A segmentation approach to understand the motivations underlying water sports tourists behaviour

Abstract of PhD Thesis

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1. Introduction

Water-based tourism, sports, leisure and recreation activities have become increasingly popular in the leisure activities of the industrialised nations of the 21st century, both internationally (Jennings 2007, Olivera and Olivera 2016, Scuttari et al. 2021, Stott 2019) as well as in Hungary (Bánhidi 2013, Buzgó 2016, Jászberényi et al. 2022). There is also a growing interest in studying the positive impacts of recreational activities in outdoor water environments on well-being (Jarratt et al. 2022, Hatimi et al. 2020, Olive and Wheaton 2021). The role of the environmental elements in creating an optimal experience and satisfaction with the overall outcome of a sports tourist's stay varies depending on the nature of the sports tourism product (Bánhidi 2007). In the case of outdoor water sports such as windsurfing, kitesurfing, kitefoil, sailing, kayak-kayaking or SUP, the natural environment (wind, waves, water depth, shoreline) is of particular importance for the optimal experience (Bánhidi 2007, Olivera and Olivera 2016), as its dynamically changing nature influences the perceived challenge or risk for the participants (Buckley 2012). According to Pomfret (2016), the motivations for participation in adventure recreation and adventure tourism are worth exploring in the fields of sport sociology, sport psychology and positive psychology. In my doctoral thesis, I reviewed the relevant literature along these disciplines, and explored consumer segments in the context of tourism marketing.

Sport sociological studies can be a way of exploring participation patterns in sport and related travel (Jennings 2007, Terzić et al. 2020, Mutz and Müller 2021, Reyes 2021, Widdop and Cutts 2013). In Hungary, active tourism, including water and sailing tourism, has a steadily growing social base (Jászberényi et al. 2022), while access to sport and travel and the freedom of choice is unevenly distributed in society (Csapó and Gonda 2019, Dóczi 2008, Vastag 2013). According to Vastag (2013), the most promising segment in terms of discretionary spending within Hungarian sports tourism may be the ‘upper middle-class’ cluster of single young people without children. A similar finding was made by Törőcsik and Csóka (2018), who found that the most likely to participate in sport trips are those members of the Hungarian population who are already involved in sport, young people, those with higher education, those who can ’make ends meet and can save’ in terms of their financial situation, and those living in cities with county status. Furthermore, Csapó and Gonda (2019) found that the prevalence of active tourism participation increases proportionally with educational attainment in the Hungarian population.

The field of sport psychology is of particular importance for understanding the commitment to physical activity in the study of water sports tourism participants. Self-determination theory, which has been used to explain the motivation of athletes, suggests that the satisfaction of the three psychological needs that are fundamental to all human beings - autonomy, competence and social relationships - in a supportive environment, leads to intrinsically motivated, self-regulated, curious, pro-active and committed action (Ryan and Deci 2000). The different stages of motivation were presented by Poulsen et al. (2006) as a continuum from the amotivated state through the different stages of extrinsic and intrinsic motivation (Vallerand 1997) to the nine dimensions of the flow state (Jackson and Csíkszentmihályi 1999) in the framework of the Rocket Motivation Model. Fortier and colleagues (1995) found that competitive athletes have lower intrinsic motivation and higher extrinsic identified regulation and amotivation than recreational athletes. In contrast, Modroño and Guillén (2016) observed high levels of intrinsic motivation among both competitive and recreational windsurfers. This may be due to the fact that lifestyle sports such as windsurfing, be they competitive or recreational, encourage intrinsic rewards such as pleasure, involvement and 'living in the moment'. Flow experience can therefore help to maintain long-term participation in physical activity. These feelings can provide participants with a distinctive lifestyle and an exclusive social identity (Wheaton 2004). Modroño and Guillén (2016) found only age differences in sport motivation among recreational and competitive windsurfers by demographic variables, with younger participants having a higher intrinsic motivation for accomplishment and an extrinsic motivation for identified regulation than older participants. This is consistent with the results of Szemes and colleagues (2016) for competitive athletes.

Positive psychology as a conceptual framework is applicable to the conceptualization of adventure sports in nature, according to Mackenzie and Brymer (2018), as these activities promote both *hedonic* (pleasure, positive emotions, pain avoidance) and *eudaimonic* (well-being, self-actualization and goal setting) emotional states. To date, there is no consensus-based definition of the flow state associated with the concept of positive psychology, due to the complexity of the experience and the subjective evaluations of its components; even Csíkszentmihályi (1990) himself used several synonyms for the flow experience. The definition is made even more difficult by the dimensions on the basis of which flow is conceptualised (Magyaródi 2016). The original conceptualisation was that the flow state could be described by the co-presence of nine dimensions (Jackson and Csíkszentmihályi 1999), but later Csíkszentmihályi (2005) modified this concept, by dividing the dimensions into three prerequisite conditions (high level of perceived challenge-skill balance; clear goals; clear,

continuous feedback) and the six factors influencing the dynamics of the flow experience (attention, loss of awareness, merging of activity and consciousness, sense of control, change in time perception, autotelicism). In order to review and to make the measurement of flow even more simple, the Flow State Questionnaire was developed (Magyaródi et al. 2013), in which the two meta-dimensions were '*Challenge-Skill Balance*' (11 items) and '*Absorption in the task'* (9 items), which still include the original nine dimensions of the flow experience. There is evidence that some autotelic personality factors may influence the likelihood of perceiving the flow experience (Magyaródi 2016). However, the relationship between demographic variables (age, gender, socioeconomic status, educational attainment) and flow proneness has so far been less studied and existing results are often controversial (Isham and Jackson 2023). In leisure activities, gender (Han 1992, Chang 2017), age (Morgan and Coutts 2016) and educational attainment, as well as socio-economic status (Isham and Jackson 2023), have been found to influence the experience of flow. The effect of social context also reveals conflicting results. According to Magyaródi and Oláh (2017), flow can be more intense in a shared, cooperative activity than in solitary situations; however, it can also lead to so-called 'anti-flow' experiences in leisure activities (Chang 2017, Decloe et al. 2009). The characteristics of adventure sports (challenges, clear goals, concentration, sense of control, distortion of time perception, loss of self-consciousness, autotelic activity) are coincident with the construct of flow and therefore provide an appropriate environment to capture the optimal experience (Bennett and Kremer 2000, Jeon and Ridinger 2009, Mackenzie et al. 2011, Morgan and Coutts 2016). The development of sport skills can have a significant impact on the flow experience due to the high investment of effort, intense personal commitment and involvement (Decloe et al. 2009, Heo et al. 2010, Stebbins 2001). The experience of flow can have an impact on the financial and time inputs, as participants hope to recreate the flow experience as a consequence. However, in the field of extreme sports there can also be dependence-inducing effects of the flow experience, resulting in a continuously increasing challenge and neglecting social relationships (Partington et al. 2009); but the experience of flow has an overall positive impact on consumer behaviour related to sports tourism (Jeon and Ridinger 2009, Nam and Kwon 2016). In terms of consumer behaviour, the perception of flow also has a positive impact on the evaluation of service quality (Kim and Thapa 2018), responsible environmental behaviour (Finger 1994) and length of stay (Fansurya et al. 2024).

In the tourism marketing process, the heterogeneity of the demand for sports tourism highlights the importance of dividing the market into smaller, homogeneous segments, as this allows operators to identify the relevant consumer groups. This can be achieved through segmentation, where the most challenging question is perhaps how to create homogeneous groups based on which characteristics (Raffai 2017). Traditionally, segmentation has been based on objective data such as age, gender, education, income and residence. This approach has recently been criticised and the subjective, behavioural characteristics have been considered more valuable in defining market segments (Liu et al. 2008), as very different psychographical and behavioural characteristics can be found within a particular demographic segment (Lin 2002). In Table 1, Sulyok (2018) presents a summary of the main types of segmentation, where *'a priori'* stands for objective and *'a posteriori'* for subjective market segmentation.

Table 1. The main types of segmentation

(Sulyok 2008 based on ETC/UNWTO, Moscardo et al. 2001)

	Category	**Variable type**
a priori	1. demographic	age, gender, education, stage of life, income
	2. geographical characteristics	residence
a posteriori	3. psychological, lifestyle characteristics	goods, attitudes, values, personal characteristics
	4. behavioural characteristics	consumption habits, information sources and use of communication channels

Variables *'a priori'* cover the objective characteristics of consumers that we may already know before their participation in the tourism experience. In contrast, segmenting according to *'a posteriori'* aspects is a more refined approach, as these are the ones that come up during the consumption of the experience and from feedback. Thus, the *'a posteriori'* variables also take into account consumer reactions, better capturing tourists' decisions and their behaviour during the tourist experience chain (Sulyok 2018).

Segmentation in sports tourism can also be based on demographic and geographical characteristics, which are popular for their easy usage and data collection, but the related research has used segmentation by psychological and behavioural characteristics based on participants' values (Terzić et al. 2020) or motivations for sport and travel (Hallmann et al. 2012, Hennigs and Hallmann 2015, Hungenberg et al. 2016).

2. Objective

In my doctoral thesis, I aim to present a comprehensive picture of the variables influencing the optimal experience of Hungarian water sports tourists in a multidisciplinary approach. I focus on the influence of demographic and behavioural characteristics on flow state. I uncover specific consumer segments based on sport and travel motivations. Based on the findings in the literature, I focus on addressing eight research questions (Table 2), to which I assigned seven hypotheses for quantitative studies.

Table 2. Relationship of the main literature chapters of the thesis to the research questions

I. CONCEPTUALISATION: A SPORTS TOURISM APPROACH		
Q1*	Which are the specific environmental components that a Hungarian sports tourism operator needs to be aware of in order to ensure outdoor water sports as an optimal experience?	**-**
II. SPORTS SOCIOLOGY APPROACH		
Q2	Which are the main sending areas of the water sports centre presented in the field research and what conclusions can be made on the basis of this about the economic status of the customers?	**H1**
III. SPORT PSYCHOLOGY APPROACH		
Q3	Comparing recreational athletes with competitive athletes, what differences can be found in the change of intrinsic, extrinsic and amotivational factors of sport motivation with aging?	**H2**
IV. POSITIVE PSYCHOLOGY APPROACH		
Q4	Does the Hungarian Flow State Questionnaire confirm the two-factor structure and is it a reliable measurement tool when testing on a special sample of Hungarian water sports tourism participants, windsurfers?	**H3**
Q5	Which objective (demographic data) and subjective (behavioural characteristics) variables can predict the flow experience?	**H4**
Q6	How can demographic variables, the experience of flow and the goals set in the chosen water sport influence consumer behaviour (financial and time investment in the sport)?	**H5**
V. TOURISM MARKETING APPROACH		
Q7	Which sport and tourism motivations can be used to identify unique, homogeneous market segments among the water sports tourists surveyed? If segments can be distinguished, are they different on the basis of demographic variables, flow experience or sport tourism behaviour?	**H6**
Q8	In the emerging new business model of tourism, in the context of the sharing economy, can tourists be segmented by the level of interpersonal trust?	**H7**

Note: 'Q' stands for the research questions, while 'H' for hypotheses.

* For Q1 (first research question), I have carried out an exploratory, qualitative study, therefore there was no need to formulate a hypothesis.

3. Methods

My thesis consists of four studies, which I examine under seven hypotheses (Table 3).

Study I: Field research: participatory observation, document analysis (n=745): Q1, H1

Study II: First questionnaire survey: online format (n=297): H2, H3, H4, H5, H6

Study III: Second questionnaire survey: paper-pencil format (n=42): H2

Study IV: Third questionnaire survey: online format (n=175): H7

Table 3: Study samples and related hypotheses in the thesis

	VARIABLES	STUDY SAMPLES***				
		Study I.	Study II.		Study III.	Study IV.
		National and foreign gear renters	Water sports tourists (including 2 subsamples)		National competitive athletes	National and foreign tourists
		n=745	n=297		n=42	n=175
H1	Sending areas	n=745				
H2	Sport motivations			n=282**	n=42	
H3	Flow dimensions		n=55*			
H4	Flow predictors		n=55*	n=297		
H5	Expenditures					
H6	Motivations			n=297		
H7	Trust level					n=175

Note: * the sub-sample that represents the windsurfing community (n=55) is part of the main sample

** this sub-sample of recreational athletes (n=282) excluded 15 competitors from the main sample

*** Ethics Approval Number of the research presented in the thesis: TE-KEB/No34/2023.

I) I carried out a field research study in a water sports centre on Lake Balaton during five summer seasons (2010-2015) using participatory observation, as proposed by Radel (2018) for field research. In a complex leisure or tourism context, qualitative data collection is required in addition to quantitative research methods because the interaction of expectations, experiences and satisfaction cannot be captured by quantitative methods alone (Donne 2005). For a broad environmental analysis, I summarized the data from the responsibility statements of the sports equipment renters' sending areas (n=745).

II) Following the field research, I carried out an online questionnaire survey among participants of water sports on Lake Balaton (n=297) with convenience sampling between 2015

and 2019 in social media groups engaged in water sports, including a pilot study in 2015 with the windsurfing community (n=55) of the water sports centre surveyed in the field research. The role of studying smaller consumer tribes (communities) among water-based adventure, nature tourism and lifestyle sports enthusiasts is emphasized by Scuttari et al. (2021). Results for the windsurfing community (n=55) are also presented separately in the thesis. To test hypothesis H2, I also analyzed the results of an additional sub-sample: from the main sample of 297 individuals, I filtered out those who practiced water sports as a competitive activity (n=15), so that this sub-sample consisted of individuals who practiced water sports for recreational purposes (n=282) The questionnaire consisted of five main sections: 1) Demographic variables, 2) Travel-related information, 3) Iso Ahola's socio-psychological tourism model (Snepenger et al. 2006), 4) Flow State Questionnaire (Magyaródi et al. 2013), 5) Sport Motivation Scale (SMS-28, Tsang et al. 2005). Three scales were used in the questionnaire (sections 3, 4, 5), for each of them confirmatory factor analysis (CFA) was used to test the goodness of fit and for reliability, a reliability analysis was performed. In all three cases the reliability scores were adequate (Cr-$\alpha \geq 0.60$).

III) To investigate H2, I also included the results of a sample of competitive athletes (n=42) in order to compare age differences in sport motivation with the results of recreational participants in water sports (n=282). Szemes and colleagues (2016), in a study of competitors in multiple sports, found that of the sports, combat sport athletes had the highest intrinsic motivation. Therefore, I decided that for comparison with a sample of recreational water sports athletes (n=282), of which a significant proportion are windsurfers with high intrinsic motivation (Modroño and Guillén 2016), combat athletes would be an appropriate comparison. Data were collected after a training session at the national wrestling team's training camp in July 2015. The SMS-28 was used as a measurement tool, which was also used in the questionnaire with the recreational athletes, thus allowing for a comparison of the data.

IV) Beside sports tourists, I also examined the segmentation possibilities of other types of tourists. I was particularly interested in the importance of interpersonal relationships based on the findings of my research in sports tourism, which I considered to be a relevant starting point for distinguishing tourists in the context of the community economy. Therefore, I surveyed interpersonal trust among Hungarian and international travellers in travel-related online groups between 2017 and 2018. To test the hypothesis (H7), I analysed the results by grouping the sample into clusters with accommodation preference as the grouping variable (hotel, Airbnb, hostel, couchsurfing).

4. Results

For clarity, I summarise the research question and the testing of my hypotheses based on the relevant literature in a spreadsheet format (Table 4). The first research question is related to a qualitative study, in which I conducted an exploratory field research, and hence it does not require a hypothesis. In the rest of the analysis, I formulated a total of seven hypotheses and, where the complexity of the statement demanded it, I also formulated sub-hypotheses. Given the use of several different samples, I consider it necessary to indicate to which of them the hypothesis applies. Of the seven hypotheses, two were fully confirmed (C) and five were only partially confirmed (P). The sub-hypotheses were not confirmed in several cases (N). In this chapter, I will present the results for the significant correlations in a brief summary.

Table 4: Testing the hypotheses of the thesis

RESEARCH QUESTION AND HYPOTHESES OF THE THESIS		TESTING	
Elements of the specific environment of the water sports centre in the field research			
Q1	Which are the specific environmental components that a Hungarian sports tourism operator needs to be aware of in order to ensure outdoor water sports as an optimal experience? (Bánhidi 2007, Jászberényi et al. 2022, Pomfret 2016)?		
Customers renting at the water sports centre surveyed in the field research		**n= 745**	
H1	Hungarian active tourists visiting the water sports centre presented in the field research are typically men of high economic status who live in the capital or in cities with county status (Csapó and Gonda 2019, Törőcsik and Csóka 2018).	**C**	
Study of recreational athletes (n=282) and competitive athletes (n=42)		**n=282**	**n=42**
H2	Both in recreational and competitive sport, younger participants are more prone to intrinsic motivation for accomplishment and higher levels of extrinsic motivation related to identified regulation than older participants (Modroño and Guillén 2016, Szemes et al. 2016).	**P**	**N**
		P	
Study of the windsurf community (n=55) and water sports tourists (n=297)		**n=55**	**n=297**
H3	The Flow State Questionnaire confirms the two-factor structure of flow state (Challenge-Skill Balance and Absorption in the Task) and is considered to be a reliable measurement tool in the studied watersports tourist sample (Magyaródi et al. 2013).	**C**	
H4	Demographic (gender, age, education) and sport characteristics (social context, intensity of practice, skill level, goals) variables influence the perception of flow experience among the studied water sport tourists.	**P**	**P**
		P	
H4/a	Gender differences influence the flow experience (Han 1992, Chang 2017).	**N**	**C**
H4/b	Younger participants tend to have higher flow levels than older participants (Morgan and Coutts 2016).	**N**	**N**
H4/c	Educational attainment influences the flow experience (Isham and Jackson 2023).	**C**	**C**

H4/d	Social interaction influences the flow experience (Magyaródi and Oláh 2017, Decloe et al. 2009).	**C**	**N**
H4/e	Time spent practising the preferred water sport positively influences flow experience (Decloe et al. 2009, Heo et al. 2010, Stebbins 2001, Morgan and Coutts 2016).	**N**	**N**
H4/f	Self-reported competence (skill level) positively influences the flow experience (Bennett and Kremer 2000, Mackenzie et al. 2011).	**N**	**C**
H4/g	The goal set in the chosen water sport influences the flow experience (Jeon and Ridinger 2009).	**C**	**N**
Study of water sports tourists		**n=297**	
H5	Demographic variables, the desired skill level in the chosen water sport and the flow experience during practice influence the financial and time investments ('spending' and 'time spent practising') in the sport.	**P**	
H5/a	Demographic variables (gender, age group, education, residence) influence the financial and time investment (Csapó and Gonda 2019, Terzić et al. 2020, Vastag 2013).	**P**	
H5/b	The desired goals to be accomplished in the chosen watersport influence the financial and time investments (Jeon and Ridinger 2009, Nam and Kwon 2016).	**P**	
H5/c	The perceived flow experience in the chosen watersport influences the financial and time investments (Nam and Kwon 2016, Partington et al. 2009).	**P**	
H6	Based on sport and tourism motivations, unique market segments, clusters, can be distinguished and the clusters (members) differ from each other based on demographic variables, flow experience and sport tourism behaviour.	**P**	
H6/a	Based on sport and tourism motivations, unique market segments or clusters can be distinguished (Hallmann et al. 2012, Hennigs and Hallmann 2015, Hungenberg et al. 2016).	**C**	
H6/b	The clusters (members) differ from each other based on demographic variables, flow experience and sport tourism behaviour (Cheng and Lu 2015, Jennings 2007, Morgan and Coutts 2016, Sidorova 2015).	**P**	
Study of Hungarian and international travellers		**n=175**	
H7	Travellers who prefer non-traditional types of accommodation (Airbnb, hostel, couchsurfing) are more likely to seek closer interaction with the local community than those who prefer hotels during their travels (Kántor 2017, Tussyadiah 2015).	**C**	

Note: **C** = *hypothesis confirmed,*

P = *hypothesis partially confirmed,*

N = *hypothesis not confirmed.*

In the first research question, I investigate which environmental factors are necessary for a Hungarian water sports tourism company to provide outdoor water sports as an optimal experience. Participatory observation suggests that tourists visiting the surveyed water sports resort are often unable to accurately perceive the challenges presented by the natural environment and the limits of their own skill level (Nagy and Bánhidi 2015). As a consequence, the service provider needs to have a complex and up-to-date knowledge of the environmental factors relevant for water sports tourism (Bánhidi 2007). In the case of water sports tourism in particular, the continuous monitoring and interpretation of elements of the natural environment, such as wind strength, wind direction, wave action or water depth, is of particular importance, as dynamic changes in these elements not only carry the possibility of risks but are also serve as a primary source of experience intensity (Prayag and Yankee 2013, Ayazlar 2015, Buckley 2012). Exploring the social environment helps to identify the service providers and professionals that tourists may contact in a given region. Furthermore, the economic environment determines the market position and sustainability of sports tourism products through supply and demand (Bánhidi 2007). Understanding all these factors together is essential for optimal experience design and ensuring service quality in the long term.

According to my **first hypothesis, Hungarian active tourists visiting the water sports centre presented in the field research are men of high economic status who typically live in the capital or in cities with county status.** As part of exploring the social environment of the water sports centre under study, I identified the main sending areas of the guests (n=745) who rented the sports equipment: from Budapest 40.4%, from the agglomeration of the capital 22.8%, while the rest of the guests came from the western part of the country, with the exception of the Lake Fertő area. Most of them travelled from districts of Budapest with higher average gross income.

According to my **second hypothesis, both in recreational and competitive sports, younger participants are more likely to have a higher level of intrinsic motivation for accomplishment and extrinsic motivation to identified regulation than older participants.** In the case of recreational athletes, Spearman's rank correlation showed a significant, weak, negative correlation between age categories and intrinsic motivation factors, and a weak, positive correlation with amotivation. Thus, the increase in age is associated with a decrease in all three intrinsic motivation factors (to know, to accomplish, to experience stimulation) and an increase in amotivation. Regarding competitive athletes, the one-way ANOVA test shows that the youngest age group (10-19 years old) has significantly higher levels of amotivation than 19-

25 year olds, and that the youngest age group (10-19 years old) requires significantly more external regulatory factors to trigger sport motivation than the 19-25 or 25-28 year olds.

According to my **third hypothesis, the Flow State Questionnaire confirms the two-factor structure of flow state (Challenge-Skill Balance and Absorption in the Task) and is considered to be a reliable measurement tool in the studied watersports tourist sample.** Based on the EFA, the two-factor structure was confirmed (KMO=0.674, $p<0.001$). The overall flow measurement tool was reliable with a Cronbach's alpha of 0.784, and the two factors used to calculate the flow items were the *'Challenge-Skill Balance'* scale (Crα=0.864) and the *'Absorption in the Task'* scale (Crα=0.629), both showing values above the cut-off ($\alpha \geq 0.60$).

According to my **fourth hypothesis, demographic (gender, age, education) and sport characteristics (social context, intensity of practice, skill level, goals) variables influence the perception of flow experience among the studied water sport tourists.** I tested this in two samples of participants in water sports, which showed different results. In the first sample, a homogeneous sample of only windsurfers (n=55), the independent samples t-test showed that the *'Challenge-Skill balance'* scale scores varied by educational attainment ($t(108)=2.31$, $p<0.05$). Analysis of variance revealed that windsurfers practicing in different social contexts perceived the *'Challenge-Skill balance'* dimension differently ($p=0.077$) and that the mean scores of the '*Absorption in the Task'* scale varied significantly across sporting goals ($F(6, 48)=2.42$, $p<0.05$). In the second sample of water sports tourists (n=297), the sub-hypotheses were tested using a multivariate generalized linear model (GLM), where the dependent variables were the two factors of flow and the independent variables were demographic and sport characteristics. Among demographic variables, gender ($p=0.007$) and education ($p=0.031$); and among sport characteristics, knowledge level ($p=0.024$) were found to influence the experience of *'Absorption in the Task'*.

According to my **fifth hypothesis, demographic variables, the desired skill level in the chosen water sport and the flow experience during practice influence the financial and time investments ('spending' and 'time spent practising') in the sport**. This hypothesis was tested only for the sample of water sports tourists (n=297). Based on the Mann-Whitney test, women spend more money on water sports lessons ($p=0.030$); based on the Chi-square test, men spend more time on water sports practice ($p=0.033$); based on the Spearman correlation, those with higher education spend more on lessons ($p=0.004$) and renting ($p=0.036$), and younger people spend more on buying sports equipment ($p=0.045$). According to the multivariate generalized linear model (GLM), time expenditure (frequency of water sport practice) was influenced by the goals set in the chosen water sport ($p<0.001$); while financial

expenditure (expenditure on sport lessons) was influenced by the experience of the dimension *'Absorption in the Task'* (p=0.003).

According to my **sixth hypothesis, based on sport and tourism motivations, unique market segments, clusters, can be distinguished and the clusters (members) differ from each other based on demographic variables, flow experience and sport tourism behaviour**. Using the k-means clustering method, four clusters were formed taking into account the '*Escape from Stress', 'Meeting New People'*, and '*Quality* of *Leisure'* factors for tourism motivation; and the '*Recognition', 'Development',* and *'Amotivation'* factors for sports motivation. The dominant variables identified the four clusters as '*Sport Oriented'* (n=53), '*Leisure Ignorant'* (n=45), '*Leisure Oriented'* (n=81), '*Socially Oriented'* (n=118). Only some demographic variables showed significant differences between clusters: the Chi-square test revealed a significant difference between clusters in the distribution of age groups ($\chi^2(12)=22.748$, p=0.030) and in residence type ($\chi^2(6)=13.949$, p=0.030).

According to my **seventh hypothesis, travellers who prefer non-traditional types of accommodation (Airbnb, hostel, couchsurfing) are more likely to seek closer interaction with the local community than those who prefer hotels during their travels**. The results for the different accommodation preference groups show that those who choose couchsurfing, hostels and Airbnb when travelling are more open to interacting with the local community ($F=4.74$, $p<0.05$) compared to those who prefer hotels, and they are also the most likely to seek contact with locals in the sharing economy ($F=10.46$, $p<0.01$).

5. Conclusions

In my doctoral research, I investigated a niche market segment of water sports tourism that generates positive economic and social impacts worldwide (Jennings 2007, Olivera and Olivera 2016, Scuttari et al. 2021, Stott 2019). Despite the growing social base of this field in Hungary (Jászberényi et al. 2022), only limited information is available on the consumption patterns of water sports tourists (Donka 2012, Máthé and Császár 2019, Törőcsik and Csóka 2018). In reviewing the literature, I applied a multidisciplinary approach to investigate the aspects influencing the consumer behaviour of water sports tourists, which has so far only been carried out in an international context (Pomfret 2016, Weed 2009). I maintained this structure also when analysing the results, thus exploring the decision mechanisms of sport tourists in the framework of the disciplines of geography, sport sociology, sport psychology, positive

psychology and tourism marketing. This approach allowed me to gain deeper insights into the motivations, preferences and factors behind the consumption patterns of water sports tourists. In this chapter, I report the conclusions drawn on the basis of a comparison of the results and the literature, focusing on the main message and novelty of the thesis, and therefore I assign several hypotheses to each variable, in many cases, and indicate them in the text.

Developing an experience-centered model of adventure tourism

Based on the phenomena observed in the field research (Q1), a new experiential approach was developed inspired by Bánhidi's (2007) theoretical model of sport tourism and Pomfret's (2016) concept of participation and consumption in adventure tourism. The novelty of the model is that it contributes to the knowledge of the optimal-experience approach to outdoor water sports in the field of sports tourism (Bánhidi et al. 2024). The modified model explores the supply and demand side of sport tourism through a balance of challenges and skills, and complements it with environmental, individual and social factors that influence the experience. Due to the changing nature of environmental factors, sport tourism operators need to use flexible strategies to tailor the sport experience to the given conditions. The results highlighted that sport tourism service providers have a key role to develop the flow experience by influencing the dynamics of challenges and skills.

Geographical distribution of water sports tourists' residence in Hungary

The analysis of the clientele of the surveyed water sports businesses provided a basis for identifying the regions where water sports tourists visit (H1), while significant differences between clusters were also found by type of settlement (H6/b). Among water sports equipment renters (n=745), visitors from cities with county rights (54%), the capital (40.4%) and the Budapest agglomeration (22.8%) were over-represented (H1). In the case of visitors from Budapest, higher-income districts were predominant (District II, III, XII), while there were no visitors from lower-income districts (Nagy and Bánhidi 2015). This income filter also highlights social inequalities in the access to sports tourism. Our results are confirmed by Törőcsik and Csóka (2018), who in their 2017 survey of a sample representative of the Hungarian population found that a high proportion of people living in cities with county rights participate in sport tourism, and that sailing is practiced by a narrow stratum in Budapest. The questionnaire research confirmed the spatial concentration: more than half of water sports tourists (52.1%) live in Budapest, followed by rural urbanites (28.9%). The analysis of the sport tourism clusters also revealed a distinctive picture (H6/b): *'Leisure Ignorant'* was dominated

by those living in the capital (68.9%), while *'Socially Oriented'* was dominated by rural urban residents (51.7%). This suggests that water sports tourism is not only geographically stratified, but also socially stratified.

The relevance of age for sport, tourism motivation and consumption patterns

Age groups showed significant differences in the level of sports motivation (H2), spending on sports equipment (H5/a) and between clusters (H6/b) among the studied water sports tourists (n=297). Concerning sport motivation (H2), the youngest recreational water sport athletes (n=282) had the highest levels of all three intrinsic motivation types, which significantly decreased with age: intrinsic motivation to know, to accomplish and to experience stimulation. Furthermore, my results confirmed that the youngest had the lowest levels of amotivation, which increases with age (Nagy et al. 2024). The decrease in intrinsic motivation for accomplishment with age was also noted by Szemes et al. (2016) and Modroño and Guillén (2016), but the decrease in the other two types of intrinsic motivation and amotivation is a new result as compared to the literature. The opposite trend was found in the competitive athletes sample (n=42), with the youngest age groups (10-19 years old) showing significantly higher values for both the amotivation and the external regulation sport motivation factors (Szemes et al. 2017). Overall, it can be concluded that the youngest competitive athletes (10-19 year olds) were the most likely to participate in sport under external pressure (to be rewarded or to avoid punishment). In contrast, the motivation of recreational athletes was the opposite, with young people being the most likely to take part in water sports for internal motivations. The younger age group also tended to spend more on water sports equipment than the older age group (H5/a, n=297). By matching the results of the two hypotheses (H2 and H5/a), it is possible that the purchase of sports equipment could be a means to achieve intrinsic motivation to master sport skills (IM to know), to develop (IM to accomplish) and seek pleasure (IM to experience stimulation), as the enjoyment of water sports and more effective learning are positively influenced by good high quality technical equipment. Törőcsik and Csóka's (2018) study on the Hungarian sport consumption also confirms that the domestic consumers of sport tourism are young people with higher educational attainment and high discretionary income. According to Vastag (2013), the '*upper middle class'* cluster of Hungarian society includes citizens whose discretionary spending preferences are characterised by travel, sport and leisure, with a significant proportion of single young people without children spending 3-4 times the Hungarian average on related consumption items. Finally, there were also significant differences between the different age groups in the sports tourist clusters (H6/b, n=297). The

age group distributions in each cluster show a trend that the youngest (18-29 years old) are more motivated by improving their social relations (meeting new people) and external recognition, the 40-49 years old by getting away from the daily routine and experiencing personal well-being, while the over 50s are more motivated by improving their skills and stress relief. In the related literature, Hennigs and Hallmann (2015) found the opposite trend in age composition in a cluster study of recreational riders in kitesurfing and windsurfing. I suggest that the reason for this difference can be explained by the sample composition.

Gender differences in the perception of flow experience and consumption patterns

Gender differences in the perception of flow experience (H4/a) and consumption patterns (H5/a) showed significant differences (n=297). On the dimension of *'Absorption in the Task'*. of flow experience, women showed higher scores than men (Nagy et al. 2021). In contrast, Chang (2017) and Sidorová (2015) found higher flow experience in men when studying extreme athletes. Chang (2017) suggests that the reasons for gender differences can be explained by different dimensions of leisure involvement, where for women, the motivation to engage in leisure activities is related to self-expression and lifestyle, which increases the chance of experiencing flow. Furthermore, it can be assumed that in the watersports activities we have studied, women are more likely to be immersed and more sensitive to the qualitative components of the flow experience, to changes in time perception and to forgetting the environment than men (Magyaródi et al. 2013). Women are also more likely to spend more money on learning water sports through lessons (H5/a). This can be explained by two factors: on the one hand, women are more risk-sensitive, so it is understandable that they spend more on learning sports they consider to be more risky; on the other hand, their participation in active tourism is increasingly being shifted from family priorities (Pomfret and Bramwell 2016). Matching the results from H4/a and H5/a suggests that for women, the involvement and engagement generated by water sports lessons may generate a flow experience through increased skill levels and gender differences mediate this relationship (Decloe et al. 2009, Havitz and Mannell 2005). Men showed higher values for time spent on water sports, which is confirmed by the literature (Csapó and Gonda 2019, Terzić et al. 2020).

The influence of educational attainment on the perception of flow experience and consumption patterns

Educational attainment had a significant effect in my research, as it influenced the perception of flow experience (H4/c) both in the windsurfing community (n=55) and among water sports

tourists (n=297), and was also a predictor variable of financial investments (rentals and lessons) in the watersport activities (H5/a, n=297). In the windsurfing community (n=55), windsurfers with higher educational attainment experienced less *'Challenge-Skill Balance'* than participants with lower educational attainment (Nagy and Kovács 2016). In the sample of water sport tourists (n=297), educational attainment influenced the flow dimension 'Absorption with the task', with the highest mean score being obtained by participants with PhD degree (M=38.6) and the lowest score by participants with vocational or primary education (M=36.37). However, the results do not show a clear linear trend between educational attainment and the flow experience. This suggests that educational attainment alone does not determine the intensity of the flow experience and that other factors may play a role in the development of flow sensitivity. The results also suggest that differences between work and leisure flow experience require a more nuanced approach. While previous research (Magyaródi and Oláh 2015, Isham and Jackson 2023) suggests that higher educational attainment in the work environment is associated with a more favourable flow state, socio-economic status may be a more significant factor in the case of leisure activities. Being in a higher socio-economic group may promote flow experiences during leisure, as higher income provides easier access to flow-enhancing activities. Overall, however, Isham and Jackson (2023) find that the joint impacts of age, gender, socioeconomic status and educational attainment explain only minimal differences in adults' flow experiences, with the additional finding that in countries with lower living standards, the level of education may be a stronger determinant. The lack of a consistent pattern in the effect of educational attainment among water sports tourists supports this idea and highlights the need to examine the determinants of flow experience in a more complex, multivariate context. Overall, it seems that the benefits of the flow experience are in general theoretically available to the society as a whole and to different demographic groups.

Moreover, higher educational attainment has also contributed to the increase in financial investments in sports lessons and equipment rental among water sports tourists (n=297). This is implicitly confirmed by Terzić et al.'s (2020) research on segmentation of active tourists in Europe. They found that groups with the highest educational attainment have a high level of environmental friendliness and social responsibility (especially in the Nordic countries). Taking this into account, renting may be a more sustainable way to use the sport equipment, with less impact on waterfront infrastructure (Jászberényi et al. 2022). And higher investments in water sports lessons emphasize the importance of awareness and risk avoidance in the highly qualified groups.

The influence of social interactions on the perception of flow experience

In the community of windsurfers, both social and educational contexts showed a tendencial differences in the perception of the flow experience (H4/d, n=55). The role of recognition and feedback from peers and instructors is also supported by the existence of the '*Socially Oriented'* cluster (H6/a, n=297), which was the largest segment in our research (Nagy et al. 2021). Windsurf instructors experienced higher level of *'Challenge-Skill balance'* when teaching than those who practiced with friends or alone (Nagy and Kovács 2016). The *'Challenge-Skill balance'* dimension as experienced in an educational situation may result in higher scores because '*Clear Goals', 'Clear Feedback'* and a '*Sense of Control'* are more pronounced (Magyaródi et al. 2013) than in spontaneous practice. Mackenzie et al. (2011) confirm the importance of experiencing flow during teaching in the field of adventure sports, pointing out that instructors experience flow with different frequencies in goal- and process-oriented situations. Reflections during and after sport are important contributors to the development of engagement (Dant and Wheaton 2007), as verbal reflections allow the conceptualization of flow experiences (Ayazlar 2015, Morgan and Coutts 2016). The natural elements can unexpectedly change the challenges of a certain situation, resulting in a variety of continuously renewing experiences, which are worth discussing and evaluating after the session in the subcultural community.

The influence of skill level on the perception of flow experience

When analysing the level of skill on the flow experience (H4/f, n=297), the lowest level of the dimension '*Absorption in the task'* was observed for competitors, while beginner, intermediate and advanced level water sports athletes and water sports instructors showed similar levels. The reasons for this could be attributed to the characteristics of the '*Absorption in the Task'* factor (Nagy et al. 2021). Those engaged in water sports at a recreational level and instructors have a high level of commitment and high intrinsic motivation to invest a high amount of energy in their own development, and are therefore more likely to experience the qualitative components of the flow experience, such as a distortion of time perception, the ability to complete a task with full attention focus, while being forgotten by their surroundings (Diaz 2011, Magyaródi et al. 2013). If we take into account that the actions of the competitors are motivated by external factors, the lower flow values observed among them can be explained by the different stages of involvement presented in the Rocket Motivation Model developed by Poulsen et al. (2006). Similarly, Mackenzie and colleagues (2011) found that there was no significant difference in the level of flow experience between instructors and (novice) learners in river surfing, and that

the frequency and quality of the flow experience was rather related to the process- or goal-oriented nature of the situation, namely the challenge-skill ratio. In both groups, the flow experience was more frequent in the paratelic state (when skills exceeded challenges). Beginners experienced moderate to high flow and a relaxed feeling, and instructors associated it with more frequent flow experience. In contrast, in telic states (when challenges exceeded their skills), they had less frequent but more memorable flow experiences. The more goal-oriented (telic) state of mind of competitors may explain the less frequent occurrence of *'Absorption in the Task'.* In leisure activities, it is particularly important to examine micro-flow (low *'Challenge-Skill Balance'*) and deep-flow (high *'Challenge-Skill Balance'*) experiences separately for participants with different skill levels (Heo et al. 2010); and to treat the positive effect of balance between challenges and skills on flow experience with some caution (Løvoll and Vittersø 2014).

The influence of sport goals on the perception of flow experience and consumption patterns

Goals set in water sports affected the factor of flow experience *'Absorption in the task'* in the windsurfing community (H4/g, n=55) and also affected time expenditure in water sports tourists (H5/b, n=297). In the windsurfing community, I found that those whose purpose for practicing the sport was to *experience pleasure*, *teaching friends* and *self-development* scored significantly higher in the '*Absorption in the task'* flow dimension than those *preparing for national or international competitions* (Nagy and Kovács 2016). This result is supported by the literature (Morgan and Coutts 2016, Modroño and Guillén 2016, Wheaton 2004), and the different flow levels in sport goals can be explained by their close association with intrinsic and extrinsic motivational stages of the self-determination continuum (Deci and Ryan 2000, Poulsen et al. 2006). Furthermore, among water sports tourists, sporting goals also influenced the frequency (time investment) of participation in the sport (Nagy et al. 2021). Based on the results, those participating in international competitions and those who seek self-improvement will practice continuously, depending on the weather. It is worth noting here that, although competitors exercise continuously in order to achieve their goals, they experience a much lower level of flow than recreational athletes (H4/f, H4/g). In the case of recreational athletes, those who aim to improve themselves are followed by those who practice sport for pleasure. Hennigs and Hallmann (2015) also point out that, besides having fun, development and improvement of skills, i.e. self-development, is the most important motivation for practitioners of adventure sports (kitesurf and windsurf), which, according to Buckley (2012), also encourages

participants to change the natural environment (i.e. the level of challenge), thus creating demand for adventure tourism.

The influence of the flow experience on consumption patterns

Our results (Nagy et al. 2021) indicated that higher '*Absorption in the task'* flow factor scores were associated with higher financial investments in water sport lessons (H5/c, n=297). The influence of flow experience on tourist consumer behaviour has been confirmed by several researchers, but the field of sports tourism is still unexplored. Nam and Kwon (2016) observed that the experience of flow and the development of technical skills have a positive impact on economic investment among water sports practitioners. Furthermore, the perceived flow experience by tourists can contribute to an increase in responsible environmental behaviour (Finger 1994), customer satisfaction (Wu and Liang 2011), loyalty to the destination (Tung and Ritchie 2011) and length of stay for tourism purposes (Fansurya et al. 2024).

Creating consumer segments in water sports tourism

The cluster analysis revealed unique consumer segments based on sport and tourism motivations in the field of water sports tourism (H6/a). Our results (Nagy et al. 2021) are in line with previous studies that applied a motivation-based segmentation approach to active tourism (Hallmann et al. 2012, Hennigs and Hallmann 2015, Hungenberg et al. 2016). The cluster analysis yielded four groups. In general, the *'Sport-oriented'* group (n=53) believes that the main advantage of practising water sports is the transfer of the skills acquired in sport to challenging life situations. Their main motivation to travel is to escape from stressful environments. Thus, it can be stated that the members of this group are the most motivated to leave their comfort zone in an aspiration to improve their skills and release stress. The *'Quality of Leisure'* factor as a travel motivation was particularly important in differentiating consumer segments. Among the members of the smallest cluster, the '*Leisure Ignorant*' segment (n=45), *'Quality of Leisure'* was much less important than the sample average, while in the '*Leisure Oriented'* segment (n=81) only this factor showed a moderately positive value. This factor included both elements of extrinsic motivation (*'Escaping from Personal Environment'*) and intrinsic motivation (*'Seeking Personal Rewards*' factor and *'Self-discovery'* item), but it should be noted that in both cases improving personal well-being was the main motivation (Iso-Ahola 1982), while developing interpersonal relationships was not important for them. In contrast, the '*Socially Oriented'* segment (n=118) had as their main motivation for travelling and for choosing their desired destination '*Meeting New People'*, while their motivation for practicing sport was

characterised by *'Recognition'* by others. This was not only the largest segment within the sample, but also a new sport tourist cluster compared to related studies, for whom building interpersonal relationships and receiving positive feedback from peers while enjoying sport were also of great importance.

Creating consumer segments in the sharing economy

In the field of sports tourism, I divided consumers into smaller, homogeneous groups based on psychographic segmentation (participants' typical activities, interests, opinions, values), because these variables are the ones that best capture their primary motivation for the sports tourism product. And in the field of sharing economy, I chose behavioural segmentation to distinguish consumers by examining their past, present or future behaviour towards a given service or product (Raffai 2017). Interpersonal relationships played a key role in identifying a new cluster in the sports tourism segmentation as opposed to the literature. The development of interpersonal relationships may also be of particular importance in the context of experiences in other tourism settings (Iso-Ahola 1982). Thus, examining differences in interpersonal trust in the business model of the sharing economy can provide relevant information on consumer preferences (Tussyadiah 2015). Despite the growing distrust in the safety of destinations in global tourism (Kővári and Zimányi 2011), services based on trust with local people are becoming increasingly popular for travellers (Melián-González et al. 2019). In our findings (Nagy et al. 2019), the group who preferred a 3-5 star hotel showed less openness to interact with the local community, while those who preferred Couchsurfing, hostels and Airbnb were the most open to them (H7). When it comes to participation in the sharing economy, the group preferring hotels showed below-average scores, while those choosing Couchsurfing, hostels and Airbnb showed above-average scores. Therefore, it can be seen that the level of interpersonal trust can be used to distinguish consumer preferences (Kántor 2017).

6. List of own publications

Publications related to the topic of the dissertation

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