

## **Motivation and attachment to a diving destination: The case of Medes Islands (Catalonia, Spain)**

### **Abstract**

Motivations and place attachment constructs have been previously used as antecedents of behavioral intentions regarding a destination. Nevertheless, previous studies investigating behavioral intention models have paid little attention to the influence of motivations on place attachment, and the influence of place attachment on behavioral intentions within the same structural model. This paper develops an integrated model to investigate these relationships. Data were collected from recreational scuba divers in Catalonia, Spain. The results suggest that personal escape and personal seeking are the main motivations and these factors influence place dependence and place identity. Other findings indicate that place dependence influences behavioral intentions more than place identity. In addition, the level of involvement in the activity moderates the links between constructs in some of the relationships.

**Keywords:** Scuba diving, motivation, place dependence, place identity, behavioral intentions, involvement

## 1. Introduction

The practice of SCUBA (Self-Contained Underwater Breathing Apparatus) diving has undergone considerable growth in recent years. PADI (the Professional Association of Diving Instructors), one of the most important organizations in the certification of qualifications for the practice of underwater recreational activities, has gone from certifying 107,404 divers in 1980 to more than 900,000 in 2015, with total cumulative certifications reaching 24,000,000 (PADI, 2016). Catalonia (Spain) receives 19.2 million international tourists per year (Idescat, 2016), some of them scuba diving recreationists. The latest available data on the total number of divers indicates that there were 250,000/year, who spent a total of approximately 100 million euros/year (Triadó et al., 2014). Specifically, in the Medes Islands (Catalonia, Spain), which is the diving destination where we have conducted our research, diving activity has an economic impact of 10 million euros/year on the small tourist destination of L'Estartit-Medes Islands (Govern.cat, 2015). These figures indicate how important it is for diving destinations to have an insight into the drivers behind favorable behavioral intentions among recreational scuba divers. However, the administrative regulations of the Medes Islands Marine Reserve have recently been modified. The previous regulation did not allow more than 450 dives per day because it is a marine nature reserve and a protected area (Catalonia Parks, 2017). The success of the diving destination means that every year the number of dives performed was close to the maximum permitted during the summer season, but the rest of the year the demand was not significant. Therefore, policymakers from the public administration and the stakeholder groups (ecologists, scuba diving industry, host community, local government) have been discussing a draft amending the current regulation for the last year – PRUG, 2008 – (Parks of Catalonia, 2017). Finally, a Decree passed by the

Catalonia Government has modified the current regulation, establishing a maximum of 74,876 dives per year for the reservation as a whole (Generalitat of Catalonia, 2018). This opens up an opportunity to get more divers attached to the Medes Islands. Accordingly, managers of the destination must be ready to develop new strategies to attract more scuba divers during the diving season (April to October), taking into account that dives are no longer counted on a daily basis, but instead by annual totals. Hence the need to identify the motivations and attachment factors that make them come to the Medes Islands.

Research into the behavior of scuba divers as consumers of destinations is not plentiful. Published studies have mainly focused on measuring satisfaction with the experience of scuba diving (Musa et al., 2006), satisfaction with environmental, social, service and facilities aspects (Musa, 2002, Palau-Saumell et al., 2014), the effect of diving attitude on responsible underwater behavior (Ong and Musa, 2012) or satisfaction with the diving experience (Ince and Bowen, 2011).

There are also studies that identify the motivations of scuba divers to dive in a specific destination, such as Dearden et al. (2006), who identified diver motivations by level of specialization and satisfaction; Meisel-Lusby and Cottrell (2008) found differences in divers' motivations according their level of development; Edney (2012) described wreck diving motivations; and Lucrezi et al. (2013) observed that the motivations for diving were stronger among the more experienced scuba divers. Bentz et al. (2016a) and Todd et al. (2002) found differences in divers' motivations with regard to their level of specialization or development. However these studies have not analyzed the relationship between motivations and feelings of attachment toward a place, especially when it is known that divers form ties with the places where they spend their recreation time (Kler and Moskwa, 2013). Analyzing this causal

relationship will enable diving destinations to understand the level of impact of divers' motivations on their attachment to the site, and to determine the main motivation that leads scuba divers to become attached to a specific site.

Early tourism literature (Alexandris et al., 2006; Jang et al., 2009; Lee, 2009; Prayag and Ryan, 2012; Yoon and Uysal, 2005) has analyzed place attachment and motivation as antecedents of behavioral intentions, but only in a partial or fragmentary way, such as: satisfaction, place attachment, involvement, and destination image (Prayag and Ryan, 2012); motivations and satisfaction (Lee, 2009); satisfaction and motivation (Yoon & Uysal, 2005); place attachment (Alexandris et al., 2006); and motivations (Jang et al., 2009).

Furthermore, research on scuba divers as consumers in the Medes Islands is not very extensive in the literature. Mundet and Ribera (2001) described the profile of divers who visited the Medes Islands. Palau-Saumell et al. (2014) found differences in the relationships between emotions, value, satisfaction and behavioral intentions of scuba divers related to the diving centers, according to the level of diving involvement. In a more recent study, Rodrigues et al. (2016) highlighted the fact that the changes associated with sea warming and ocean acidification reduce the attractiveness of the Medes Islands for scuba divers. Finally, other studies have measured the negative impact of diving in the Medes Islands, such as Linares et al. (2012), who suggested that the abrasion caused by divers increases the mortality rates of the red coral colonies.

Despite the importance of scuba divers for tourist destinations, no studies in tourism literature have simultaneously examined the structural relationships between motivations and place attachment as antecedents of behavioral intentions in a diving destination, and the moderating effects of involvement in diving. The importance of

analyzing these simultaneous relationships would be justified because the motivations allow Medes Islands' management to understand the relationships between the human factors and the natural environments (Kyle et al., 2004a). Furthermore, attachment reflects the cognitive and emotional connection of the individual with a place and, in turn, this connection influences the likelihood of these individuals' displaying intentions to return, as has been demonstrated in a ski resort (Alexandris et al., 2006), so that divers could show the same behavior toward the Medes Islands. In addition, the search for moderated relationships of involvement allows us to apply the results to a portion of a sample (Wang, 2014), specifically to differentiate between high and low involvement divers, since the literature has found differences between these groups in the attitude-behavior models (Palau-Saumell et al., 2014).

This study aims to provide and test a more comprehensive framework to determine whether motivations are an explanatory factor in predicting attachment to a place, and also whether place attachment contributes to behavioral intentions regarding a dive site. The study also uses the concept of involvement in diving activity as a moderating construct.

## **2. Theoretical background and hypotheses**

### *2.1. Behavioral intentions*

The concept of behavioral intentions is grounded in the theory of planned behavior (TPB), which suggests that behavioral intentions are determined by attitude, subjective norm, and perceived behavioral control (Ajzen, 1991). Behavioral intention is defined as the degree to which a person has formulated conscious plans to carry out a specified future behavior or not (Warshaw and Davis, 1985), that is, behavioral intentions are one's likelihood of conducting a specific behavior (Ajzen, 1991).

Behavioral intentions are commonly associated with customer retention and loyalty (Alexandris et al., 2002), and many studies treat tourists' level of loyalty to tourism destinations and products only as behavioral intentions (Chen and Chen, 2010; Zabkar et al., 2010; Liu et al., 2012), in other words, as Oliver's conative stage of loyalty (Oliver, 1999). Furthermore, loyalty to public spaces, as is the context of this study, means consumers highly identify with, or depend on, the place (Kyle et al., 2004a).

Previous researchers have conceptualized the behavioral intentions construct as *willingness to recommend* (Chen and Tsai, 2007; Lee et al., 2007), *word-of-mouth* and *revisit or repurchase intention* (Bajs, 2015; Forgas-Coll et al., 2017; Ryu, et al., 2008). These variables indicate the tourist's disposition, in his/her future behavior, towards a tourism destination (Um et al., 2006) and are the ones used in this study. The literature on scuba diving has analyzed some of these variables in previous studies, although only partially, such as willingness to return to the Azores Islands (Bentz et al., 2016b), or all of them, such as scuba divers' behavioral intentions toward a dive center (Palau-Saumell et al., 2014). Therefore, the willingness of scuba divers to revisit and recommend destinations and participate in positive word-of-mouth facilitates the tourist flow and helps destination managers to prepare their management strategies. Therefore, these variables will indicate future scuba diver behavior with regard to a specific place, as happens among other types of tourists (Yoon and Uysal, 2005; Zabkar et al., 2010; Prayag and Ryan, 2012).

## 2.2. *Place attachment*

The first studies on attachment emerged from attachment theory, which is defined as a deep emotional bond connecting one person with another over time and space

(Bowlby, 1969). Attachment theory has expanded over recent decades to include other social relationships between people and places (Ramkissoon et al., 2012). Williams et al. (1992) define attachment as a set of positive beliefs and emotional linkages that tourists make with respect to a specific tourist destination. In this sense, place attachment refers to the emotional and symbolic relationships individuals form with recreational resources (Williams and Vaske, 2003). In fact, place attachment is the result of a functional relationship between people and places, which results in an emotional bond between individuals and sites through the repeated interactions between them (Oh et al., 2012). These attitudes then influence people's future behavior, and this has an enduring effect on participants (Houston and Rothschild, 1978).

Tourists and recreationists tend to develop emotions and dependence toward a specific recreation site (Hammitt et al., 2004). If this place is also specialized in diving activities, specialized tourists, such as scuba divers, are more likely to show more preferences toward and dependence on a particular place and, thus, it is more difficult for them to switch to other tourist destinations (Hammitt et al., 2004). For example, scuba divers may become attached to a particular diving destination because of its characteristics, which allow them to enjoy the practice of diving activities.

A number of dimensions related to place attachment have been reported in leisure and tourism literature. Williams et al. (1992) posited that place attachment includes the dimensions place dependence and place identity. Place dependence refers to the collection of social and physical resources meeting visitors' specific activity needs and representing the unique qualities of a place (Williams et al., 1992). Furthermore, place dependence is determined by the characteristics of a specific place and the possibility of comparing it positively with alternative destinations (Halpenny, 2010).

Place identity is the emotional connection that a person develops towards a certain place (Williams et al., 1992). Place identity is also an important factor that contributes to individuals' self-identity. This factor helps people to structure their experiences toward one or more physical places (Halpenny, 2010), and comfortable experiences are important to recreational scuba diving (Dimmock, 2009). One of the few studies that have investigated the place attachment of divers is the one by Moskwa (2012) among South Australian divers. This author showed that local divers experienced greater identification with the dive destination, while visitors showed greater dependence (Moskwa, 2012).

Other authors have added dimensions such as social (Xu and Zhang, 2016), lifestyles (Bricker and Kerstetter, 2000), or have established other dimensions for place attachment (Kaltenborn, 1997), or have combined place attachment variables with involvement variables (Gross and Brown, 2008). In general, literature has broadly discussed place attachment with two dimensions, place dependence and place identity (Hou et al., 2005; Hwang et al., 2005), and this is found to be the most commonly studied (Smith et al., 2010) because people connect to the places as a result of these functional and emotional relationships (Needham and Little, 2013).

The emotional connections of attachment are related to the physical settings that define and structure a person's everyday life (Smith et al., 2010), which in leisure activities leads to individuals identifying with the natural environment (Clayton, 2003).

Some authors have partially tested the relationship, positing that place identity has a positive relationship with attitudinal loyalty (Mechinda et al., 2009). Other authors have identified the direct relationship between place dependence and place identity with behavioral intentions (Alexandris et al., 2006), or between attachment and loyalty



(Xu and Zhang, 2016). In sum, positive attachment to a place may be linked to the willingness of scuba divers to revisit, recommend, and talk positively to others about that place. Therefore, taking into account the results of earlier studies and the lack of empirical evidence within the framework of dive tourism, the hypotheses asserted are as follows:

**H<sub>1</sub>:** Place attachment positively and directly affects behavioral intentions: place dependence (**H<sub>1a</sub>**) and place identity (**H<sub>1b</sub>**) positively and directly affects behavioral intentions.

### *2.3. Motivations*

A widely accepted definition of motivation is that it represents the hypothetical construct used to describe the internal and/or external forces leading to the initiation, direction, intensity, and persistence of behavior, such as a meaningful state of mind which adequately disposes an individual to travel (Dann, 1981). This is especially relevant in recreationists who practice scuba diving, since it is an activity that requires a high degree of involvement and commitment of recreational divers (Ince & Bowen, 2011).

Scuba divers' motivation is a mixture of intrinsic and extrinsic factors (Lucrezi et al., 2013). Intrinsic motivation refers to the fact that the self-satisfaction of an individual is more essential than the benefits achieved externally, while extrinsic motivation refers to the gains reached externally (Ryan and Deci, 2000). These motivations have been identified in previous research on scuba diving, and include factors such as exploring the underwater depths and marine life (Shafer and Inglis,

2000; Ditton et al., 2002; Meyer et al., 2003; Uyerra, Watkinson and Côté, 2009; Edney, 2012), examining the underwater marine life to see large iconic marine species (Anderson et al., 2011; Gallagher and Hammerschlag, 2011; Bentz et al., 2016b), undergoing new experiences, feeling relaxed, and meeting new people (Meisel-Lusby and Cottrell, 2008), as well as some extrinsic motivations (Asafu-Adjaye and Tapsuwan, 2008).

There is no consensus on how to measure the scuba divers' motivations construct. Divers differ in their motivations to dive, and previous literature has used different variables depending on the context. Todd et al. (2002) identified six motivation factors among New York State divers, called personal challenge, stature, escape, learn, adventure, and social interaction. Meyer et al. (2003) collected data among students of a major university, located in north central Florida, who were still in the process of becoming certified scuba divers. These authors found that the main motivations to dive were to look at underwater animal and plant life, experience stimulating and exciting activities, explore things, and for the adventure. Dearden et al. (2006) found different motivations to dive in Phuket (Thailand), such as seeing marine flora and fauna, developing diving skills, exploring new environments, expanding knowledge, and to escape from everyday life. Meisel-Lusby and Cottrell (2008) identified some motivation variables among scuba divers who dive in the Florida Keys (USA), such as seeking new experiences among divers who are beginning, while advanced divers were more concerned with meeting new people, relaxing and using their equipment. Edney (2012) validated motivational variables related to wreck diving, such as to see historical shipwrecks, artifacts and marine life, to penetrate wrecks, and to enjoy the peace and quiet in Chuuk Lagoon (Federated States of Micronesia). Lucrezi et al. (2013) analyzed different motivations in Sodwana

Bay (South Africa) with three scuba diver groups – potential, tourist and hardcore – similar to those described by Rice (1987), and found motivations such as being part of an expedition, acquiring new skills, and overcoming fear, in the first group; relaxing and getting away from routine and having fun, in the second; and always diving here, in the third group. Giglio et al. (2015) found that the motivations to return to Abrolhos National Marine Park (Brazil) were historical shipwrecks, coral diversity, and fish diversity among experienced divers, while for novices the main reasons were diversity of fish, social, and personal diving skills. Bentz et al. (2016a) identified differences in the motivations of scuba divers who go diving in the Azores Islands, depending on where they came from. Divers from southern Europe were motivated by underwater visibility, the abundance of fish and easy diving conditions, while Western Europeans were motivated by unpolluted and uncrowded diving sites. In sum, all these studies analyze seeking and escaping motivations, but in no cases do they differentiate between personal and interpersonal or are they related to attachment to a destination.

The theory of leisure motivation, which inspires this study, comprises elements of seeking (intrinsic rewards) and escaping (routine environments) (Iso-Ahola, 1982). Seeking elements are the motivations that drive people to act to satisfy needs, while escaping refers to the motives that drive people to break with everyday routine. The theory also states that the psychological benefits of travel arise from the interaction between escaping and seeking and the personal and interpersonal dimensions. In this sense, neither element is exclusive and an individual may be committed to both at the same time, so both dimensions have a psychological component (personal) and a social component (interpersonal) (Dunn Ross and Iso-Ahola, 1991).

Snepenger et al. (2006) operationalized and empirically tested Iso-Ahola's theory for similar tourism and recreation experiences and awarded equal and direct salience

to each of the four dimensions of motivation: personal seeking, personal escape, interpersonal escape and interpersonal seeking. These motives are considered latent and act as push factors as an individual pursues recreational activities. However, few researchers have tested the motivation dimensions of Iso-Ahola (Snepenger et al., 2006), nor are there studies relating the four dimensions with place attachment.

Although the theory of planned behavior suggests that motivations may influence attitude (Fishbein and Ajzen, 1975), and place attachment can be considered an attitudinal construct (Kyle et al., 2004a), in fact, the relationship between motivations and place attachment has only been tested using a reduced version of the REP scale (Kyle et al., 2004b). These authors found numerous relationships between the dimensions of motivations and those of attachment. So, based on this previous literature and the knowledge that traveler's motivations produce a positive effect on attitude (Hsu and Huang, 2012), the following hypotheses are proposed:

**H<sub>2</sub>:** Personal escape positively and directly affects place dependence (**H<sub>2a</sub>**) and place identity (**H<sub>2b</sub>**).

**H<sub>3</sub>:** Interpersonal escape positively and directly affects place dependence (**H<sub>3a</sub>**) and place identity (**H<sub>3b</sub>**).

**H<sub>4</sub>:** Personal seeking positively and directly affects place dependence (**H<sub>4a</sub>**) and place identity (**H<sub>4b</sub>**).

**H<sub>5</sub>:** Interpersonal seeking positively and directly affects place dependence (**H<sub>5a</sub>**) and place identity (**H<sub>5b</sub>**).

#### *2.4. Involvement*

Involvement can be defined as an unobservable state of motivation arousal, or interest in the consumption of a product category, recreational activity or object (Rothschild, 1984). Early literature classified it as situational, enduring, and response involvement (Houston and Rotchschild, 1978). Enduring involvement, which is analyzed in this study, involves people paying attention to objects or things for relatively longer periods of time (Huang et al., 2010), and refers to a person's constant preoccupation with an activity (Styvén, 2010).

Involvement has been treated as either a multidimensional construct (Havitz et al., 2013) or as a single construct (Beldoa et al., 2010; Ferns and Walls, 2012). Furthermore, existing literature supports both the unidimensionality of involvement and involvement as a moderating variable (Chen and Tsai, 2008; Olsen, 2007; Palau-Saumell et al., 2014; Wang, 2014). Samples from the studies were split into two groups: those showing a high degree of involvement, and those showing a low degree of involvement (Alexandris et al., 2013; Dwyer, 2011), allowing discrepancies between the groups to be identified.

Studies on tourism have found that involvement has a higher influence on the relationship between emotions and behavioral intentions in groups that have low-level involvement, than those with high-level involvement in a sample of airline passengers (Wang, 2014). In contrast, Palau-Saumell et al. (2014) found that scuba divers showing a high level of involvement influence the relationship between emotions and behavioral intentions more than those with low involvement. Therefore, in this type of low-level involvement situation, a scuba diver's place identity perception has a stronger impact on behavioral intentions. Based on the theoretical and empirical background, the following sub-hypotheses of H6 were expected:

*H6a:* Place dependence has a greater positive effect on behavioral intentions when the level of involvement is low than when the level of involvement is high.

*H6b:* Place identity has a greater positive effect on behavioral intentions when the level of involvement is high than when the level of involvement is low.

Previous research identified that motivation was an antecedent of enduring involvement (Iwasaki and Havitz, 2004). In contrast, Josiam et al. (1999) find that tourists who are motivated by the push and pull factors of the destination are those with a high level of involvement in travelling. So, highly involved scuba divers will influence the relationships of personal and interpersonal escape and seeking and place attachment (place dependence and place identity) more. Consequently, and based on the above literature, tourists' involvement will moderate the following hypotheses:

*H6c:* Involvement moderates the relationship between personal escape and place attachment, such that the effect is stronger for high involvement.

*H6d:* Involvement moderates the relationship between interpersonal escape and place attachment, such that the effect is stronger for high involvement.

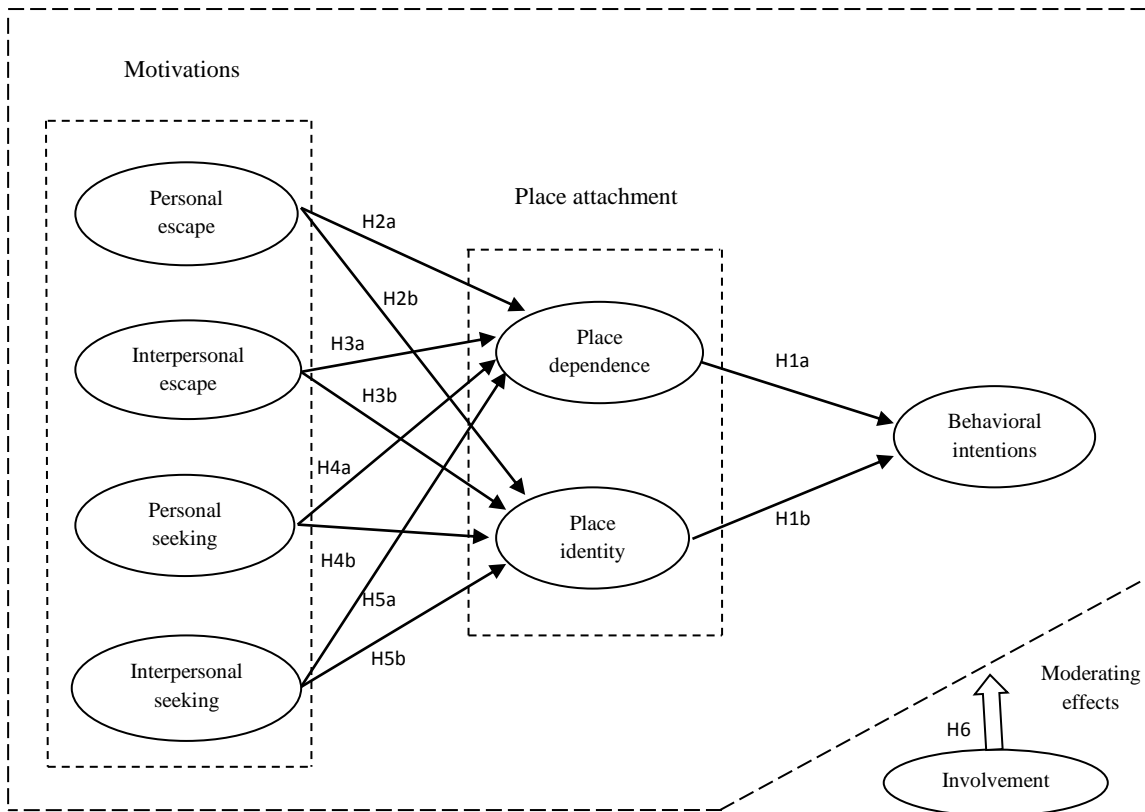
*H6e:* Involvement moderates the relationship between personal seeking and place attachment, such that the effect is stronger for high involvement.

*H6f:* Involvement moderates the relationship between interpersonal seeking and place attachment, such that the effect is stronger for high involvement.

A summary of the hypotheses is highlighted in Table 1. The relationships and the corresponding hypotheses are also illustrated in Figure 1.

**Table 1.** Hypotheses summary

Hypothesis number	Hypotheses
H1 (H1a)	Place attachment positively and directly affects behavioral intentions: place dependence and place identity (H1b) positively and directly affects behavioral intentions.
H2 (H2b)	Personal escape positively and directly affects place dependence (H2a) and place identity (H2b)
H3 (H3b)	Interpersonal escape positively and directly affects place dependence (H3a) and place identity (H3b)
H4 (H4b)	Personal seeking positively and directly affects place dependence (H4a) and place identity (H4b)
H5 (H5b)	Interpersonal seeking positively and directly affects place dependence (H5a) and place identity (H5b)
H6	Place dependence has a greater positive effect on behavioral intentions when the level of involvement is low than when the level of involvement is high (H6a) Place identity has a greater positive effect on behavioral intentions when the level of involvement is high than when the level of involvement is low (H6b) Involvement moderates the relationship between personal escape and place attachment, such that the effect is stronger for high involvement (H6c) Involvement moderates the relationship between interpersonal escape and place attachment, such that the effect is stronger for high involvement (H6d) Involvement moderates the relationship between personal seeking and place attachment, such that the effect is stronger for high involvement (H6e) Involvement moderates the relationship between interpersonal seeking and place attachment, such that the effect is stronger for high involvement (H6f)



**Figure 1.** Structural model. **Methodology**

### 3.1. Measures

The questionnaire was designed following a review of the relevant tourism literature and the theoretical framework. All measurement items, validated in previous studies, were adapted to make them appropriate to the scuba diving context. Motivation is evaluated using twelve items based on the work of Snepenger et al. (2006). Place attachment is composed of place dependence and place identity, and three items were taken from each dimension and adapted from the study by Hou et al. (2005). This second part also included behavioral intentions, which were operationalized using three items: revisit, recommend, and word-of-mouth intentions (Lee, 2009).

Concerning the moderating effects of involvement, previous literature on scuba diving has used four items of enduring involvement to measure the affective dimension of recreation specialization as an independent variable (Thapa et al., 2005), and as a moderating effect (Thapa et al., 2006). However, in this research, it was decided to use the adapted items of Olsen (2007), despite the similarity with the items of Thapa et al. (2005, 2006), since they had been validated in previous research on scuba divers (Palau-Saumell et al., 2014). So, four items adapted from the study by Olsen (2007) were used to assess enduring involvement with scuba diving: *'Diving is important to me'*, *'Diving is one of the things that I enjoy most'*, *'I am extremely motivated to scuba dive'*, *'Being able to go diving in my free time is very important for me'*. Finally, the third part includes five items designed to gather information regarding gender, age, education, and income.

Items on the questionnaire were rated using a 5-point Likert scale, where 1 = completely disagree and 5 = completely agree. A review of the items was carried out



by means of qualitative interviews with trained divers at established and experienced SCUBA Diving Centers. In addition, the items on the questionnaire were pre-tested by means of 50 individual interviews to ensure and validate it.

### *3.2. Data collection and sampling*

The study was carried out at Medes Islands Natural Park (Costa Brava, Catalonia, Spain), and is part of a larger project on scuba divers' behavioral intentions. The small archipelago of the Medes Islands has seven islets, and lies only a mile off the coast at L'Estartit (Catalonia, Spain), a calm and small coastal village of 3,500 inhabitants, which can multiply its population by three in the summer season. The Medes Islands are one of the most important marine reserves in the Mediterranean (Estació Náutica Estartit, 2017) with a total integral nature reserve of 23 hectares (42°03'00"N 3°13'15"E), famous for its coralligenous habitat with emblematic natural features (Rodrigues et al., 2016).

The data used for this study was collected from the port of L'Estartit, where the scuba divers embark and disembark to and from the Medes Islands, and were gathered using a convenience sampling strategy. Scuba divers were asked to think about their motivations for going diving, their attachment to the Medes Islands, and their level of involvement in diving. Tourist divers completed the survey, during the entire high season of diving, which runs from the beginning of July to the end of September, on a voluntary basis while waiting to board or disembark after diving. In total, 475 individual interviews were carried out, but 21 were in some way incomplete or had a defect, and were therefore excluded, leaving 454 interviews, which were finally used in the study.

The results indicated that the majority of divers (83%) were under 54 years of age, and were males (71%). The four dominant age groups were between 25 and 34 years old (21%), 35 to 44 (28%), 45 to 54 (26%), and 55 to 64 (15%). Among the respondents, French divers and those from Benelux constituted a higher percentage (74%) than Spaniards (23%). This majority of French and Belgian scuba divers also coincides with the samples of other authors (Mundet and Ribera, 2001; Rodrigues et al., 2016) among scuba divers in Medes Islands. These nationalities were identified as the most relevant percentage, which confirms that the scuba divers of these nationalities in the Medes Islands are still predominant.

In terms of educational background, the majority of the respondents (60%) held a university degree.

### *3.3. Method of analysis*

Structural equation models were used to analyze the data in order to test Hypotheses 1 to 5, and Hypothesis 6 was tested using a multi-group analysis. The maximum likelihood procedure was used to estimate the models from the matrices of variances and covariances, using EQS 6.2 statistical software (Bentler, 1995). We began by analyzing the scale's dimensionality, reliability and validity. This was followed by a verification of the scale's invariance, then the regression coefficients of each sample (both low-level involvement and high-level involvement scuba divers (H<sub>6</sub>) were compared. The causal relationships for the entire sample were determined beforehand to test Hypotheses 1 to 5.

## **4. Results**

### *4.1. Validation of scale and invariance test*

Table 2 presents the goodness-of-fit indices of the proposed model, and a good fit to the data is indicated. ( $\chi^2 = 173.361$ ,  $df = 152$ ,  $P = 0.113$ ;  $RMSEA = 0.018$ ;  $CFI = 0.995$ ;  $NNFI = 0.993$ ) (Jöreskog and Sörbom, 1996). The convergent validity is proved because the factor loadings are significant and greater than 0.5 (Hair et al., 2006), and the average variance extracted (AVE) for each factor is above 0.5 (Fornell and Larcker, 1981) with levels that ranged from 0.58 (personal escape) to 0.79 (behavioral intentions). The scale's reliability is proven, because the composite reliability indices for each dimension obtained are above 0.6 (Bagozzi and Yi, 1988), with levels that ranged from 0.76 (personal escape) to 0.91 (behavioral intentions).

**Table 2.** Analysis of the dimensionality, reliability and validity of the scale (Fully standardized solution)

Items	Factor loading	t-Value
Personal escape (CR=0.76; AVE=0.58)		
To get away from my normal environment	0.65**	15.46
To change my daily life for a natural and sustainable environment	0.83**	19.85
To overcome my daily problems	0.66**	15.37
Interpersonal escape (CR=0.84; AVE=0.68)		
To avoid people who annoy me	0.86**	19.48
To get away from a stressful social environment	0.82**	18.41
To avoid interactions with mass tourism	0.70**	17.18
Personal seeking (CR=0.87; AVE=0.72)		
To tell others about my sustainable diving experiences	0.69**	16.95
To feel good about myself in a sustainable tourism environment	0.90**	23.85
To experience new diving activities by myself	0.89**	24.69
Interpersonal seeking (CR=0.81; AVE=0.64)		
To be with people with similar sustainable tourism interests	0.62**	11.50
To bring family and friends closer	0.89**	24.43
To meet new divers committed to nature	0.77**	19.80
Attachment (Place dependence) (CR=0.78; AVE=0.61)		
The Medes Islands cannot be substituted by other diving destinations	0.71**	16.41
The Medes Islands is the best diving destination on the Costa Brava.	0.85**	22.78
The Medes Islands has sufficient diving services	0.64**	13.82
Attachment (Place identity) (CR=0.87; AVE=0.72)		
I strongly identify with the Medes Islands	0.87**	24.94
I am proud of the Medes Islands after sharing its seabed with others	0.89**	26.93
To go on a diving trip to the Medes Islands says a lot about who I am	0.71**	18.60
Behavioral intentions (CR=0.91; AVE=0.79)		
Willingness to revisit	0.81**	16.20
Willingness to recommend to others	0.98**	22.99
Positive word-of-mouth to others	0.84**	15.41

Note: Fit of the model:  $\chi^2=173.3614$ ,  $df=152$ ,  $P=0.11316$ ;  $RMSEA=0.018$ ;  $CFI= 0.995$ ;  $NNFI=0.993$   
 CR= Composite reliability; AVE=Average Variance Extracted; \*\*  $p<.01$

The discriminant validity of the constructs are presented in Table 3, and were evaluated by extracting the AVE (Fornell and Larcker, 1981). The square roots of the AVE are larger than the correlations among the constructs, substantiating the discriminant validity of the constructs (Hair et al., 2006).

**Table 3.** Discriminant validity of the scale

	1	2	3	4	5	6	7
1. Personal escape	0.76						
2. Interpersonal escape	0.14*	0.83					
3. Personal seeking	0.21**	0.11*	0.85				
4. Interpersonal seeking	0.42**	0.22**	0.52**	0.80			
5. Place dependence	0.43**	0.12*	0.37**	0.32**	0.78		
6. Place identity	0.48**	0.20**	0.33**	0.39**	0.62**	0.85	
7. Behavioral intentions	0.11*	0.15**	0.19**	0.19**	0.38**	0.29**	0.89

Below the diagonal: correlation estimated between the factors. Diagonal: square root of AVE. \* p<.05; \*\* p<.0

To test the moderating effect of involvement, a four-item scale was tested using confirmatory factor analysis and accepted. The scale was validated because all of the factor loadings were greater than 0.6 (between 0.61 and 0.83), which generated a composite reliability (CR) of 0.82 and an AVE of 0.61. Furthermore, the model presents an adequate fit, given that the probability associated with chi-squared ( $\chi^2$ ) is greater than 0.05 (0.160). Groups with different levels of involvement were obtained using cluster analysis, in which a hierarchical cluster formed first. Once all the cluster centers were obtained, then a k-means cluster analysis was used, yielding two groups. The first group, showing low-level involvement (values between 2.35 and 3.59), comprised 234 respondents. The second group, showing high-level involvement (values between 3.94 and 4.70), was made up of 220 cases.

Next, we focused on calculating the invariance of the measuring instrument (Table 4), before verifying the differences between groups, regarding the parameters that are common to the groups studied (Byrne, 2006; Hair et al., 2006). In stage one, the model is considered on an individual basis for each of the samples. Table 4 shows a

good fit in each sample: high involvement ( $\chi^2 = 293.592$ ;  $df = 152$ ;  $RMSA = 0.052$ ;  $SRMR = 0.048$ ;  $CFI = 0.984$ ;  $NNFI = 0.978$ ) and low involvement ( $\chi^2 = 303.499$ ;  $df = 152$ ;  $RMSA = 0.047$ ;  $SRMR = 0.052$ ;  $CFI = 0.978$ ;  $NNFI = 0.976$ ). During stage two, the model is estimated in both of the samples simultaneously, in order to verify that the number of factors is equal and they have the same shape. The model shows an adequate fit ( $\chi^2 = 597.091$ ;  $df = 304$ ;  $RMSA = 0.053$ ;  $SRMR = 0.054$ ;  $CFI = 0.981$ ;  $NNFI = 0.974$ ). The third, and final, stage deals with metrical invariance, or the similarity of the factor loadings in both groups. We observed that introducing this restriction into the model does not lead to a significantly worse the fit than that in stage two, as deduced from the comparison between the  $\chi^2$  of steps 2 and 3 ( $\Delta\chi^2 = 23.247$ ;  $\Delta df = 21$ ;  $p = 0.330 > 0.05$ ;  $RMSA = 0.051$ ;  $SRMR = 0.057$ ;  $CFI = 0.979$ ;  $NNFI = 0.972$ ). Therefore, the invariance of the factor loadings is confirmed (Hair et al., 2006).

**Table 4.** Invariance measurement test

	$\chi^2$	$df$	$\Delta \chi^2$	$\Delta df$	$p$	RMSEA (90%CI)	SRMR	CFI	NNFI
Individual groups:									
High involvement	293.592	152				0.052 (0.042-0.062)	0.048	0.984	0.978
Low involvement	303.499	152				0.047 (0.036-0.058)	0.052	0.978	0.976
Invariance measurement:									
Simultaneous model	597.091	304				0.053 (0.041-0.065)	0.054	0.981	0.974
Model with restricted factor loadings	620.338	325	23.247	21	0.3309	0.051 (0.042-0.060)	0.057	0.979	0.972

#### 4.2. Causal relationships and moderating effects

The structural model fitted the data well, taking into account that the probability of chi-squared is higher than 0.05 (0.091), CFI is close to unity (0.995) and RMSEA is close to zero (0.018). Additionally, the variance in place dependence del ( $R^2=0.30$ ) was explained by personal escape and personal seeking, the variance in place identity

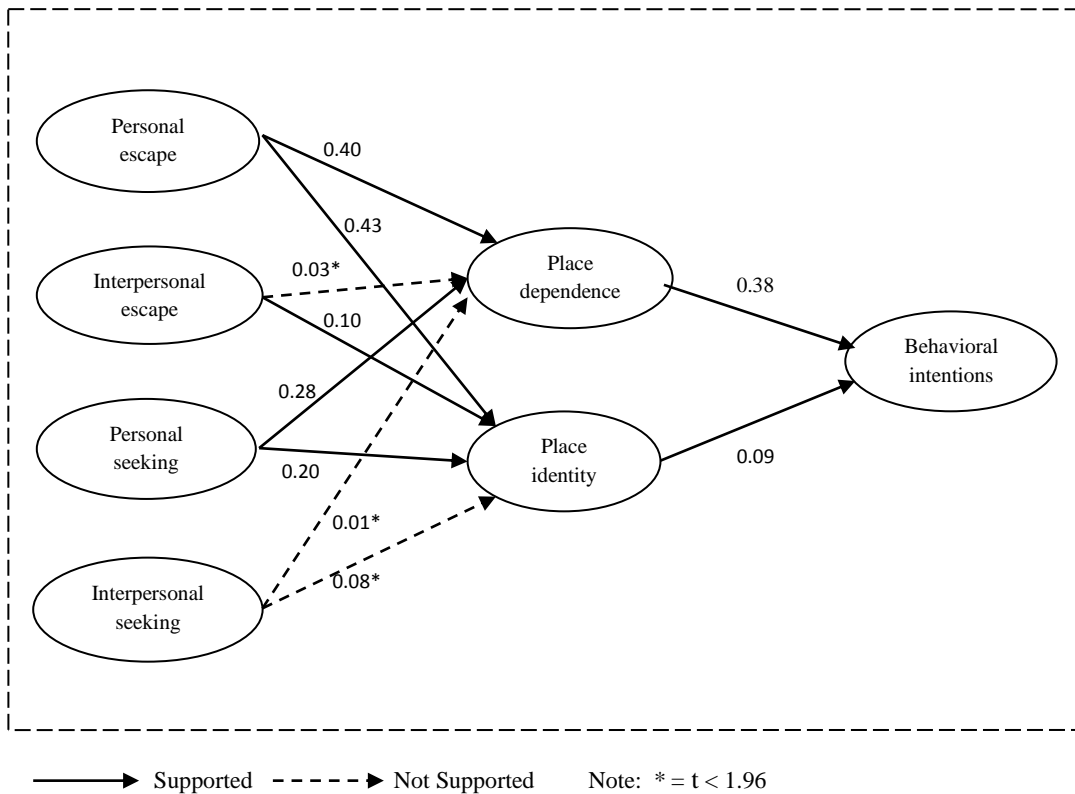
( $R^2=0.34$ ) can be attributed to personal and interpersonal escape and personal seeking, and the variance in behavioral intentions ( $R^2=0.21$ ) was due to the direct effects of place dependence and place identity, suggesting that the current model could foresee and explain customer behavioral intentions effectively.

The analytical results indicated that the relationships postulated in the model are partly upheld for the whole sample (Table 5 and Figure 2). As expected, behavioral intentions are positively influenced by place dependence ( $\beta_{31} = 0.38$ , t-value = 6.46,  $p < 0.01$ ) and place identity ( $\beta_{32} = 0.09$ , t-value = 1.97,  $p < 0.05$ ), supporting H<sub>1</sub>. Personal escape has a direct and positive effect on place dependence ( $\gamma_{11} = 0.40$ , t-value = 5.39,  $p < 0.01$ ) and place identity ( $\gamma_{21} = 0.43$ , t-value = 5.96,  $p < 0.01$ ), so H<sub>2</sub> is supported. However, of the H<sub>3</sub> that proposed relationships between interpersonal escape and the dimensions of place attachment, only interpersonal escape was found to have a significant positive effect on place identity ( $\gamma_{22} = 0.10$ , t-value = 2.03,  $p < 0.05$ ), while the relationship between interpersonal escape and place dependence was not supported ( $\gamma_{12} = 0.03$ , t-value = 0.43,  $p > 0.05$ ). The relationship between personal seeking and place dependence ( $\gamma_{13} = 0.28$ , t-value = 3.90,  $p < 0.01$ ) and place identity ( $\gamma_{23} = 0.20$ , t-value = 3.32,  $p < 0.01$ ) are supported, providing support for H<sub>4</sub>. In contrast, interpersonal seeking was not significantly related to place dependence ( $\gamma_{14} = 0.01$ , t-value = 0.19,  $p > 0.05$ ) and place identity ( $\gamma_{24} = 0.08$ , t-value = 1.07,  $p > 0.05$ ), indicating that H<sub>5</sub> was not supported. These findings suggested that all of the hypotheses were supported except for Hypothesis 5 and partially for Hypothesis 3.

**Table 5.** Structural model relationships for total sample

Hypothesis	Path	Parameter	t	Support
H <sub>1</sub>	Place attachment → Behavioral intentions			Yes
H <sub>1a</sub>	β <sub>31</sub> Place dependence → Behavioral intentions	0.38	6.46**	
H <sub>1b</sub>	β <sub>32</sub> Place identity → Behavioral intentions	0.09	1.97*	
H <sub>2</sub>	Personal escape → Attachment			Yes
H <sub>2a</sub>	γ <sub>11</sub> Personal escape → Place dependence	0.40	5.39**	
H <sub>2b</sub>	γ <sub>21</sub> Personal escape → Place identity	0.43	5.96**	
H <sub>3</sub>	Interpersonal escape → Attachment			Partially
H <sub>3a</sub>	γ <sub>12</sub> Interpersonal escape → Place dependence	0.03	0.43	
H <sub>3b</sub>	γ <sub>22</sub> Interpersonal escape → Place identity	0.10	2.03*	
H <sub>4</sub>	Personal seeking → Attachment			Yes
H <sub>4a</sub>	γ <sub>13</sub> Personal seeking → Place dependence	0.28	3.90**	
H <sub>4b</sub>	γ <sub>23</sub> Personal seeking → Place identity	0.20	3.32**	
H <sub>5</sub>	Interpersonal seeking → Attachment			No
H <sub>5a</sub>	γ <sub>14</sub> Interpersonal seeking → Place dependence	0.01	0.19	
H <sub>5b</sub>	γ <sub>24</sub> Interpersonal seeking → Place identity	0.08	1.07	

Note: Fit of the model:  $\chi^2=197.1575$ ;  $df=172$ ,  $P=0.09161$ ;  $RMSEA=0.018$ ;  $CFI=0.995$ ;  $NNFI=0.994$ .  
 \*  $p<.05$ ; \*\*  $p<.01$



**Figure 2.** Structural model results (whole sample)

The moderating effect of the levels of involvement was also analyzed (Table 6 and Figure 3). In order to calculate marked differences between the estimated parameters, we added restrictions by comparing the  $\chi^2$  of the restricted structural model with the  $\chi^2$  of the unrestricted structural model, thus testing the proposed hypothesis (H<sub>6</sub>). This is illustrated in Table 4.

The analysis undertaken to show the causal relationships between the variables studied proves adequate, as the probability of the chi-squared is higher than 0.05 (0.138), CFI is close to unity (0.993), and RMSEA is close to zero (0.021).

The results show that the degree of involvement moderates some relationships in the model. In fact, when a moderator effect of involvement occurs, this finding disproves the null hypothesis of equality of the parameters. So, H<sub>6</sub> is only partially confirmed (Table 6 and Figure 3).

The low-involvement scuba divers have a stronger influence than those with high involvement in the relationship between place dependence and behavioral intentions (0.36 and 0.28,  $\Delta\chi^2=4.59$ ;  $p=0.03<0.05$ ), while the relationship between place identity and behavioral intentions (0.15,  $\Delta\chi^2=4.36$ ;  $p=0.03<0.05$ ) is only significant in the high-involvement group. These results provide support for H<sub>6a</sub> and H<sub>6b</sub>.

Hypothesis H<sub>6c</sub> is supported partially by the effect the high involvement group of scuba divers has on personal escape and place attachment. Results indicate that there are no significant differences between high and low involvement groups in the relationship between personal escape and place dependence (0.42 and 0.40;  $\Delta\chi^2=0.03$ ;  $p=0.87$ ), while high-involvement scuba divers have a stronger influence than low-involvement scuba divers on the connection between personal escape and place identity (0.48 and 0.36,  $\Delta\chi^2=4.85$ ;  $p=0.04<0.05$ ).



The findings show partial support for H6e. There are no notable differences between high-involvement and low-involvement groups in the relationship between personal seeking and place dependence (0.25 and 0.30;  $\Delta\chi^2=0.15$ ;  $p=0.70$ ), while the relationship between personal seeking and place identity (0.24,  $\Delta\chi^2=4.24$ ;  $p=0.04<0.05$ ) is only significant in the high-involvement group.

In contrast, H6d and H6f were not supported, because there are no marked differences between high-involvement and low-involvement groups in the relationship of interpersonal escape and place dependence (0.03 and 0.03;  $\Delta\chi^2=4.23$ ;  $p=0.03$ ), and contradicting H6d, the relationship between interpersonal escape and place identity is only significant in the sample of low-involvement scuba divers (0.17,  $\Delta\chi^2=4.23$ ;  $p=0.03<0.05$ ). Finally, there is no causality in the relationship between interpersonal seeking and place attachment, and there are no significant differences between high-involvement and low-involvement groups.

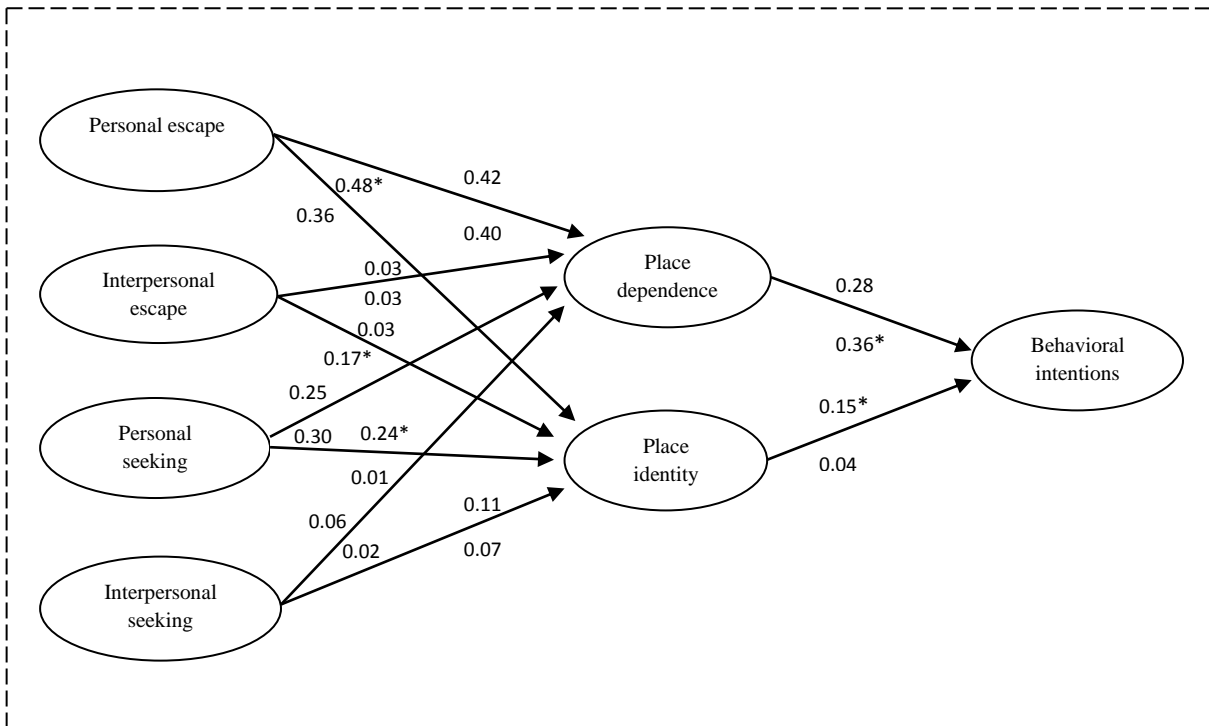
**Table 6.** Moderating effects of involvement

Path	High involvement		Low involvement		$\Delta\chi^2$	p	Support
	Parameter	t	Parameter	t			
Place dependence → Behavioral intentions	0.28	5.00**	0.36	6.08**	4.59	0.03*	Yes
Place identity → Behavioral intentions	0.15	3.46**	0.04	0.73	4.36	0.03*	Yes
Personal escape → Place dependence	0.42	6.34**	0.40	4.82**	0.03	0.87	No
Personal escape → Place identity	0.48	7.23**	0.36	4.85**	3.85	0.04*	Yes
Interpersonal escape → Place dependence	0.03	0.45	0.03	0.44	0.50	0.48	No
Interpersonal escape → Place identity	0.03	0.58	0.17	3.07**	4.23	0.03*	Yes
Personal seeking → Place dependence	0.25	3.52**	0.30	3.86**	0.15	0.70	No
Personal seeking → Place identity	0.24	2.01*	0.01	0.11	4.24	0.04*	Yes
Interpersonal seeking → Place dependence	0.06	0.89	0.02	0.23	0.24	0.62	No
Interpersonal seeking → Place identity	0.11	4.20**	0.17	2.54*	1.78	0.18	No

Note: Fit of the model:  $\chi^2=387.2006$ ;  $df=358$ ;  $P=0.13836$ ;  $RMSEA=0.021$ ;  $CFI=0.993$ ;  $NNFI=0.992$ .

Simultaneously latent variables test:  $\Delta\chi^2=25.44$ ;  $\Delta df=10$ ;  $p=0.00457^{**}<0.05$

\*  $p<0.05$ ; \*\*  $p<0.01$



Notes: Parameters of high involvement above, and low involvement below.  
 \* When there are significant differences ( $p < 0.05$ ), the higher value is marked.

**Figure 3.** Moderating effects of involvement

## 5. Discussion and conclusions

This study created and tested a behavioral intentions model using data obtained from scuba divers to the Medes Islands (Catalonia, Spain). The findings enable us to advance knowledge regarding the behavior of scuba divers in tourism destinations. The results offer only partial support for the conceptual framework, because not all of the motivation dimensions were statistically significant predictors of the place attachment dimensions. In any event, the results show that for scuba diver tourists who visit a diving destination, personal escape and personal seeking are antecedents of place dependence and place identity, and place dependence and place identity are antecedents of behavioral intentions.

From a theoretical point of view, this study is useful to prove the dimensions of motivations influencing attachment, and the importance of place dependence on behavioral intentions of scuba divers visiting a diving destination. The main contribution of this study is that the results suggest the strong influence of the personal dimensions of motivations, proposed by Iso-Ahola (1982), on the dimensions of place attachment. Personal escape and personal seeking have a strong impact on place dependence and place identity. These findings suggest that the personal motivations of scuba divers are translated to dependence and identity attachment with the Medes Islands. That is, for the scuba divers, the Medes Islands are an excellent place to escape from daily problems and to enjoy diving experiences in an environmentally sustainable environment. These findings suggest that both the Public Administration and the stakeholders must take these results into account, by considering the new regulation that is being discussed. An excessive increase in the number of dives in the summer season could have a negative impact on the perception of divers that recognize Medes Islands as a natural and sustainable environment, which, as we have shown, are the main motivators.

Furthermore, the results showed that interpersonal escape motivations of scuba divers in the Medes Islands have an influence on place identity, but with a much lower  $\beta$  (0.10) than in the case of personal escape and personal seeking. These results suggest that avoiding interactions with mass tourism or with unwanted people is a weak factor in scuba divers' identification with the site.

On the other hand, no causal relationships exist between interpersonal seeking and the dimensions of place attachment. Knowing other divers who have similar sustainable tourism interests, meeting new divers, and taking the family with them

(interpersonal seeking) do not seem to have an effect on place dependence and place identity. These results suggest that for scuba divers, the most important motivations influencing attachment to the Medes Islands are those related to escape from personal problems and new challenges and experiences. In contrast, despite the Destination's efforts to also position itself as a family destination in addition to diving (VisitEstartit, 2016), influence on the attachment of motivations related to social and family contacts is not significant. In this respect, L'Estartit, which is the dive destination of the Medes Islands, seems an appropriate place for scuba divers to be moved by personal motivations, and be able to find the calmness that they do not usually have.

This study has developed a motivations construct in which it incorporates two dimensions, personal and interpersonal motivations, unlike previous authors who only partially considered them (Todd et al., 2002; Lucrezi et al., 2013), have only analyzed the personal motivations (Dearden et al., 2006; Meisel-Luby and Cottrell, 2008), or their studies have been focused mainly on extrinsic factors, mainly the features of the diving site (Shafer and Inglis, 2000; Ditton et al., 2002; Meyer et al., 2002; Asafu-Adjaye and Tapsuwan, 2008; Uyarra, Watkinson and Côté, 2009; Anderson et al., 2011; Gallagher and Hammerschlag, 2011; Edney, 2012; Giglio et al., 2015; Bentz et al., 2016b). Our results suggest that, beyond the attributes of the site, the scuba divers identify with the Medes Islands more for personal or intrinsic motivations than for extrinsic motivations.

This research also indicates that place dependence and place identity influence behavioral intentions, confirming the findings of Alexandris et al. (2006) in another tourism context. However, place dependence has more influence on behavioral intentions than place identity, making it an important driver for behavioral intentions.

One possible explanation would be that the majority of the sample is made up of divers from France and the Benelux countries (74%), which would tend to be consistent with the results of Moskwa (2012), in which he showed that visitor divers are less identified with the place than local ones.

Another contribution is that the results of the study confirm those of previous studies concerning the existence of differences between different levels of involvement (Palau-Saumell et al., 2014). In this case, these differences also occur between scuba divers with high and low involvement. The differences in the relationships between personal escape and place identity, personal seeking and place identity in the high-involvement group could suggest that divers with high involvement tend to depend on, and to identify with, certain geographical destinations as their level of specialization increases, as it does in other types of recreation activities (Hammitt et al., 2004). These results must be taken with caution because they refer to the Medes Islands and would coincide with Bentz et al. (2016a), who concluded that the motivations of the specialized divers (a concept that could be equivalent to the high involvement group of this research) vary from one destination to another as they seek different experiences.

Also, the relationship between place identity and behavioral intentions is stronger for scuba divers with high involvement. These results suggest that the greater the involvement with diving, the greater the identification with the Medes Islands, meaning a diver's relationship with the destination is more symbolic and emotional than functional.

Our findings further revealed that interpersonal escape has more influence on place identity among divers with low involvement. One possible explanation for this is that

these divers are motivated to go to the Medes Islands in order to avoid crowds and mass tourism. Thus, identification with the destination will be strengthened in line with the destination, meeting the expectations of this group of scuba divers. Also, low-involvement divers show a significantly stronger relationship between place dependence and behavioral intentions. This difference may be explained by divers with low involvement being less experienced scuba divers and having less ability to adapt to varied challenging diving situations (Ong & Musa, 2012). Consequently, they tend to have more behavioral intentions towards the destination.

Tourism destination managers of L'Estartit will have to assume that the level of scuba divers' attachment to the Medes Islands comes from personal motivations. Thus, they must ensure that the destination and the marine park offer the conditions that will afford the scuba divers reasons to continue to feel motivated, to be attached to, and to return to L'Estartit to dive in the Medes Islands.

Destination stakeholders must continue to work together to avoid exceeding the carrying capacity of the destination. The study shows the following are essential: (i) that the interpersonal escape of low-involvement scuba divers is satisfied and they therefore identify with the destination; (ii) that high-involvement scuba divers continue to find personal motivations that increase their level of identification with the destination. They should also associate family tourism more with diving tourism to attract divers who have more interpersonal seeking motivations. This requires a more shared positioning of the two tourist services offered, rather than the destination positioning the two services differently, as it has done until now. This strategy could also increase the low-involvement group's place identity with the destination. Tourism destination managers may wish to consider promoting the destination among

international diving clubs, since the study shows that high-involvement scuba divers have less place-dependent attachment to the destination, and this attachment influences their behavioral intentions less. It is therefore essential they promote new diving activities and facilities to attract experienced divers. The Destination Management Organization (DMO) should implement more concrete proposals in relation to diving activities. In addition to promoting diving centers that offer a range of diving opportunities in different points of interest of the Medes Islands, the DMO should also promote other underwater activities. In this regard, the DMO should develop, together with diving centers, dives related to education and the observation of flora and fauna, in collaboration with the managers of the Marine Reserve. Some examples could be to show the evolution of the density, coverage, and flowering of posidonia meadows, the impact of sea urchin populations on the algae meadows on the Mediterranean coast, the effect of pollution on the Marine Reserve, sharing dives with scientific teams working on the reintroduction and control of red coral, and underwater archaeological activities. All these new potential activities are related to the motivators of the divers that influence the attachment, personal escape and seeking, and which the study has shown to be relevant for place attachment, dependence, and identity. This is especially significant for experienced divers or high involvement groups who show a greater influence on behavioral intentions with regard to the Medes Islands through an affective relationship such as place identity and their antecedent, personal seeking motivation, which includes motivations related to the environment and new diving experiences. These activities would also be indicated for less experienced divers, or low involvement groups, if they were carried out with a lower technical level. It must be noted that the behavioral intentions of this group are determined by place dependence, and personal seeking motivators influence

place dependence. Furthermore, the DMO should ensure the destination maintains a carrying capacity similar to the current one and continue to avoid mass tourism. One of the motivators of this group of recreational divers is interpersonal escape, which influences affection toward the destination, or place identity. This is necessary because interpersonal escape contains motivators such as avoiding stressful social environments and mass tourism.

In addition, and bearing in mind the importance of scuba divers for the funding of the nature reserve, the marine reserve managers should continue to work on conserving the park in order to improve the cognitive attributes of the reserve and help increase place dependence among recreational scuba divers. The results of this research show the need for the policymakers of Marine Natural Park to continue to implement and improve environmental policies in the Medes Islands Marine Reserve, because the changes associated with the environment, such as the reduction in the coralligenous areas, reduce the attractiveness for scuba divers (Rodrigues et al., 2016). Likewise, they make it clear that they also need to avoid one of the consequences of scuba-diving overcrowding, namely the abrasion caused by an excessive number of scuba divers (Linares et al., 2012).

## **6. Limitations and future research**

The study has several limitations. One is that it was carried out in only one diving destination, and therefore the conclusions cannot be generalized. In future, this model should be tested in other diving destinations where scuba diving is the main recreational activity. Another limitation is the focus on push motivations and future research could also consider pull motivations. The study includes motivations, place



attachment, and behavioral intentions, but there are other factors affecting behavioral intentions towards a place. Future research could explore other antecedents to further improve the model. A final factor that should be taken into account for future studies is that 65% of the sample represents divers from Benelux and France, as the information was gathered at a time of year when these nationalities are the most numerous. In future research, the information-gathering period ought to be extended to other times of the year and thus incorporate divers of other nationalities, such as Spaniards, which is the next most frequent nationality visiting the Medes Islands.

## References

- Alexandris K, Dimitriadis N and Markata D (2002) Can perceptions of service quality predict behavioral intentions? An exploratory study in the hotel sector in Greece. *Managing Service Quality* 12(4): 224-232.
- Alexandris K, Kouthouris C, Funk D and Tziouma O (2013) The use of negotiation strategies among recreational participants with different involvement levels: The case of recreational swimmers. *Leisure Studies* 32(3): 299-317.
- Alexandris K, Kouthouris C and Meligdis A (2006) Increasing customers' loyalty in a skiing resort. The contribution of place attachment and service quality. *International Journal of Contemporary Hospitality Management* 18(5): 414-425.
- Ajzen I (1991) The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50(2): 179-211.
- Anderson RC, Adam MS, Kitchen-Wheeler AM and Stevens G (2011) Extent and economic value of manta ray watching in Maldives. *Tourism Marine Environments* 7(1): 15-27.
- Asafu-Adjaye J and Tapsuwan S (2008) A contingent valuation study of scuba diving benefits: Case study in Mu Ko Similan Marine National Park, Thailand. *Tourism Management* 29(6): 1122-1130.
- Bagozzi RP and Yi T (1988) On the evaluation of structural equation models. *Journal of the Academy of Marketing Science* 16(1): 74-94.
- Bajs IP (2015) Tourist perceived value, relationship to satisfaction, and behavioral Intentions: The example of the Croatian tourist destination Dubrovnik. *Journal of Travel Research* 54(1): 122-134.

- Beldoa S, Moreo AP and Mundra GD (2010) The role of involvement and variety-seeking in eating out behaviors. *International Journal of Contemporary Hospitality Management* 22(3): 433-444.
- Bentler PM (1995) *EQS structural equations program manual*. Encino, CA: Multivariate Software Inc.
- Bentz J, Lopes F, Calado H and Dearden P (2016a) Understanding diver motivations and specialization for improved scuba management. *Tourism in Marine Environments* 12(1): 35-49.
- Bentz J, Lopes F, Calado H and Dearden P (2016b) Managing marine wildlife tourism activities: Analysis of motivations and specialization levels of divers and whale watchers. *Tourism Management Perspectives* 18(1): 74-83.
- Bowlby J (1969) *Attachment and loss: Attachment* (Vol. 1). New York: Basic Books.
- Bricker KS and Kerstetter D (2000) Level of specialization and place attachment: An exploratory study of white water recreationists. *Leisure Sciences* 22(4): 233–257.
- Byrne BM (2006) *Structural equation modelling with EQS: basic concepts, applications and programming* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Catalonia Parks (2017) Pla rector d'ús i gestió (PRUG) de l'Àrea Protegida de les Illes Medes. Available at: [http://parcsnaturals.gencat.cat/ca/illes-medes/coneixenos/instruments\\_de\\_planificacio\\_i\\_gestio/pla\\_rector\\_dus\\_i\\_gestio\\_prug/](http://parcsnaturals.gencat.cat/ca/illes-medes/coneixenos/instruments_de_planificacio_i_gestio/pla_rector_dus_i_gestio_prug/) (accessed 26 June 2017).
- Chen C and Chen F (2010) Experience quality, perceived value, satisfaction and behavioral intentions for heritage tourists. *Tourism Management* 31(1): 29–35.
- Chen C-F and Tsai D (2007) How destination image and evaluative factors affect behavioral intentions? *Tourism Management* 28(4): 1115–1122.
- Chen C-F and Tsai D-C (2008) Perceived value, satisfaction, and loyalty of TV travel product shopping: Involvement as a moderator. *Tourism Management* 29(6): 1166-1171.
- Clayton S (2003) Environmental identity: a conceptual and an operational definition. In S. Clayton, & S. Opatow (Eds.), *Identity and the natural environment: The psychological significance of nature* (pp. 45-65). Cambridge, MA: The MIT Press.
- Dann GMS (1981) Tourist motivation: an appraisal. *Annals of Tourism Research* 8: 187-219.
- Dearden P, Bennett M and Rollins R (2006) Implications for coral reef conservation of diver specialization. *Environmental Conservation* 33(4): 353-363.
- Dimmock K (2009) Finding comfort in adventure: experiences of recreational SCUBA divers. *Leisure Studies* 28(3): 279-295.

- Ditton RB, Osburn HL, Baker TL and Thailing CE (2002) Demographics, attitudes, and reef management preferences of sport divers in offshore Texas waters. *ICES Journal of Marine Science* 59: 186–191.
- Dunn Ross EL and Iso-Ahola SE (1991) Sightseeing tourists' motivation and satisfaction. *Annals of Tourism Research* 18(2): 226-237.
- Dwyer B (2011) Divide loyalty? An analysis of fantasy football involvement and fan loyalty to individual national football league (NFL) teams. *Journal of Sport Management* 25(5): 445-457.
- Edney J (2012) Diver characteristics, motivations, and attitudes: Chuuk Lagoon. *Tourism in Marine Environments* 8(1/2), 7-18.
- Estació Náutica Estarrit (2017) The Medes Islands - A sub aquatic paradise. Available at: <http://www.enestartit.com/en/natural-park-montgri-illes-medes-baix-ter> (accessed 26 June 2017).
- Ferns BH and Walls A (2012) Enduring travel involvement, destination brand equity, and travelers' visit intentions: A structural model analysis. *Journal of Destination Marketing & Management* 1(1-2): 27-35.
- Fishbein M and Ajzen I (1975) Belief, attitude, intention, and behavior: An introduction to Theory and Research. Boston: Addison-Wesley.
- Forgas-Coll S, Palau-Saumell R, Matute J and Tárrega S (2017) How do service quality, experiences and enduring involvement influence tourists' Behavior? An empirical study in the Picasso and Miró museums in Barcelona. *International Journal of Tourism Research* 19(2): 246–256.
- Fornell C and Larcker DF (1981) Evaluating structural equations models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1): 39-50.
- Gallagher A and Hammerschlag N (2011) Global shark currency: The distribution, frequency, and economic value of shark ecotourism. *Current Issues in Tourism* 14(8): 797–812.
- Generalitat of Catalonia (2018) Pla rector d'ús i gestió (PRUG). Available at: [http://parcsnaturals.gencat.cat/ca/illes-medes/coneixeu-nos/instruments\\_de\\_planificacio\\_i\\_gestio/pla\\_rector\\_dus\\_i\\_gestio\\_prug/](http://parcsnaturals.gencat.cat/ca/illes-medes/coneixeu-nos/instruments_de_planificacio_i_gestio/pla_rector_dus_i_gestio_prug/) (accessed 23 February 2018).
- Giglio VJ, Luiz OJ, Schiavetti A (2015) Marine life preferences and perceptions among recreational divers in Brazilian coral reefs. *Tourism Management* 51(1): 49-57.
- Govern.cat (2015) El Govern aprova el Pla de gestió dels espais protegits 2015-2020, una eina de conservació i dinamització del territori. Available at: [http://www.govern.cat/pres\\_gov/AppJava/govern/notespremsa/280460/govern-](http://www.govern.cat/pres_gov/AppJava/govern/notespremsa/280460/govern-)

[aprova-gestio-espais-protegits-2015-2020-eina-conservacio-dinamitzacio-territori.html](#) (accessed 26 June 2017).

- Gross MJ and Brown G (2008) An empirical structural model of tourists and places: Progressing involvement and place attachment into tourism. *Tourism Management* 29(6): 1141-1151.
- Hair JF, Black WC, Babin JB, Anderson R E and Tatham RL (2006) *Multivariate data analysis* (6th ed.). Upper Saddle River, N.J.: Pearson Education Inc.
- Halpenny EA (2010) Pro-environmental behaviours and park visitors: the effect of place attachment. *Journal of Environmental Psychology* 30(4): 409-421.
- Hammit WE, Backlund EA and Bixler RD (2004) Experience use history, place bonding and resource substitution of trout anglers during recreation engagements. *Journal of Leisure Research* 36(3): 356-378.
- Havitz ME, Kaczynski AT and Mannell RC (2013) Exploring relationships between physical activity, leisure involvement, self-efficacy, and motivation via participant segmentation. *Leisure Sciences* 35(1): 45-62.
- Hou J-S, Lin CH and Morais DB (2005) Antecedents of attachment to a cultural tourism destination: The case of Hakka and non-Hakka Taiwanese visitors to Pei-Pu, Taiwan. *Journal of Travel Research* 44(2): 221-233.
- Houston MJ and Rothschild ML (1978) Conceptual and methodological perspectives in involvement. In S. C. Jain (Ed.), *Research frontiers in marketing: Dialogues and directions* (pp. 184–187). Chicago: American Marketing Association.
- Huang C-Y, Chou C-J and Lin P-C (2010) Involvement theory in constructing bloggers' intention to purchase travel products. *Tourism Management* 31(4): 513-526.
- Hsu CHC and Huang S (2012) An extension of the Theory of Planned Behavior model for tourists. *Journal of Hospitality & Tourism Research* 36(3): 381-416.
- Hwang S-N, Lee C and Chen H-J (2005) The relationship among tourists' involvement, place attachment and interpretation satisfaction in Taiwan's national parks. *Tourism Management* 26(2): 143-156.
- Idescat (2016) Foreign tourists 2011-2015. By country of origin. Available at: <http://www.idescat.cat/pub/?id=aec&n=569&lang=en> (accessed 27 October 2016).
- Ince T and Bowen D (2011) Customer satisfaction and services: insights from dive tourism. *The Service Industries Journal* 31(11): 1769-1792.
- Iso-Ahola SE (1982) Toward a social psychological theory of tourism motivation: A rejoinder. *Annals of Tourism Research* 9(2): 256–262.

- Iwasaki Y and Havitz ME (2004) Examining relationships between leisure involvement, psychological commitment, and loyalty to a recreation agency. *Journal of Leisure Research* 36(1): 45-72.
- Jang SC, Bai B, Hu C and Wu C-ME (2009) Affect, travel motivation, and travel intention: A senior market. *Journal of Hospitality & Tourism Research* 33(1): 51-73.
- Jöreskog KG and Sörbom D (1996) *LISREL 8: user's reference guide*. Chicago: Scientific Software.
- Josiam BM, Smeaton G and Clements CJ (1999) Involvement: Travel motivation and destination selection. *Journal of Vacation Marketing* 5(2): 167-175.
- Kaltenborn BP (1997) Nature of place attachment: A study among recreation homeowners in Southern Norway. *Leisure Sciences* 19(4): 175-189.
- Kler B and Moskwa E (2013) Experience, interpretation and meanings. In G. Musa, and K. Dimmock, K. (Eds.), *Scuba diving tourism* (pp. 134-151). Abingdon: Routledge.
- Kyle GT, Graefe A, Manning R and Bacon J (2004a) Predictors of behavioral loyalty among hikers along the Appalachian Trail. *Leisure Sciences* 26(1): 99-118.
- Kyle GT, Mowen AJ and Tarrant M (2004b) Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology* 24(4): 439-454.
- Lee TH (2009) A structural model to examine how destination image, attitude, and motivation affect the future behavior of tourists. *Leisure Sciences* 31(2): 124-135.
- Lee C-K, Yoon Y-S and Lee S-K (2007) Investigating the relationships among perceived value, satisfaction, and recommendations: The case of the Korean DMZ. *Tourism Management* 28(1): 204-214.
- Linares C, Garrabou J, Hereu B, Díaz D, Marschal, C, Sala E and Zabala M (2012) Assessing the effectiveness of Marine Reserves on unsustainably harvested long-lived sessile invertebrates. *Conservation Biology* 26(1): 88-96.
- Liu CR, Lin WR and Wang YC (2012) Relationship between self-congruity and destination loyalty: Differences between first-time and repeat visitors. *Journal of Destination & Marketing Management* 1(1-2): 118-123.
- Lucrezi S, Saayman M and Van der Merwe, P (2013) Managing diving impacts on reef ecosystems: Analysis of putative influences of motivations, marine life preferences and experience on divers' environmental perceptions. *Ocean & Coastal Management* 76(1): 52-63.
- Mechinda P, Serirat S and Gulit N (2009) An examination of tourists' attitudinal and behavioral loyalty: comparison between domestic and international tourists. *Journal of Vacation Marketing* 15(2): 129-148.

- Meisel-Lusby C and Cottrell S (2008) Understanding motivations and expectations of scuba divers. *Tourism in Marine Environments* 5(1), 1-14.
- Meyer LA, Thapa B and Pennington-Grey L (2003) An exploration of motivations among scuba divers in North Central Florida. In: *Proceedings of the 2002 Northeastern Recreation Research Symposium*, (ed R Schuster), Bolton Landing, NY, 13-16 April 2002, pp. 292-295. Delaware, OH: USDA Forest Service.
- Moskwa EC (2012) Exploring place attachment: An underwater perspective. *Tourism in Marine Environments* 8(1/2): 33-46.
- Mundet L and Ribera L (2001) Characteristics of divers at a Spanish resort. *Tourism Management* 22(5): 501-510.
- Musa G (2002) Sipadan: A scuba-diving paradise: an analysis of tourism impact, diversatisfaction and tourism management. *Tourism Geographies* 4(2): 195–209.
- Musa G, Kadir SLSA and Lee L (2006) Layang Layang: an empirical study on scuba diver's satisfaction. *Tourism in Marine Environments* 2(2): 89-102.
- Needham MD and Little CM (2013) Voluntary environmental programs at an alpine ski area: visitor perceptions, attachment, value orientations, and specialization. *Tourism Management* 35(1): 70-81.
- Oh, C-O, Lyu SO and Hammitt, WE (2012) Predictive linkages between recreation specialization and place attachment. *Journal of Leisure Research* 44(1): 70-87.
- Oliver RL (1999) Whence consumer loyalty? *Journal of Marketing* 63(4): 33-45.
- Olsen SO (2007) Repurchase loyalty: The role of involvement and satisfaction. *Psychology & Marketing* 24(4): 315-341.
- Ong TF and Musa G (2012) Examining the influences of experience, personality and attitude on SCUBA divers' underwater behaviour: A structural equation model. *Tourism Management* 33(6): 1521-1534.
- PADI (2016). *Worldwide corporate statistics 2016*. Data for 2010-2015. Available at: [http://www.padi.com/sites/default/files/documents/about-padi/statistics/PADI\\_2016\\_WW\\_Statistics.pdf](http://www.padi.com/sites/default/files/documents/about-padi/statistics/PADI_2016_WW_Statistics.pdf) (accessed 27 October 2016).
- Palau-Saumell R, Forgas-Coll S, Sánchez-García J and Prats-Planagumà L (2014) Managing dive centres: SCUBA divers' behavioural intentions. *European Sport Management Quarterly* 24(4): 422-443.
- Parks of Catalonia (2017). *Pla rector d'ús i gestió El Montgrí, les Illes Medes i el Baix Ter*. Available at: [http://parcsnaturals.gencat.cat/ca/illes-medes/coneixenos/instruments\\_de\\_planificacio\\_i\\_gestio/pla\\_rector\\_dus\\_i\\_gestio\\_prug/](http://parcsnaturals.gencat.cat/ca/illes-medes/coneixenos/instruments_de_planificacio_i_gestio/pla_rector_dus_i_gestio_prug/) (accessed 16 November 2016).
- Prayag G and Ryan C (2012) Antecedents of tourists' loyalty to Mauritius: The role and influence of destination image, place attachment, personal involvement, and satisfaction. *Journal of Travel Research* 51(3): 342–356.

- Ramkissoon H, Weiler B and Smith LDG (2012) Place attachment and pro-environmental behavior in national parks: The development of a conceptual framework. *Journal of Sustainable Tourism* 20(2): 257-276.
- Rice K (1987) Special Report: SCUBA diving: dive market requires specialized skill and information. *Tour and Travel News*, 9 February, 24-27.
- Rodrigues LC, Van den Bergh JCJM, Loureiro ML, Nunes PALD and Rossi S (2016) The cost of Mediterranean sea warming and acidification: a choice experiment among Scuba divers at Medes Islands, Spain. *Environmental and Resource Economics* 63(2): 289-311.
- Rothschild M (1984) Perspectives on involvement: current problems and future directions. *Advances in Consumer Research* 11(1): 216-217.
- Ryan RM and Deci EL (2000) Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology* 25(1): 54-67.
- Ryu K, Han H and Kim T-H (2008) The relationships among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions. *International Journal of Hospitality Management* 27(3): 459-469.
- Shafer C and Inglis G (2000) Influence of social, biophysical, and managerial conditions on tourism experiences within the Great Barrier Reef World Heritage Area. *Environmental Management* 26(1): 73-87.
- Smith JW, Siderelis C and Moore RL (2010) The effects of place attachment, hypothetical site modifications and use levels on recreation behavior. *Journal of Leisure Research* 42(4): 621-640.
- Snepenger D, King J, Marshall E and Uysal M (2006) Modelling Iso-Ahola's motivation theory in the tourism context. *Journal of Travel Research* 45(2): 140-149.
- Styvén ME (2010) The need to touch: Exploring the link between music involvement and tangibility preference. *Journal of Business Research* 63(9/10): 1088-1094.
- Thapa B, Graefe AR and Meyer, LA (2005) Moderator and mediator effect of scuba diving specialization on marine-based environmental knowledge-behaviour contingency. *The Journal of Environmental Education* 37(1): 53-66.
- Thapa B, Graefe AR and Meyer, LA (2006) Specialization and marine based environmental behaviors among SCUBA divers. *Journal of Leisure Research* 38(4): 601-615.
- Todd S, Graefe A and Mann W (2002) Differences in SCUBA diver motivations based on level of development. In: *Proceedings of the 2001 Northeastern Recreation Research Symposium*, (ed S Todd), Bolton Landing, NY, 1-3 April 2001, pp. 105-114. Delaware, OH: USDA Forest Service.

- Triadó XM, Elasri A, Blanco R, Aparicio P and Moré JM (2014) El potencial econòmic del sector náutic a Catalunya. Les oportunitats de la Mediterrània. *Revista Econòmica de Catalunya*, 69: 15-23. Available at: <http://diposit.ub.edu/dspace/bitstream/2445/66534/1/635091.pdf> (accessed 26 June 2017).
- Um S, Chon K and Ro Y (2006) Antecedents of revisit intention. *Annals of Tourism Research* 33(4): 1141–1158.
- Uyarra MC, Watkinson AR and Côté IM (2009) Managing dive tourism for the sustainable use of coral reefs: Validating diver perceptions of attractive site features. *Environmental Management* 43(1): 1-16.
- VisitEstartit (2016) -L'Estartit Tourist Office- [www page]. Available at: <http://www.visitestartit.com/en/49/Promotion/Activities/Family-Tourism-html> (accessed 27 October 2016).
- Wang SW (2014) The moderating effects of involvement with respect to customer relationship management of the airline sector. *Journal of Air Transport Management* 35(1): 57-63.
- Warshaw PR and Davis FD (1985) Disentangling behavioral intention and behavioral expectation. *Journal of Experimental Social Psychology* 21(3): 213-228.
- Williams DR, Patterson ME, Roggenbuck JW and Watson AE (1992) Beyond the commodity metaphor: examining emotional and symbolic attachment to place. *Leisure Sciences* 14(1): 29-46.
- Williams D and Vaske J (2003) The measurement of place attachment: validity and generalizability of a psychometric approach. *Forest Science* 49(6): 831-840.
- Yoon Y and Uysal M. (2005) An examination of the effects of motivation and satisfaction on destination loyalty: a structural model. *Tourism Management* 26(1): 45–56.
- Xu Z and Zhang J (2016) Antecedents and consequences of place attachment: a comparison of Chinese and Western urban tourists in Hangzhou, China. *Journal of Destination Marketing & Management* 5(1): 86-96.
- Zabkar V, Brencic MM and Dmitrovic T (2010) Modelling perceived quality, visitor satisfaction and behavioural intentions at the destination level. *Tourism Management* 31(4): 537-546.



