Journal of Tourism & Development | n.º 45 | 2024 | [171 - 186]
DOI: 10.34624/rtd.v45i0.3349
e-ISSN 2182-1453

Sport tourism spectators' **environmental sustainability** intentions in an international surfing event

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Abstract | The assessment of environmental strategies and practices is an essential factor in sport tourism events environmental sustainability. Thus, this investigation aimed to study spectators' environmental intentions in an international surfing event using the sport sustainability campaign evaluation model (SSCEM). A questionnaire was applied to 343 spectators of the World Championship Tour at Peniche, Portugal. The data were analysed with the Structural Equation Modelling Analysis. The results confirmed the influence of points of attachment and internal constraints on spectators' attitudes towards environmental campaign. However, attitudes towards environmental campaign did not influence spectators' sustainability intentions. Only, external constraints and past behaviours were associated to spectators' sustainable intentions. This research added valuable knowledge on the factors influencing the sport consumers' environmental intentions providing knowledge to sport managers to better plan future campaigns regarding the target audience. Furthermore, this investigation confirmed the SSCEM's ability to analyse the consequences of the environmental campaigns developed by the sport tourism events.

Keywords | Environmental sustainability campaigns, nature-based sports, spectators, sport consumer's behaviour, sport tourism events

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1. Introduction

Sport events are valuable resources to promote environmental awareness and their importance is recognized by International Olympic Committee (IOC) and the World Tourism Organization (WTO) (IOC, 2017; WTO, 2019).

Sport organizations are motivated by strategic and legitimacy factors to adopt environmental management practices (Babiak & Trendafilova, 2011; Kellison & Hong, 2015), and these efforts continue to advance (McCullough, Pfahl, & Nguyen, 2016). These increased determinations further emphasize the importance to evaluate environmental initiatives' results to legitimize the continuity, justify adjustments, or suppress such initiatives. Implementing environmental initiatives through fan engagement campaigns, such as the organization of green thematic sport events and environmental education, is one of the most mentioned environmental practices adopted by sport organizations (Barrett, Bunds, Casper, & Edwards, 2019). Thus, it is imperative to evaluate the effectiveness and impacts of such efforts based on organizational outcomes among targeted stakeholder groups.

Spectators are recognized as part of the sport tourism demand (Martins, Pereira, Rosado, & Mascarenhas, 2021; Mascarenhas, Pereira, Rosado, & Martins, 2021) and as important stakeholders for evaluating the events' sustainability performance (Boggia, Massei, Paolotti, Rocchi, & Schiavi, 2018). Additionally, it is recommended the study of the effectiveness of environmental initiatives on spectators' behaviour (Mascarenhas et al., 2021; Trendafilova & McCullough, 2018). Thus, it is necessary to examine which factors are involved in the spectator's response to environmental campaigns, contributing to the increase of pro-environmental behaviour (Martins et al., 2022), and justifying the current initiatives and the promotion of future environmental campaigns within various sport contexts (Trail & McCullough, 2020).

Several studies have verified the importance of sport initiatives and campaigns to increase spectators' ecological behaviour (Casper, McCullough, & Pfahl, 2020; Casper, Pfahl, & McCullough, 2017, 2014; Inoue & Kent, 2012); however, few studies have advanced with models deepening the spectator's sustainability intentions, such as (i) Casper et al. (2020) reflect on environmental values, personal and sport norms as predictive factors for spectators' sustainability behaviours; and (ii) Trail's (2016) research proposes the sport fan sustainability behaviour model, identifying the various factors that forecast the sport fans' specific attitudes to sustainability campaigns and sustainability behavioural intentions, but it has not yet been tested.

The Sport Sustainability Campaign Evaluation Model (SSCEM) (Trail & McCullough, 2020) investigates the effect of environmental campaigns on the sport participants' intentions, exposing which factors contribute to their attitudes toward the sustainability campaigns and behavioural intentions. Trail and McCullough (2020) recommended testing the SSCEM on future applications to other types of sport actors and sport events.

In particular, nature-based sports provide a context where sport actors are directly connected to natural resources, which has been identified as a promoter of more ecologically friendly attitudes and behaviours (Lin & Lee, 2020; Wolf, Croft, & Green, 2019). For example, surfers' link to the natural environment was one of the factors endorsing ecological behaviours (Larson, Usher, & Chapmon, 2018). Furthermore, considering the centrality of the relationship with nature in the surfing experience, a strong connection from the surfing community to the environmental theme has been deduced (Borne, 2018). The World Surf League (WSL), as the organization responsible for the world championship tour, has been committed to several environmental actions (WSL, 2019).

The recognition of the surf community's connection with the natural space, its activism on en-

vironmental issues, and the environmental initiatives and campaigns proposed by WSL surf events are solid justifications for applying the SSCEM to surfing events' spectators. Thus, accounting for the relevance of evaluating environmental campaigns implemented by sport organizations, the purpose of this investigation was to study spectators' environmental intentions in an international surfing event using the sport sustainability campaign evaluation model, contributing, in theoretical terms, to the deepening of knowledge about the behavioural intentions of sport spectators and in practical terms, for the development of strategies to positively influence the environmental intentions of the spectators in the surf tourism context.

2. Literature Review

To assess the impact of environmental campaigns on the behaviour of the sport actors, Trail and McCullough (2020) developed the SSCEM. The SSCEM (Figure 1) was grounded on the sport fan sustainability behaviour model (Trail, 2016), expanding its application context to sports participants and adapting its dimensions. Thus, the SSCEM is a model already validated for the context of sport events, and consequently, applicable in the present study. However, strengthening the application of SSCEM to other niches of sport consumption, such as spectators, is essential to guarantee the relevance of the knowledge provided by the model so that sport event managers can better plan environmental campaigns aimed at spectators.

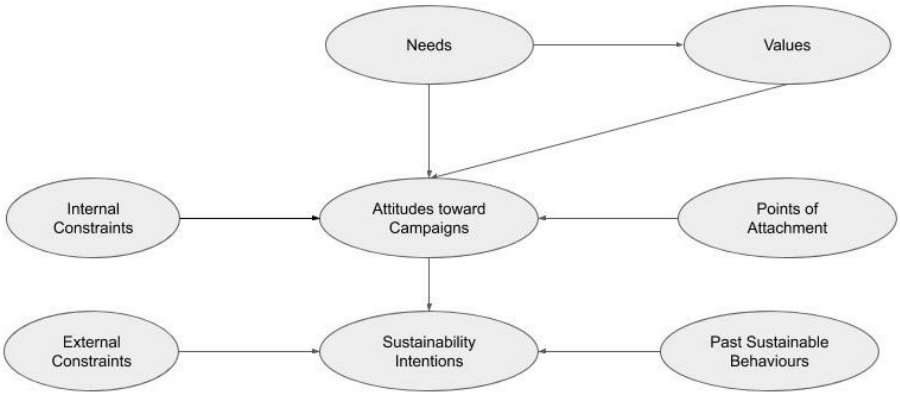


Figure 1 | Sport Sustainability Campaign Evaluation Model
Source: Trail & McCullough, 2020, p.4

2.1. Needs and values

Self-determination theory (Deci & Ryan, 2008), values theory (Rokeach, 1973), Sagiv and Schwartz's (2000) values theories, identity theory (Stryker & Burke, 2000) and the value-belief-norm (VBN) model (Stern, Dietz, Abel, Guagnano, & Kalof, 1999), have been used to relate needs and values to environmental attitudes and intentions.

Some studies that have specifically focused on environmental behaviour have attested to the positive influence of universal and biospheric values (de Groot & Steg, 2010), in particular for environmentalism values, which has been corroborated in the tourism context (Oliver, Benjamin, & Leonard, 2019) and on spectators and sport practitioners' behaviour (Casper et al., 2014; Gau, Huang, Chen, & Naylor, 2019; Van Riper et al., 2019). Moreover, environmentalism is included in universalism values, such as tolerance and social justice values,

which refer to the appreciation for tolerance and protection of the welfare of all people and nature, according to the value theory (Schwartz, 1992).

In Trail's (2016) research, self-actualization needs, namely, needs for wisdom and inner peace, were related to aesthetics and associated with the sport spectators' environmental sustainability intentions when mediated by environmentalism, tolerance, and social justice values. Thus, the following hypotheses are proposed:

H1: Self-actualization needs will influence universalism values.

H2a: Self-actualization needs will influence attitudes toward the campaign.

H2b: Self-actualization needs will influence attitudes toward the campaign mediated by universalism values.

H3: Universalism values will influence attitudes toward the campaign.

2.2. Points of attachment

Trail et al. (2000) stated that identification, as 'orientation of the self in regard to other objects including a person or a group that results in feelings or sentiments of close attachment' (pp. 165-166), influences the consumption behaviour of sport spectators. Given their influence on attendance and purchasing intentions, points of attachment have been recurrently used in the study of spectators (Ballouli, Trail, Koesters, & Bernthal, 2016; Reams, Eddy, & Cork, 2015; Rocha & Fleury, 2017). Some studies have refined the Points of Attachment Index (Robinson & Trail, 2005; Trail et al., 2003) with several subscale adaptations to the context of sporting events. Ballouli et al. (2016), for example, examined a Formula 1 event with adapted subscales of identification to the driver, sport, Formula 1, and place, providing support for the adaptation of the Points of Attachment Index to the measurement of sporting events with individual modalities, as it is the case of surfing events. In the context of tourism events and nature sports, the influence of connection to the place and the community has been positively related to the adoption of environmental behaviours (Alonso-Vazquez, Packer, Fairley, & Hughes, 2019; Buta, Holland, & Kaplanidou, 2014; Larson et al., 2018). Following the above conceptualization,

H4: Points of attachment will influence attitudes toward the campaign.

2.3. Environmental attitudes and sustainability behavioural intentions

Among the multiple theories that contextualize human behaviour, the theory of the planned behaviour (Ajzen & Madden, 1986) has been one of the most used to examine the influential factors on environmental behaviours (Klöckner, 2013). The literature on environmental behaviour addresses the existence of a beneficial effect of environmental attitudes on behaviour, and also the possibility of encounter the attitude-behaviour gap (Kollmuss & Agyeman, 2002). In the context of tourism events, evidence supports the positive effect of attitudes on the intention to engage in eco-friendly behaviours (Wong, Wan, Huang, & Qi, 2021). Also, in the sport context, there have been some findings that positively relate attitudes to practitioners and spectators' environmental behaviour (Kil, Holland, & Stein, 2014; Lin & Lee, 2020; McCullough, 2013). According to the above theories and results,

H5: Attitudes toward the campaign will lead to sustainability behavioural intentions

2.4. Constraints

The stimulation of internal and external factors has been recognized in environmental behaviour (Kollmuss & Agyeman, 2002; Steg & Vlek, 2009). In the sport literature, several studies on spectators have shown the negative influence of constraints on sport consumption (i.e., sport attendance: Kim & Trail, 2010; Mayer & Hungenberg, 2021; Rocha & Fleury, 2017; Trail & Kim, 2011). Internal constraints have been defined as internal perceptions that can constrain spectators' consumption behaviour. External constraints are the social and contextual aspects that constrain the spectators' consumption behaviour (Kim & Trail, 2010). Kim and Trail (2010) found that the lack of knowledge, lack of someone to attend with, lack of success and interest from others were internal constraints factors, and parking, location, commitments, financial cost, leisure alternatives, participant sport alternatives and sport entertainment were external constraints. Theoretically elaborating on the model of constraints, the same authors advanced with their hierarchy, placing the influence of internal constraints in the first place and, in the second place, that of external constraints (Kim & Trail, 2010; Trail & Mccullough, 2018).

Specifically, there is evidence of the influence of constraints on the environmental attitudes of outdoor recreationists (Moghimehfar, Halpenny, & Walker, 2018). Trail (2016) found that internal and external constraints influenced sport consumers' sustainability behavioural intentions, which was further empirically supported by Trail and McCullough (2018, 2020) in the study of the internal constraint, lack of worth, and the external constraint, lack of access, also identified as an external constraint in the recycling spectators' behaviour (McCullough, 2013). Given the above framework, this investigation proposes,

> H6: Internal constraints will negatively influence attitudes toward the campaign.

> H7: External constraints will negatively influence sustainability behavioural intentions.

2.5. Past sustainable behaviours

Past sustainable behaviours have been considered important for their positive influence on future environmental behaviours (Klöckner, 2013; Kollmuss & Agyeman, 2002; Steg & Vlek, 2009; Van der Werff, Steg, & Keizer, 2014). Some studies have concluded that recycling behaviour decreases from daily to leisure (Oliver et al., 2019), similar to the spectators' behaviour identified in sport tourism events (Han, Nelson, & Kim, 2015). However, some sport studies have demonstrated the association of past behaviours with behavioural intentions (Chiu, Won, & Kim, 2019), and more specifically, with sustainability intentions, for example, in spectators' recycling intentions (McCullough & Cunningham, 2011). In accordance, it is suggested,

> H8: Past sustainable behaviours will lead to sustainability behavioural intentions.

Based on this framework, the objective of the present investigation was to investigate spectators' environmental intentions in an international surfing event applying the hypotheses advanced by SSCEM.

3. Materials and Methods

3.1. Event context

The World Championship Tour MEO Rip Curl PRO 2019 (WCT Peniche), organized by the WSL, was hosted in Supertubos Beach, Peniche, Portugal, on the 17th, 18th, 20th and 26th of October 2019. The WCT Peniche had a female and male

competition and involved 54 surfers. Event organizers ensured the operationalization of selective waste collection and water points for refilling bottles and marked paths for beach access. In addition, the event sponsors carried out several awareness actions on the topic of waste, namely, campaigns that focused on reducing single-use plastics, such as beach cleaning actions and the "Beat the Plastic - The Unwanted Shapes" campaign.

3.2. Sampling

Data was collected from 343 spectators over 18 years of age present at the events. The sample is educated, active, slightly female and mostly young (Table 1).

Table 1 | Sample socio-demographic and sport activity characteristics

		Total (%)
Gender	Male	47.1
	Female	52.9
Age	Under 25	34.4
	25 - 30	30.8
	31 - 40	20.1
	41 or more	14.6
Level of Education	High school	24.8
	Undergraduate	34.5
	Graduate	39.8
	Other	0.9
Sport Activity	Active (other sports)	46.2
	Active (surf)	38.2
	None	15.6

Data collection considered: a) the timeline of the event - including weekdays and weekends; b) the physical space of the event - a team of collaborators covered the various areas available to spectate the event; and c) the characteristics of the event – it was carried out in loco, during all competition days, only to spectators who were in the hosting event area, using paper and pen. The collaborators were instructed to briefly present the investigation to the respondents and provide adequate time and space to complete the questionnaire.

The questionnaire applied to the event was based on the questionnaire developed by Trail and McCullough (2020), which included eight dimensions, namely, self-actualization needs, universalism values, attitudes toward the campaigns, points of attachment, internal constraints, external constraints, sustainability behaviour intentions, and past sustainable behaviours.

The self-actualization needs dimension was measured through the need for wisdom, inner peace and aesthetics and the universalism values dimension was measured through social justice, tolerance and environmentalism. Both dimensions were measured by three self-reported items with a 9-point scale, with -1 = Opposed to my Needs/Values, 0 = Not Important, 3 = Important, 6 = Very Important, and 7 = Of Supreme Importance, following Schwartz's (1992) value theory. This scale allows the measurement of "negative values" (Schwartz, 1992, p. 17), i.e., values that are avoided in their behavioural choices.

Points of attachment were conceptualized as a second order factor based on the Points of Attachment Index. The constructs' previous reliability and validity values were good in a team (Robinson & Trail, 2005) and individual sport events (Ballouli et al., 2016).

The items in Trail and McCullough (2020) were adapted for the present investigation, to measure: (i) attitudes toward the campaign, through two items that, in general, characterize the attitude towards the campaigns and initiatives at the surfing event promoting sustainable behaviour; (ii) sustainability behaviour intentions, through six items, of which three items focus on the recycling behaviour and the other three items specify water bottle reuse behaviour; (iii) internal constraints was conceptualized as a second-order factor reflected in a total of eleven items worded negatively adapted from Kim and Trail (2010) constraints model and Trail and McCullough's SSCEM (2020); (iv) external constraints were measured through four items representing lack of access since it is the only factor in Trail and McCullough's (2020) research that adapts to the characteristics of this

investigation; and (v) past sustainable behaviours, two items representing the behaviours that linked to the event's campaign. The attitudes toward the campaign, points of attachment, internal constraints, external constraints and sustainability intentions were measured with self-report items on a 7-point Likert-type scale, with 1 = Strongly Disagree to 7 = Strongly Agree. In addition, spectators were asked about the frequency of environmental behaviour (i.e., percentage of times) to measure past sustainable behaviours, with a response format from 0% to 100% (Trail & McCullough, 2020).

Except for self-actualization needs, universalism values and past sustainable behaviours items, all the items appeared randomly. The demographic questions (age, gender, education level) and the frequency of surfing events attendance and sport practice were included at the end of the questionnaire.

Given the event's international context, 36.5% of respondents completed the English version and 63.5% the Portuguese version of the questionnaire - a translation of the English version, adapted for the present investigation, produced by the authors and checked for cross-cultural equivalence by a professional translator using a committee approach (Brislin, 1980).

3.3. Data Analysis

Using IBM SPSS Statistics (v. 25), the normal distribution of the data was assessed through skewness (sk) and kurtosis (ku) measures. Non-severe violations of the normality assumption, with absolute values of the sk and ku lower than 3 and 7 respectively, were the thresholds to use SEM analysis with maximum likelihood estimation (Marôco, 2014).

The SEM analysis was performed with lavaan package (v. 0.6.4; Rosseel, 2012) from the R statistical package. To deal with missing values, full information maximum likelihood (FIML) imputation was used. Also, in this investigation, the maximum likelihood estimation with robust standard errors (MLR) estimator was selected in the face of the non-severe deviations of the items' normal distributions. The robust fit measures chi-square (χ^2), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) were used to access the goodness of fit of the model accepted for CFI>0.90, TLI>0.90, RMSEA<0.08 and SRMR<0.08 (Hair, Black, Babin, & Anderson, 2010; Marôco, 2014). Items with factor loadings <0.5 and the items that presented problems to the model identification were removed.

The composite reliability with the coefficient omega (ω) was analysed considering the reference values $\omega \geq 0.7$ (Hair et al., 2010; Marôco, 2014) as indicative of acceptable internal consistency.

The model's discriminant validity was assessed with the Heterotrait-Monotrait (HTMT) ratio of correlations considering the threshold value HTMT>.90 for distinguishing a lack of discriminant validity (Henseler, Ringle, & Sarstedt, 2015).

4. Results

The results attested non-severe violations of the normality for all the items as well as good internal consistency reliability within most factors, excepting for attitudes, lack of interest from others, and lack of time which presented values of acceptable internal consistency (Table 2).

Table 2 | Items distributional properties (Mean, Standard Deviation, Skewness and Kurtosis) and loadings of items on constructs (Standardized Loadings)

	M	*SD*	sk	ku	λ
Self-actualization Needs					
Wisdom – Accumulated knowledge of life gained through experience.	6.2	1.0	-1.7	2.9	0.46
Inner peace – At peace with one's self and life.	6.2	1.1	-1.7	2.2	0.83
Aesthetics - Being appreciative of beautiful things in life.	6.0	1.2	-1.8	3.5	0.74
Universalism Values					
Environmentalism - Protecting the environment.	5.8	1.3	-1.3	0.9	0.66
Social justice - Fair and dignified treatment of all people within society.	6.0	1.3	-1.7	2.5	0.72
Tolerance - Accepting differing views of other people and treating them fairly.	5.3	1.6	-0.9	0.1	0.63
Attitudes toward the Campaign					
I like that this event is trying to promote people's environmentally sustainable practices.	6.5	0.84	-2.0	5.4	0.58
I like that this event is inspiring people to be more environmentally friendly.	6.2	1.0	-1.9	5.0	0.71
Sustainability Intentions					
During this event, I will make sure to refill my water bottle at the provided refill stations.	5.5	1.3	-0.8	0.1	0.83
During this event, I am planning to refill my water bottle at the provided refill stations.	5.2	1.5	-0.7	-0.2	0.79
During this event, I intend to refill my water bottle.	5.9	1.4	-1.5	2.0	0.67
Points of Attachment					0.81
Attachment to Surf					0.95
I am a fan of the surfers on the World Surf League (WSL) events.	5.1	1.6	-0.7	-0.2	0.85
I am a big fan of specific surfers.	4.3	1.8	-0.3	-0.9	0.75
First and foremost, I consider myself a surfing fan.	4.8	1.7	-0.6	-0.5	0.82
Surfing is my favourite sport.	4.1	1.9	0.0	-1.2	0.68
Attachment to Event					0.92
I am a fan of the WSL events regardless of who is surfing	4.9	1.6	-0.7	-0.1	0.81
I consider myself a fan of WSL events, and not just one specific surfer.	4.7	1.7	-0.5	-0.4	0.78
I am a big fan of WSL events.	4.8	1.7	-0.6	-0.5	0.93
Attachment to the Community					0.44
I feel connected to numerous aspects of the Ericeira/Peniche community.	4.3	1.6	-0.2	-0.4	0.83
I feel that I am a part of the Ericeira/Peniche community.	3.8	1.8	0.1	-0.9	0.81
I support the Ericeira/Peniche community as a whole.	5.2	1.3	-0.5	-0.1	0.61
Internal Constraints					0.60
Lack of Knowledge					0.77
I don't understand why this event is worried about water bottle refilling.	1.8	1.3	2.3	5.0	0.82
I don't understand why this event is worried about waste recycling.	1.8	1.3	2.4	5.6	0.94
Lack of Interest from Others					0.73
My friends are not interested in acting sustainably.	2.4	1.6	1.2	0.5	0.65
My family is not interested in acting sustainably.	2.5	1.8	1.0	0.0	0.55
My significant other is not interested in acting sustainably.	2.3	1.5	1.1	0.4	0.59
Lack of Time					0.62
I don't have time to find a refill water station when I'm watching surfing events.	2.6	1.6	0.9	-0.2	0.69
I don't have time to find a waste recycling receptacle when I'm watching surfing events.	2.9	1.6	0.5	-0.7	0.57
External Constraints					
When watching surfing events, it is just easier to buy a water plastic bottle than to look for a refill water station.	3.4	1.8	0.2	-1.2	
Past Sustainable Behaviours					
Approximately what percentage of times do you reuse your water bottle instead of buying one?	67.9	33.4	-0.9	-0.6	

All the factors presented good discriminant validity (Table 3). The WCT Peniche's measurement model had a good fit (χ^2(329).robust = 508.807; CFI.robust=.948; TLI.robust =.940; RMSEA.robust =.040; SRMR=.056) and the structural model an acceptable fit (χ^2(387).robust = 688.137; CFI.robust = .916; TLI.robust = .906; RMSEA.robust = .048; SRMR=.075).

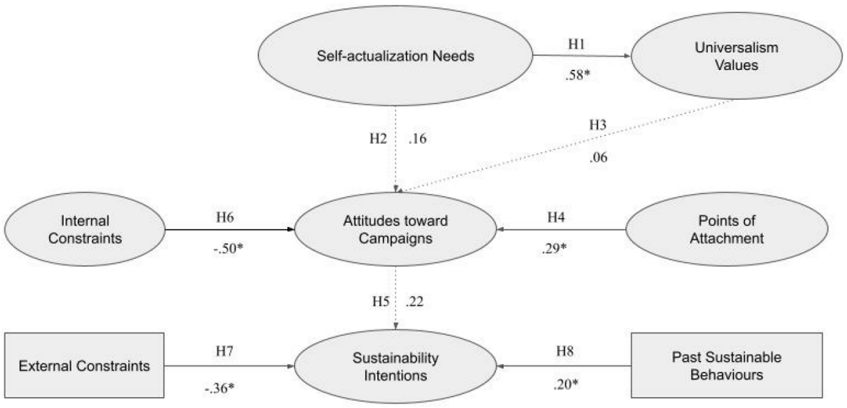
Table 3 | Reliability and Validity (Omega Coefficient and Heterotrait-Monotrait (HTMT) ratio of correlations)

		HTMT								
	ω	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.Self-actualization Needs	0.74	1									
2.Universalism Values	0.70	0.65	1								
3.Attitudes toward the Campaign	0.61	0.46	0.25	1							
4.Sustainability Intentions	0.80	0.23	0.13	0.25	1						
Points of Attachment	0.93										
5.Attachment to Surf	0.85	0.14	0.24	0.25	0.06	1					
6.Attachment to Event	0.88	0.13	0.19	0.23	0.15	0.84	1				
7.Attachment to the Community	0.82	0.17	0.21	0.18	0.13	0.42	0.39	1			
Internal Constraints	0.76										
8.Lack of Knowledge	0.87	0.18	0.10	0.35	0.20	0.13	0.05	0.16	1		
9.Lack of Interest from Others	0.62	0.24	0.09	0.48	0.19	0.15	0.11	0.13	0.58	1	
10.Lack of Time	0.60	0.09	0.12	0.27	0.44	0.16	0.07	0.11	0.49	0.43	1

In this investigation, the SSCEM explained 26% of the Sustainability Intentions, which is above the R^2 =.25, advanced as a good metric for social sciences (Cohen, 2013).

From the path coefficients analysis (Figure 2), this investigation found the significant direct effect of self-actualization needs on universalism values; points of attachment and internal constraints on attitudes toward the campaign; and past sustainable behaviours and external constraints on sustainability intentions.

Thus, as shown in table 4, the results presented above supported hypotheses H1, H4, H6, H7 and H8, but did not validate hypotheses H2, H3 and H5.



Legend: β* significant for p<.05

Figure 2 | Sport Sustainability Campaign Evaluation Model for WCT Peniche

Table 4 | Synthesis of the results

Hypotheses	β	S.E.	Z	Decision
H1. Self-actualization Needs → Universalism Values	0.58	0.15	0.00	Supported
H2. Self-actualization Needs → Attitudes toward the Campaign	0.16	0.19	0.27	Not supported
H3. Universalism Values → Attitudes toward the Campaign	0.06	0.12	0.59	Not supported
H4. Points of Attachment → Attitudes toward the Campaign	0.29	0.11	0.00	Supported
H5. Attitudes toward the Campaign → Sustainability Intentions	0.22	0.12	0.10	Not supported
H6. Internal Constraints → Attitudes toward the Campaign	-0.50	0.17	0.00	Supported
H7. External Constraints → Sustainability Intentions	-0.36	0.04	0.00	Supported
H8. Past Sustainable Behaviours → Sustainability Intentions	0.20	0.00	0.00	Supported

5. Discussion

The present study aimed to investigate spectators' environmental intentions applying the SSCEM at an international surf event whose environmental campaigns met the implementation of the reduction, reuse and recycling of plastic waste.

Focusing on the SSCEM, the model validated five of the eight hypotheses. The effect of the self-actualization needs on universalism values (H1) corroborates the theoretical background (Trail & McCullough, 2020), supporting the choice of inner peace, aesthetics and wisdom to reflect the needs related to the environmentalism, tolerance and social justice values. However, neither self-actualization needs nor universalism values were confirmed as predictors of attitudes, preventing the validation of hypotheses H2 and H3. These results support neither the findings of Trail's (2016) research, in which the aforementioned needs were related to sustainable behaviours only through values, nor the vast literature that focuses on biocentric and universal values as influencing environmental attitudes and behaviours (Van der Werff et al., 2014; de Groot & Steg, 2010; Casper et al., 2014; Gau et al., 2019; Van Riper et al., 2019). However, Trail & McCullough (2020, 2021) did not validate the influence of needs on attitudes either, including ten different needs corresponding to various levels, namely, self-actualization, belongingness, safety and physiological needs.

The absence of the effect of attitudes on recycling / reuse intentions reflects an attitude-behaviour gap of the spectators, nullifying the H5. The attitude-behaviour gap is a recurrent topic in studies that infer about behaviour, including environmental behaviour (Kollmuss, & Agyeman, 2002). More specifically, this gap has been noticed in the contexts of sport demand in general (Martins et al., 2021) and sport tourism (Martins et al., 2022; Mascarenhas et al., 2021), in particular.

The remaining hypotheses - H4, H6, H7 and H8 - which forecasted the influence of the points of attachment and internal constraints on the attitudes and the effect of external constraints and past behaviours on sustainable intentions, were confirmed. For this event, the influence of the points of attachment on the attitudes toward sustainability campaigns (H4) highlights the possibility of investing more in endorsing the identification of spectators with the event, the host community and the surf itself to further enhance the attitudes towards the environmental campaigns.

In the WCT Peniche, internal constraints influence attitudes and external constraints influence intentions, validating H6 and H7. These results support the importance that has been attributed to the study of constraints in the context of environmental behaviour (Moghimehfar et al., 2018; Thøgersen, 2005) and in the spectator's study (Ito & Kono, 2019).

The last hypothesis (H8) was confirmed, validating past sustainable behaviours as predictors of sustainability intentions. This result is consistent with the literature that attests to the positive effect of past behaviours on the attendance behavioural intentions of the spectator (Chiu et al., 2019), the positive influence of past environmental

behaviours on the spectators' intentions (McCullough & Cunningham, 2011; Trail & McCullough, 2020), and, even in a general consumption context, the positive effect of the past environmental behaviours on the sustainability intentions (Van der Werff et al., 2014).

6. Implications

From a methodological perspective, this study advocates for prior knowledge of the needs and values more connected to the environmental behaviour of the sport consumers under study and an introduction of several points of attachment, measured through multi-items with subscales adapted to surf events, namely, attachment to the event, surf, and community.

Regarding the reliability values of the lack of time and lack of interest, these factors may benefit from a formative conceptualization or measurement by single items (Kono et al., 2022; Trail & McCullough, 2021).

From a managerial perspective, this study underlines the importance of addressing the multiplicity of factors that can induce environmental behaviour, foreseeing a clear disadvantage in developing an environmental campaign solely focused on promoting attitudes, regarding the attitude-behaviour gap reported in this study. On the contrary, campaigns should expand the strategies and actions to be carried out at the event, for example, taking into account the mitigation of external constraints, such as the lack of accessibility, confirmed as a constraining factor of sustainable intentions.

In addition, the use of role models to promote environmental behaviour has been suggested in the sport literature (Chen et al., 2018; Martin, Weiler, Reis, Dimmock, & Scherrer, 2017). Exploring the positive influence of the attachment to the place and community on the adoption of environmental behaviours, campaigns should contain a clear message, with a strong and direct appeal to spectators regarding the behaviour they intend to promote (Alonso-Vazquez et al., 2019), strengthening the adoption of an environmentally beneficial behaviour for the place/community with which they identify (Buta et al., 2014). For example, promoting the community of Peniche and the close connection to the sea could be a starting point in invoking the environmental behaviour of WCT Peniche spectators. Since the place-attachment has been connected to promoting the revisiting of the place and the event (Kirkup & Sutherland, 2017), the event managers should address the message to an audience that has already been exposed to a first environmental campaign, making several editions of the campaign. This strategy will enhance the advantage of greater visibility of environmental action and, consequently, of the environmental image of sport event organizations, which is defended by O'Brien and Chalip (2008) in the context of environmental strategic leveraging, advocating care prior planning of the environmental benefits that are to be achieved with the event.

7. Conclusion

In conclusion, this research contributed to the strengthening of the knowledge about the environmental behaviour of sport tourists and exploring a model that could be used to better plan and implement environmental campaigns at sporting events. Thus, managers should focus on understanding the lack of knowledge, time and interest from others since it can influence the positive attitude of spectators regarding the recycle / reuse campaign. Furthermore, event managers should plan future environmental campaigns, connecting the spectators with the surf context (surf, event and the host community), mitigating the lack of access to perform the environmental behaviour and promoting experiences that can leverage past sus-

tainable behaviour. Furthermore, this study broadened the focus of the application of the SS-CEM to sport tourism events, examined a cultural context different from its original application and analysed sport events with a close connection to nature, strengthening the theoretical framework under study.

8. Limitations and Directions for Future Research

Given that self-actualization needs and universalism values were not confirmed as predictors of attitudes, in future investigations may be beneficial to introduce hedonic values since they have also been related to nature-based sports (Van Riper et al., 2020).

The absence of the influence of attitudes on intentions clearly illustrates the presence of the attitude-behaviour gap in low-effort environmental behaviours, such as recycling and reuse, accumulating another finding that should be explored by future research. The intentions chosen for this investigation are consistent with Trail's (2016) work, examining the progression of sustainability campaigns and the resulting behaviours. In addition, though, it is also important to study high effort environmental intentions/behaviours that require a greater commitment from sport spectators, such as the adoption of sustainable transport in the context of sport tourism events (Martins et al., 2022; Mascarenhas et al., 2021).

Future studies should also include the spectators' expectations/perceptions on the responsibility of organizations linked to the event, in terms of the incorporation of more effective environmental management practices, since there is evidence that this is a factor that positively influences the sport spectators' recycling behaviour (Casper et al., 2017; Han et al., 2015). Additionally, the integration of other event stakeholders, such as local residents, should be considered (Araújo & Sá, 2017) in the study of sustainable tourism, and in particular, in the research of pro-environmental behavioural change resulting from marketing campaigns of sport events.

Finally, it is noteworthy that the questionnaire used self-reported items, which only allowed the verification of behavioural intentions and not of observed behaviours, acknowledging the bias between intentions and behaviour. Future studies may include the recommendations of Esfandiar et al. (2019) advocating the advantages of (i) using items that affect current environmental behaviour instead of future intentions; and (ii) inclusion of 'pro-environmental personal norms' as a proxy for pro-environmental behaviour, based on the norm-activation theory.

Acknowledgment

This paper is financed by National Funds provided by FCT- Foundation for Science and Technology through project UIDB/04020/2020 and with DOI 10.54499/UIDB/04020/2020 (https://doi.org/10.54499/UIDB/04020/2020).

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