Current Issues in Tourism

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rcit20

Memorable tourism experiences and critical outcomes among nature-based visitors: a fuzzy-set qualitative comparative analysis approach

Arash Akhshik, Hamed Rezapouraghdam, Ali Ozturen & Haywantee Ramkissoon

To cite this article: Arash Akhshik, Hamed Rezapouraghdam, Ali Ozturen & Haywantee Ramkissoon (2022): Memorable tourism experiences and critical outcomes among nature-based visitors: a fuzzy-set qualitative comparative analysis approach, Current Issues in Tourism, DOI: 10.1080/13683500.2022.2106196

To link to this article: https://doi.org/10.1080/13683500.2022.2106196

Published online: 11 Aug 2022.

CURRENT ISSUES IN TOURISM
https://doi.org/10.1080/13683500.2022.2106196

Routledge
Taylor & Francis Group

Memorable tourism experiences and critical outcomes among nature-based visitors: a fuzzy-set qualitative comparative analysis approach

Arash Akhshik [a,b], Hamed Rezapouraghdam[c], Ali Ozturen [c] and Haywantee Ramkissoon [d,e,f]

[a]Institute of Environmental Science, Faculty of Biology, Jagiellonian University, Kraków, Poland; [b]School of Business and Economics, Linnaeus University, Kalmar, Sweden; [c]Faculty of Tourism, Eastern Mediterranean University, Famagusta, Turkey; [d]Centre for Contemporary Hospitality & Tourism, College of Business, Law & Social Science, University of Derby, Derby, United Kingdom; [e]School of Business & Economics, Faculty of Fisheries & Biosciences, UiT The Arctic University of Norway, Tromsø, Norway; [f]College of Business & Economics, University of Johannesburg, Johannesburg, South Africa

ABSTRACT

Intense global competition for natural resources, manifesting in negative environmental externalities, has forced hospitality and tourism stakeholders to adopt strategies that may result in economic growth in tandem with environmental conservation. One such strategy is to cultivate travellers' loyalty to the tourism destinations and encourage them to participate in environmentally friendly activities. Using the affective theory of social exchange, social identity, stimulus–organism–response, tourism consumption system and attachment theories, this study proposes and tests a configurational model that predicts the antecedents of visitors' pro-environmental behavioural intentions (PEBIs) regarding their desire to revisit (REVI) and recommend (RECI) the services that they experienced. Fuzzy-set qualitative comparative analysis was applied to assess the effect of memorable tourism experiences, place attachment, and demographics on these outcomes. The findings revealed that multiple configurations can predict visitors' intentions at tourist destinations. This study's implications for theory, practice, and future research directions are also discussed.

ARTICLE HISTORY
Received 7 April 2021
Accepted 17 July 2022

KEYWORDS
Pro-environmental behaviour intention; revisit intention; recommendation intention; memorable experiences; place attachment

Introduction

The globalization of tourism has resulted in dramatic competition to commodify natural resources at the cost of economic growth. However, negative externalities, such as an increased strain on vulnerable ecosystems and the degradation of sites, are only a few of the unfavourable outcomes of this unsustainable development. Despite these negatives, tourism is still prescribed as a chief strategy to provide alternative livelihood possibilities for communities, especially those adjacent to marine protected areas (Pham-Do & Pham, 2020). These areas have the vitally important responsibility of maintaining biodiversity and ensuring wildlife conservation, which is usually funded by non-consumptive activities such as tourism (Maldonado-Oré & Custodio, 2020).

Nevertheless, increased demand fuelled by tourists' growing desire to encounter endangered species before they disappear forever can pose an enormous risk to the biodiversity of these

CONTACT Haywantee Ramkissoon H.Ramkissoon@derby.ac.uk

destinations. The most recent findings detail a tragic decline of almost 70% in the animal population since 1970 (WWF, 2020). Furthermore, the devastating impact of human behaviour on nature was discussed in a compelling UN report, which noted that one million species are threatened with extinction (UN, n.d.).

These reasons drive the growing pressure on destination management and tourism organizations to adopt eco-friendly strategies, especially in ecologically vulnerable tourist destinations, such as protected areas. As the economic resources generated by tourism are necessary to cover the likely expenses of protecting these geographical spaces and the habitats they contain, effective environmental management strategies are vital (Rezapouraghdam et al., 2021). Accordingly, destination managers are continuously searching for mechanisms through which they may achieve the two apparently opposing objectives of customer retention and environmental protection. One of the main objectives of the management efforts in ecologically sensitive places is to decrease visitors' footprints by encouraging pro-environmental behaviours (PEBs; Rezapouraghdam et al., 2021).

Accordingly, it is important to understand the factors that may determine nature-based travellers' desirable intentions, such as their pro-environmental behaviour intentions (PEBIs) and revisit (REVI) and recommendation (RECI) intentions towards the destination. This can facilitate sustainable destination development and management (Ramkissoon et al., 2018).

Therefore, our purpose with this study is to take an outcome-focused approach to unveil the factors that best explain the occurrence of combinations of the desired intentional outcomes. To do so, the links among memorable tourism experiences (MTEs), place attachment, and behavioural intentions will be observed for insight (Tsai, 2016). Experience plays such a unique role in the tourism industry that scholars call it the heart of the entertainment business (Loureiro, 2014) and the key to success and competitiveness for destinations (Ellis & Rossman, 2008). Tourism has traditionally been concerned with tourist experiences (Buonincontri et al., 2017; Stamboulis & Skayannis, 2003), such that each transaction associated with visitors at travel destinations can be understood as an experience (Oh et al., 2007).

A memorable experience is formed from individuals' emotional assessment of real experiences during their travel. Recently, MTEs that are strong enough to enter the long-term memory (Oh et al., 2007) have been viewed favourably due to their significant role in tourism marketing and management (Sthapit et al., 2019). Such memorable experiences influence visitors' intentions and determine their future behaviours (Kim et al., 2012).

Moreover, individuals' behaviours and intentions are substantially influenced by the emotional bonds they make with places (Shaykh-Baygloo, 2020). Place attachment is a multidimensional construct comprised of place identity, place dependence, place affect, and developing a social bond with a place, which manifests in visitors' emotional thoughts about it (Ramkissoon et al., 2013). According to Hidalgo and Hernandez (2001, p. 274), place attachment can be defined as 'a positive affective bond between an individual and a specific place, the main characteristic of which is the tendency of the individual to maintain closeness to such a place'.

Previous study suggested scholars to extend the concept of MTEs to domains such as nature-based activities (Huang et al., 2019). Furthermore, the study of visitors' behaviour in protected areas and among human-endangered species in contexts outside of Western countries requires more research (Shi et al., 2019). Additionally, considering a combination of various intentions (i.e. PEBI, RECI, and REVI) as outcome variables offer unprecedented implications to the prescription of strategies that focus on ideal visitor types (Lee et al., 2019).

Nature-based travel is an ecologically sensitive phenomenon (Akhshik et al., 2021), which, because of its numerous beneficial goals and practical significance, has received increasing attention in recent years. Meanwhile, protected natural areas are essential for preserving biodiversity, tourism, ecosystem services, and economic benefits for local communities (Maldonado-Oré & Custodio, 2020). As human activity is considered a major threat to the natural environment in these areas (Kim et al., 2020), the study of visitors' sustainable behaviours and the observation of the factors that influence

their future intentions is highly significant. Furthermore, the financial contribution of nature-based tourism is crucial to the preservation of biodiversity.

Nevertheless, despite the globally increased demand for nature-based tourism (Kim et al., 2020), the study of the influential combinations of factors that may influence travellers' PEBI, REVI, and RECI in protected areas using non-linear approaches is limited. Therefore, this study's findings will answer the following question: 'The presence of which factors together can concurrently predict nature-based tourists' PEBI, REVI, and RECI?' Our study focuses on a shift from a linear to a non-linear approach in research design, data analysis, and interpretation and crafts a configural model using fuzzy-set qualitative comparative analysis (fsQCA). We believe intentions may be best evoked when their generating antecedents interact and reach a certain tipping point from which profound, intentional changes in the visitor's belief system may occur (Gladwell, 2006).

Theoretical background and research model

Some scholars argue that theoretical and managerial techniques for explaining visitors' behaviours in the complex social milieu of protected areas are poorly understood (Brown et al., 2010). This is because visitors' impacts and the challenges of managing the human–nature relationship through conventional coexistence are characterized by complexity (Shi et al., 2019). In other words, the intentions and psychological processes that govern these behaviours are complex (Brown et al., 2010). That is why many researchers question the sufficiency of a single theory to comprehensively explain individuals' PEBs or intentions (Bamberg & Möser; Onwezen et al., 2013). In response, researchers have started to integrate different theories to predict and understand individuals' intentions and behaviours more accurately. For example, Han (2015) integrated the theory of planned behaviour (TPB) and value–belief–norm (VBN) theory into one theoretical framework to understand hotel guests' PEB decision-making. Nevertheless, the author indicated that although the integration of these theories provided a better understanding of the intended outcomes (e.g. PEBs), the roles of other factors and variables should not be overlooked. Chuang et al. (2018) integrated sustainability values, TPB, the unified theory of acceptance, and the use of technology into their framework to predict travellers' PEBs. They also concluded that consumers' overall decision-making processes can be influenced by many internal and external factors, such as socio-demographic variables. Accordingly, in this study, we used several theories including affective theory of social exchange (Lawler, 2001), attachment theory (Bowlby, 1982), social identity theory (Brown, 2000), tourism consumption system theory (Woodside & Dubelaar, 2002) and stimulus–organism–response theory (Mehrabian & Russell, 1974) to explain how individuals' various intentions develop based on the outcomes of their memorable tourism experiences, place attachment, and demographic backgrounds (see Figure 1).

Memorable experiences

The outcome of a tourism product or service is generally psychological and reflects a variety of experiences (Pine & Gilmore, 1998). The guest experience in a tourism context has been recognized as a crucial element to enhance tourists' memories of places (Wang, 1999). Lawler's (2001) affective theory of social exchange can be used in this context to explain how MTEs can affect individuals' attitudes and behaviours. This theory postulates that positive experiences can create positive emotions and result in attachment to people or places (Hosany et al., 2017). In other words, visitors' various experiences from their interactions with the people and places they visit and the exchange of knowledge, gratitude, and affection with them can generate positive or negative emotions. MTEs must convey positivity when recalled after the event (Kim et al., 2012), and can lead to emotional attachment to a place.

Kim et al. (2012) developed the most comprehensive measure of MTEs, which includes seven salient dimensions and has been extensively used in the literature (e.g. Sthapit & Coudounaris, 2018). The dimensions of this scale are: 1) hedonism, which refers to the experience of a pleasurable

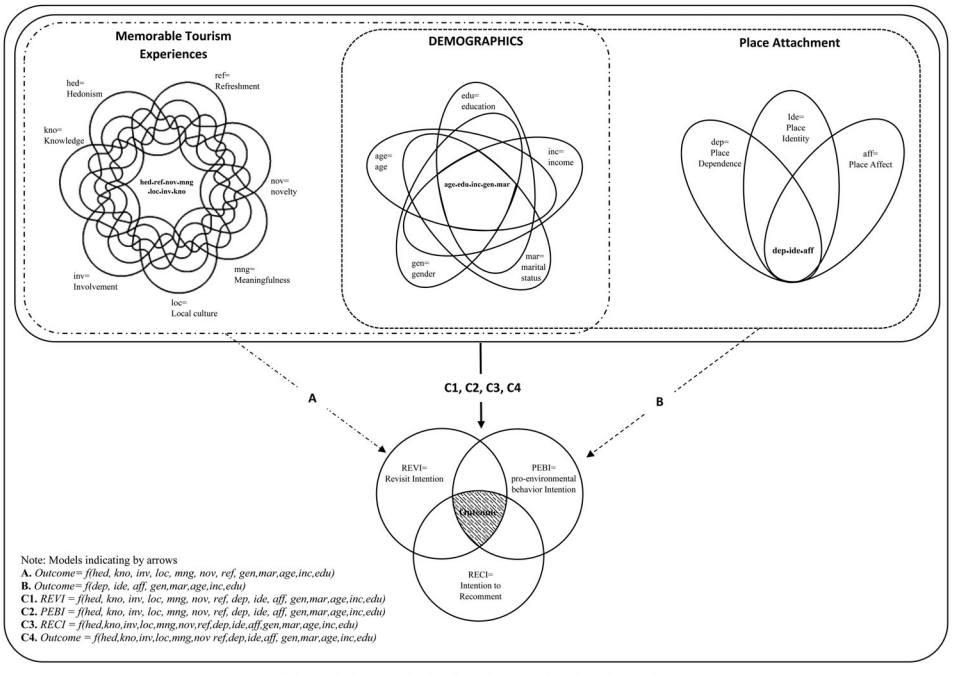


Figure 1. Asymmetrical and configurational model of the study.

Figure 1. Asymmetrical and configurational model of the study.

feeling that engenders excitement; 2) refreshment, which is described as experiencing relaxation and being refreshed; 3) local culture, which is the experience of social interaction with local people and developing a positive impression of them; 4) meaningfulness, described as the experience of physical, emotional, or spiritual fulfilment through tourism; 5) knowledge, which is experiencing new facts and information about a new culture; 6) involvement, which is the experience of participating in on-site activities and planning travel; and 7) novelty, which is the experience of partaking in something distinctive and different from past experiences. Social judgement theory and the concept of involvement, which is provoked by specific stimuli in the environment (Havitz & Dimanche, 1997; Zaichkowsky, 1985), can explain how tourists' participation in leisure activities that are characterized by self-expression, enjoyment, importance, and freedom can attach them to a destination (Xu & Zhang, 2016).

Kim and Ritchie (2014) empirically showed that MTEs affect behavioural intentions among Taiwanese respondents, as other studies have posited. However, more detailed observations are required to unpack the mechanism through which a complex phenomenon such as MTEs may influence different behavioural intentions in a nature-based tourism setting.

Place attachment

Building on attachment theory (Bowlby, 1982), humans have an innate psychological tendency to establish and maintain security via their close links. Many scholars argue that a bond with a meaningful space is a universal affective tie (Relph, 1976). Development theory (Morgan, 2010) also asserts that positive emotions towards a destination can induce attachment through person–place interactions. Therefore, it is reasonable to presume that people who perceive their tourism experiences at a destination positively would tend to become emotionally attached.

Drawing on Ramkissoon et al.'s (2013) conceptualization of place attachment, place dependence is tourists' awareness of the uniqueness of a setting and its ability to provide their desired travel

experiences. Place identity refers to one's beliefs and perceptions that the self is invested in a specific place. Place affect, alternatively, is the emotional bond that people create with places. Social bonding reflects the experiences that individuals have through social interactions in a place.

Loureiro (2014) observed the role that visitors' experiences play in place attachment and behavioural intentions in a rural context in Portugal. Importantly, in protected areas, destination managers and scientists agree that the major role of place attachment in decreasing human environmental impacts can have significant implications for PEBIs (Buta et al., 2014; Ramkissoon et al., 2018). A study conducted among visitors to Italy found that tourists' motivations positively affected their place attachment and that, consequently, place attachment predicted their RECI (Prayag et al., 2018).

Place attachment's contribution to supporting tourism development was also studied in Kavala, Greece (Stylidis, 2018). Additionally, Vada et al. (2019) found that MTEs significantly influence tourists' place attachment through the mediation of hedonic and eudaimonic well-being, and residents' place attachment reportedly affected their positive word-of-mouth behaviour in Sydney and Shanghai (Chen et al., 2018). Moreover, social identity theory (SIT) also supports the linkage between place attachment and individuals' environmentally friendly behaviours, such that those who identify with a place are more inclined to behave in the interests of that place (Brown, 2000).

Travellers' place attachment is related to their experiences and engagement with a place (Gross & Brown, 2008). Environmental and personal factors, like positive memories and experiences, are the primary motivators that facilitate the development of place attachment (Loureiro, 2014). Cognitive appraisal theory argues that people's emotions are the outcome of what they experience in a place, which then influence their intentions (Io, 2018). Previous studies have asserted that the type and level of attachment might lead to different relationships with visitors' intentions. Scholars have encouraged further research to understand how place attachment affects PEBI (Ramkissoon et al., 2013).

Future intentions

The term 'behavioural intentions' refers to a person's intentions to perform or not perform a particular behaviour and are predictive of actual behaviours (Brown et al., 2010). The drivers of travel intentions (such as MTEs) are regarded as outputs of people's previous tourism activities, which influence their future intentions (Sthapit & Coudounaris, 2018). MTEs have been asserted as determinant variables that affect individuals' future intentions (RECI and REVI) after visiting a tourist destination (Bujisic et al., 2015). Nonetheless, a previous study found that the relationships are complex and not all dimensions of a tourism experience influence tourists in the same ways in the post-experience stage (Triantafillidou & Petala, 2016).

Additionally, the relationship between individuals' place attachment and their environmental behavioural intentions has been thoroughly documented (Buta et al., 2014; Qu et al., 2019). Lee et al. (2015) found a linear structural relationship between recreation experiences and tourists' environmentally friendly behaviour in Taiwan. People's interactions in natural environments and their recreational experiences significantly contribute to the development of human–nature bonds (Buta et al., 2014).

Tourists' behavioural intentions have been studied in various contexts throughout the literature. For example, the effect of street food on consumer behavioural intentions was observed in India (Gupta et al., 2018), and travellers' REVI was determined to be influenced by destination and country image, mediated by MTEs, among international tourists in China (Zhang et al., 2018). Hasan et al. observed coastal tourists in Bangladesh and showed that visitors' satisfaction and destination images had considerable effects on their REVI (Hasan et al., 2019). In the context of wine tourism in Greece, a study observed the effect of tourists' experiences on their emotions, satisfaction, REVI, and RECI (Leri & Theodoridis, 2019). A previous study in the context of sports event tourism asserted the significant role place attachment exerted on individuals' behavioural intentions in South Korea (Jeong et al., 2020).

Tourism consumption system theory (Woodside & Dubelaar, 2002), argues that travellers' evaluation of the destination experience affects their overall perception of the destination as well as their behaviour (Sharma & Nayak, 2019). According to this theory, the link between MTEs and their outcomes can be supported as MTEs enhance visitors' desirable behavioural intentions (e.g. PEB, REVI, and RECI) directly and indirectly by satisfying the innate human need for attachment (Relph, 1976).

Stimulus–organism–response theory (SOR), developed by Mehrabian and Russell (1974), explains that individuals are influenced both physically and emotionally by their surroundings (S), which per se nurture their internal states (O) and result in reactions (R). MTEs can nurture visitors' emotional attachment and motivate them to have positive intentions towards the destination.

Given the above-discussed theories, this study observes the links among MTEs, place attachment, and PEBI, REVI, RECI, and their combinations. The attributes of MTEs and the components of place attachment were considered antecedent configurations of visitors' behavioural intentions.

Methodology

Measurement scales

Several established constructs were extracted from the relevant literature. Six items from Kiatkawsin and Han (2017) were used to measure PEBI; for example, 'I would prefer to buy local products'. REVI and RECI were measured with two items adapted from Toyama and Yamada (2012): 'Would you like to visit this location again in the future?' and 'Would you recommend this location to others?' Place attachment was measured with 10 items from the categories of place affect (three items), place dependence (three items), and place identity (four items; Kulczycki & Halpenny, 2014). Finally, 24 items from Kim and Ritchie (2014) were used to measure visitors' memorable experiences in seven dimensions. Most of the constructs were measured on a 5-point Likert scale (anchored by strongly disagree = 1 and strongly agree = 5). REVI and RECI were measured on a 7-point Likert scale (strongly disagree = 1; strongly agree = 7).

Data collection procedure

The study applied a systematic approach to collect empirical data. For the first step, a four-part survey questionnaire (the details of which are provided below) was prepared. A pilot study of 20 participants confirmed the quality of the questionnaire (e.g. the clarity of the questions, readability, and timing). A series of procedural remedies, such as a cover letter explaining the study purpose and outlining the steps that would be taken to ensure anonymity and confidentiality, were employed to avoid common method bias during this phase (Podsakoff et al., 2003). Moreover, to avoid yea-saying and nay-saying, reverse-coded items were embedded into the questionnaire.

In the second step, the Marine Protected Area Administration (a society for the protection of turtles) granted permission for the researchers to observe the turtles and their habitat. The researchers were based at the primary turtle nesting site of Alagadi Beach, Northern Cyprus, during August and September 2019. Guided tours of the area were booked in advance for small groups of no more than 20 people. Activities included participation in a video-based educational programme, a detailed introduction to the species by a specialist, and an interpretive activity in which baby turtles were released into the sea.

Data analysis procedure

In the first step, the composition of the measurement items was explored with a set of factor analyses using a principal component analysis (PCA) method with varimax rotation. The above process was

confirmed with confirmatory factor analysis (CFA) through a maximum likelihood estimator (Fornell & Larcker, 1981).

The reliability was tested with Cronbach's alpha (α), and composite reliability (CR) validated the internal consistency of the variables. Then, the convergent and discriminant validity were evaluated. Harman's single-factor test was used to evaluate the potential common method variance (Podsakoff et al., 2003).

In the second step, cross-tabulation analyses of two correlated variables (using Cramér's V test) validated the existence of cases that opposed the main net effect. This step affirmed the complexity of the relationships between variables, further suggesting an asymmetrical approach to data analysis. Fiss (2011) encouraged researchers to perform fsQCA when their findings were subject to asymmetry.

The interpretation of fsQCA results is an elaborate process as it produces substantial exploratory information that goes beyond quantitative and qualitative analysis (Ragin, 2009). Therefore, unlike in conventional symmetric methods (Armstrong, 2011), an asymmetric approach such as fsQCA allows complex relationships of antecedents that generate the same combination of outputs to be assessed. In asymmetrical modelling, the terms 'antecedent' and 'ingredient' correspond to the 'independent variable' in symmetrical modelling, and instead of 'net effect', as in symmetrical modelling, the term 'recipe' is used in asymmetrical models.

In the third step, fsQCA was performed using Tosmana version 1.6 software to retrieve the causal recipes for the desired outcome and identify the antecedents that were necessary to achieve that outcome using necessary condition analysis (NCA; Dul, 2016). In this step, a three-phase fsQCA was performed using Ragin's (2014) guidelines. First, the data were calibrated and transformed into fuzzy membership scores. Then, a truth table was crafted with possible low and high outcome scores, and counterfactual analysis refined the conditions to provide the recipes. The results that Tosmana generated were then compared with the results produced by fsQCA (Ragin, 2014). No difference was observed in the generated results or configural models.

Finally, predictive validity was provided and the generated configural models were assessed according to the premise of complexity theory (Woodside, 2017). From almost 500 visitors to Alagadi Beach during the study period, 406 valid questionnaires were extracted for further analysis. The sample included 175 men (43.1%) and 231 women (56.9%). Additional demographic data are listed in Table 1.

Results and discussion

Results of the preliminary tests

After data screening, several questionnaires were discarded because they had missing values of greater than 5%, leaving 406 valid questionnaires. The mean replacement technique was used to overcome missing values of less than 5%, and this approach did not affect the mean of the variables. In addition, early and subsequent versions of the collected questionnaires were compared to test for nonresponse bias (Armstrong & Overton, 1977). No significant differences ($p > .05$) were identified, providing further evidence that nonresponse bias was not a concern in this study. The normality of the data was judged by skewness and kurtosis values, which were in the acceptable range of ±1 and ±3 respectively.

The results of the PCA and descriptive statistics are presented in Table A1. All items were loaded accurately and at an acceptable level ($\lambda > 0.69$) under the desired measuring constructs. The eigenvalue of each construct was greater than 1.00 (see Table A1). The results of calculating Cronbach's alpha coefficient and the average variance extracted (AVE) affirm the construct reliability, with alphas higher than the suggested cut-off level ($\alpha > 0.70$ and AVE > 0.5; Cortina, 1993). The results provided in Table 2 also validate the internal consistency of the measurement items through CR that meets the threshold of 0.70 (Fornell & Larcker, 1981).

Table 1. Respondents' profile *(n = 406)*.

Characteristics	Frequency	Percentage
Gender		
Male	175	43.1
Female	231	56.9
Age		
18–29	30	7.4
30–49	126	31.0
50–64	156	38.4
Over 65	94	23.2
Education level		
No schooling completed	47	10.6
Some high school	118	29.1
Associate degree/diploma	116	28.6
Trade/technical/Vocational training	77	19.0
Bachelor's degree	36	8.9
Graduate and higher degree	12	3.0
Marital status		
Married	254	62.6
Single	152	37.4
Income		
Less than 1000 USD	91	22.4
1000 – 2999 USD	103	25.4
3000 – 5999 USD	184	45.3
More than 6000 USD	28	6.9
Nationality		
British	146	35.9
Cypriot	37	9.1
Russian	34	8.3
German	33	8.1
Swedish	24	5.9
Turkey	26	6.4
Others	106	26.1
Total	406	100%

Table 2 also indicates that all items were loaded sufficiently under their factors; therefore, no items were dropped during this stage.

Results of cross-tabulation analyses

Table 3 supports the existence of contrarian cases in the dataset between statistically correlated variables (i.e. between meaningfulness and pro-environmental behaviour). These cases oppose the main net effect and our intuition. Conventional methods ignore the existence of such cases in the dataset (Olya & Akhshik, 2019). Ignoring the asymmetry of the measurement items creates an illusion during data interpretation, thereby compromising decision-making processes based on these data (Armstrong, 2011). Table 3 illustrates that 24 individuals (6% of the sample) did not derive any sense of meaningfulness from the area they visited but still intended to behave in a pro-environmental manner.

Moreover, Table 3 reveals negative contrarian cases (30 cases, 7.3%) in which visitors who perceived meaningfulness did not intend to behave in a pro-environmental manner. The results reveal the heterogeneity of indicating PEBI and the asymmetric relationships between the outcome and its antecedents. This affirms that contrarian cases exist even when the associations between predictors and outcomes are positive and their effect size is significant.

Table 3 demonstrates how linear modelling may lead to disregarding important information in our dataset. Therefore, to comprehend complex relationships, configural models are recommended to attain a better understanding of the studied phenomena (Woodside, 2015).

Table 2. Result of CFA, CR, AVE, MSV and *α*.

Scale Items		*β*	CR	AVE	MSV	*α*
Pro-environmental behavior intention (PEBI)			.858	.522	.015	.722
Pebi3	I would try to save water and electricity i.e. turning off the tap while washing/ brushing teeth, turning off the lights if I leave the room for more than 10 min, walking up the stairs if only need to go 1 floor up, and using hotel towels more than once.	.984				
Pebi6	I would buy products in eco-friendly packaging when possible i.e. avoid plastic shopping bags, plastic bottles and try to reuse bottles and bags.	.966				
Pebi2	I would try to learn about the recycling facilities and actions of the locals.	.531				
Pebi4	I would try to protect local resources as much as I could i.e. I would voluntarily stop visiting a famous spot if it needed to recover from environmental damage and I would not disturb any creatures and vegetation, for example, feeding fish and birds or picking flowers.	.530				
Pebi1	I would prefer to buy local products.	.538				
Pebi5	I would try to dispose garbage properly if possible i.e. sort my garbage into separate containers for paper, plastic, glass, etc.	.613				
Hedonism (hed)			.876	.641	.402	.800
Hed3	Really enjoyed this tourism experience	.814				
Hed4	Exciting	.699				
Hed2	Indulged in the activities	.901				
Hed1	Thrilled about having a new experience	.774				
Place Identity (ide)			.871	.628	.009	.793
Ide3	I identify strongly with Alagadi beach	.836				
Ide2	Visiting Alagadi beach says a lot about who I am	.838				
Ide1	I feel like Alagadi beach is part of me	.788				
Ide4	When I see Alagadi beach other see me the way I want them to see me	.701				
Knowledge (kno)			.928	.812	.027	.901
Kno2	Knowledge	.922				
Kno1	Exploratory	.886				
Kno3	New culture	.894				
Novelty (nov)			.824	.541	.105	.735
Nov3	Different from previous experiences	.77				
Nov4	Experienced something new	.708				
Nov2	Unique	.801				
Nov1	Once-in-a lifetime experience	.654				
Refreshment (ref)			.815	.529	.176	.728
Ref2	Enjoyed sense of freedom	.832				
Ref4	Revitalized	.555				
Ref3	Refreshing	.733				
Ref1	Liberating	.761				
Involvement (inv)			.892	.735	.023	.857
Inv2	I enjoyed activities which I really wanted to do	.938				
Inv3	I was interested in the main activities of this tourism experience	.875				
Inv1	I visited a place where I really wanted to go	.747				
Local culture (loc)			.885	.72	.094	.849
Loc3	Local people in a destination were friendly	.94				
Loc1	Good impressions about the local people	.828				
Loc2	Closely experienced the local culture	.770				
Place Affect (aff)			.84	.637	.319	.798
Aff2	I feel happiest when I am in Alagadi beach	.815				
Aff1	I have strong positive feelings for Alagadi beach	.774				
Aff3	I am fond of Alagadi beach	.804				
Place Dependence (dep)			.775	.539	.176	.734
Dep1	Alagadi beach is the best place for what I like to do	.859				
Dep2	I would not substitute any other area for the types of things I do at Alagadi beach	.704				
Dep3	I get more satisfaction out of visiting Alagadi beach than any other place	.619				
Meaningfulness (mng)			.767	.526	.402	.725
Mng2	I did something important	.774				
Mng3	Learned about myself	.619				
Mng1	I did something meaningful	.771				

Note: *β*: standardized factor loading; β is significant at the .001 level; AVE: average variance extracted; MSV: maximum shared squared variance; CR: composite reliability; α: Chronbach's Alpha.

Table 3. Cross-Tabulation Analysis of Pro-environmental Behaviour Intentions (PEBI) * Meaningfulness.

			Pro-environmental Behaviour Intentions (PEBI)					
			Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Meaningfulness	Strongly disagree	Count	2	9	9	2	0	22
		% within Meaningfulness	9.1%	40.9%	40.9%	9.1%	0.0%	100.0%
		% within pebi	6.9%	9.1%	4.7%	2.7%	0.0%	5.4%
		% of Total	0.5%	2.2%	2.2%	0.5%	0.0%	5.4%
	Disagree	Count	11	22	36	19	3	91
		% within Meaningfulness	12.1%	24.2%	39.6%	20.9%	3.3%	100.0%
		% within pebi	37.9%	22.2%	18.7%	25.7%	27.3%	22.4%
		% of Total	2.7%	5.4%	8.9%	4.7%	0.7%	22.4%
	Neutral	Count	13	41	89	30	8	181
		% within Meaningfulness	7.2%	22.7%	49.2%	16.6%	4.4%	100.0%
		% within pebi	44.8%	41.4%	46.1%	40.5%	72.7%	44.6%
		% of Total	3.2%	10.1%	21.9%	7.4%	2.0%	44.6%
	Agree	Count	3	21	51	23	0	98
		% within Meaningfulness	3.1%	21.4%	52.0%	23.5%	0.0%	100.0%
		% within pebi	10.3%	21.2%	26.4%	31.1%	0.0%	24.1%
		% of Total	0.7%	5.2%	12.6%	5.7%	0.0%	24.1%
	Strongly agree	Count	0	6	8	0	0	14
		% within Meaningfulness	0.0%	42.9%	57.1%	0.0%	0.0%	100.0%
		% within pebi	0.0%	6.1%	4.1%	0.0%	0.0%	3.4%
		% of Total	0.0%	1.5%	2.0%	0.0%	0.0%	3.4%
Total		Count	29	99	193	74	11	406
		% within Meaningfulness	7.1%	24.4%	47.5%	18.2%	2.7%	100.0%
		% within pebi	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	7.1%	24.4%	47.5%	18.2%	2.7%	100.0%

Note: Cramer's V = .336, $p < 0.000$; The marked numbers illustrate contrarian cases ~ Meaningfulness → Pro-environmental behavior intention (24 cases) and Meaningfulness → ~Pro-environmental behavior intention (30 cases).

Results of model testing

The results of this study's configural model, depicted in Figure 1 as arrows A to C, are presented in Tables 4 and 5. Coverage and consistency are two criteria for selecting the consistent and sufficient recipes that are generated in fuzzy truth tables (Olya & Akhshik, 2019; Olya & Han, 2020). Occurrences of more than 1 and a consistency of at least .8 are considered acceptable levels for each recipe (Ragin, 2014).

Additionally, fsQCA enables prioritizing more than one outcome (Olya & Al-ansi, 2018). This allows us to target the desired visitors to protected areas with a combination of all intentions to achieve financial goals and promote pro-environmental behaviours.

The identified intersections of the antecedents of MTEs and demographics on the combination of all intentions (i.e. Figure 1: Arrow A. Outcome = f(hed, kno, inv, loc, mng, nov, ref, gen, mar, age, inc, edu)) are presented in Table 4.

One causal recipe (A: M1) led to a high outcome (pebi ∩ revi ∩ reci) score (solution coverage = 0.23; solution consistency = 0.82). A: M1 (hed * mng * loc * ~nov * ~inv * kno * ref * age * ~inc * ~edu * gen * mar) shows that older, married, poorly educated women with lower incomes and a high level of hedonism, meaningfulness, respect for local culture, and knowledge who demonstrated refreshment but not involvement or novelty displayed a high score in the combination of all intentions. This result is also confirmed by previous studies (Olya & Akhshik, 2019), where older married women showed stronger intentions to support sustainable development and exhibited high intentions of pro-environmental behaviour.

Table 4. Configural Models of high and low scores of Outcome (model A, B and their negations).

Models for predicting high score of Outcome	C	RC	UC	Models for predicting low score of Outcome	C	RC	UC
A. *Outcome = f(hed, kno, inv, loc, mng, nov, ref, gen,mar, age,inc,edu)*				**~A.** *Outcome = f(hed, kno, inv, loc, mng, nov, ref, gen, mar,age,inc,edu)*			
				M1. hed * mng* loc* nov* inv * kno * ref * age * ~inc * edu* ~gen* mar	.99	.15	**
M1. hed * mng* loc* ~nov* ~inv * kno* ref * age * ~inc* ~edu* gen * mar	.82	.23	**				
Solution coverage: .23				*Solution coverage: .15*			
Solution consistency: .82				*Solution consistency: .99*			
B. *Outcome = f(dep, ide, aff, gen,mar,age,inc,edu)*				**~B.** *Outcome = f(dep, ide, aff, gen,mar,age,inc,edu)*			
M1. aff * ~dep * ide * age* ~inc* ~edu* ~gen	.75	.32	.10	M1. aff * dep * ide * age* ~inc	.94	.51	**
M2. aff * dep * age* ~inc* ~edu* ~gen* ~mar	.78	.25	.03	M2. aff * ide * age* ~inc* gen* mar	.92	.27	**
				M3. aff * ide * age* ~inc* ~edu* ~gen	.96	.23	**
Solution coverage: .35				M4. aff * dep * ide * age* ~edu* gen* mar	.96	.23	**
Solution consistency: .72							
				M5. aff * dep * age* ~inc* ~edu* ~gen*	.96	.13	**
				M6. aff * dep * ide * ~inc* ~edu* ~gen* ~mar	.96	.14	**
				Solution coverage: .60			
				Solution consistency: .92			

Note: RC = raw coverage; C = consistency; UC: unique coverage; * = and; ~ = negation; Outcome = pebi ∩ revi ∩ reci; pebi = Pro-environmental behaviour intention; revi = Revisit intention; reci = Intention to recommend; age = respondents' age; gen = gender; mar = marital status; inc = income; edu = education; hed = Hedonism; kno = Knowledge; inv = Involvement; loc = Local culture, mng = Meaningfulness; nov = Novelty; ref = Refreshment; dep = Place dependence; ide = Place identity; aff = Place affect; marital status and gender are dummy variables: 0 indicates: single and men, while 1 indicates: married, women respectively.

Table 4 ~A presents one recipe for a low outcome score: ~A: M1 (hed * mng * loc * nov * inv * kno * ref * age * ~inc * edu * ~gen * mar). This suggests that older, educated, lower-income, married men who demonstrated high scores in hedonism, meaningfulness, respect for local culture, involvement, novelty, refreshment, and knowledge of the environment and surrounding areas felt, upon reflection, that they had behaved poorly while participating in nature-based tourism. These results contradict mainstream research, which suggests that visitors with more knowledge or education will be more concerned about the environmental issues of locations they visit (Kim & Stepchenkova, 2020).

However, this non-compliance is fully explained by the contrarian cases and non-linearity in this study. Thus, unlike conventional methods that use one model to predict outcomes, this state-of-the-art method uses causal recipes to simulate visitors' intentions. In symmetric models, a low level of intention is presented in opposition to a high level, whereas fsQCA proposes varying solutions for the negation of outcomes (Table 4; ~A: M1 and M2).

More results (B: M1, M2; ~B: M1, M6) from the configural model highlight two causal recipes for the combination of place attachment and demographics (solution coverage: 0.35; solution consistency: 0.72). B: M1 (aff * ~dep * ide * age * ~inc * ~edu * ~gen) implies that uneducated older men with lower incomes who scored high in place identity and place affect but lacked place dependency achieved high scores in predicting the outcome (the combination of intentions). This outcome is a counterintuitive result, which may have been misinterpreted in studies that employed regression analysis or structural equation modelling. Because of this, several studies have reported that place dependency is correlated with intentions (Scannell & Gifford, 2010).

This does not, however, necessarily indicate that visitors who reported high dependency for a place intended to act pro-environmentally or revisit the area. As an example, a negation of the same outcome (~B: M1 (aff * dep * ide * age * ~inc)) indicates that older visitors with lower incomes and high scores in the place attachment dimensions (place affect, dependence. and identity) do not intend to act pro-environmentally, recommend the service, or revisit the area. Again, conventional methods would misinterpret relevant data hidden in the dataset (Armstrong, 2011)

Table 5. Configural Models of high and low scores of REVI, PEBI, RECI and outcome with all the antecedents (model C and their negations).

Models for predicting high/low scores of REVI, PEBI, RECI, and outcome	C	RC
C1. REVI = f(hed, kno, inv, loc, mng, nov, ref, dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age* inc*edu* gen*~mar	0.95	0.10
M2. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.96	0.10
M3. ~hed*~mng*~loc*nov*inv* kno* ref* ~aff*dep* ide* age*~inc* ~edu* ~gen* mar	0.96	0.11
M4. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.96	0.12
M5. hed*~mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* ~gen*~mar	0.97	0.11
M6. ~hed*~mng*loc*~nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc*edu* gen*~mar	0.97	0.11
M7. hed*~mng*loc*nov* ~inv* kno* ~ref* ~aff* ~dep~ide* ~age*~inc* ~edu* ~gen* mar	0.98	0.11
M8. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age*~inc*edu* ~gen*~mar	0.95	0.12
M9. hed*mng*loc*nov* ~inv* kno* ref* aff*dep~ide* age* inc* ~edu* gen* mar	0.95	0.12
M10. hed*mng*loc*nov*inv* kno* ref* aff* ~dep* ide* age*~inc* ~edu* ~gen*~mar	0.96	0.12
Solution coverage: .23		
Solution consistency: .88		
~C1. ~REVI = f(hed, kno, inv, loc, mng, nov, ref, dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age*~inc* ~edu* gen*~mar	0.97	0.13
M2. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age* inc*edu* gen*~mar	0.98	0.12
M3. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* ~gen* mar	0.95	0.12
M4. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.99	0.11
M5. hed*~mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* ~gen*~mar	0.95	0.12
M6. ~hed*~mng*loc*~nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc*edu* gen*~mar	0.95	0.12
M7. hed*~mng*loc*nov*inv* kno* ref* aff*dep* ide* ~age*~inc* ~edu* ~gen*~mar	0.95	0.13
M8. hed*~mng*loc*nov* ~inv* kno* ~ref* ~aff* ~dep~ide* ~age*~inc* ~edu* ~gen* mar	0.95	0.11
M9. hed*~mng*loc*nov* ~inv* ~kno* ~ref* aff*dep* ide* age*~inc* ~edu* gen* mar	0.97	0.13
M10. hed*mng*loc*nov* ~inv* kno* ref* aff* ~dep* ide* age*~inc* ~edu* ~gen*~mar	0.96	0.13
M11. hed*mng*loc*nov* ~inv* kno* ref* aff*dep~ide* age* inc* ~edu* gen* mar	0.96	0.13
M12. hed*mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* gen* mar	0.95	0.15
Solution coverage: .28		
Solution consistency: .88		
C2. PEBI = f(hed, kno, inv, loc, mng, nov, ref,dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*loc*~nov* ~inv* kno* ref* aff* ide* age*~inc* ~edu* gen* mar	0.96	0.14
M2. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc*edu* "cgen"	0.96	0.18
M3. hed*mng*loc*nov* kno* ref* aff* ~dep* ide* age*~inc* ~edu* ~gen*~mar	0.97	0.12
M4. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age* inc* ~edu* mar	0.97	0.17
M5. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age* ~edu* gen* mar	0.97	0.17
M6. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc* ~edu* mar	0.96	0.21
M7. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age*~inc* ~edu* gen*~mar	0.98	0.11
M8. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age* inc*edu* gen*~mar	0.99	0.10
M9. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* ~gen* mar	0.98	0.10
M10. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.99	0.09
M11. hed*mng*loc*nov*inv* ~kno* ref* aff*dep* ide* age*~inc*edu* gen* mar	0.98	0.13
M12. ~hed*~mng*~loc*nov*inv* kno* ref* ~aff*dep* ide* age*~inc* ~edu* ~gen* mar	0.98	0.10
M13. hed*mng*loc*nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc*edu* gen* mar	0.98	0.14
M14. hed*~mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc*edu* ~gen* mar	0.97	0.13
M15. hed*~mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* ~gen*~mar	0.99	0.10
M16. hed*mng*loc*nov*inv* kno* ref* aff* ~dep* ide* age* inc* ~edu* gen* mar	0.95	0.14
M17. ~hed*~mng*loc*~nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc*edu* gen*~mar	0.97	0.10
M18. hed*~mng*loc*nov*inv* kno* ref* aff*dep* ide* ~age*~inc* ~edu* ~gen*~mar	0.98	0.11
M19. hed*~mng*loc*nov* ~inv* kno* ~ref* ~aff* ~dep~ide* ~age*~inc* ~edu* ~gen* mar	1.00	0.10
M20. hed*~mng*loc*nov* ~inv* ~kno* ~ref* aff*dep* ide* age*~inc* ~edu* gen* mar	0.96	0.11
M21. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age*~inc*edu* ~gen*~mar	0.98	0.11
M22. hed*mng*loc*nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc* ~edu* ~gen* mar	0.97	0.12
M23. hed*mng*loc*nov* ~inv* kno* ref* aff*dep~ide* age* inc* ~edu* gen* mar	0.98	0.11
M24. hed*mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* gen* mar	0.98	0.13
Solution coverage: .44		
Solution consistency: .91		
~C2. ~PEBI = f(hed, kno, inv, loc, mng, nov, ref,dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*loc*nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc* ~edu* mar	0.93	0.25
M2. hed*mng*loc*nov* kno* ref* aff* ~dep* ide* age*~inc* ~edu* ~gen*~mar	0.95	0.16
M3. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age*~inc* ~edu* gen*~mar	0.95	0.14
M4. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age* inc*edu* gen*~mar	0.98	0.13
M5. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* ~gen* mar	0.97	0.14
M6. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.99	0.13

(*Continued*)

Table 5. Continued.

Models for predicting high/low scores of REVI, PEBI, RECI, and outcome	C	RC
M7. hed*mng*loc*~nov* ~inv* kno* ref* aff* ~dep* ide* age*~inc* ~edu* gen* mar	0.95	0.17
M8. ~hed*~mng*~loc*nov*inv* kno* ref* ~aff*dep* ide* age*~inc* ~edu* ~gen* mar	0.97	0.13
M9. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.95	0.15
M10. hed*~mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* ~gen*~mar	0.98	0.14
M11. ~hed*~mng*loc*~nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc*edu* gen*~mar	0.98	0.14
M12. hed*~mng*loc*nov*inv* kno* ref* aff*dep* ide* ~age*~inc* ~edu* ~gen*~mar	0.96	0.15
M13. hed*~mng*loc*nov* ~inv* kno* ~ref* ~aff* ~dep~ide* ~age*~inc* ~edu* ~gen* mar	0.96	0.13
M14. hed*~mng*loc*nov* ~inv* ~kno* ~ref* aff*dep* ide* age*~inc* ~edu* gen* mar	0.99	0.15
M15. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age* inc* ~edu* gen* mar	0.95	0.18
M16. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age*~inc*edu* ~gen*~mar	0.95	0.15
M17. hed*mng*loc*nov* ~inv* kno* ref* aff*dep~ide* age* inc* ~edu* gen* mar	0.95	0.15
M18. hed*mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* gen* mar	0.96	0.17
Solution coverage: .44		
Solution consistency: .84		
C3. RECI = f(hed, kno, inv, loc, mng, nov, ref,dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*loc*nov* kno* ref* aff* ~dep* ide* age*~inc* ~edu* ~gen*~mar	0.95	0.11
M2. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age* inc* ~edu* mar	0.95	0.16
M3. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age*~inc* ~edu* gen*~mar	0.95	0.10
M4. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age* inc*edu* gen*~mar	0.95	0.09
M5. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* ~gen* mar	0.95	0.10
M6. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.95	0.09
M7. hed*mng*loc*nov*inv* ~kno* ref* aff*dep* ide* age*~inc*edu* gen* mar	0.96	0.12
M8. hed*mng*loc*nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc*edu* gen* mar	0.96	0.13
M9. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.95	0.10
M10. hed*~mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* ~gen*~mar	0.98	0.09
M11. ~hed*~mng*loc*~nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc*edu* gen*~mar	0.97	0.09
M12. hed*~mng*loc*nov* ~inv* kno* ~ref* ~aff* ~dep~ide* ~age*~inc* ~edu* ~gen* mar	0.98	0.09
M13. hed*~mng*loc*nov* ~inv* ~kno* ~ref* aff*dep* ide* age*~inc* ~edu* gen* mar	0.98	0.10
M14. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age*~inc*edu* ~gen*~mar	0.96	0.11
M15. hed*mng*loc*nov* ~inv* kno* ref* aff*dep~ide* age* inc* ~edu* gen* mar	0.96	0.10
M16. hed*mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* gen* mar	0.95	0.12
Solution coverage: .31		
Solution consistency: .88		
~C3. ~RECI = f(hed, kno, inv, loc, mng, nov, ref,dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age* inc*edu* gen*~mar	0.97	0.13
M2. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.97	0.13
M3. ~hed*~mng*~loc*nov*inv* kno* ref* ~aff*dep* ide* age*~inc* ~edu* ~gen* mar	0.95	0.14
M4. hed*~mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* ~gen*~mar	0.96	0.14
M5. hed*~mng*loc*nov* ~inv* kno* ~ref* ~aff* ~dep~ide* ~age*~inc* ~edu* ~gen* mar	0.95	0.13
M6. hed*mng*loc*nov* ~inv* kno* ref* aff*dep~ide* age* inc* ~edu* gen* mar	0.95	0.15
M7. hed*mng*loc*nov*inv* kno* ref* aff* ~dep* ide* age*~inc* ~edu* ~gen*~mar	0.95	0.15
Solution coverage: .25		
Solution consistency: .88		
C4. Outcome = f(hed, kno, inv, loc, mng, nov, ref,dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	0.95	0.17
M2. hed*~mng*loc*nov*inv* kno* ref* aff*dep~ide* age*~inc* ~edu* ~gen*~mar	0.95	0.18
M3. hed*~mng*loc*nov* ~inv* kno* ~ref* ~aff* ~dep~ide* ~age*~inc* ~edu* ~gen* mar	0.97	0.18
Solution coverage: .22		
Solution consistency: .90		
~C4. ~Outcome = f(hed, kno, inv, loc, mng, nov, ref,dep, ide, aff, gen, mar, age, inc,edu)		
M1. hed*mng*loc*~nov* ~inv* kno* ref* aff* ide* age*~inc* ~edu* gen* mar	0.99	0.12
M2. hed*mng*loc*nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc* gen* mar	0.96	0.13
M3. hed*mng*loc*nov*inv* kno* ~ref* aff* ~dep* ide* age*~inc* ~edu* mar	0.97	0.16
M4. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc*edu* "cgen"	0.98	0.15
M5. hed*mng*loc*nov* kno* ref* aff* ~dep* ide* age*~inc* ~edu* ~gen*~mar	0.98	0.10
M6. hed*mng*loc*nov*inv* kno* ~ref* aff*dep* ide* age* inc* ~edu* mar	0.98	0.14
M7. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age* ~edu* gen* mar	0.98	0.14
M8. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc* ~edu* mar	0.98	0.18
M9. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age*~inc* ~edu* gen*~mar	1.00	0.09
M10. hed*mng*loc*nov* ~inv* kno* ref* aff*dep* ide* age* inc*edu* gen*~mar	1.00	0.08
M11. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* ~gen* mar	0.99	0.08
M12. hed*mng*~loc*~nov* ~inv* kno* ref* aff*dep* ide* age*~inc*edu* gen*~mar	1.00	0.08
M13. hed*mng*loc*nov*inv* ~kno* ref* aff*dep* ide* age*~inc*edu* gen* mar	0.98	0.10

(*Continued*)

Table 5. Continued.

Models for predicting high/low scores of REVI, PEBI, RECI, and outcome	C	RC
M14. ∼hed*∼mng*∼loc*nov*inv* kno* ref* ∼aff*dep* ide* age*∼inc* ∼edu* ∼gen* mar	0.99	0.08
M15. hed*∼mng*loc*∼nov*inv* kno* ref* aff*dep* ide* age*∼inc*edu* ∼gen* mar	0.99	0.11
M16. hed*∼mng*loc*nov*inv* kno* ref* aff*dep∼ide* age*∼inc* ∼edu* ∼gen*∼mar	0.99	0.08
M17. hed*mng*loc*nov*inv* kno* ref* aff* ∼dep* ide* age* inc* ∼edu* gen* mar	0.99	0.12
M18. ∼hed*∼mng*loc*∼nov*inv* kno* ∼ref* aff* ∼dep* ide* age*∼inc*edu* gen*∼mar	0.99	0.08
M19. hed*∼mng*loc*nov*inv* kno* ref* aff*dep* ide* ∼age*∼inc* ∼edu* ∼gen*∼mar	0.99	0.09
M20. hed*∼mng*loc*nov* ∼inv* kno* ∼ref* ∼aff* ∼dep∼ide* ∼age*∼inc* ∼edu* ∼gen* mar	0.98	0.08
M21. hed*∼mng*loc*nov* ∼inv* ∼kno* ∼ref* aff*dep* ide* age*∼inc* ∼edu* gen* mar	1.00	0.09
M22. hed*mng*loc*nov*inv* kno* ∼ref* aff*dep* ide* age*∼inc*edu* ∼gen*∼mar	0.98	0.09
M23. hed*mng*loc*nov* ∼inv* kno* ref* aff*dep∼ide* age* inc* ∼edu* gen* mar	1.00	0.09
M24. hed*mng*loc*nov*inv* kno* ref* aff*dep∼ide* age*∼inc* ∼edu* gen* mar	1.00	0.10
Solution coverage: .38		
Solution consistency: .95		

Note: RC = raw coverage; C = consistency; ∼ = negation; Outcome = PEBI ∩ REVI ∩ RECI; PEBI = Pro-environmental behaviour intention; REVI = Revisit intention; RECI = Intention to recommend; age = respondents' age; gen = gender; mar = marital status; inc = income; edu = education; hed = Hedonism; kno = Knowledge; inv = Involvement; loc = Local culture, mng = Meaningfulness; nov = Novelty; ref = Refreshment; dep = Place dependence; ide = Place identity; aff = Place affect; marital status and gender are dummy variables: 0 indicates: single and men, while 1 indicates: married, women respectively.

The results of arrows C1, 2, 3, and 4 in Figure 1, which are the intersections of all possible antecedents for each of the outcomes (C1, C2, and C3) and the intersection of the outcomes (C4), are outlined in Table 5. Ten recipes were generated in fsQCA (C1: M1–M10) for the confluence of all antecedents that result in REVI. Another 12 recipes were extracted for the negation of outcomes using the same combination (C1: M1–M12). An example recipe is C1: M1 (hed * mng * loc * nov * ∼inv * kno * ref * aff * dep * ide * age * inc * edu * gen * ∼mar), which explains that older, single, educated women with higher incomes who scored high in hedonism, meaningfulness, local culture, knowledge, refreshment, and place affect, dependence, and identity, but who lacked involvement, are expected to revisit the area.

Moreover, Table 5 suggests recipes for attaining high and low PEBI scores among visitors (C2, ∼C2). It also provides recipes for achieving high and low scores in visitors' intentions to recommend (C3, ∼C3), the details of which are also presented.

The extension of these recipes illustrates the inherent complexity of the studied intentions and the complex relationships of the antecedents. In considering all potential configurations (i.e. demographics, MTEs, and place attachment) to predict the intersections of intentions (REVI, RECI, and PEBI), three causal recipes explain the conditions (solution consistency: 0.90; solution coverage: 0.22) under which marine turtle visitors have the desired combination of intentions (Table 5; C4: M1, M2, and M3). For example, C4: M1 (hed * mng * ∼loc * ∼nov * ∼inv * kno * ref * aff * dep * ide * age * ∼inc * edu * gen * ∼mar) reveals that single, older, more-educated women with low incomes who scored high in hedonism, meaningfulness, knowledge, refreshment, and place affect, dependence, and identity while scoring low on local culture, novelty, and involvement had strong intentions to behave pro-environmentally, recommend the service to others, and revisit the area.

Based on the results shown in Table 5 for the negation of the combination of intentions and antecedents, 24 causal recipes explain the low scores associated with intentions (solution coverage: 0.38; solution consistency: 0.95), the details of which are presented in Table 5 (∼F: M1–M24). An in-depth assessment of the complexity of these relationships is presented in the following section.

Necessary condition analysis

Unlike sufficient conditions, individual necessary conditions are critically important components in recipes; without these conditions, the outcomes will not occur (Dul, 2016). Table 6 demonstrates the results of NCA to identify the conditions that are necessary to achieve the desired intentions.

Table 6. Necessary condition analysis.

	Outcome			
Conditions	PEBI	REVI	RECI	outcome
hed	**0.9065**	0.8754	0.8584	**0.9451**
∼hed	0.3725	0.3803	0.3497	0.5241
mng	0.7828	0.7350	0.7164	0.8641
∼mng	0.5773	0.5739	0.5492	0.7224
loc	0.8471	0.8306	0.8308	**0.9046**
∼loc	0.4284	0.4123	0.3722	0.5266
nov	0.7795	0.7366	0.7351	0.8685
∼nov	0.6211	0.6155	0.5596	0.7588
inv	0.7694	0.7947	0.7567	0.8687
∼inv	0.4760	0.4288	0.4357	0.5442
kno	0.8295	0.7996	0.8050	0.8376
∼kno	0.3793	0.4011	0.3725	0.5082
ref	0.8507	0.7684	0.7520	0.8781
∼ref	0.5085	0.5275	0.5085	0.6877
aff	**0.9035**	0.8710	0.8831	**0.9439**
∼aff	0.3678	0.3849	0.3266	0.5110
dep	0.8072	0.7548	0.7396	0.8471
∼dep	0.5549	0.5483	0.5221	0.7136
ide	0.8919	0.8591	0.8646	**0.9276**
∼ide	0.4010	0.3919	0.3579	0.5447

Note: PEBI = Pro-environmental behaviour intention; REVI = Revisit intention; RECI = Intention to recommend; hed = Hedonism; kno = Knowledge; inv = Involvement; loc = Local culture, mng = Meaningfulness; nov = Novelty; ref = Refreshment; dep = Place dependence; ide = Place identity; aff = Place affect; The numbers indicate consistency; ∼ indicates negation condition; Bold numbers indicate necessary condition to achieve desired outcome (>0.9).

A cut-off level for consistency of .90 was used to select the necessary conditions that resulted in each intention, as well as combinations of intentions (Olya & Al-ansi, 2018; Tóth et al., 2015). Hedonism and place affect were found to be necessary for PEBI.

Moreover, hedonism, local culture, place affect, and place identity emerged as necessary conditions to simultaneously achieve all three desired intentions.

These results provide guidelines for destination management organizations (DMOs) to emphasize the necessary conditions to focus on financial and environmental goals while managing visitors to sensitive sites.

Predictive validity

To predict future outcomes and test the forecasting power of the extracted recipes, this study tested for predictive validity, as many scholars have suggested (Ferguson et al., 2017). Accordingly, in the first step, the sample data were divided into a subsample and a holdout sample. Next, a fuzzy XY plot was generated for one of the recipes (C2: M6 (pebi = hed * mng * loc * ∼nov * inv * kno * ref * aff * dep * ide * age * ∼inc * ∼edu * mar)), both in the subsample and the holdout sample (Table 5). A comparison of the consistency and coverage of the original sample, the subsample, and the holdout sample affirms the predictive validity of the extracted model.

Summary of findings

In this empirical study, a configural model to predict the favourable intentions of visitors to protected areas was developed and assessed. The findings indicate that a single antecedent is rarely sufficient to predict the desired outcome (Tenet 1). This means that recipes containing different antecedents are needed to fully explain high or low outcome scores (Tenet 2: The recipe principle). In our study, the combination of the studied variables in Table 5, C4: M1 (hed * mng * ∼loc * ∼nov * ∼inv * kno * ref * aff * dep * ide * age * ∼inc * edu * gen * ∼mar) resulted in high levels of intention scores

among visitors. Although hedonism may be a necessary condition for this recipe to achieve strong intentions, hedonism alone cannot describe or predict this outcome.

Furthermore, a single recipe that sufficiently predicts the outcome is insufficient to describe the phenomenon by itself, as other recipes can generate the same results (Tenet 3: Equifinality principle). As presented in Tables 4 and 5, multiple recipes exist that will generate high or low scores for the desired outcomes.

The models' causality requires the negated outcome to be unique (Tenet 4: The causal asymmetry principle). As presented in Tables 4 and 5, the causal recipes for low outcome scores (∼A, ∼B, and ∼C) are unique and not the mirror opposites of those for high outcome scores (A, B, and C).

Additionally, we argue that an antecedent (e.g. hedonism) can contribute positively or negatively to the prediction of an outcome, depending on the presence or absence of other ingredients in the recipe (Tenet 5). In this study, the presence or absence of hedonism contributed to high and low scores, respectively, in predicting the outcome (Table 5; C3: M10 and M11 or ∼C3: M2 and M3). As the sixth tenet, which suggests a high Y score, argues, a recipe is relevant for some, but not all, cases and the coverage of any single combination should be less than 1.00. The evidence is provided in an XY plot (Table 7). A given recipe for a high PEBI score is relevant for some, but not all, cases and the coverage are less than 1.00.

The findings assert that visitors' behavioural intentions must be modelled as complex phenomena using configural causal modelling, such as fsQCA, if solutions are to be considered outside of a single framework.

Conclusion and implications

The theory of planned behaviour (TPB) and theory of reasoned action (Fishbein & Ajzen, 1975) are typically used when scholars consider self-interest and rational choices as the sources of environmentally friendly intentions and behaviours. This is usually opposed to the beliefs of those who relate such intentions and actions to pro-social motives and utilize other theories, such as value–belief–norm (VBN) theory (Stern et al., 1999). However, strong controversies have arisen in the literature, questioning the adequacy of these theories in efforts to comprehensively explain individuals' PEB or intentions (Bamberg & Möser; Onwezen et al., 2013).

Hence, different theories have recently been integrated to explain individuals' intentions and behaviours (Chuang et al., 2018; Han, 2015; Rezapouraghdam et al., 2019). Using several theories, this study found that a complex interaction of variables can best predict nature-based tourists' intentional behaviours, and using fsQCA as a set-theoretic approach facilitated the measurement of combinations of the studied outcomes. We successfully applied a model that predicted the combination of PEBIs in conjunction with REVI and RECI. This empirical research offers theoretical and practical contributions to the context of nature-based tourism in protected areas.

Travellers' behavioural intentions are shaped by visitors' past experiences (MTEs), the resultant emotions (attachment), and their demographic profiles. Lawler's (2001) affective theory of social exchange asserts that the essence of the exchanges that visitors experience with their surroundings and other people during travel can result in positive emotions, such as attachment. This is also supported by social judgement theory and the concept of involvement (Havitz & Dimanche, 1997; Zaichkowsky, 1985) and can attach them to a destination (Xu & Zhang, 2016). This attachment is an innate human need that occurs when a person finds meaning in a place.

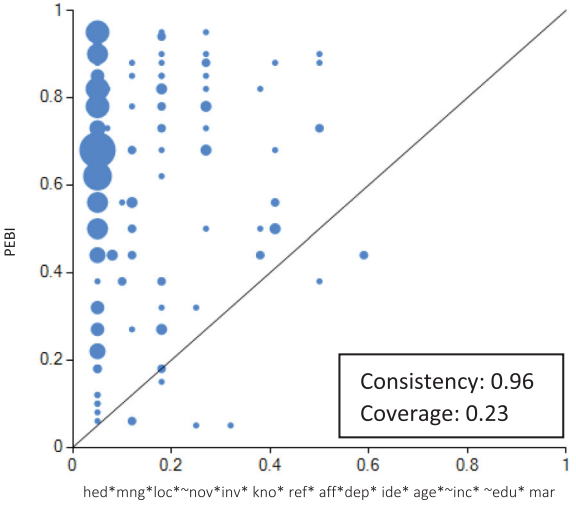
Other theories, such as social identity theory (Brown, 2000) and attachment theory, support the notion that an attached individual would endeavour to react positively (PEBIs, REVI, and RECI) in favour of the place to which they are attached. Tourism consumption system theory (Woodside & Dubelaar, 2002) and SOR theory (Mehrabian & Russell, 1974) can explain the whole picture as well by describing how MTE, place attachment, and peoples' positive intentions are interrelated.

Although visitors' pro-environmental intentions at the time of (re)visiting are vital to the ecological well-being of destinations, the existing literature has mainly focused on the symmetrical

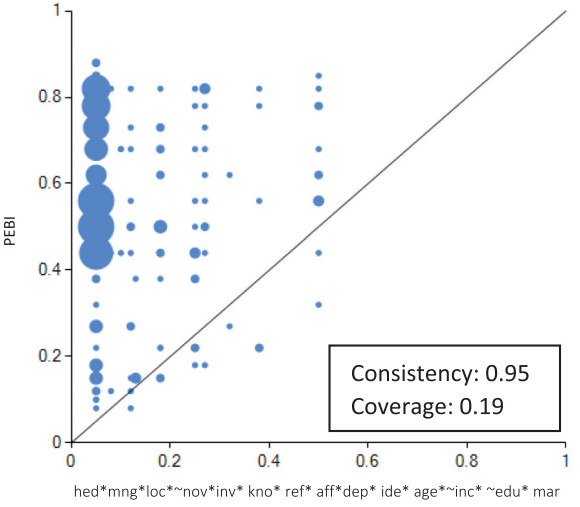
Table 7. Evidence of predictive validity on two subsamples.

Configural model	Raw coverage	Consistency
C2:M6. hed*mng*loc*~nov*inv* kno* ref* aff*dep* ide* age*~inc* ~edu* mar	0.21	0.96

Test of the same model with subsample I



Test of the same model with subsample II



Note: The fuzzy XY plot unveils the asymmetric relationship of the causal model and provides the predictive validity.

antecedents of visitors' intentions to revisit and recommend (Gupta et al., 2018; Hasan et al., 2019; Jeong et al., 2020; Zhang et al., 2018). Our study contributed to the literature by providing a detailed explanation of how various combinations of tourists' experiences, with dimensions of place attachment and visitors' demographic details, can lead to positive intentions.

MTEs' role in shaping travellers' behaviours in nature-based environments has received little attention in the literature (Rezapouraghdam et al., 2021), and simultaneous observations of visitors' PEBIs, REVI, and RECI are scarce. In addition, although the literature supports the role of place attachment in fostering individuals' PEBIs, the evidence is inconsistent across individual studies (see Daryanto & Song, 2021). This has made it difficult to ascertain the overall impact of place attachment on PEBIs.

Our findings provide key insights for destination managers and marketers. First, the importance of the interaction between demographics and MTEs in provoking desirable visitor intentions as travel outcomes should be highlighted (see A: M1). Focusing on tours courting older women as participants is a good starting point for destination managers. Moreover, based on this high-scoring causal recipe (A: M1), all MTE components except for involvement and novelty had a considerable effect on the predicted outcome variables. This gives destination managers in sensitive areas a better grasp of how to make travellers' experiences more memorable to achieve the desired tourism outcomes.

In other words, as participants become more aware of the impact of their travel, the meaningfulness of their visit to the destination increases. Therefore, destination managers should promote this dimension of travel by emphasizing how visitors' presence can financially support the preservation of marine turtles, for example.

Destination service providers can enhance the knowledge dimension of MTEs by delivering information about marine turtles, thus increasing providers' contributions to the ecology of the region and the turtles' life cycle. They can do so through various strategies, such as media campaigns, posted signage, and employing knowledgeable tour guides.

These targeted campaigns can focus on the visitors who bring the most value to both the destination service provider and the protected area. Alternatively, these findings can be used to adjust the experience design to encourage pro-environmental behaviours based on other factors (e.g. demographics) to realize the greatest benefit from an MTE.

In sum, the proposal for various recipes to drive PEBIs, REVI, and RECI in this study indicates that any single ingredient (variable) is insufficient to predict the desired intention.

Various examples of management failures have been observed at tourist destinations and businesses due to an intense concentration on a single dimension rather than a holistic, comprehensive vision (Dos Santos et al., 2017; Sirakaya et al., 1996). The complex nature of tourism products and tourist behaviour demands a recipe that contains the necessary components unveiled by this study. However, a single necessary condition can bring about the desired outcome only when combined with additional necessary conditions. This study revealed that hedonism and place affect are necessary single antecedents and further signalled the importance of engaging visitors emotionally while gamifying the experience to generate the most benefit from educational tours.

Place affect can enhance the visitor experience (Chanchaichujit et al., 2020), lead to further support for tourism and generate well-being outcomes that align with sustainable development goals (Ramkissoon, 2020a). Therefore, managers at tourist destinations should advise their staff to engage with tourists and discuss the emotional moments they experienced during their visits to increase tourists' sentiments and positive affect towards the destination. For example, visitors may describe their feelings as they witnessed the turtles laying eggs or the eggs hatching.

Those who manage these protected zones should also consider advertising and promoting the area as a green destination based on its contribution to nature preservation and the local community's well-being. This will increase visitors' place identity and can increase their PEBI.

Limitations and suggestions for future studies

This study's participants were limited to visitors to Alagadi Beach in Cyprus. Future studies could include participants at similar destinations. The study also did not include other potential ingredients in the recipes, such as visitors' nationalities. The inclusion of these other factors, such as background or culture, could generate more exact estimations from the prediction models.

Moreover, testing the influences of other variables, such as destination image, destination familiarity, and destination social responsibility motives may result in new insights that could lead to different paths engendering desirable outcomes. Comparing symmetrical (using first- or second-order variables) and asymmetrical models to gain further insights into how asymmetrical approaches compare to conventional models would also be beneficial. Finally, the results of this study were limited to visitors' intentions; however, intentions may not always convert into behaviours. Therefore, future research should also measure visitors' actual behaviours.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Arash Akhshik http://orcid.org/0000-0001-6743-4725
Ali Ozturen http://orcid.org/0000-0001-8879-1916
Haywantee Ramkissoon http://orcid.org/0000-0002-2603-0473

References

Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, *82*(2), 261.
Akhshik, A., Ozturen, A., & Rezapouraghdam, H. (2021). A passionate travel to mind green turtles-Unpacking the complexity of visitors' green behaviour. *International Journal of Tourism Research*, *23*(3), 301–318.
Armstrong, J. S. (2011). Illusions in regression analysis. Available at SSRN 1969740.
Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, *14*(3), 396–402.
Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*(4), 664–678. https://doi.org/10.1111/j.1939-0025.1982.tb01456.x
Brown, R. (2000). Social identity theory: Past achievements, current problems and future challenges. *European Journal of Social Psychology*, *30*(6), 745–778. https://doi.org/10.1002/1099-0992(200011/12)30:6<745::AID-EJSP24>3.0.CO;2-O
Brown, T. J., Ham, S. H., & Hughes, M. (2010). Picking up litter: An application of theory-based communication to influence tourist behavior in protected areas. *Journal of Sustainable Tourism*, *18*(7), 879–900. https://doi.org/10.1080/09669581003721281
Bujisic, M., Bilgihan, A., & Smith, S. (2015). Relationship between guest experience, personality characteristics, and satisfaction: Moderating effect of extraversion and openness to experience. *Tourism Analysis*, *20*(1), 25–38. https://doi.org/10.3727/108354215X14205687167509
Buonincontri, P., Marasco, A., & Ramkissoon, H. (2017). Visitors' experience, place attachment and sustainable behaviour at cultural heritage sites: A conceptual framework. *Sustainability*, *9*(7), 1112. https://doi.org/10.3390/su9071112
Buta, N., Holland, S. M., & Kaplanidou, K. (2014). Local communities and protected areas: The mediating role of place attachment for pro-environmental civic engagement. *Journal of Outdoor Recreation and Tourism*, *5*, 1–10. https://doi.org/10.1016/j.jort.2014.01.001
Chanchaichujit, K., Holmes, K., Dickinson, S., & Ramkissoon, H. (2020). The role of place affect in forming emotional bonds with unvisited destinations. *CAUTHE 2020: 20: 20 Vision: New Perspectives on the Diversity of Hospitality, Tourism and Events*, p.693.
Chen, N. C., Dwyer, L., & Firth, T. (2018). Residents' place attachment and word-of-mouth behaviors: A tale of two cities. *Journal of Hospitality and Tourism Management*, *36*, 1–11. https://doi.org/10.1016/j.jhtm.2018.05.001
Chuang, L. M., Chen, P. C., & Chen, Y. Y. (2018). The determinant factors of travelers' choices for pro-environment behavioral intention-integration theory of planned behavior, unified theory of acceptance, and use of technology 2 and sustainability values. *Sustainability*, *10*(6), 1869. https://doi.org/10.3390/su10061869
Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, *78*(1), 98–104. https://doi.org/10.1037/0021-9010.78.1.98

Daryanto, A., & Song, Z. (2021). A meta-analysis of the relationship between place attachment and pro-environmental behaviour. *Journal of Business Research*, *123*, 208–219. https://doi.org/10.1016/j.jbusres.2020.09.045

Dos Santos, R. A., Méxas, M. P., & Meiriño, M. J. (2017). Sustainability and hotel business: Criteria for holistic, integrated and participative development. *Journal of Cleaner Production*, *142*, 217–224. https://doi.org/10.1016/j.jclepro.2016.04.098

Dul, J. (2016). Identifying single necessary conditions with NCA and fsQCA. *Journal of Business Research*, *69*(4), 1516–1523. https://doi.org/10.1016/j.jbusres.2015.10.134

Ellis, G. D., & Rossman, J. R. (2008). Creating value for participants through experience staging: Parks, recreation, and tourism in the experience industry. *Journal of Park and Recreation Administration*, *26*(4).

Ferguson, G., Megehee, C. M., & Woodside, A. G. (2017). Culture, religiosity, and economic configural models explaining tipping-behavior prevalence across nations. *Tourism Management*, *62*, 218–233. https://doi.org/10.1016/j.tourman.2017.05.001

Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, *54*(2), 393–420.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

Gladwell, M. (2006). *The tipping point: How little things can make a big difference*. Brown.

Gross, M. J., & Brown, G. (2008). An empirical structural model of tourists and places: Progressing involvement and place attachment into tourism. *Tourism Management*, *29*(6), 1141–1151. https://doi.org/10.1016/j.tourman.2008.02.009

Gupta, V., Khanna, K., & Gupta, R. K. (2018). A study on the street food dimensions and its effects on consumer attitude and behavioral intentions. *Tourism Review*, *73*(3). https://doi.org/10.1108/TR-03-2018-0033

Han, H. (2015). Travelers' pro-environmental behavior in a green lodging context: Converging value-belief-norm theory and the theory of planned behavior. *Tourism Management*, *47*, 164–177. https://doi.org/10.1016/j.tourman.2014.09.014

Hasan, M. K., Abdullah, S. K., Lew, T. Y., & Islam, M. F. (2019). The antecedents of tourist attitudes to revisit and revisit intentions for coastal tourism. *International Journal of Culture, Tourism and Hospitality Research*, *13*(2), 218–234. https://doi.org/10.1108/IJCTHR-11-2018-0151

Havitz, M. E., & Dimanche, F. (1997). Leisure involvement revisited: Conceptual conundrums and measurement advances. *Journal of Leisure Research*, *29*(3), 245–278. https://doi.org/10.1080/00222216.1997.11949796

Hidalgo, M. C., & Hernandez, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology*, *21*(3), 273–281.

Hosany, S., Prayag, G., Van Der Veen, R., Huang, S., & Deesilatham, S. (2017). Mediating effects of place attachment and satisfaction on the relationship between tourists' emotions and intention to recommend. *Journal of Travel Research*, *56*(8), 1079–1093. https://doi.org/10.1177/0047287516678088

Huang, Y. F., Zhang, Y., & Quan, H. (2019). The relationship among food perceived value, memorable tourism experiences and behavior intention: The case of the Macao food festival. *International Journal of Tourism Sciences*, *19*(4), 1–11. https://doi.org/10.1080/15980634.2019.1706028

Io, M. U. (2018). The relationships between positive emotions, place attachment, and place satisfaction in casino hotels. *International Journal of Hospitality and Tourism Administration*, *19*(2), 167–186. https://doi.org/10.1080/15256480.2017.1305315

Jeong, Y., Yu, A., & Kim, S. K. (2020). The antecedents of tourists' behavioral intentions at sporting events: The case of South Korea. *Sustainability*, *12*(1), 333. https://doi.org/10.3390/su12010333

Kiatkawsin, K., & Han, H. (2017). Young travelers' intention to behave pro-environmentally: Merging the value-belief-norm theory and the expectancy theory. *Tourism Management*, *59*, 76–88. https://doi.org/10.1016/j.tourman.2016.06.018

Kim, J. H., & Ritchie, J. B. (2014). Cross-cultural validation of a memorable tourism experience scale (MTES). *Journal of Travel Research*, *53*(3), 323–335. https://doi.org/10.1177/0047287513496468

Kim, J. H., Ritchie, J. B., & McCormick, B. (2012). Development of a scale to measure memorable tourism experiences. *Journal of Travel Research*, *51*(1), 12–25. https://doi.org/10.1177/0047287510385467

Kim, M. S., & Stepchenkova, S. (2020). Altruistic values and environmental knowledge as triggers of pro-environmental behavior among tourists. *Current Issues in Tourism*, *23*(13), 1575–1580. https://doi.org/10.1080/13683500.2019.1628188

Kim, Y. J., Lee, D. K., & Kim, C. K. (2020). Spatial tradeoff between biodiversity and nature-based tourism: Considering mobile phone-driven visitation pattern. *Global Ecology and Conservation*, *21*(1), e00899. https://doi.org/10.1016/j.gecco.2019.e00899

Kulczycki, C., & Halpenny, E. A. (2014). Sport cycling tourists' setting preferences, appraisals and attachments.". *Journal of Sport and Tourism*, *19*(2), 169–197. https://doi.org/10.1080/14775085.2015.1070741

Lawler, E. J. (2001). An affect theory of social exchange. *American Journal of Sociology*, *107*(2), 321–352.

Lee, T. H., Jan, F. H., & Huang, G. W. (2015). The influence of recreation experiences on environmentally responsible behavior: The case of liuqiu island, Taiwan. *Journal of Sustainable Tourism*, *23*(6), 947–967. https://doi.org/10.1080/09669582.2015.1024257

Lee, Y. K., Pei, F., Ryu, K. S., & Choi, S. (2019). Why the tripartite relationship of place attachment, loyalty, and pro-environmental behavior matter? *Asia Pacific Journal of Tourism Research*, *24*(3), 250–267. https://doi.org/10.1080/10941665.2018.1564344

Leri, I., & Theodoridis, P. (2019). The effects of the winery visitor experience on emotions, satisfaction and on post-visit behavior intentions. *Tourism Review*, *74*(3). https://doi.org/10.1108/TR-07-2018-0092

Loureiro, S. M. C. (2014). The role of the rural tourism experience economy in place attachment and behavioral intentions. *International Journal of Hospitality Management*, *40*, 1–9. https://doi.org/10.1016/j.ijhm.2014.02.010

Maldonado-Oré, E. M., & Custodio, M. (2020). Visitor environmental impact on protected natural areas: An evaluation of the Huaytapallana Regional Conservation Area in Peru. *Journal of Outdoor Recreation and Tourism*, l, 100298. https://doi.org/10.1016/j.jort.2020.100298

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.

Morgan, P. (2010). Towards a developmental theory of place attachment. *Journal of Environmental Psychology*, *30*(1), 11–22. https://doi.org/10.1016/j.jenvp.2009.07.001

Oh, H., Fiore, A. M., & Jeoung, M. (2007). Measuring experience economy concepts: Tourism applications. *Journal of Travel Research*, *46*(2), 119–132. https://doi.org/10.1177/0047287507304039

Olya, H. G., & Akhshik, A. (2019). Tackling the complexity of the pro-environmental behavior intentions of visitors to turtle sites. *Journal of Travel Research*, *58*(2), 313–332. https://doi.org/10.1177/0047287517751676

Olya, H. G., & Al-ansi, A. (2018). Risk assessment of halal products and services: Implication for tourism industry. *Tourism Management*, *65*, 279–291. https://doi.org/10.1016/j.tourman.2017.10.015

Olya, H. G., & Han, H. (2020). Antecedents of space traveler behavioral intention. *Journal of Travel Research*, *59*(3), 528–544. https://doi.org/10.1177/0047287519841714

Onwezen, M. C., Antonides, G., & Bartels, J. (2013). The Norm Activation Model: An exploration of the functions of anticipated pride and guilt in pro-environmental behaviour. *Journal of Economic Psychology*, *39*, 141–153. https://doi.org/10.1016/j.joep.2013.07.005

Pham-Do, K. H., & Pham, T. T. T. (2020). Tourism in marine protected areas: A view from Nha trang Bay, Vietnam. *Tourism Management Perspectives*, *33*, 100623. https://doi.org/10.1016/j.tmp.2019.100623

Pine, B. J., & Gilmore, J. H. (1998). Welcome to the experience economy. *Harvard Business Review*, *76*, 97–105.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Prayag, G., Chen, N., & Del Chiappa, G. (2018). Domestic tourists to Sardinia: Motivation, overall attitude, attachment, and behavioral intentions. *Anatolia*, *29*(1), 84–97. https://doi.org/10.1080/13032917.2017.1387583

Qu, Y., Xu, F., & Lyu, X. (2019). Motivational place attachment dimensions and the pro-environmental behaviour intention of mass tourists: A moderated mediation model. *Current Issues in Tourism*, *22*(2), 197–217. https://doi.org/10.1080/13683500.2017.1399988

Ragin, C. C. (2009). *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press.

Ragin, C. C. (2014). *The comparative method: Moving beyond qualitative and quantitative strategies*. Univ of California Press.

Ramkissoon, H. (2020). Perceived social impacts of tourism and quality-of-life: A new conceptual model. *Journal of Sustainable Tourism*, 1–17. https://doi.org/10.1080/09669582.2020.1858091

Ramkissoon, H., Mavondo, F., & Uysal, M. (2018). Social involvement and park citizenship as moderators for quality-of-life in a national park. *Journal of Sustainable Tourism*, *26*(3), 341–361. https://doi.org/10.1080/09669582.2017.1354866

Ramkissoon, H., Smith, L. D. G., & Weiler, B. (2013). Relationships between place attachment, place satisfaction and pro-environmental behavior in an Australian national park. *Journal of Sustainable Tourism*, *21*(3), 434–457. https://doi.org/10.1080/09669582.2012.708042

Relph, E. (1976). *Place and placelessness*. Pion Limited.

Rezapouraghdam, H., Akhshik, A., & Ramkissoon, H. (2021). Application of machine learning to predict visitors' green behavior in marine protected areas: Evidence from Cyprus. *Journal of Sustainable Tourism*, 1–25. https://doi.org/10.1080/09669582.2021.1887878

Rezapouraghdam, H., Alipour, H., & Arasli, H. (2019). Workplace spirituality and organization sustainability: A theoretical perspective on hospitality employees' sustainable behavior. *Environment, Development and Sustainability*, *21*(4), 1583–1601.

Scannell, L., & Gifford, R. (2010). The relations between natural and civic place attachment and pro-environmental behavior. *Journal of Environmental Psychology*, *30*(3), 289–297. https://doi.org/10.1016/j.jenvp.2010.01.010

Sharma, P., & Nayak, J. K. (2019). Understanding memorable tourism experiences as the determinants of tourists' behaviour. *International Journal of Tourism Research*, *21*(4), 504–518. https://doi.org/10.1002/jtr.2278

Shaykh-Baygloo, R. (2020). A multifaceted study of place attachment and its influences on civic involvement and place loyalty in baharestan new town, Iran. *Cities*, *96*, 102473. https://doi.org/10.1016/j.cities.2019.102473

Shi, F., Weaver, D., Zhao, Y., Huang, M. F., Tang, C., & Liu, Y. (2019). Toward an ecological civilization: Mass comprehensive ecotourism indications among domestic visitors to a Chinese wetland protected area. *Tourism Management*, *70*, 59–68. https://doi.org/10.1016/j.tourman.2018.07.011

Sirakaya, E., McLellan, R. W., & Uysal, M. (1996). Modeling vacation destination decisions: A behavioral approach. *Journal of Travel and Tourism Marketing*, *5*(1-2), 57–75. https://doi.org/10.1300/J073v05n01_05

Stamboulis, Y., & Skayannis, P. (2003). Innovation strategies and technology for experience-based tourism. *Tourism Management*, *24*(1), 35–43. https://doi.org/10.1016/S0261-5177(02)00047-X

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review*, 81–97.

Sthapit, E., & Coudounaris, D. N. (2018). Memorable tourism experiences: Antecedents and outcomes. *Scandinavian Journal of Hospitality and Tourism*, *18*(1), 72–94. https://doi.org/10.1080/15022250.2017.1287003

Sthapit, E., Coudounaris, D. N., & Björk, P. (2019). Extending the memorable tourism experience construct: An investigation of memories of local food experiences. *Scandinavian Journal of Hospitality and Tourism*, *19*(4-5), 333–353. https://doi.org/10.1080/15022250.2019.1689530

Stylidis, D. (2018). Place attachment, perception of place and residents' support for tourism development. *Tourism Planning and Development*, *15*(2), 188–210. https://doi.org/10.1080/21568316.2017.1318775

Tóth, Z., Thiesbrummel, C., Henneberg, S. C., & Naudé, P. (2015). Understanding configurations of relational attractiveness of the customer firm using fuzzy set QCA. *Journal of Business Research*, *68*(3), 723–734. https://doi.org/10.1016/j.jbusres.2014.07.010

Toyama, M., & Yamada, Y. (2012). The relationships among tourist novelty, familiarity, satisfaction, and destination loyalty: Beyond the novelty-familiarity continuum. *International Journal of Marketing Studies*, *4*(6), 10. https://doi.org/10.5539/ijms.v4n6p10

Triantafillidou, A., & Petala, Z. (2016). The role of sea-based adventure experiences in tourists' satisfaction and behavioral intentions. *Journal of Travel and Tourism Marketing*, *33*(sup1), 67–87. https://doi.org/10.1080/10548408.2015.1008667

Tsai, C. T. (2016). Memorable tourist experiences and place attachment when consuming local food. *International Journal of Tourism Research*, *18*(6), 536–548. https://doi.org/10.1002/jtr.2070

Vada, S., Prentice, C., & Hsiao, A. (2019). The influence of tourism experience and well-being on place attachment. *Journal of Retailing and Consumer Services*, *47*, 322–330. https://doi.org/10.1016/j.jretconser.2018.12.007

Wang, N. (1999). Rethinking authenticity in tourism experience. *Annals of Tourism Research*, *26*(2), 349–370. https://doi.org/10.1016/S0160-7383(98)00103-0

Woodside, A. G. (2015). Visualizing· matching· generalizing: Case identification hypotheses and case-level data analysis. *Australasian Marketing Journal (AMJ)*, *23*(3), 246–258. https://doi.org/10.1016/j.ausmj.2015.07.002

Woodside, A. G. (2017). Releasing the death-grip of null hypothesis statistical testing (p <. 05): Applying complexity theory and somewhat precise outcome testing (SPOT). *Journal of Global Scholars of Marketing Science*, *27*(1), 1–15. https://doi.org/10.1080/21639159.2016.1265323

Woodside, A. G., & Dubelaar, C. (2002). A general theory of tourism consumption systems: A conceptual framework and an empirical exploration. *Journal of Travel Research*, *41*(2), 120–132. https://doi.org/10.1177/004728702237412

WWF. (2020). Living Planet Report 2020 - Bending the curve of biodiversity loss. Almond,.E.A., Grooten M. and Petersen, T. (Eds). WWF, Gland, Switzerland.

Xu, Z., & 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*(2), 86–96. https://doi.org/10.1016/j.jdmm.2015.11.003

Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of Consumer Research*, *12*(3), 341–352. https://doi.org/10.1086/208520

Zhang, H., Wu, Y., & Buhalis, D. (2018). A model of perceived image, memorable tourism experiences and revisit intention. *Journal of Destination Marketing and Management*, *8*, 326–336. https://doi.org/10.1016/j.jdmm.2017.06.004

Table A1. Results of EFA, and descriptive statistics of scale items (n = 406).

Factor		MEAN	SD	Eigenvalues (% of Variance)	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Place Affect (Kulczycki & Halpenny, 2014)				1.403 (3.509)				
Aff1	.826	3.9754	.93723		−.946	.121	.641	.242
Aff2	.859	4.0837	.82724		−.946	.121	.984	.242
Aff3	.753	3.7414	.91604		−.492	.121	−.334	.242
Place Dependence (Kulczycki & Halpenny, 2014)				1.332 (3.330)				

(*Continued*)

Table A1. Continued.

Factor		MEAN	SD	Eigenvalues (% of Variance)	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Dep1	.828	3.4754	.97278		−.569	.121	.034	.242
Dep2	.808	3.3966	.90151		−.216	.121	−.178	.242
Dep3	.725	3.2537	1.10763		−.295	.121	−.522	.242
Hedonism (Kim & Ritchie, 2014)				4.283 (10.708)				
Hed1	.760	4.1010	.81780		−1.032	.121	1.562	.242
Hed2	.804	3.7980	.95767		−.553	.121	−.143	.242
Hed3	.810	3.8916	.96766		−.718	.121	.040	.242
Hed4	.808	3.8547	.99185		−.895	.121	.540	.242
Place Identity(Kulczycki & Halpenny, 2014)				3.337 (8.441)				
Ide1	.849	3.9310	.96362		−.810	.121	.217	.242
Ide2	.865	3.7808	.94997		−.661	.121	.025	.242
Ide3	.868	3.8054	.95533		−.746	.121	.264	.242
Ide4	.797	3.8744	.96940		−.792	.121	.283	.242
Involvement (Kim & Ritchie, 2014)				2.226 (5.565)				
Inv1	.850	3.5591	1.42818		−.618	.121	−1.011	.242
Inv2	.928	3.5567	1.40211		−.630	.121	−.960	.242
Inv3	.906	3.6010	1.33089		−.635	.121	−.838	.242
Knowledge (Kim & Ritchie, 2014)				2.964 (7.411)				
Kno1	.919	3.7512	1.40007		−.950	.121	−.436	.242
Kno2	.932	3.8227	1.29313		−1.023	.121	−.085	.242
Kno3	.918	3.8941	1.30189		−1.165	.121	.214	.242
Local culture (Kim & Ritchie, 2014)				2.015 (5.038)				
Loc1	.865	3.9532	1.01848		−.977	.121	.559	.242
Loc2	.850	3.5665	1.22091		−.482	.121	−.727	.242
Loc3	.918	3.8916	1.08552		−.866	.121	.058	.242
Meaningfulness (Kim & Ritchie, 2014)				1.172 (2.929)				
Mng1	.721	3.5616	1.07262		−.408	.121	−.622	.242
Mng2	.769	3.4064	1.05870		−.342	.121	−.600	.242
Mng3	.758	2.9286	1.02189		.074	.121	−.428	.242
Novelty				2.832 (7.081)				
Nov1	.684	3.1921	.84183		−.001	.121	.262	.242
Nov2	.773	3.2217	.79822		.166	.121	.106	.242
Nov3	.867	3.2906	.88848		.075	.121	−.045	.242
Nov4	.826	3.2734	.93842		−.066	.121	−.358	.242
Pro−environmental behavior intention (Kiatkawsin & Han, 2017)				5.391 (13.478)				
Pebi1	.729	3.4015	1.12608		−.316	.121	−.772	.242
Pebi2	.788	2.8793	1.08763		.045	.121	−.726	.242
Pebi3	.882	3.4384	1.05405		−.492	.121	−.405	.242
Pebi4	.740	2.6626	1.07356		.223	.121	−.708	.242
Pebi5	.697	3.6724	.87691		−.525	.121	.228	.242
Pebi6	.872	3.4236	1.01972		−.459	.121	−.325	.242
Refreshment (Kim & Ritchie, 2014)				2.439 (6.098)				
Ref1	.759	3.3596	.92362		−1.378	.121	.892	.242
Ref2	.815	3.4163	.92249		−.900	.121	.142	.242
Ref3	.767	3.5443	1.04551		−.724	.121	.045	.242
Ref4	.771	3.3227	.92260		−.380	.121	−.080	.242
Revisit Intention (Toyama & Yamada, 2012)	–	4.13	1.861		−.078	.121	−1.037	.242
Recommendation intention (Toyama & Yamada, 2012)	–	4.52	1.855		−.440	.121	−.793	.242

Note: λ is factor loading coefficient; SD is standard deviation. The sources of the scale items are presented in parenthesis. PEBI = Pro-environmental behaviour intention; REVI = Revisit intention; RECI = Intention to recommend; hed = Hedonism; kno = Knowledge; inv = Involvement; loc = Local culture, mng = Meaningfulness; nov = Novelty; ref = Refreshment; dep = Place dependence; ide = Place identity; aff = Place affect; All items gauged by 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5) except REVI and RECI that are ranging from Strongly disagree (1) to Strongly agree (7). Kaiser-Meyer-Olkin (KMO): .752; Bartlett's Test of Sphericity: Approx. *Chi-Square: 9638.24, df: 780; Sig.: 0.000;* Eigen-values > 1