

# Maximizing the potential of river sports to boost sustainable tourism development: Identification of the determinants of tourist consumption associated with river sports

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**Abstract** | Sustainable tourism development requires maximising the positive impacts of this activity. Tourism has important economic impacts, but these are concentrated particularly on coastal areas. River sports such as kayaking and canoeing, have very low negative environmental impacts and can extend positive economic impacts to geographical areas beyond the coastlines. Nevertheless, these impacts depend on visitors' evaluations of the utility of tourism products. Therefore, understanding the factors that influence expenditures on river sports is critical to maximize the economic impacts of these sports as well as their potential to boost sustainable tourism development. Despite the growing research on sports tourism consumption and its determinants, it mainly focuses on sport events and certain sports. No study was found on the factors that influence tourism consumption in river sports. This paper aims to analyse the consumption patterns of visitors related to river sports and the factors that determine this consumption. A questionnaire survey was conducted in Portugal, revealing that the surveyed river sports practitioners tend to spend more on accommodation, catering and retail and that the factors that positively influence consumption are, above all, income and some characteristics of the trip. The paper ends with theoretical contributions and implications for tourism sector agents.

**Keywords** | River sports, sustainability, tourist consumption, determinants of tourism expenditures, economic impacts

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## 1. Introduction

There has been a growing interest in sports tourism (Gibson, 1998; Gammon & Robinson, 2003; Huggins, 2013; Leite & Rodrigues, 2019; Narvekar & Dayanand, 2020; Roberts, 2011). Although there is no consensual definition of this type of tourism, the literature suggests that it has a broad scope and may encompass passive participation in sports activities, observation of these activities or visiting tourism attractions associated with sports (Gibson, 1998; Roberts, 2011). Some researchers (e.g. Huggins, 2013) also argue that sports tourism may have a competition facet or a recreational facet. Indeed, researchers such as Gammon and Robinson (2003) consider that there are different typologies of sports tourism, according to whether sport participation (active or passive) is the main reason for travel (either for competition or recreation), or to whether tourism takes on a more relevant role and active or passive participation in sport (for recreation or competition) becomes a secondary activity. Hinch and Higham (2001) consider that tourism and sport are clearly related, since often one can exist as a consequence of the other.

It is recognised that river tourism, involving sports practised on rivers in the scope of tourism, can provide an important contribution to the sustainable development of tourism. From an environmental perspective, it may enable both tourism development with low negative environmental impacts and create awareness concerning the environment (Kline, Cardenas, Duffy, & Swanson, 2012; Rickly & Vidon, 2017; Rosa, Carvalhinho, & Soares, 2017), while from an economic perspective, it permits the local economies of destinations where these sports are practised to be boosted (Hjerpe, 2018; Kline et al., 2012; Marsac, 2015). Considering the economic perspective, in order to maximize the positive economic impacts of river tourism it is of major importance to identify the factors that influence expenditures on ri-

ver sports. Nevertheless, despite the growing interest in sports tourism consumption and its determinants (Agrusa, Lema, Kim, & Botto, 2009; Barandela, Fernández, & Álvarez, 2018; Dixon et al., 2012; Kwiatkowski, Diederling, & Oklevik, 2017), research in this field is mainly confined to some sports and sport events. No study was found on the factors that influence tourism consumption in river sports.

Despite recognising the high potential impacts of tourism, to maximise positive tourism impacts it is crucial to deeply understand the consumer behaviour. Actually, the decisions of consumers are highly oriented by assessments of products' utility (Brida, & Scuderi, 2013; Read, 2007) and it is of utmost relevance to understand the factors influencing these utility evaluations and, thus, the consumers' behaviour. This will be critical to design strategies to create more appealing products, attract specific target market segments and boost a more sustainable tourism development.

The aim of this paper is to analyse the consumption patterns of visitors who practise river sports and to examine the factors that determine this consumption. The present paper provides important theoretical contributions, namely promoting advances in knowledge on consumer behaviour, considering, among several issues, the utility theory, and identifying a diverse set of factors that influence consumption in the scope of river sports tourism. Moreover, it also shows that the impacts of factors vary according to the component of the tourism product considered.

It also offers insights to agents of the tourism sector on how to design more appealing river sports tourism products, to attract specific tourism markets, to increase expenditures associated with river tourism sports and, consequently, to boost a more sustainable tourism development regarding river sports tourism.

This paper is structured in five parts. After this introduction, a literature review follows regarding the potential of river tourism to boost sustaina-

ble tourism development, tourism consumption in sports tourism and determinants of this consumption. Next, the methodology of the empirical research is explained and the results of that research are analysed. The paper ends with main conclusions and guidelines for those involved in tourism management and planning.

## 2. Theoretical contextualization

### 2.1. The potential of river tourism to boost sustainable tourism development

There are various river sports, i.e. sports that can be practised on rivers, such as canoeing, stand up paddle, rafting and fishing, among others. Both kayaking and rafting (Jennings, 2007) and canyoning (Hardiman & Burgin, 2011) have undergone exponential growth in recent decades.

Kayaking and rafting enthusiasts tend to practise these activities due to the experience and adrenaline these activities may provide, and to gain new skills (Jennings, 2007). Buckley (2018) describes the experiences with adventure sports (many of them river tourism sports) as therapeutic and extremely beneficial for the development of the character of the individual. The practice of some of these sports can also enable personal goals to be reached or fears to be overcome (Brymer, 2013).

However, river sports generate benefits not only for visitors but also for the destinations where they are practised, having a great potential to boost sustainable tourism development. Concerning an environment dimension, river sports like paddle are considered to be low-carbon activities (Kline, Cardenas, Duffy, & Swanson, 2012). Some researchers state that nature sports practitioners (who include many river sports practitioners) tend to be more aware of their responsibilities to maintain nature (Rickly & Vidon, 2017) and that nature sports can even raise awareness and environmentally fri-

endly behaviours (Rosa, Carvalhinho, & Soares, 2017). Moreover, the World Tourism Organization (2014) argues that adventure tourism, which encompasses many river sports, can contribute to the sustainable development of tourism by driving tourists away from massively tourist areas such as coastal areas, promoting other points of interest and providing access to remote areas of great beauty.

Moreover, river tourism can also provide an important contribution to boosting the local economies of destinations where these sports are practised. Marsac (2015) points out that kayaking and rafting are some of the activities that contribute most to the recreation and mountain sports market. Furthermore, some research reveals that many people view kayaking and canoeing as important economic tools (Kline et al., 2012) and attest that in some geographical contexts this kind of sports may have an important role in boosting local economies and creating jobs (Hjerpe, 2018).

### 2.2. Consumption in sports tourism

In order to maximise the positive impacts of several economic activities, growing research has been developed to better understand consumption. It is recognised, considering the utility theory, that the consumers' decisions are highly based on utility judgements, with utility being the contribution of a product to increase the consumer's happiness (Read, 2007). It is also argued that the global utility people derive from tourism "depends on the joint consumption of a bundle of goods and services" (Divisekera, 2010, p. 117). It is therefore important, when carrying out research on visitors' expenditures in tourism, to analyse expenditures in the several components of the tourism product and to deeply examine the factors influencing those expenditures (this issue will be further explored in the next section).

There has been a growing interest in analysing

the consumption in sports tourism in the last decades. Studies where the determinants of tourism consumption are analysed are presented in table 1.

Most of the studies were conducted in the United States (5), Germany (4), Spain (3) and Italy (3).

**Table 1** | Consumption in sports tourism

Authors	Date	Place	Sport/ event	Type of expenditure	Retail	Res.	Acc.	Ent.	Attr.	Sport	Tran.
Agrusa, Lema, Kim, & Botto	2009	Honolulu (Hawaii, USA)	Marathon	Daily per person	X	X	X				
Downward, Lumsdon, & Weston	2009	England	Cycling	Daily per group							
Barquet, Brida, Osti, & Schubert	2011	Antholz-Anterselva (Italy)	Biathlon	Daily per person		X					
Dixon, Backman, Backman, & Norman	2012	South Carolina (USA)	Golf	Daily per person	X	X	X	X		X	X
Kruger, Saayman, & Ellis	2012	Cape Town (South Africa)	Marathon	Total per group	X	X	X				X
Wicker, Hallmann, & Zhang	2012	Cologne, Bonn and Hanover (Germany)	Marathon	Daily per person	X	X	X	X		X	X
Wicker, Prinz, & Weimar	2013	Germany	Triathlon	Total yearly per person			X			X	X
Del Chiappa, Tinaz, & Michele Turco	2014	Sardinia (Italy)	Motor sports	Daily per group	X	X	X				X
Sato, Jordan, Kaplanidou, & Funk	2014	Miami (USA)	Running event	Total per person at the destination	X	X	X	X	X		X
Buning, Cole, & McNamee	2016	Oregon (USA)	Mountain bike	-							
Cheung, Mak, & Dixon	2016	Hong Kong (China)	East Asian Games	Total per person at the destination	X	X		X			
Jiménez-Naranjo, Coca-Pérez, Gutiérrez-Fernández, & Fernández-Portillo	2016	Cáceres (Spain)	Padel	Total per person per trip		X	X				X
Melstrom	2017	Oklahoma (USA)	Sport-fishing	-							
Duglio & Beltramo	2017	Bionaz (Italy)	Sport event at a trail	Total per person at the destination		X	X	X	X	X	X
Kwiatkowski & Könecke	2017	Sylt (Germany)	Windsurf	Daily per person							
Kwiatkowski, Diederich & Oklevik	2017	Rostock (Germany)	Sailing	Daily per person	X	X	X	X		X	X
Salgado-Barandela, Barajas, & Sánchez Fernández	2018	Santiago de Compostela (Spain)	Basketball	Total per person at the destination	X	X	X				
Barandela, Fernández, & Álvarez	2018	Pontevedra (Spain)	Swimming	Total per person at the destination	X	X	X	X	X		

Note: X Expenditure considered in the paper.

Acc. - Accommodation, Attr. - Tourism attractions, Res. - Restaurants,

Ent. - Entertainment, Tran. - Transport.

The studies analyse various types of expenditure made at the destination and each study classifies them differently. Accommodation and restaurants are the type of expenditures most often considered. Nevertheless, expenditures in retail (e.g. supermarket, clothes, souvenirs), transport at the destination, entertainment (e.g. cafes, bars,

clubs, cinemas), sports (sports equipment, tickets for sport events) and tourism attractions (e.g. museums, monuments, cultural events) are also examined in some studies. Although it is difficult to compare these studies due to the different methodologies adopted and types of expenditures considered, the components in which respondents are

likely to spend more money are restaurants, retail and accommodation, as shown by the studies of Dixon et al. (2012), Duglio and Beltramo (2017) and Wicker et al. (2012).

The type of expenditure most analysed is daily expenditure per person, followed by total expenditure at the destination per person. The sports analysed are extremely varied, with racing being the only sport examined in several studies (including marathons and trail). Other sports analysed are golf, triathlon, paddle, cycling and mountain biking, among others. The East Asian Games is an event that encompasses various sports such as athletics, gymnastics, combat sports and others.

The majority of these studies (e.g. Agrusa et al., 2009; Barandela et al.; 2018, Del Chiappa et al., 2014; Dixon et al., 2012; Jiménez-Naranjo et al., 2016) were conducted during sports events. No studies were found on tourist consumption exclusively in river sports that analyse the factors that influence this consumption. Although Melstrom (2017) conducted a study on fishing practitioners, fishing is not exclusively a river sport, since it may be practised at sea.

### 2.3. Determinants of consumption in sports tourism

As already stated, consumers' decisions are greatly directed by utility evaluations. However, these utility evaluations are highly complex, since they are not only determined by the potential benefits of the product, but are also constrained by various consumers' resources such as money and time (Downward, Lumsdon & Weston, 2009). Moreover, the utility of a product is also partially determined by the utility of other products (Read, 2007). In addition, it is influenced by tangible and intangible factors (Brida, & Scuderi, 2013), as well as internal and external factors of the individual. Therefore, examining the factors that influence consumption behaviour of visitors is crucial to ma-

ximise positive impacts.

Several factors that may influence the consumption in sports tourism have been studied across time (Table 2). Among sociodemographic characteristics, income, besides being one of the most studied variables, is that most frequently related to tourist consumption, with this relation always being positive. There is no consensus in the literature about the relationship between place of residence and consumption. Sociodemographic characteristics such as age, gender and education are not usually significantly related to the expenditure of respondents. However, when there is a significant relationship, education and age tend to have a positive relationship with expenditures or, according to Wicker et al. (2013), there is a positive relationship up to a certain age, with a tendency for this relationship to become negative after that age. Only a significant relationship between gender and one scope of expenditure was found, with women spending more on shopping than men (Cheung et al., 2016).

Travel characteristics (e.g. length of stay, size of travel group and type of accommodation) as well as psychological characteristics (motivation to travel and involvement with sport), although less studied than most of the sociodemographic characteristics, present significant relationships with tourism consumption in practically all studies where they are considered. Barquet et al. (2011), Dixon et al. (2012), Kruger et al. (2012) and Sato et al. (2014) find positive relationships between tourism expenditures and both travel group size and length of stay. In contrast, Buning et al. (2016) and Kwiatkowski and Könecke (2017) find negative relationships between these variables. However, note that both Kruger et al. (2012) and Sato et al. (2014) considered total expenditure per person and, therefore, longer length of stays and larger travel groups may contribute to higher total expenditure per person even if the average daily expenditure per person is lower. Concerning the type of accommodation, individuals who stayed

overnight in hotels or condominiums tend to incur higher expenditures, while individuals who prefer unpaid accommodation tended to incur fewer expenditures (e.g. Dixon et al., 2012; Kruger et al., 2012; Kwiatkowski & Könecke, 2017). Type of transport used to travel to the destination and

to travel at the destination are only considered in one study, preventing conclusions being drawn concerning their relationship with sports tourism consumption.

**Table 2 |** Determinants of consumption in sports tourism

Authors	Date	Sociodemographic charact.						Psychologic charact.		Characteristics of the travel					
		Age	Gen.	Ed.	Inc.	Place of resid.	Status econ. act.	Inv. with the sport	Mot. to travel	Prev. visits	Size of travel group	Type of persons in travel group	Length of stay	Acc.	Type of tran. at dest.
Agrusa et al.	2009					R									
Downward et al.	2009				R						R		R		
Barquet et al.	2011	R	N		-	R				R	R		R		
Dixon et al.	2012	N	N	N	R	N		R			R		R	R	
Kruger et al.	2012	-	-	R	R	R		R	R		R		R	R	
Wicker et al.	2012	N	N	N	R	N		R							
Wicker et al.	2013	R	N	N	R			R							
Del Chiappa et al.	2014	R	N	N		R	N			N	-				
Sato et al.	2014	R		N	R	R		R	R		R		R		
Buning et al.	2016	N	N		R	R				-	R	-	R		
Cheung et al.	2016	N	R	N		N				R					
Jiménez-Naranjo et al.	2016	N	N	R		R			R						
Melstrom	2017	N			R								R		
Duglio & Beltramo	2017	-	-	-		R	-								
Kwiatkowski & Könecke	2017	N	N	N	R	N	N		R	-	R	R	N	R	N
Kwiatkowski et al.	2017	-	-	-	-	R	-					R	-	-	-
Salgado-Barandela et al.	2018	N	N			R	-			R		R			
Barandela et al.	2018	-	-	-	-										

Note: R There is a relationship. N There is no relationship. - The variable was analysed but the relationship with expenditures was not examined.

Acc. - Accommodation, Act. - Activity, Charact. - Characteristics, Dest. - Destination, Econ. - Economic, Ed. - Education, Gen. - Gender, Inc. - Income, Inv. - Involvement, Mot. - Motivation, Resid. - Residence, Tran. - Transport.

Kruger et al. (2012) found a positive relationship between motivation 'escape and relaxation' and expenditures made. Involvement was another potential determinant examined. It may be described as a feeling of personal relevance that can influence both a consumer's cognitive and behavioural processes (Celsi & Olson, 1988) or as an attachment, personal or affective, that persons have, for example, to an activity which remains relatively stable over time (Ritchie, Tkaczynski, & Faulks,

2010). Involvement with sports is usually characterised by the following dimensions (Beaton et al., 2011; Cheng et al., 2016; Cheng & Lu, 2015; Ritchie et al., 2010): (i) hedonism/attraction, representing the connection with and the importance of the activity to its practitioner; (ii) centrality, indicating the importance the activity has on the practitioner's lifestyle and social environment; and (iii) self-expression/sign, representing the role the activity plays in the way the practitioners express

who they are.

Most authors found a positive relationship between expenditures and indicators of involvement – e.g. the number of participations in the event (Dixon et al., 2012) and the number of marathons completed (Kruger et al., 2012). Only Wicker et al. (2013) and Sato et al. (2014) obtained a negative relationship between tourist involvement with the sport (number of years of sport practice) and tourist consumption.

### 3. Methodology

The aims of the empirical research were to identify the main patterns of consumption on river sports tourism among those participating in river sports' tourism, as well as identifying factors influencing this consumption. Since there is already some research that provides various insights on determinants of expenditures on sports' tourism, although not specifically on river sports' tourism, a positivist approach was adopted, similarly to what happened in the studies analysed in the literature review. In order to collect information from a considerable higher number of respondents and compare the information of those respondents, a survey questionnaire was conducted. The objective was, through this survey, to obtain information about the last trip people made in the last two years where they practised some river sport (e.g. rafting, canyoning, kayaking, water walk) and stayed at least one night away from home.

The first questions aimed to know the motivations to travel and the behaviour of the respondents in the destination (e.g. activities performed, people with whom they travelled, type of accommodation and transportation used at the destination, number of nights spent at the destination). To assess motivations for travel, respondents were asked to report how important various motivations considered in the study of Kruger et al. (2012) were

in deciding to travel, on a Likert-type scale from 1 (not important) to 7 (extremely important).

In order to understand the respondents' involvement with the river sport(s) performed during their trip, people were asked to say how many times they had previously practised the sport(s) and to express their agreement, using a Likert scale from 1 (strongly disagree) to 7 (strongly agree), with statements (adapted from Beaton et al., 2011, Cheng et al., 2016, Cheng & Lu, 2015, Ritchie et al., 2010) representing hedonism/attraction, centrality and self-expression/sign.

Considering the focus of the study, respondents were then asked to indicate the total expenditures incurred during the trip in various areas already considered in previous literature and how many people they were responsible for regarding expenditures. This information, together with information on the number of nights the respondent spent at the destination, allows calculation of the average daily expenditure incurred by each respondent in each type of expenditure. Transport expenditures were not considered since the focus of the study is on expenditures in the destination and it may be difficult for respondents to identify transport expenditures only made in the destination. The questionnaire ended with questions on sociodemographic characteristics.

A convenience sampling approach was selected, since the entire population of the study was not known and due to time and financial constraints. The questionnaire was administered in two ways: (i) online, promoted on social networks and groups of river sports practitioners; and (ii) through personal administration in a Portuguese municipality where various river sports activities are organized – Arouca – specifically at a river sports event (Paiva Fest) and at the Areinho river beach. The questionnaires were administered between April and September of 2019. A total of 85 completed questionnaires were obtained. Data were analysed through descriptive analyses and multivariate analyses, es-

pecially multivariate linear regressions.

#### 4. Results

The results of the empirical research are presented in the next sections.

##### 4.1. Characteristics of the sample

Regarding sociodemographic characteristics, most of the respondents are male (64.7%) and are 26 to 35 years old and 36 to 45 years old (both groups with 29.4% of respondents), with the average age of the sample being 35.7 years. Almost three quarters (72.9%) completed higher education. Most respondents are employed (81.2%) and single (54.1%), although a large percentage are married (44.7%). The most reported average monthly net income was [€1000; €1500[ (32.9%), followed by [€500; €1000[ (24.7%). Almost all respondents were Portuguese (96.5%).

Regarding the characteristics of the trip, the average length of stay was 5.1 nights, with 64.7% of visitors being away between 1 and 5 nights (Table 3). Most respondents preferred to travel with friends (83.5%) or with the spouse or partner (27.1%). The average number of people in travel groups was 8.8, with 40% of individuals travelling with 1 to 5 people and 42.4% travelling with a group of 6 to 10 people. The most popular accommodation facilities are the campsite (37.6%) and the hostel/local accommodation (34.1%). The largest number of respondents used their own car (74.1%) as a means of transport at their destination.

The most practised river sports are canyoning

The main motivations to travel (Table 5) are socialization (6.4 on a scale of 1 'not important', to 7 'extremely important'), escape from routine

(49.4%) and kayaking (31.8%), followed by rafting (21.2%). In addition to river sport activities, 64.7% of individuals take walks, 56.5% taste typical dishes and 31.8% visit museums or historic buildings. A considerable percentage (21.2%) also make purchases. Most respondents (70.6%) choose Portugal as their travel destination and 64.7% had previously visited the country of destination. In addition to Portugal, other destinations such as Spain (10) and France (6) are visited by respondents.

Cronbach's alpha attested the existence of three dimensions of involvement with river sport activities, since the alphas are all higher than 0.7 (Table 4). The hedonism/attraction dimension obtained the highest average (4.9) on a scale from 1 (strongly disagree) to 7 (strongly agree), followed by centrality (4.3) and self-expression/sign (3.7). In general, individuals agree that river sports are important for them and one of the most satisfying activities they perform. However, many do not agree that their life is organized around the practice of river sports, nor that one can know much about someone else because he/she practises river sports. These results are to some extent in line with the results obtained by Chang and Gibson (2011), Cheng and Lu (2015), Cheng et al. (2016) and Ritchie et al. (2010), who also obtained higher values of involvement in the hedonism/attraction dimension. Thus, it can be concluded that river sports attract visitors and satisfy them, but that they are not part of visitors' life in a regular way and individuals do not always fully identify themselves with them. Data also show that almost half of the respondents (49.4%) had practised river sports more than 10 times before the trip, 25.9% had practised 1 to 2 times and 20% 3 to 10 times.

and relaxation (6.2) and the attractiveness of the destination (6.1), followed by challenge and adventure (5.9).



Table 3 | Characteristics of the trip

	N	%	Mean	Standard deviation
<b>Nights away from home</b>	-	-	5.1	2.921
<b>River sports practised</b>				
Kayak	27	31.8%		
Canyoning	42	49.4%		
Rafting	18	21.2%		
Water walk	15	17.6%		
<b>Other activities done</b>				
Walks	55	64.7%		
Tasting typical dishes	48	56.5%		
Visiting museums or historic buildings	27	31.8%		
Sports events	11	12.9%		
Shopping	18	21.2%		
Other	2	2.4%		
<b>Number of people in the travel group</b>	-	-	8.8	7.223
<b>Type of people in the travel group</b>				
Friends	71	83.5%		
Relatives	14	16.5%		
Partner/spouse	23	27.1%		
Alone	3	3.5%		
<b>Accommodation</b>				
Hotel	3	3.5%		
Own home / friends or relatives' home	12	14.1%		
Camping site	32	37.6%		
Local accommodation/hostel	29	34.1%		
Other	9	10.6%		
<b>Transportation</b>				
Bus	10	11.8%		
Taxi/Uber	2	2.4%		
Rented car	10	11.8%		
Own car	63	74.1%		
<b>Made previous visits to the destination</b>	55	64.7%		

Table 4 | Involvement with river sports practised

Involvement	Mean	Standard deviation	Cronbach's alpha
<i>Hedonism/Attraction</i>	4.93	1.422	0.851
River sports are very important to me	5.04	1.809	
River sports are one of the most satisfying activities I do	5.42	1.499	
River sports help me relax and escape from the pressures of everyday life	5.88	1.384	
<i>Centrality</i>	4.28	1.823	0.899
Much of my life is organized around river sports	3.36	1.895	
I have many friends who also practise river sports	4.89	2.138	
I like to talk about river sports with other people	4.59	1.885	
<i>Self-expression/Sign</i>	3.65	1.706	0.889
River sports say a lot about me	4.00	1.871	
When I practice river sports I can fully express myself	3.64	1.975	
I can know a lot about a person when I see him/her doing river sports	3.32	1.807	

Table 5 | Motivations to travel

Motivations	Mean	Standard deviation
Escape from routine and relaxing	6.2	1.153
Socialization	6.4	0.980
Attractiveness of the destination	6.1	1.095
Family union	4.7	1.769
Novelty of the sports activity practised	4.1	1.820
Achieving a personal objective	4.6	1.693
Challenge and adventure	5.9	1.006

#### 4.2. Tourist consumption in river sports

The total daily average expenditure of respondents per person during their trip is 55.1, with respondents being responsible for an average of 1.9 people in terms of expenditures (Table 6). Always considering the average expenditure per person per day, the areas where the highest expenditures are reported are accommodation (€15.6), catering (€12.3) and retail (€9.3), followed by ex-

penditures with tourism entertainment companies (€6.5) and rental or purchase of sports equipment (€6.1). Entertainment (€3.2), tourist attractions (€1.0) and other sports-related expenses (€1.0) revealed the lowest average expenditures. These results corroborate the results reported by Dixon et al. (2012), Duglio and Beltramo (2017) and Wicker et al. (2012), who indicated catering, retail and accommodation as the areas where visitors spent most money.

Table 6 | Tourist consumption in river sports

Type of expenditures	Average daily expenditures per person		Average total expenditures per person	
	Mean	Standard deviation	Mean	Standard deviation
Accommodation	15.6	17.650	84.7	109.912
Restaurants	12.3	10.095	60.9	58.089
Entertainment companies	6.5	10.485	24.2	35.781
Sports equipment	6.1	40.711	26.5	163.700
Other issues related to sports	1.0	3.174	3.7	13.342
Retail	9.3	9.018	48.1	48.824
Entertainment	3.2	4.425	14.8	22.201
Tourism attractions	1.0	1.816	5.5	9.712

Daily averages were significantly affected by the fact that many respondents reported no costs in certain areas, preferring to take low-cost trips. Actually, 42.4% of respondents do not spend money on accommodation, and 55.3% do not spend money on tourism entertainment companies. Despite daily expenditures per person not being very high, average total expenditures per travel per person on accommodation, restaurants and retail, reach €85, €61 and €48, respectively.

#### 4.3. Factors influencing tourist consumption in river sports

Nine regressions were performed to analyse the influence of several variables on different types of expenditures. The regressions have different dependent variables – total daily expenditure per person and daily expenditures per person in several areas (e.g. accommodation, restaurants, entertainment companies), while maintaining the same

independent variables presented in Equation 1 in all regressions

$$\begin{aligned}
 \text{(Eq.1)} \quad ADEPP_{ij} = & \alpha + \beta_1 AGE_i + \beta_2 GEN_i + \beta_3 EDU_i + \beta_4 EMP_i + \beta_5 MAR_i + \beta_6 INC_i + \beta_7 TPRS_i + \\
 & \beta_8 LS_i + \beta_9 NPTG_i + \beta_{10} PREVIS_i + \beta_{11} CAR_i + \beta_{12} CD_i + \beta_{13} HLA_i + \beta_{14} C_i + \beta_{15} APKAY_i + \\
 & \beta_{16} APCAN_i + \beta_{17} APRAF_i + \beta_{18} APWW_i + \beta_{19} OAWH_i + \beta_{20} OATTD_i + \beta_{21} OAVMHB_i + \beta_{22} OAASE_i + \\
 & \beta_{23} OAS_i + \beta_{24} GFRI_i + \beta_{25} CGPS_i + \beta_{26} CGREL_i + \beta_{27} CGALO_i + \beta_{28} MOTREL_i + \beta_{29} MOTSOC_i + \\
 & \beta_{30} MOTATR_i + \beta_{31} MOTFUI_i + \beta_{32} MOTNOV_i + \beta_{33} MOTOBJ_i + \beta_{34} MOTCH_i + \beta_{35} INVHED_i + \\
 & \beta_{36} INVCENT_i + \beta_{37} INVSELA_i + \varepsilon_i
 \end{aligned}$$

Note:

Dependent variable  
ADEPP – Average daily expenditures per person

$i = 1 \dots n$  – Number of visitors

$j = 1 \dots 9$  – Different types of average daily expenditures (1 = Total, 2 = Accommodation, 3 = Restaurants, 4 = Entertainment companies, 5 = Sports equipment, 6 = Other issues related to sports, 7 = Retail, 8 = Entertainment, 9 = Tourism attractions)

Independent variables (Factors that can influence the average daily expenditures per person).

Sociodemographic characteristics

AGE – Age

GEN – Gender (1 – female; 2 – male)

EDU – Education (0 – lower than higher education; 1 – higher education)

EMP – Employed (0 – no; 1 – yes)

MAR – Married (0 – no; 1 – yes)

INC – Average monthly income (1 – [€0;€500]; 2 – [€500;€1000]; 3 – [€1000;€1500]; 4 – [€1500;€2000]; 5 – [€2000;€2500]; 6 – [€2500;€3000]; 7 – €3000 or more)

Characteristics of the trip

TPRS – Number of times that practised river sports before the trip (1 – Never; 2 – 1 to 2 times; 3 – between 3 and 10 times; 4 – more than 10 times)

LS – Length of stay (in nights)

NPTG – Number of people in the travel group

PREVIS – Previous visits to the destination (0 – no; 1 – yes)

CAR – Car used in the destination (0 – other mean of transport used; 1 – car used)

CD – Country of destination (0 – another country; 1 – Portugal)

Accommodation used (0 – no; 1 – yes): HLA – Hotel or local accommodation, C – Camping

River sports activities performed (0 – no; 1 – yes): APKAY – Kayak, APCAN – Canyoning, APRAF – Rafting, APWW – Water walk

Other activities performed (0 – no; 1 – yes): OAWH – Walks and hikes, OATTD – Tasting typical dishes, OAVMHB – Visiting museums or historic buildings, OAASE – Attending sports events, OAS – Shopping

Composition of the travel group (0 – no; 1 – yes): CGFRI – Friends, CGPS – Partner or

spouse, CGREL – Other relatives, CGALO – Alone

Motivations to travel (1 – not important at all to 7 – extremely important): MOTREL – escaping from routine and relaxation, MOTSOC – socialization, MOTATR – attractiveness of the destination, MOTFU – family union, MOTNOV – novelty of the sports activity practised, MOTOBJ – achieving a personal objective, MOTCH – challenge and adventure

Dimensions of involvement (1 – not important at all to 7 – extremely important) (average score of statements of each dimension): INVHED – Hedonism/Attraction, INVCENT – Centrality, INVSELF – Self-expression/Sign

All regression assumptions are met since, for example, there is no multicollinearity (tolerance is always  $\geq 0.1$  and VIF is always  $\leq 10$ ). The only factors that influence the total average daily expenditure per person (Table 7) are the average monthly income and the number of times the visitors practised river sports before the trip. Monthly income is the most prominent determinant, having a positive influence on visitors' expenditures, corroborating the research carried out by various authors (e.g. Dixon et al., 2012; Downward et al., 2009; Kruger et al., 2012; Melstrom, 2017). The more times visitors practised river sports previously, the lower their total expenditures tend to be, possibly because more experienced practitioners focus on river sports during their trip and do not find it necessary to spend a lot to be satisfied.

Table 7 | Factors influencing tourist consumption in river sports (Results of regression analyses) (continues)

	Types of average daily expenditures				
	Total	Accom.	Rest.	Entert.	Sports equip.
	$r^2=0.217$	$r^2=0.734$	$r^2=0.425$	$r^2=0.509$	$r^2=0.087$
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<b>Sociodemographic characteristics</b>					
Monthly income	0.483				0.294
Employed			0.279		
Age				-0.308	
<b>Characteristics of the trip</b>					
Hotel or local accommodation		0.798		0.161	
Camping sites		0.293			
Number of persons in the travel group				-0.374	
Travelling with friends					
Travelling with the partner/spouse					
Length of stay (in nights)			-0.374		
Country of destination (Portugal)			-0.343		
Previous visits to the destination			-0.366		
<b>River activities practised</b>					
Water walk		-0.306			
Rafting		-0.137		0.276	
<b>Other activities performed</b>					
Tasting local dishes		0.146	0.191		
Attending sports events				-0.260	
Visiting museums / historic buildings					
Shopping			0.207		
<b>Motivations</b>					
Escape from routine and relaxing					
<b>Involvement</b>					
Number of times they practised river sports	-0.260			-0.428	
Self-expression/sign		-0.170			

Note: Accom. - Accommodation, Attr. - Attractions, Ent. - Entertainment, Equip. - Equipment, Rest. - Restaurants.

Table 7 | Factors influencing tourist consumption in river sports (Results of regression analyses) (continuation)

	Types of average daily expenditures			
	Other issues related to sports	Retail	Entert.	Tourism attr.
	r <sup>2</sup> =0.125	r <sup>2</sup> =0.412	r <sup>2</sup> =0.155	r <sup>2</sup> =0.358
	β	β	β	β
<b>Sociodemographic characteristics</b>				
Monthly income				
Employed				
Age				
<b>Characteristics of the trip</b>				
Number of times they practised river sports				
Hotel or local accommodation				
Camping sites				
Number of persons in the travel group		-0.322	-0.295	
Travelling with friends		0.404		
Travelling with the partner/spouse		-0.233	-0.273	-0.197
Length of stay (in nights)				
Country of destination (Portugal)				
Previous visits to the destination		0.264		-0.228
River activities practised				
Water walk				
Rafting	0.272			
Other activities performed				
Tasting local dishes				
Attending sports events				
Visiting museums / historic buildings				0.301
Shopping		0.345		0.313
<b>Motivations</b>				
Escape from routine and relaxing	-0.233			
<b>Involvement</b>				
Number of times they practised river sports				
Self-expression/sign		-0.388		

Note: Accom. - Accommodation, Attr. - Attractions, Ent. - Entertainment, Equip. - Equipment, Rest. - Restaurants.

Individuals using campsites, hotels or local accommodation and who tasted typical dishes are more likely to spend more on accommodation (Table 7). This is partially explained because these means of accommodation are more expensive than, for example, own home or friends/relatives' home. This may also result from people spending more on meals in accommodation offering typical dishes. In contrast, water-walking and rafting, as well as involvement with river sports, namely self-expression, negatively influence the average daily expenditure per person in accommodation, probably because visitors who are more involved with river sports usually travel to destinations where they already have friends and prefer to save more using these persons' accommodations.

Employed individuals, those who taste typical

local dishes or who shop tend to incur higher expenditures in restaurants. Eating in restaurants that serve typical dishes tends to be more expensive than eating in other kinds of establishments. Those visiting Portugal, those who are repeat visitors to the destination and those who spend more nights at the destination tend to spend less per day in restaurants. The data suggest that tourists who know the region better are less likely to have their meals in typical restaurants, possibly because they already know the local cuisine and are more interested in exploring other attractions such as river sports. As expected, visitors spending more nights at the destination try to lower their total travel costs by not spending as much daily on some areas such as restaurants.

The factors that positively influence the ave-

rage daily expenditure per person at entertainment companies are rafting and hotel or local accommodation. This possibly happens because rafting is a modality which usually requires greater experience of the boat's commander and therefore there is a greater need to use the services of entertainment companies when people have no experience of practising this activity. Moreover, those who stay in hotels and local accommodation usually seek more comfort and some prefer to purchase these services through these professionals. On the contrary, visitors who practised river sports more often tend to spend less on entertainment companies, probably because they have less need to acquire the service of a professional. Age, the number of people in the travel group and attending sport events are factors that negatively influence the average daily expenditure per person in entertainment companies. These data show that younger people travelling in smaller groups tend to hire entertainment companies more. People attending sport events do not spend so much on entertainment companies, probably because these companies usually do not develop programmes, including attendance of sports events.

The average daily expenditure per person on sports equipment is positively influenced only by average monthly income, probably because individuals with higher income are more likely to make larger investments in sports equipment.

Other expenditures related to the practice of sports activity are positively influenced by the practice of rafting and negatively influenced by the motivation to travel for relaxation. As with expenditures in entertainment companies, individuals who raft may need to make more expenditures related to sports due to the complexity of rafting and the need to request professional services. Visitors travelling to escape from routine and feel relaxed may not give as much importance to the sport as to other components of the trip.

Not surprisingly, individuals who shop tend to spend more on retail, such as those who travel with

friends or who are repeat visitors. When repeating a visit to the destination, it is natural that visitors do not feel so much need to do tourism activities and opt for shopping. People repeating a visit may also have a greater attachment to the destination, wanting to buy more objects associated with the destination due to the importance it has for them. In contrast, individuals who travel with their partner/spouse or with larger numbers of people and have a high involvement with the river sport (especially concerning self-expression) are less likely to spend on retail, possibly because these people are more motivated to do non-retail activities.

Individuals travelling with a partner/spouse or belonging to larger travel groups are less likely to spend on entertainment. These data suggest that those travelling in small groups including people other than their spouse or partner (e.g. friends, other family members) or travelling alone tend to look more for entertainment opportunities, even if they are paid.

Visitors shopping or visiting museums and historic buildings are likely to spend more on tourism attractions. In contrast, individuals repeating the visit or travelling with a partner/spouse make lower average daily expenditures at tourism attractions, possibly because they are not much interested in visiting the attractions again or have other motivations for travelling, such as relaxing.

## 5. Conclusion

The literature review reveals that there is a symbiotic interconnection between tourism and sport, as both end up benefiting from the existence of the other and often happen as a consequence of the other. The importance of river sports is also highlighted, since adventure and nature tourism, which encompass many river sports undertaken in the scope of tourism, are essential for directing tourism flows from extremely touristic areas to less

touristic areas, thus enabling more sustainable development of certain destinations. River tourism can, in this context, contribute to the economic development of disadvantaged areas, also allowing more authentic experiences and contact with nature areas, often unique. Moreover, nature sports often increase awareness of environmental issues. For all of the above reasons, it is important to analyse the tourist consumption of tourism associated with river sports and to define strategies that meet the needs and preferences of practitioners while maximizing the contribution of this type of tourism to the development of destinations.

The paper also provides important theoretical contributions and practical implications. It contributes to advances in knowledge on consumer behaviour and the utility theory in the scope of tourism. First, considering that visitors derive their global satisfaction from a bundle of goods and services, it offers some insights on patterns of consumption of different goods and services of river sports tourism. The empirical research of the present paper corroborates several studies which show that practitioners of several sports have higher expenditures in catering, retail and accommodation.

Moreover, the empirical research carried out in this paper offers insights on factors influencing tourism consumption behaviour patterns in tourism, more specifically of several components of river sports tourism. The average income and some characteristics of the trip, such as the composition of the travel group and the activities carried out, are some of the factors that influence expenditures of visitors who carry out river sports. Visitors with higher incomes tend to have higher expenditures and those employed spend more in restaurants.

Furthermore, the empirical research of this paper also reveals that the impact of factors influencing the consumption pattern differs among the several components of the river sports tourism considered in the study. The negative influence of travel group size on entertainment, retail and tourist entertainment expenditures suggests that smaller

travel groups will be more likely to spend more in these areas. Younger tourists are more likely to spend money with tourist entertainment companies, which may be explained by their inexperience in river sports and, therefore, by the need for professional help. Individuals who taste typical dishes are more likely to spend on accommodation, which may be due to the provision of such dishes in more expensive hotels and accommodation. Those who shop are more likely to spend on restaurants and tourist attractions, perhaps because these organisations sell some products that visitors appreciate.

Nevertheless, in contrast with researches on other sports, this study shows that those more involved in river sports, either due to the number of times that they practised these sports before or because they identify themselves with these sports, are likely to have lower expenditures. This may perhaps be explained by the type of travel that individuals who practise river sports regularly prefer, privileging the practice of river sports and often opting for home-cooked meals and unpaid or cheap accommodation, rather than staying in luxury accommodation, and by the lower need for tourism entertainment businesses, due to their expertise.

The analysis of these results allows some recommendations to be made to tourism sector agents concerning relevant strategies to increase expenditures and, consequently, positive economic impacts in the destinations. The results obtained show the importance of promoting river sports among visitors who do not know these modalities and do not have a high level of involvement with them. This type of visitors tends to incur more expenditures on accommodation and retail.

Tourism supply agents should also pay attention to smaller travel groups, who tend to spend more on entertainment, retail and entertainment companies. It is important to have entertainment spaces, which lead to greater satisfaction with the trip and, consequently, to higher expenses. Tourism entertainment companies can create packages aimed at younger visitors. Hotels should continue

to play an important role in offering typical dishes and the sale of local products should be promoted, not only in shops, but also in restaurants and tourism attractions.

Another contribution of this paper is the questionnaire undertaken in the scope of the empirical research of the present paper, which may be an important tool that those engaged on tourism planning and development can use to monitor the economic impacts of river tourism. Nature tourism and river sport activities can continue to be an important tool for decentralizing tourism from large cities if there are appropriate tourism support infrastructures and facilities and if the various players in the tourism sector have a symbiotic relationship to boost this development.

Regarding the limitations of this paper, financial and temporal constraints only allowed the questionnaire to be administered online and in one municipality. It would be interesting to carry out a similar study in several regions of the country or even in other countries where river sports are carried out, to obtain more diversified answers and to confirm the results obtained.

The fact that the questionnaire was applied only during the summer led to a significantly higher number of practitioners of canyoning, which is more practised at that time of year than other river sports. In future studies, the questionnaire should be administered throughout the year, to better understand the different characteristics of practitioners of different modalities performing river sports at different times of the year.

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