-known origins of and destinations for sailing tourists. Of the fourteen attributes, clean marina sanitary facilities, helpful service attitudes of marina employees, water and electrical connections, weather, and clean marina grounds were rated highest in importance for sailing experiences. Based on Kano's model, the fourteen marina attributes were categorized into must-be, one-dimensional, attractive, and indifferent. This research gives insights into future strategic management decisions for marina destinations.

Management implications

The results of Kano's model and the customer satisfaction coefficients give insight into future strategic management decisions for stakeholders of marina destinations. This research classified 14 marina attributes into different categories based on Kano's model, having implications for how to strengthen the pull factor of a destination by optimizing the attributes. Marina destinations should have clean sanitary facilities because the cleanliness has a linear relationship with sailing tourists' satisfaction. The five must-be attributes are "bottom-liners": marina destinations should ensure good performance with them to avoid causing dissatisfaction. The seven attractive attributes can be used to gain competitive advantages, such as a tourism information centre, restaurants within the marina grounds, grocery shopping facilities within the marina, personal safety, cultural and entertainment activities, shopping and restaurants in surrounding areas, and less crowding. Although people will not feel dissatisfied with marinas because of bad weather, destinations should offer instant and accurate weather forecasts so that sailing tourists can better plan their trips.

1. Introduction

Europe has a 68,000-km long coastline, which is much longer than that of the United States and Russia (European Environment Agency, 2020). The long coastline offers great opportunities for the development of sailing tourism. Europe has 4500 marinas with 1.75 million berths and a total boat park of 6.3 million vessels (Vlašić, Poldrugovac, & Jankovic, 2019). The nautical tourism sector in Europe creates 234,000 jobs and generates €28 billion in revenue each year. Thirty-six million citizens of the European Union regularly participate in boating activities, keeping about six million vessels in European waters (Ivanić, Hadžić, & Mohović, 2018). As one of the fastest-growing sectors in European tourism, sailing has experienced continuous growth over the past 30 years (European Parliament, 2019).

Sailing tourism is different from other types of outdoor recreation and tourism based on the complexity of its influential factors and distinctive characteristics of sailing tourists. Sailing tourism is a part of nautical tourism, which is defined as *a multifunctional tourist activity with a distinguished maritime component* (Luković, 2013, p. 15). Sailing tourism involves navigation (Luković, 2013), movements on and with water (Rhoden & Kaaristo, 2020), sojourn of tourists on their own or chartered vessels (Luković, 2013), and various maritime activities and

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entertainment (Mikulić, Krešić, & Kožić, 2015). The transition from one port/marina to another, the diversity of ports and marinas, and the requirement of a vessel make sailing tourism different from other leisure activities (Luković, 2013). The sailing tourist experience is significantly influenced by five attributes, including core marina services, onshore destination experiences, charter products, marina supporting products, and basic destination attributes (Mikulić et al., 2015). Additionally, sailing tourists have distinctive characteristics compared to mass tourists. Sailing tourists are often males over 50 years old with high educational levels (Caribbean Tourism Organization, 2016; European Commission, 2016), and they want to enjoy nature, freedom, and flexibility (Butowski, 2018). Apart from Europe, there is growing interest in the development of sailing tourism in other parts of the world, with China and Indonesia representing two notable examples (Mai, 2017; Republic of Indonesia, 2017; To & Lee, 2018).

A majority of the related research literature focuses on the physical aspects of coastal areas and marina development, especially with respect to ecological impacts and sustainability (Łapko, Strulak-Wójcikiewicz, Landowski, & Wieczorek, 2019; Silveira, Santos, & Perna, 2018), sailing safety and communication (Benevolo & Spinelli, 2018; Kasum, Mikuličić, & Kolić, 2018), and the impact of sailing tourism on local economies (Ivanić, Hadžić, & Mohović, 2018). Surprisingly, very few studies have investigated satisfaction with sailing tourism (Gračan & Uran, 2002; González, González, & Ledesma, 2018). These observations suggest there is a major gap in the existing tourism literature and that analysis of sailing tourist requirements and satisfaction levels is needed.

Sailing tourist satisfaction is of significant importance to marina destinations and tourism businesses. Without an adequate understanding of sailing tourist satisfaction, it will pose obstacles to the development of sailing tourism and fulfilment of tourists' recreational needs. Satisfied tourists returning to destinations are essential because the costs of retaining customers are lower than gaining new ones. In contrast, dissatisfied tourists can be detrimental for destinations as they may choose new destinations, complain or create negative word-of-mouth (East, Wright, & Vanhuele, 2013; Song, van der Veen, Li, & Chen, 2012). A majority of studies have confirmed that satisfaction significantly influences repurchase intentions and word-of-mouth recommendations (Lee, 2015). In addition, satisfaction with vacation trips impacts people's recreational experience, which further influences their quality of life (Song et al., 2012). Lacking an understanding of sailing tourist satisfaction may bring difficulty in optimizing the quality of service and tourist experiences. Sailing tourists are significantly different from mass tourists (Butowski, 2018), so the previous research findings on destination satisfaction may not apply to them. Therefore, it is crucial now to comprehend sailing tourist satisfaction. The literature indicates that tourist satisfaction is created through a combination of various attributes of destinations and factors within tourist experiences (Albayrak & Caber, 2013). For sailing tourism, marina attributes play a crucial role in influencing sailing experiences and tourist satisfaction, so this research considered sailing tourist satisfaction by examining the various attributes of marina destinations.

This research focused on testing Danish and British sailing tourists' perceptions of different marina attributes, which are a key part of the sailing tourism product and considered important in the European economy (Luković, 2012). Denmark and the UK have long and proud maritime histories, diversified coastlines, and good harbours (Department for Transport, 2019; DK Travel, 2018). It is critical to understand how sailing tourists perceive the importance of and satisfaction with marina attributes, so this research applied Kano's model for the first time in the investigation of sailing tourism attributes. The marina attributes were classified into different importance categories (i.e., must-be, attractive, one-dimensional, and indifferent), providing useful guidelines on how to better satisfy sailing tourists. The methodology applied through Kano's model overcomes the limitation of importance-performance analysis (IPA), which assumes the relationship between product attributes' performance and overall satisfaction is linear (Matzler, Bailom, Hinterhuber, Renzl, & Pichler, 2004). Overall, the goal of this research was to analyse the factors that create satisfying and dissatisfying experiences for sailing tourists at marina destinations. The three specific research objectives were to:

(1) Determine the perceived importance attached to and rankings of marina attributes.
(2) Categorise marina attributes by applying Kano's model.
(3) Quantify how marina attributes increase satisfaction and decrease dissatisfaction if fulfilled.

This research contributes to understanding the different roles of marina attributes in influencing sailing tourist satisfaction. The categorisation of marina attributes yields practical implications for the development of marina destinations and guiding principles for designing and managing marina destinations that facilitate higher levels of satisfaction.

2. Literature review

2.1. Sailing tourism and marina attributes

Sailing, a type of nautical tourism, is a fast-growing sector with 30 years of continued increases (Papageorgiou, 2016; Luković, 2012). Nautical tourism is defined as nautical recreational marinas and activities (Lück, 2007; Luković, 2013; Salvador et al., 2016) or more specifically as a 'poly-functional tourist activity with a strong maritime component' (Luković, 2012, p. 401), in which sailboat-based activities are a key component. A sailboat is a vessel built with a sailing form which can be used for both sport and recreation purposes. It carries no more than 36 people, is not a cargo vessel and has a tonnage certificate describing it as either for 'private sailing' or 'commercial sailing' (Sariisik, Turkay, & Akova, 2011).

Sailing tourism can be defined as a form of special interest tourism (SIT), involving the use of sailboats for sport or recreation (Sari, Bulut, & Pirnar, 2016). It involves sailboats with keels that are designed to provide the right navigation and manoeuvres through the use of the weight of the crafts (Sariisik et al., 2011). Sailing is an activity carried out for the sake of enjoyment in sailboats and a holiday to either sail or learn how to sail (Caribbean Tourism Organization, 2016). Motivated by a desire to be close to nature along with the kind of freedom and flexibility a sailing vacation brings, sailing tourists are considered high-value visitors who have above-average expenditures (Sari et al., 2016).

The considerable investments of sailing tourists can also be seen in the increasing demand for more comfort onboard sailboats, where they now come with more amenities such as in-mast and in-boom furling systems for main sails and have more sophisticated navigation equipment. When sailing, the voyage itself is an important part of the overall experience, including the amenities ashore and the destinations the sailing tourists visit (European Boating Association, 2013).

The previous research on sailing tourism is divided into several topics: attractiveness and challenges of its development (Silveira, Santos, & Perna, 2018); environmental impacts and sustainability of sailing tourism (Łapko et al., 2019); safety issues in sailing tourism (Kasum et al., 2018); web communication in sailing tourism (Benevolo & Spinelli, 2018); management of sailing tourism (Vukić, Vidan, & Marušić, 2018); and contribution of sailing tourism to local economies (Ivanić, Hadžić, & Mohović, 2018). Some researchers investigated the demand side for sailing tourism. Jovanovic, Dragin, Armenski, Pavic, and Davidovic (2013) evaluated the constraints on nautical tourism in Serbia from the customer perspective and found that constraints decrease with increasing education and income levels. Mikulić et al. (2015) studied yacht tourism in Croatia and defined the dimensions of yachting tourism experiences through a survey of sailing tourists. They produced a five-dimensional structure of the yachting tourism experience, including core marina services, basic destination attributes,

charter products, marina supporting products, and onshore destination experiences. Scottish Enterprise (2010) conducted a consumer survey in a study of sailing tourism in Scotland. The report demonstrated that key developments of Scotland were on the east coast in The Forth and The Tay, which were vital to attract the European market.

Only a few studies have given insights into sailing tourist satisfaction (Gračan & Uran, 2002; González et al., 2018; Mikulić et al., 2015). Researchers have examined how the performance of marinas impact satisfaction. Gračan and Uran (2002) investigated sailing tourists' satisfaction with the services in six ACI marinas using Likert-type scales. They concluded that service efficiency should be improved to enhance the competitiveness of marinas. Mikulić et al. (2015) examined the performance of 24 marina attributes and used exploratory factor analysis to categorise them into five main factors. Other researchers focused on one factor influencing satisfaction. For example, González et al. (2018) adopted the ordinal logistic regression model to measure the impact of the weather on the number of nautical activities. Weather satisfaction was essential for guaranteeing sailing tourists' overall satisfaction. Similar to González's et al. (2018) research, Lam--González's et al. (2019a) study concluded that a positive climatic experience increases tourists' satisfaction with maritime activities. The third stream is about the relationship between destination image, previous experience and sailing tourism satisfaction. Lam-González, León, and de León (2019b) examined tourist satisfaction with visiting Cape Verde using an ordinal logistic approach and proposed that previous satisfactory travel experience leads to higher levels of satisfaction with the sailing destination of Cape Verde. Lam-González, León, and de León (2020) also proposed that the quality of sailing tourism and the diversity of cultural offer increase tourist satisfaction.

The previous literature shows that the relationship between the importance of different marina attributes and sailing tourist satisfaction has not been investigated adequately. Researchers either focused on the performance of marina attributes (Gračan & Uran, 2002; Mikulić et al., 2015) or the relationship between satisfaction and other constructs (Lam-González et al., 2020). Understanding how different marina attributes influence sailing experiences will give insights into prioritizing the enhancement of marina attributes and strategically developing sailing tourism destination.

For the marina attributes, previous researchers focused on one or two marina attributes, such as weather (González et al., 2018) and crowding level (Kuentzel & Heberlein, 2003). Lee and Yoo (2015) identified five attributes of a marina port, including capacity, access, waterfront, program, and price. Mikulić's et al. (2015) research is the first study exploring key drivers of the yachting tourism experience. Based on interviews with 2171 sailing tourists, Mikulić et al. (2015) derived 24 attributes of yachting tourism experience, which were categorized into core marina services, onshore destination experiences, marina supporting products, basic destination attributes, and charter products. Mikulić's et al. (2015) construct of sailing tourism experiences including marina destinations is the most comprehensive one in the literature. Therefore, this research developed the marina attributes based on Mikulić's et al. (2015) research findings.

2.2. Satisfaction studies and measurements

Satisfaction represents overall subjective post-consumption evaluation based on consumer experiences (Oliver, 1980). It can be viewed as a focus on tourists' expectations of and satisfaction with the attributes contributing to the overall tourist experience (Agyeiwaah, Adongo, Dimache, & Wondirad, 2016). Tourist satisfaction is a crucial component of successful destination marketing, as it influences the choice of destination and the decision to revisit (Yoon & Uysal, 2005; Aliman, Hashim, Wahid, & Harudin, 2016). The concept of satisfaction has grown to great importance within the tourism and hospitality field over several decades because higher levels of satisfaction can lead to various positive behaviours and thus contribute to a destination's profitability (Shavanddasht & Schänzel, 2019). The importance of tourist satisfaction is also evident since the consequences of tourists who are dissatisfied can result in switching to new destinations, complaints, or negative word-of-mouth (Bianchi, 2016). Tourist satisfaction has become a strategic necessity for destination management organisations (Della Corte, Sciarelli, Cascella, & Del Gaudio, 2015).

Tourist satisfaction can be measured in several ways (Pizam, Shapoval, & Ellis, 2016). The first approach is to measure overall satisfaction with the service or experience. Several models have been proposed to quantify service quality and customer satisfaction: SERVQUAL (Parasuraman, Zeithaml, & Berry, 1985), ECOSERVE (Khan, 2003), and RENTQUAL (Ekiz, Bavik, & Arasli, 2009). These models measure the different dimensions of service quality. For example, SERVQUAL evaluates service quality from five dimensions including reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman, Zeithaml, & Berry, 1985). As an extension of SERVQUAL, ECOSERVE added eco-tangibles as a new dimension (Khan, 2003). Ekiz et al. (2009) further developed SERVQUAL to measure the service quality of the rental car business, which included 18 items. Although SERVQUAL was widely adopted in hospitality and tourism, it has been criticised for the application of expectations and the gap scoring (Torres, 2014). As the conceptualisation of expectation is difficult to measure, the gap score between expectation and perception is less reliable (Pizam et al., 2016). Additionally, SERVQUAL, ECOSERVE, and RENTQUAL measure the overall satisfaction with a service instead of satisfaction with individual attributes of the service. The expectation with and performance of the attributes cannot be identified through these models.

The second approach is with the assumption that when customers experience the attributes of a service, they form a set of independent evaluations of each attribute (Pizam et al., 2016). In other words, tourist satisfaction is believed to be created through a combination of various attributes of a destination and factors within a tourist experience where the performance of these attributes can be viewed as pull factors making tourists choose one destination over another (Albayrak & Caber, 2013). Researchers use ordinal and discrete rating scales to measure customer satisfaction with an attribute. However, Likert-type scales might lead to an acquiescence bias, as participants tend to give a positive response (Pizam et al., 2016). Another limitation is that using Likert-type scales assumes the relationship between satisfaction and dissatisfaction is linear, but recent studies indicate that this linear relationship is not actually the case (Lee, 2015; Matzler, Renzl, & Rothenberger, 2006). Therefore, Kano's is a valuable model to understand the relationships among attributes and customer satisfaction and explain human needs (Pizam et al., 2016). Kano's model has been widely used for understanding customer opinions (Gregory & Parsa, 2013; Shahin & Zairi, 2009).

2.3. Kano's model and its application in tourism studies

Kano's model is an enrichment of Herzberg's two-factor theory from the 1970s (Füller & Matzler, 2008; Matzler & Sauerwein, 2002). The theory is used to identify primary attributes to improve satisfaction levels (Albayrak & Caber, 2013). Compared to Herzberg's two-factor theory, Kano's model has a wider scope and can more effectively determine the dynamics of customer needs and identify the varying importance of attributes (Hartono & Chuan, 2011). Both Kano's model and Herzberg's two-factor theory emphasise that the level of satisfaction is independent of the level of dissatisfaction. However, there are two main differences between these two theories. First, Kano's model focuses more on customer satisfaction, whereas Herzberg's theory explains job satisfaction. Second, Herzberg proposes two categories of satisfaction generators, including motivators and hygiene factors. The characteristics related to motivators result in satisfaction, and poor performance of hygiene factors causes dissatisfaction (Chan & Baum, 2007a). These two factors are redefined as attractive and must-be factors in Kano's model (Lee & Chen, 2006). Kano also incorporated a third

factor (i.e., one-dimensional), representing the linear relationship between satisfaction and dissatisfaction. Therefore, compared to Herzberg's theory, Kano's model is more applicable for customer satisfaction research because of its focus and multiple classifications. Kano's model is also related to Vroom's expectancy theory as they have the same assumption that people make choices among alternatives based on their perceptions of the extent to which a certain behaviour will result in desired outcomes (Vroom, 1964). Expectancy theory does not specify how to quantify people's perceptions, while Kano's model measures people's perceptions of attributes and classifies attributes into different categories (Fig. 1).

According to Kano's model, three primary factors that influence customer satisfaction include must-be, one-dimensional, and attractive attributes (Alegre & Garau, 2011; Chang, Chen, & Hsu, 2012; Palumbo, 2015):

- ***Must-be attributes***: These basic attributes determine minimum requirements which lead to dissatisfaction if they are not met but do not increase satisfaction if met. Thus, fulfilling these needs will not create positive word-of-mouth; however, not fulfilling them will create dissatisfaction causing negative word-of-mouth (Alegre & Garau, 2011; Lee, 2015; Matzler et al., 2006). For example, in the research of Chang et al. (2012), varied hot spring bath pools, different hot spring facilities, and hospitable and friendly residents were identified as must-be attributes for hot spring destinations.
- ***One-dimensional attributes***: These performance attributes are proportional to performance levels, so high performance levels will generate high tourist satisfaction (Albayrak & Caber, 2013; Füller & Matzler, 2008). If the attributes are not met, they will lead to dissatisfaction (Lee, 2015; Matzler et al., 2006). The influence of these attributes on the overall satisfaction of tourists are symmetric and linear (Palumbo, 2015). For instance, good service in terms of efficiency of the staff, good service in terms of staff attitudes, and good service in terms of staff willingness were one-dimensional attributes for hot spring destinations (Chang et al., 2012).
- ***Attractive attributes***: These are not expressed or expected by consumers, so tourists will not be dissatisfied if these requirements are not met, but they will lead to satisfaction if met (Alegre & Garau, 2011; Lee, 2015). When these attributes are available and requirements are met, this leads to tourists communicating positive word-of-mouth (Lee, 2015; Matzler et al., 2006). Chang et al. (2012) categorized unique history and culture, variety of recreational activities, specific natural scenery, and happiness associations as attractive attributes for hot spring destinations.

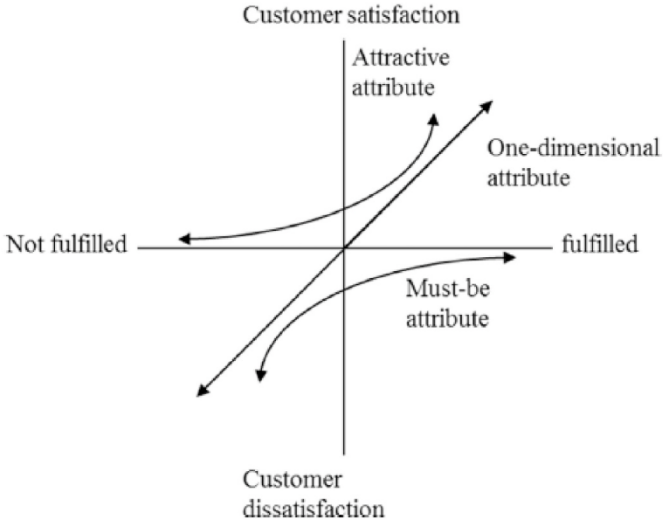

Fig. 1. Kano's model of customer satisfaction (Source: Lin et al., 2017).

In addition to these three factors, Kano also proposed another three: indifferent, questionable and reverse (Palumbo, 2015; Pizam et al., 2016). Customers do not care about indifferent attributes, while questionable attributes are those where customers' attitudes are unclear. Reverse attributes are the ones that customers do not desire: their presence causes dissatisfaction, but their absence results in satisfaction (Chang et al., 2012; Palumbo, 2015).

To further analyse the attributes based on Kano's model, Matzler and Hinterhuber (1998) proposed two formulas to calculate the coefficients for increasing customer satisfaction (C1) and the coefficients for decreasing customer dissatisfaction (C2):

$$\frac{(A+O)}{(A+O+M+I)} \tag{C1}$$

$$\frac{(O+M)}{(A+O+M+I)}(-1) \tag{C2}$$

Note: A, O, M, and I stand for the percentage of attractive, one-dimensional, must-be, and indifferent attributes, respectively.

Kano's model is a powerful tool for creating profitable products or services and has been widely used in consumer behaviour and marketing studies. For example, it has been integrated with SERVQUAL into quality function deployment to provide excellent services (Tan & Pawitra, 2001). This approach helps organisations to evaluate customer satisfaction, identify their weak attributes, and determine attractive attributes that should be embedded into future services.

The basic Kano model (Kano, Seraku, Takahashi, & Tsuji, 1984) has been revised and expanded by incorporating more categories to measure customer satisfaction (e.g., Yang, 2005; Shahin, Pourhamidi, Antony, & Park, 2013; Madzík, 2018). These refinements, while representing new approaches, tend to build on the basic categories of Kano, which remain an effective means to evaluate and measure customer satisfaction. As Madzík (2018) notes, there are merits and deficiencies in all Kano model types, and the basic model appears a better choice as it had fewer deficiencies compared to the later modifications.

Although Kano's model has been used in many studies in marketing, relatively limited research in tourism has employed it to analyse attribute performance and tourist satisfaction (Christensen, Shen, Kokkranikal, & Morrison, 2021). Pai, Yeh and Tang (2018) investigated a chain restaurant in Taiwan and proposed strategies based on Kano's model: As attractive attributes, maintaining the quality of service during busy times and providing individual attention should be strengthened to gain competitive advantages. Chang et al. (2012) applied Kano's model to examine the critical elements of a hot springs destination. They concluded that service efficiency, elements related to staff attitudes, and willingness to serve customers were the critical brand contact elements for the tourist destination. Furthermore, Kano's model has been adopted to develop new services, like a mobile app for tourists visiting Italian cities (Palumbo, 2015). A multilingual option, friendly and efficient user interface and compatibility with different operating systems were identified as must-be attributes, so these functions should be implemented in the mobile app. Although Kano's model has been widely used to evaluate existing and future elements of a product or service, there is no known research that has been conducted in the sailing tourism context. Therefore, this research adopted the basic Kano's model to examine the relationships among marina attributes and sailing tourist satisfaction.

3. Method

3.1. Survey design

Denmark and the UK are two well-known origins of and destinations for sailing tourists (Center for Economic and Business Research, 2019). The primary data were collected through survey questionnaires in both Danish and English. The questionnaire was developed in Danish first and

then translated into English by a bilingual (Danish-English) member of the team. After that, an English native speaker on the team checked the English version. A pre-test was conducted using three English and three Danish speakers to identify potential problems with the questionnaire and to ensure conceptual equivalence. The questionnaire contained 53 questions, divided into three parts. First, respondents were asked about their demographic characteristics, including gender, age, nationality, educational level, and years of sailing experience. The information about their nationality instead of their place of residence was collected because most studies use nationality to categorise respondents (Pizam & Sussmann, 1995). Second, respondents were asked about their attitudes towards 14 attributes of marina destinations. Each attribute was evaluated by three questions (i.e., importance, functional, and dysfunctional) based on the research of Kano's model (Palumbo, 2015). The third part was about behavioural outcomes, including the intention to revisit and intention to recommend.

3.2. Measures

The 14 attributes were selected to understand the perception of the respondents about the importance of the facilities and ambience in marinas. In an earlier study, Mikulić et al. (2015) proposed a five-dimensional structure of the sailing tourism experience, consisting of basic destination attributes, marina supporting services, onshore destination experiences, core marina services, and charter products. This research focused on the former four dimensions related to marina destinations, and the chartering product was not included as not all sailing tourists need to rent a sailing charter. The remaining attributes were modified and revised according to their relevance and by combining those similar attributes. Additionally, two attributes relevant to travel experience were added: weather (González et al., 2018) and less crowding (Kuentzel & Heberlein, 2003). The 14 attributes represent key attributes of a marina that provide functional, performative and excitement experience to sailing tourists.

The measurement was based on Kano's Evaluation Matrix (Table 1). Respondents were asked about perceived importance attached to these attributes, and two (functional/dysfunctional) questions were included for each attribute according to Kano's model (Chang et al., 2012). For example, respondents were asked, *How do you feel if the employees at the marina have a helpful service attitude?* (functional) and *How do you feel if the employees at the marina have an unhelpful service attitude?* (dysfunctional). The answer options included *I like it that way, It must be that way, I am neutral, I can live with it that way, and I dislike it that way* (Lee, Lin, & Wang, 2011; Palumbo, 2015).

3.3. Sampling

Tourism is often a mass phenomenon requiring a large level of involvement, so this research collected data through an e-survey, which was chosen since it is cost-effective, easily accessible, and quick to obtain responses (Blumberg, Cooper, & Schindler, 2014; Veal, 2011). The respondents for this research were a non-probability convenience sample. As sailing tourism is a form of special interest tourism, sailing tourists have their own Facebook groups to communicate sailing experiences and have marina memberships to receive updated information. To reach out to a wide range of respondents, an online survey was distributed through Facebook and to marina members to recruit Danish and British sailing tourists as survey respondents between March and April in 2018. The questionnaire was posted in 35 Danish and 71 British Facebook groups that were created and subscribed to by sailing enthusiasts from the respective countries. For the Danish participants, the keywords "sejle", "lystbåd", "havn", "sejlads", "sejlbåd", "sejlklub", "bådelaug", and "båd" were used to search Facebook groups. For the British Facebook groups, the keywords "marina", "sailing", "sailors", "yacht", "yachting", "cruising", "boat", and "sailboat" were inserted. In addition, the questionnaire was emailed to 153 members of marinas in Denmark and 163 members of marinas in the UK. These contacts were found according to the lists on the website *A Directory of UK Marinas* and *Danish Harbour Pilots*. The questionnaire was online for a month, and a total of 404 valid responses were obtained from the members of the marinas and the Facebook groups/pages. The 404 sailing tourists owned sailboats and went on vacation using those boats at marinas. Their profiles were verified based on the demographic characteristics and years of sailing experience they provided in the survey.

3.4. Analysis

The data were analysed through SPSS following an SPSS codebook (Pallant, 2016). The three research questions were answered by using a variety of statistical techniques. Descriptive analysis was conducted to evaluate the means of perceived importance for each attribute and to create rankings. Each functional-dysfunctional question pair was analysed using cross-tabulations and then evaluated based on Kano's model.

Reliability analysis was conducted to test internal consistency. The Cronbach's alpha for the importance of the 14 attributes was 0.821, which showed a high level of internal consistency for the scale. This research also had good validity as it followed the steps of the research that adopted Kano's model (Chang et al., 2012; Palumbo, 2015). The 14 marina attributes were derived from the scale of a previous study (Mikulić et al., 2015) and adapted to the context of this research. Both functional and dysfunctional questions need to be asked for each attribute of the marina, so the number of examined attributes should be limited to less than 20 to avoid a lengthy questionnaire. This practice has been supported by previous studies, which only included 17 attributes (Chang et al., 2012; Palumbo, 2015). Although some similar marina attributes in Mikulić et al. (2015) were combined and adapted, it did not change the meaning of attributes and still accurately measured the different components of marina destinations.

Table 1
Kano's Evaluation Matrix based on Kano's model (Palumbo, 2015; Pizam et al., 2016).

		Dysfunctional question: How do you feel if the requirement X is not present?				
		I like it that way	It must be that way	I am neutral	I can live with it that way	I dislike in that way
Functional question: How do you feel if the requirement X is present?	I like it that way	Q	A	A	A	O
	It must be that way	R	I	I	I	M
	I am neutral	R	I	I	I	M
	I can live with it that way	R	I	I	I	M
	I dislike in that way	R	R	R	R	Q

Note: A = attractive attributes, O = one-dimensional attributes, M = must-be attributes, I = indifferent attributes, R = reverse attributes, Q = questionable attributes (adapted from Kano et al., 1984).

4. Results

4.1. Characteristics of sailing tourists

The characteristics included in the questionnaire were demographic (nationality, gender, age, education), and sailing experience. In total, 66.8% of the respondents were Danish, and 33.2% were British. Most of the respondents were male (69.4%), which corresponds with the sailing profile in the existing literature. There was not a significant difference by gender across the nationalities. The largest number of respondents were 45–54 years old (27.5%) closely followed by the 55-64 years old (23.3%). So, 50.8% of all respondents were between 45 and 64. The largest age group of British respondents was 55–64 years old (31.2%), while for the Danish it was 45–54 years old (30.6%). This research also found that 51.7% of the respondents had 20 or more years of sailing experience, indicating a high level of attachment to this pursuit.

4.2. Marina and sailing destination attribute importance

Table 2 shows the mean ranking scores for the 14 sailing destination attributes. The top five ranked attributes were clean sanitary facilities, service attitudes of marina employees, water and electrical connections, weather, and clean marina grounds. Attributes ranked as least important were shopping and restaurant opportunities, culture and entertainment opportunities, and restaurants within marina grounds.

Sanitary facilities ($M = 4.16$, $SD = 0.83$) are very important for sailing tourists because they satisfy people's basic needs, and clean sanitary facilities leave a good impression on them. Attitudes of marina employees ($M = 3.89$, $SD = 0.78$) play a crucial role in creating memorable and pleasant sailing experiences. Poor attitudes can result in negative feelings and dissatisfaction. In addition, water and electrical connections ($M = 3.87$, $SD = 0.91$) as well as access to hot and cold water ($M = 3.68$, $SD = 0.95$) guarantee that sailing tourists can get resupplied if they need, so respondents attached more importance to these two attributes. Weather ($M = 3.83$, $SD = 0.89$) is also a critical factor considered by sailing tourists because they are safer when sailing on good weather days while thunderstorms and tornadoes can make their sailing very dangerous. Good berth width and functionality ($M = 3.72$, $SD = 0.86$) and clean marina grounds ($M = 3.81$, $SD = 0.81$) enable sailing tourists to easily dock at marinas, enjoy on-ground facilities, and have positive experiences.

Interestingly, sailing tourists attached less importance to the recreational aspects of marinas, such as less crowding ($M = 3.03$, $SD = 0.70$), tourist information centre ($M = 3.01$, $SD = 0.89$), shopping and restaurant opportunities ($M = 3.01$, $SD = 0.92$), restaurants within marina grounds ($M = 2.97$, $SD = 0.85$), and culture and entertainment opportunities ($M = 2.77$, $SD = 0.84$). These attributes were evaluated with an average about or of less than three, which is the midpoint of a five-point scale. Since having supplements and getting a good rest are the primary purposes for staying at a marina, the recreational aspects are less demanded.

Table 2
Ranking of perceived importance of marina attributes (n = 404).

Rank	Attribute	Perceived importance	
		Mean	SD
1	Clean sanitary facilities	4.16	0.83
2	Service attitudes of marina employees	3.89	0.78
3	Water and electrical connections	3.87	0.91
4	Weather	3.83	0.89
5	Clean marina grounds	3.81	0.81
6	Berth width and functionality	3.72	0.86
7	Access to hot and cold water	3.68	0.95
8	Personal safety	3.29	1.09
9	Grocery shopping opportunities	3.18	0.85
10	Less crowding	3.03	0.70
11	Tourist information centre	3.01	0.89
12	Shopping and restaurant opportunities	3.01	0.92
13	Restaurants within marina grounds	2.97	0.85
14	Culture and entertainment opportunities	2.77	0.84

4.3. Kano's model and attribute categorisation

To better understand how the marina attributes influence tourist satisfaction with sailing tourism, this research adopted Kano's model to investigate the 14 attributes. They were classified into four categories based on Kano's model: must-be, one-dimensional, attractive, and indifferent (Table 3). No attributes were placed in the reverse and questionable attribute categories. The must-be attributes included service attitudes of marina employees, good width and functionality of berths, accessibility to hot and cold water, water and electrical connections for boats, and cleanliness of marina grounds. The positive performance of these attributes does not significantly increase sailing tourist satisfaction levels, but their absence will cause significant dissatisfaction. Marina destinations should pay attention to these basic attributes and ensure their performance meets sailing tourist expectations.

C (1) represents the coefficients for increasing customer satisfaction; C (2) represents the coefficients for decreasing customer dissatisfaction.

Sailing tourist satisfaction levels had a linear relationship with the cleanliness of sanitary facilities as it was a one-dimensional attribute. Clean sanitary facilities lead to higher satisfaction, while dirty facilities result in dissatisfaction. This is connected to sailing tourist explicit needs and desires, and marina destinations should provide cleaner sanitary facilities to attract sailing tourists and become competitive among other marinas.

Several attributes were in the attractive category, including tourism information centres, restaurants within the marina grounds, grocery shopping facilities within the marina, personal safety, cultural and entertainment activities, shopping and restaurants in surrounding areas, and less crowding. Interestingly, these attributes are all related to tourism and recreation. They significantly increase satisfaction levels if delivered but will not result in a decrease in satisfaction if they are not available. Their presence can bring a competitive advantage to a marina destination because such attributes enrich experiences and add value to sailing trips. A marina destination can utilise these attributes to distinguish itself from its competitors and build a good destination image.

Weather on sailing trips was perceived as an indifferent attribute, indicating that good or bad weather had no impact on satisfaction levels with marina destinations. Although the weather was rated as an important factor for sailing experiences, sailing tourists would not attribute bad weather to the destination and did not feel dissatisfied because the weather was not under the control of marinas.

The results of importance ranking and Kano's model showed consistency. The important attributes (except the weather) were plotted in the must-be or one-dimensional categories. As sailing tourists attach importance to them, if the performance of these attributes does not meet people's expectations, they will feel disappointed and dissatisfied. The least important attributes were classified into the attractive category indicating that people do not expect their presence, but if a marina destination offers these facilities or services, sailing tourists will feel more satisfied with their trips.

In addition to Kano's model, the customer satisfaction coefficients were prepared to understand to what extent each marina attribute impacts sailing tourist satisfaction (Fig. 2). The customer satisfaction coefficients were used to quantify how strongly a marina attribute increases satisfaction and decreases dissatisfaction if fulfilled. The data were magnified 100 times and the absolute values were adopted. The numbers indicated how the presence of each attribute increases the degree of satisfaction and decreases the degree of dissatisfaction. The data means ($x = 48.15$; $y = 53.10$) were used to allocate the numbers into four quadrants (Chang et al., 2012). The one-dimensional attribute, the sanitary facilities, was an efficient-improved contact element, which

Table 3
Categorisation of marina attributes by Kano's model and customer satisfaction coefficients.

No.	Marina attributes	A	O	M	I	R	Q	Categorisation	C (1)	C (2)
1	Service attitudes of marina employees	3.99	36.97	53.99	5.05	0.00	0.00	Must-be	0.41	−0.91
2	Good width and functionality of berths	11.92	22.67	50.58	12.50	0.87	1.45	Must-be	0.35	−0.75
3	Clean sanitary facilities	3.33	51.21	41.82	1.21	0.00	2.42	One-dimensional	0.56	−0.95
4	Accessibility to hot and cold water	14.97	30.57	42.99	9.24	0.64	1.59	Must-be	0.47	−0.75
5	Water and electricity connections for the boat	9.51	37.05	40.33	12.13	0.33	0.66	Must-be	0.47	−0.78
6	Tourism information centre	44.63	6.04	21.14	27.18	0.34	0.67	Attractive	0.51	−0.26
7	Restaurants within marina grounds	46.10	4.41	20.68	28.14	0.34	0.34	Attractive	0.51	−0.25
8	Cleanliness of marina grounds	5.12	23.21	61.09	8.87	0.00	1.71	Must-be	0.29	−0.86
9	Grocery shopping facilities within the marina	39.66	8.62	29.66	19.66	2.07	0.35	Attractive	0.50	−0.39
10	Personal safety	33.10	18.82	27.18	9.41	9.76	1.74	Attractive	0.59	−0.52
11	Cultural and entertainment activities	59.36	3.89	10.60	20.50	5.30	0.35	Attractive	0.67	−0.15
12	Shopping and restaurants in surrounding areas	43.26	2.84	22.34	27.31	3.19	1.06	Attractive	0.48	−0.26
13	Weather	14.18	17.38	24.82	42.91	0.71	0.00	Indifferent	0.32	−0.43
14	Less crowding	47.86	2.86	9.29	21.43	17.50	1.07	Attractive	0.62	−0.15

Note: A = attractive attributes, O = one-dimensional attributes, M = must-be attributes, I = indifferent attributes, R = reverse attributes, Q = questionable attributes.

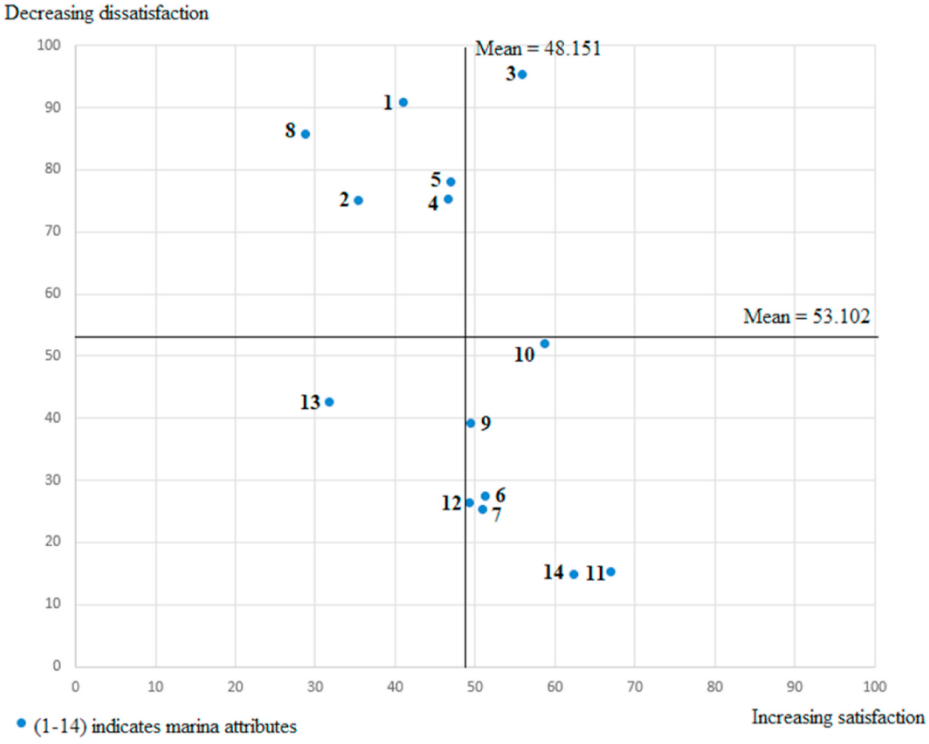

Fig. 2. Display of customer satisfaction coefficient analysis.
Note: 1. Service attitudes; 2. Functionality of berths; 3. Clean sanitary facilities; 4. Accessibility to hot and cold water; 5. Water and electricity connections; 6. Tourism information centre; 7. Restaurants within marinas; 8. Cleanliness of marina grounds; 9. Grocery shopping facilities; 10. Personal safety; 11. Cultural and entertainment activities; 12. Shopping and restaurants in surrounding areas; 13. Weather; 14. Less crowding.

could concurrently increase sailing tourists' satisfaction and decrease their dissatisfaction. Service attitudes of marina employees and cleanliness of marina grounds more effectively decreased dissatisfaction compared to the other must-be attributes, including good width and functionality of berths, accessibility to hot and cold water, and water and electrical connections for boats. Among the attractive attributes, cultural and entertainment activities played a more important role in increasing satisfaction.

5. Conclusions and discussion

This research investigated the marina attributes that impact the satisfaction of sailing tourists using a Kano's model approach. Based on the KEM analysis, 14 marina attributes were grouped into one-dimensional, must-be, attractive, and indifferent categories. The KEM analysis can supplement importance analysis by giving insights into the two essential components of satisfaction levels – increasing satisfaction and decreasing dissatisfaction. Additionally, customer satisfaction coefficients quantify how the presence of each attribute increases the degree of satisfaction and decreases the degree of dissatisfaction.

From the theoretical perspective, this research contributes to understanding the emerging phenomenon of sailing tourism. The previous sailing tourism literature mainly discusses sustainability issues (Łapko et al., 2019), technology applications (Benevolo & Spinelli, 2018), and economic contributions (Ivanić, Hadžić, & Mohović, 2018), and only a few studies examined sailing tourist satisfaction; however, the focus was on the performance of marina attributes or service at specific marina destinations (e.g., Croatia and Cape Verde). As those studies adopted the case study approach, the research generalisation was limited. There is still a lack of understanding of how different marina attributes impact sailing tourist satisfaction. Therefore, this research bridged the literature gap by adopting Kano's model to measure 14 marina attributes. In Mikulić's et al. (2015) research, the performance of marina attributes was investigated. This research is an extension of Mikulić's et al. (2015) work and examined the importance and roles of marina attributes in increasing sailing tourist satisfaction.

This research contributes to the literature on sailing tourist satisfaction. It was found that clean sanitary facilities, service attitudes of marina employees, water and electrical connections, weather, and clean marina grounds were the five most important attributes considered by sailing tourists. Furthermore, the attributes were categorized into four categories: must-be, one-dimensional, attractive, and indifferent. The four categories have different effects on increasing satisfaction and decreasing dissatisfaction. Among all the marina attributes, the cleanliness of the sanitary facilities can both increase satisfaction and reduce dissatisfaction. Service attitudes are one of the most critical must-be attributes, effectively decreasing dissatisfaction. Cultural and entertainment activities are more crucial than other attractive attributes, such as a tourism information centre, restaurants within the marina grounds, and grocery shopping facilities within and outside marina grounds. These findings bridge a gap in the literature and contribute to enhancing the understanding of how various marina attributes influence satisfaction levels of sailing tourists and are guidelines for the design and management of marina destinations that will generate higher levels of visitor satisfaction.

In addition, this investigation expanded the use of Kano's model in tourism and recreation studies by applying it to examine marina attributes. This research demonstrates how to apply Kano's model to test the attributes of sailing destinations. Kano's model can also be used to investigate diverse kinds of tourism products, such as parks, attractions, resorts, restaurants, hotels, casinos, and others. It does not only classify attributes into different categories according to their roles in influencing tourist satisfaction levels but also quantifies to what extent these attributes increase satisfaction and decrease dissatisfaction. The application of Kano's model is, therefore, a useful addition to the range of tools to measure tourism satisfaction and offers unique perspectives on satisfaction and dissatisfaction. It differs from the traditional one-factor theory that assumes satisfaction and dissatisfaction are opposite and form a bipolar continuum (Maddox, 1981). Instead, Kano's model emphasises the dependence of satisfaction and dissatisfaction levels. For example, the improved performance of some attributes (accessibility to hot and cold water, water and electricity connections for the boat) will not directly lead to higher satisfaction but the lack of them will result in dissatisfaction. Also, the relatively poor performance of some attributes (e.g., grocery shopping facilities within the marina) will not cause dissatisfaction while better performance will lead to satisfaction.

From the practical perspective, the results of Kano's model and the customer satisfaction coefficients give insight into future strategic management decisions for stakeholders of marina destinations, such as marina destination organisations, local planning authorities, marine protected area agencies, and others charged with coastal development and protection. This research classified 14 marina attributes into different categories based on Kano's model, having implications for how to strengthen the pull factor of a destination by optimizing the attributes (Chan & Baum, 2007b). Several suggestions are provided for building more attractive marina destinations, which will benefit the sailing industry and local economy.

First, marina destinations should have clean sanitary facilities because the cleanliness has a linear relationship with sailing tourist satisfaction. Cleaner sanitary facilities lead to higher satisfaction whereas unclean sanitary facilities cause dissatisfaction. Therefore, marina destinations need to pay special attention to sanitary facilities, which is an attribute effectively influencing customer satisfaction. The five must-be attributes, including service attitudes of marina employees, good width and functionality of berths, accessibility to hot and cold water, water and electricity connections for the boat, and cleanliness of marina grounds, are "bottom-liners": marina destinations should ensure good performance with them to avoid causing dissatisfaction. The seven attractive attributes can be used to gain competitive advantages, such as a tourism information centre, restaurants within the marina grounds, grocery shopping facilities within the marina, personal safety, cultural and entertainment activities, shopping and restaurants in surrounding areas, and less crowding. For example, if a marina destination has very good grocery shopping facilities, the destination can advertise its shopping to attract more visits and distinguish itself from other marinas. Local planning authorities should consider these attractive attributes when planning a marina destination. The development of a marina destination needs the efforts of all stakeholders. In addition, the weather is an important attribute for sailing tourism experiences. Although people will not feel dissatisfied with marinas because of bad weather, destinations should offer instant and accurate weather forecasts so that sailing tourists can better plan their trips.

This research can be used as a tool for managers in sailing tourism to support future strategic management decisions. It gives an insight into their target markets, along with identifying attributes of importance to sailing tourists to achieve high satisfaction levels and shows the consequences of satisfying and dissatisfying experiences. Knowing target markets more deeply can help to enhance marketing activities, making sure that target markets are reached and their expectations are met. An appreciation of the effects of different attributes on visitor experiences and satisfaction will help marina destinations to ensure the presence of marina attributes that are vital to enhancing visitor satisfaction and avoiding dissatisfaction.

6. Limitations and future research needs

This research has limited generalisation because of its relatively small sample size and sampling method. For instance, as a questionnaire-based survey, it has a small group representation of the opinions of larger groups. Nonetheless, quantitative data provides information in a concise and easily understandable form, even with relatively complex data and gathers information in the population as a whole (Veal, 2011).

Furthermore, volunteer sampling was used to eliminate chance-answers creating bias through over-representation of individuals with similar characteristics (Saunders, Lewis, & Thornhill, 2016). It is also a way for individuals to decide whether to participate, thus mainly attracting people with a genuine interest (Saunders et al., 2016), which was the reason this was done. The research attempted to overcome this limitation by sharing the questionnaire in various relevant groups.

The respondents of this research were sailing tourists who owned sailboats and went on vacation using those boats at marinas. Other types of sailing tourists, such as residents owning a berth and sailing tourists during competitions were not discussed in this study. As the types of sailing tourists may influence their needs and expectations, future studies could apply Kano's model to investigate other types of sailing tourist satisfaction with marina attributes.

If reproduced, the researchers should seek British respondents more actively, as the current numbers were limited, making them less representative. Additionally, this research focused on sailing tourism in Europe. Future studies can be conducted in the Caribbean area, where sailing tourism is also very popular (Caribbean Tourism Organization, 2016). As determined in this research, nationality impacts sailing tourists' perceived importance of marina attributes. Comparing the opinions of sailing tourists in Europe and the Caribbean will result in insightful implications on how to attract different groups of sailing tourists. It is also recommended to conduct focus groups or in-depth interviews to produce a more comprehensive understanding of sailing tourists' requirements, desired experiences, and satisfaction.

CRediT authorship contribution statement

Ye Shen: Conceptualization, Formal analysis, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. **Jithendran Kokkranikal:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Supervision, Validation, Writing – review & editing. **Camilla Paaske Christensen:** Conceptualization, Data curation, Formal analysis, Investigation,

Methodology, Writing – original draft. **Alastair M. Morrison:** Methodology, Supervision, Validation, Writing – review & editing.

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