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IDENTIFICATION AND EVALUATION OF FACTORS INFLUENCING SPORTS FAN ATTENDANCE AT INTERNATIONAL EVENTS: VOLLEYBALL CASE STUDY

Abstract: The article presents unpublished results of research conducted among fans at the 2014 FIVB Volleyball Men's World Championship (1618 respondents to a direct questionnaire survey). Its aim is to describe selected motives and barriers to attendance at international sports events. The analysis attempts to obtain information about the importance of particular factors and barriers for respondents, their relative importance and to derive a model from the correlation between these variables to explain the attendance of fans at international sports events.

Keywords: sport and tourism demand, motives and barriers, sports tourism, international sporting events, sports fans.

1. INTRODUCTION

Sports tourism is one of the most dynamically developing types of travel, especially in the form of trips to international sporting events (Kazimierczak, Malchrowicz-Mośko, 2013; Standeven, DeKnop, 1999). Hadzik (2014) points to the need to explain the theoretical background as it seems to be lagging behind the development of practice in this field.

An important issue is knowledge of demand conditions¹ as this determines the effectiveness of those managing the offer for consumers. It is particularly desirable to conduct a survey of consumer needs and preferences (Kaczmarek, Stasiak, Włodarczyk, 2010; Kramer, 1997).

This trend includes getting to know the conditions for attendance at international sporting events for consumers. The aim of the article is to present unpublished results of exploratory research conducted among fans of the men's World Volleyball Championships in 2014 (1618 respondents to a direct questionnaire survey) and investigate the hierarchy of importance and internal correlations between factors influencing attendance in the form of motives and barriers, and to search for significant correlations between particular factors and the demographic variables of the studied fans.

2. LITERATURE REVIEW

The factors influencing sports tourism are complex. In the literature there are many lists of the factors influencing attendance at major sporting events. Klisiński (2011) distinguishes environmental and personal factors analogous to external and internal conditions (Pilarczyk, Mruk, 2006). Internal (personal) factors include needs, motives, perception, attitudes, personality and learning. On the other hand, external (environmental) conditions include economic factors (income, prices) and socio-cultural (family, reference groups, opinion leaders, social group, culture).

Pitts & Stotlar (2002) describing the motives of those attending sporting events distinguish several factors:

- socio-demographic (gender, age, education, income, distance from venue),
- economic (ticket price, TV broadcasts, other available leisure activities),
- sport (participation of 'stars', team's style of play (offensive or defensive), the level of competition, the stake, promotion, announcements),
- perceptual (day of the week, weather conditions, number of spectators, violence during games).

There is a current of research in the literature, based on Maslow's model of human needs, aimed at finding

Authors Psychometric scale Factors Sloan (1989) Health effects, eustress and stimulation, catharsis and aggression, entertainment and Milne, McDonald Stress release, skill mastery, aesthetics, self-esteem, self-actualization, value develop-MSC - Motivations of (1999) in: Won, ment, social facilitation, affiliation, achievement, risk-taking, aggression, and competition the Sport Consumer) Kitamura (2007) Wann, Schrader, (1) Motive related to the need to spend free time with family and relatives, (2) theme SFMS - Sport Fan Wilson (1999) in: based on the stimulation of the so-called positive stress (eustress) - cheering stimulates Motivation Scale Hadzik (2016) action and is a source of entertainment and pleasure, (3) motive associated with the need to belong - cheering is the space for social contacts, (4) motive based on 'escape' - passive attendance at sport allows to 'escape' from stress, life problems, boredom and the monotony of everyday life, (5) motive related to the need to raise the selfesteem of fans when the team or a sportsman wins, (6) motive based on the need for the entertainment during leisure time, (7) a theme linked to the need for 'spectacularity' which can be achieved through attendance at many modern sporting events, particularly those with a global reach, (8) an economic motive based on the need for betting at bookmaker for profit Trail, James (2001) Achievement, acquisition of knowledge, aesthetics, drama/eustress, escape, family, MSSC - Motivation physical attractiveness of participants, the quality of the physical skill of the partici-Scale for Sport pants and social interaction Consumption Neale, Funk (2006) Vicarious achievement, player interest, entertainment value, drama and socialisa-Sport Interest Inventory Funk, Filo, Beaton, Socialisation, performance (effectiveness level), excitement, (stimulation/enthusiasm SPEED Model, So-Pritchard (2009) level), esteem (sense of achievement level), diversion (level of positive change/escape cialization, Performance, Excitement, from the nuisance of everyday life) Esteem and Diversion Kim, Trail (2010) Scale consists of many dimensions: Scale for Motivators - internal motivators (escape, affiliation, achievements, identification with the team: and Constraints of its community, coach, level, players, discipline) Sport Consumption - external motivators (aesthetics and dramaturgy, media, advertising) (SMCSC) - internal constraints (lack of knowledge, lack of success, lack of someone to watch the event with, lack of interest from the others) - external constraints (parking, location, nuisance, financial costs, alternative forms of recreation, alternative forms of attendance)

Table 1. Models of sports event attendance factors

Source: author's compilation.

the best model of sports fan motivation (Waśkowski, 2007, in: Hadzik, Ryśnik, Tomik, 2015) (Table 1).

However, it is pointed out that the usefulness of many of these models is limited due to the difficulty of applying results (Funk, Filo, Beaton, Pritchard, 2009). An analysis of motives explains the core of the marketing product but is less indicative of the desired elements of other levels.

Research approaches such as the SPEED scale (Funk, Filo, Beaton, Pritchard, 2009) or the approach proposed by Kim & Trail (2010) meet these expectations (Table 1). They combine studies of fan motivation with other behavioural factors. Examples include team identification (Robinson, Trail 2005), buying mementoes (Trail, Anderson, Fink, 2002), attending sports events (Kruger, Saayman, 2012; Trail, Fink, Anderson, 2003), future attendance and loyalty to a team (Fink, Trail, Anderson, 2002), demand for match tickets affecting ticket prices (Kemper, Breuer, 2015; Shapiro, Drayer, 2014).

Travel is an extremely important activity for a fan and it involves a number of incentives for attendance at sporting events. Szczechowicz postulates the explanation of a specific 'common space' formed at the junction of sport and tourism and indicates shortcomings in explaining from a theoretical point of view the relations existing between tourism and sport (Szczechowicz, 2015). For example, the question is asked whether tourism and sport generate certain unique values which manifest themselves in a specific synergistic effect (Weed, 2008, in: Szczechowicz, 2015). This is confirmed, amongst others, by the observations of Weed & Bull (2004), Smith & Stewart (2007) and Ryśnik, Żylak & Tomik (2018) who claim that sport and tourism have a lot in common.

Hadzik (2016) states that attendance at sporting events is also determined by the specific conditions of the tourist attractiveness of the event and the venue. For sports fans, the following elements may be important: the possibility of sightseeing while travelling (e.g. natural attractions, cultural monuments, museums, cultural attractions of a sport and recreational nature), the use of sports and recreation facilities, accessibility to night life, the entertainment offer and attendance at non-sport events (Hadzik, Ryśnik, Tomik, 2015).

Attendance at sporting events also depends on barriers. Economic obstacles are significant (Hadzik, Bartík, 2012; Wojdakowski, 2008) and depend on the necessity of

Table 2. Models of travel factors influencing attendance at sporting events

Authors	Factors/barriers
Yu (2010)	Cost and ease of arranging travel plans, interest in professional sports, different cultural experience, interest in travel, experience of watching live sporting events, and the chance to see Asian players or famous US players in the games
Mohan, Thomas (2012)	Travel decisions are influenced by: - distance - the scheduling of matches (e.g., weekends or weekdays) - time spent travelling - cost of accommodation - the cost of transport - mode of transport
Fairley (2009)	Means of transport as a way of building group identity
Ahn, Lee (2014)	The home team's record, outcome uncertainty, size, and quality of the stadium, playing styles
Surdam (2009)	Non-price determinants of demand for individual games: the day of the week, quality of the opposition, and special events
Simmons, Popp, McEvoy, Howell (2018)	Attendance constraints: prior commitments to school and work, beverage costs, poor team performance, and watching the game on television, time commitment necessary to attend, lack of interest in football
Nishio (2014)	The International Sports Fan Constraints Scale: alternative leisure options, security, the lack of tourist attractiveness, different culture, companions and distance.
Anthony, Kahn, Madison,	Winning percentage, weather conditions, local income and population, and individual game
Paul, Weinbach (2014)	promotion such as fireworks

Source: author's compilation.

paying for admission, transport, accommodation, meals, as well as additional services such as entertainment. Another obstacle may be the lack of flexibility in managing other resources, such as free time, caused by unfavourable dates (Wojdakowski, 2011).

Examples of research into factors influencing travel for the purpose of sport tourism are presented in Table 2.

The set of variables used in the research described in the article was selected from the presented literature on the basis of three premises: (1) comprehensive study of the impact of combined spaces of sport and tourism, (2) barriers, (3) study of aspects close to the operational level of sports and tourism product managers.

METHOD AND ORGANISATION OF THE SURVEY

The research was conducted by using the anonymous diagnostic survey method. The research was conducted on fans who were present at the matches of the 2014 men's volleyball World Championships (August and September 2014) at the 'Spodek' sports arena in Katowice.² The research was carried out at the time when the fans gathered in the arena prior to the matches and involved the fans filling in the questionnaire by themselves.

The variables used in the study included following features measured on a six-degree scale ('no important fac-

tor/important barrier' (0) to 'very important factor/ important barrier' (5)):

- the importance of barriers to attendance at volleyball matches of the national volleyball team
- the importance of the factors of attendance at the volleyball matches of the national team
- the importance of additional recreational and tourist services accompanying the volleyball matches of the national team.

The survey also asked about the demographic, social and economic variables of the respondents, i.e. gender, size of place of residence, age, education, professional status and income. The survey also made it possible to distinguish between domestic and foreign fans (origin).

The following research hypotheses were formulated in order to proceed with the research:

Hypothesis 1: Assessment of the importance of particular factors of attendance in sporting events varies depending on the characteristics of respondents, such as:

- gender
- origin (Poland/foreign).

Hypothesis 2: Assessment of the importance of different factors influencing attendance at sporting events.

Hypothesis 3: Particular assessments of factors influencing attendance at sporting events are correlated with demographic characteristics of respondents, such as age, education, professional status, income, marital status and origin (Polish/foreign).

Hypothesis 4: In analysing multidimensional correlations among the variables constituting the factors influencing attendance at sports events, it is possible to distinguish hidden factors using exploratory factor analysis as a method of analysis.

The calculations were performed mainly with the help of SAS Enterprise Guide 6.1., MS Excel 2010 and STATISTICA 13.1.

4. CHARACTERISTICS OF THE TEST SAMPLE

The database that was created as a result of the survey includes information from 1618 respondents. This number is greater than the estimated minimum sample size considering the population (with an error of 5% for a population of about 50,000 fans of this event³ and a confidence level of 0.95, the minimum sample size is 381 respondents) (Steczkowski, 1995).

The majority of the respondents were from Poland (1478/91.34%). The majority were men (55.98%) (Table 3)

Table 3. Gender and origin of respondents

			Total		
		No answer	Women	Men	Total
		Quantity Quantity (Quantity	Quantity
Onicin	Poland	17	642	819	1,478
Origin	Abroad	4	61	75	140
Total		21	703	894	1,618

Source: author using the SAS package.

Table 4. Number of inhabitants in the place of residence, age, education

Size of domicile	Supp	orters
Size of domicile	number	percentage (%)
Up to 10,000 inhabitants	327	20.85
11-49,000	367	23.41
50-99,000	499	31.82
100-499,000	286	18.24
500-999,000	69	4.40
>1 000 000	20	1.28
missir	ng data = 50	
Age	number	percentage (%)
Less than 18	219	13.82
From 19 to 25	652	41.14
From 26 to 35	405	25.55
From 36 to 45	185	11.67
From 46 to 55	89	5.62
From 56 to 65	28	1.77
More than 66	7	0.44
mis	sing data = 33	
Education	number	percentage (%)
Primary	136	8.62
Vocational	146	9.25
Secondary	481	30.48
Higher incomplete	238	15.08
Higher	577	36.57
mis	sing data = 40	

Source: author using the SAS package.

and fans living in cities with 50-99,000 inhabitants (Table 3). The most numerous age group are those aged 19-25 and 26-35 (Table 4).

The majority of the respondents had higher education (Table 4). A large number were employed or students (Table 5). The majority were unmarried (Table 5).

Table 5. Occupational and marital status of respondents

	Employed	Unemployed	Retired	Pensioner	Student
Quantity	918	233	33	13	509
(%)	56.74	14.40	2.04	0.80	31.46
	C;	ngle	Mauriad	Divorced	Widow/
	31.	rigie	Marrieu	Divorceu	widower
Quantity	1	031	490	32	8
(%)	60	3.72	30.28	1.98	0.49

Source: author using the SAS package.

5. RESULTS (STRUCTURAL ANALYSIS)

The distribution of barriers (Table 6) indicates that cost associated with travelling to an international event and the need to find free time are the most burdensome obstacles. The least important barriers were safety considerations during the trip, the event and the match itself.

By examining the significance of the difference between the mean values for particular barriers, it is possible to rank them in order of importance (Table 7).

Similarly, the importance of a group of variable factors (stimulants) for the attendance of fans in sports events was measured (Table 8) and their obtained hierarchy of importance was analysed (Table 9).

The most important factor within these variables is the willingness to attend the event. The least important factor was prestige.

With regard to the factors determining the importance of an additional tourist offer, the surveyed fans valued especially the chance to attend an additional event (e.g. a concert) as well (Tables 10, 11).

6. RESULTS – ANALYSIS OF GENDER AND ORIGIN-RELATED DIFFERENCES IN IMPORTANCE ASSESSMENTS

Table 12 presents the results of an analysis of the significance of difference between the average figures characterizing the distribution of responses by gender.

Table 13 presents the results of an analysis of the significance of differences between figures characterizing the distribution of responses by origin of respondents.

Table 6. Distribution of responses concerning the importance of barriers

Variable	Description	Mean	Sd. Dev.	Mode	N	N omission	Median
3.1. Date	The match timeframe constrains fans	2.287	1.613	3	1604	14	3
3.2. Cost	Travel expenses for volleyball matches	3.016	1.490	3	1606	12	3
3.3. Safety	Safety concerns during travel and match	1.547	1.557	0	1595	23	1
3.4. Promotion	Inappropriate promotion of national team matches	2.031	1.693	0	1598	20	2
3.5. Acquisition	Buying tickets for matches	2.776	1.644	3	1596	22	3
3.6. Offer	Offer at the matches alone	2.195	1.597	3	1581	37	2
3.7. Time	Lack of free time	2.801	1.651	4	1594	24	3
3.8. Other	Other	1.364	1.948	0	165	1453	0

Source: author using the SAS package.

Table 7. Importance of barriers

	3.2. Cost	3.7. Time	3.5. Aquisition	3.1. Date	3.6. Offer	3.4. Promotion	3.3. Safety
Average assesment	3.02	2.80	2.78	2.29	2.20	2.03	1.55
Position	1		2	3	3	4	5

Source: author using the Statistica package.

Table 8. Distribution of responses concerning attendance factors

Variable	Description	Mean	Std. Dev.	Moda	N	N omissions	Median
7.1.type	Type of competition (e.g. European Championship)	3.892	1.340	5	1,593	25	4
7.2. rivalry	Possibility of a close-knit match	3.875	1.179	5	1,605	13	4
7.3. brand	Fame of rival teams	3.637	1.324	4	1,597	21	4
7.4. relax	Relaxation, entertainment	3.898	1.205	5	1,603	15	4
7.5. live	Willingness to watch the match live	4.139	1.085	5	1,604	14	4
7.6. prestige	Prestige of being a fan of the national team	2.988	1.687	5	1,602	16	3
7.7. stake	Match stake	3.305	1.440	3	1,601	17	3
7.8. level	Anticipated sports level	3.636	1.162	4	1,602	16	4
7.9. star	Live view of a volleyball star	3.802	1.261	5	1,599	19	4
7.10. family	Opportunity to go to a match with family	3.788	1.228	5	1,603	15	4
7.11. place	Place of competition	3.557	1.355	5	1,597	21	4
7.12. other	Other	1.440	1.939	0	116	1502	0

Source: author using the SAS package.

Table 9. Importance of attendance factors

	7.5. live	7.1. type	7.2. rivalry	7.4. relax	7.9.star	7.10. family	7.3. brand	7.8. level	7.11. place	7.7. stake	7.6. prestige
Average assessment	4.14	3.89	3.87	3.90	3.80	3.79	3.64	3.64	3.56	3.30	2.99
Position	1			2			3		4	5	6

Source: author using the Statistica package.

 $Table\ 10.\ Distribution\ of\ variables\ indicating\ the\ importance\ of\ an\ additional\ tourist\ offer$

Variable	Description	Mean	Std. Dev.	Moda	N	N omissions	Median
8.1. Recreation, sport	Physical recreation, sport	2.160	1.655	0	1,521	97	2
8.2. Nature	Natural attractions	2.067	1.521	3	1,601	17	2
8.3. Entertainment	Entertainment offer	2.354	1.608	3	1,592	26	3
8.4. Culture	Cultural attractions	2.420	1.541	3	1,605	13	3
8.5. Parties	Additional events	2.591	1.525	3	1,605	13	3
8.6. Other	Other	1.349	1.918	0	146	1,472	0

Source: author using the SAS package.

Table 11. Importance of factors concerning the additional tourist offer

	8.5. Parties	8.3. Entertainment	8.4. Culture	8.1. Recreation, sport	8.2. Nature
Average assessment	2.59	2.35	2.42	2.16	2.07
The position in the hierarchy	1	2	2	3	4

Source: author using the STATISTICA package.

Table 12. Assessment of significant differences in relation to gender

		Di	ifferentiation based on gende	er
Variable	Mean for women	Mean for men	p^{a}	Interpretation Barrier/factor more important for
3.1. Date	2.178	2.382	0.012 ^a	Men
3.2. Cost	3.109	2.960	0.040 ^a	Women
3.3. Safety	1.492	1.596	0.154	No significant difference
3.4. Promotion	1.912	2.135	0.009^{a}	Men
3.5. Acquisition	2.722	2.834	0.180	No significant difference
3.6. Offer	2.052	2.309	0.001 ^a	Men
3.7. Time	2.617	2.948	0.000 ^a	Men
3.8. Other	1.107	1.558	0.188	No significant difference
7.1. Type	3.783	3.979	0.028 ^a	Men
7.2. Rivalry	3.790	3.938	0.045 ^a	Men
7.3. Brand	3.458	3.789	1.3214534E-6 ^a	Men
7.4. Relax	3.987	3.832	0.007 ^a	Women
7.5. Live	4.264	4.037	0.000032 ^a	Women
7.6. Prestige	2.810	3.129	0.00059 ^a	Women
7.7. Stake	3.110	3.461	5.113981E-6 ^a	Men
7.8. Level	3.529	3.722	0.004 ^a	Men
7.9. Star	3.831	3.775	0.291	No significant difference
7.10. Family	3.784	3.791	0.757	No significant difference
7.11. Place	3.503	3.611	0.095^{a}	Men
7.12. Other	1.208	1.525	0.253	No significant difference
8.1. Recreation, sport	2.027	2.268	0.004^{a}	Men
8.2. Nature	2.044	2.095	0.505	No significant difference
8.3. Entertainment	2.267	2.431	0.041 ^a	Men
8.4. Culture	2.469	2.390	0.276	No significant difference
8.5. Parties	2.723	2.490	0.001^{a}	women
8.6. Other	1.471	1.219	0.514	No significant difference

 $^{^{\}rm a}\,p$ calculated for Wilcoxon's test of mean differences, significant when $p{<}0.05$ Source: author using the SAS package.

Table 13. Assessment of significant differences in relation to origin of respondents

	Differentiation based on origin							
Variable	Mean for fan	Mean for fan	a	Interpretation				
	from PL	from abroad	p^{a}	Barrier/factor more important for				
3.1. Date	2.292	2.237	0.803	No significant difference				
3.2. Cost	3.084	2.297	2.9500759E-8	Polish fan				
3.3. Safety	1.502	2.022	0.001	Fan from abroad				
3.4. Promotion	2.001	2.356	0.012	Fan from abroad				
3.5. Acquisition	2.828	2.215	0.000066	Polish fan				
3.6. Offer	2.201	2.131	0.695	No significant difference				
3.7. Time	2.796	2.848	0.958	No significant difference				
3.8. Other	1.329	1.560	0.376	No significant difference				
7.1. Type	3.890	3.914	0.241	No significant difference				
7.2. Rivalry	3.899	3.620	0.0006	Polish fan				
7.3. Brand	3.684	3.146	2.7934413E-8	Polish fan				
7.4. Relax	3.963	3.216	4.078027E-12	Polish fan				

	Differentiation based on origin					
Variable	Mean for fan	Mean for fan	a	Interpretation		
	from PL	from abroad	p^{a}	Barrier/factor more important for		
7.5. Live	4.169	3.827	0.00002	Polish fan		
7.6. Prestige	2.977	3.095	0.985	No significant difference		
7.7. Stake	3.336	2.971	0.001	Polish fan		
7.8. Level	3.674	3.228	1.0761468E-6	Polish fan		
7.9. Star	3.845	3.343	3.246329E-7	Polish fan		
7.10. Family	3.811	3.543	0.003	Polish fan		
7.11. Place	3.582	3.292	0.012	Polish fan		
7.12. Other	1.392	1.684	0.668	No significant difference		
8.1. Recreation, sport	2.128	2.534	0.006	Fan from abroad		
8.2. Nature	2.019	2.584	0.00002	Fan from abroad		
8.3. Entertainment	2.341	2.504	0.231	No significant difference		
8.4. Culture	2.364	3.007	2.4180173E-6	Fan from abroad		
8.5. Parties	2.592	2.580	0.794	No significant difference		
8.6. Other	1.283	1.789	0.242	No significant difference		

 $^{^{\}rm a}$ p calculated for Wilcoxon's test of mean differences, significant when p<0.05 Source: author using the SAS package.

Among the barriers, Polish fans were more aware of the problem of the cost of a trip to a sports event (trip + ticket). For foreign visitors the sense of security and appropriate promotion of the event were more important.

In terms of factors, Polish fans considered virtually all the factors examined in the research as more important than foreign fans. Only in the area of access to additional recreational, sports and cultural offer did foreign fans indicate higher importance.

7. RESULTS – ANALYSIS OF CORRELATIONS OF THE ANALYSED VARIABLES

Using the one-dimensional correlation analysis, significant correlations within the data set were analyzed. Relations with a correlation coefficient greater than 0.2 or less than -0.2 were interpreted (see Table 14).

Within demographic variables, detected relationships are intuitive and confirm obvious patterns present in society. The age of the respondents correlates positively with the such features as income of respondents,

professional status and education level. A higher level of education positively correlates with having employment. Professional status is related to age, education and income of the respondents.

An interesting positive relationship exists between income level and the importance of the 'inconvenient match date' barrier (0.205) as well as between the age of the respondents and the importance of the 'lack of free time' barrier (0.202).

8. RESULTS – EXPLORATORY FACTOR ANALYSIS OF THE DATA SET

Exploratory factor analysis was used to identify multidimensional relationships between individual variables (importance of barriers, factors and additional factors in tourism) of the model describing the 'predisposition of the respondents to attend sports events'.

The input data set meets the necessary prerequisites for factorial analysis methodology. The sample in the data set is larger than the minimum recommended in the literature, which is 100 (Barret, Kline, 1981, in: Zakrzewska,

Table 14. Correlation detected with a Rho Spearman coefficient less than -0.2 or greater than 0.2 at a significance level of 0.05

	Age	Education	Employed	Income pl	Income euro	3.1. date	3.7. time
Age	1	0.315	0.382	0.472	0.399		0.202
Education		1	0.262				
Employed			1	0.235			
Income pl				1			
Income euro					1	0.205	
3.1.Date						1	
3.7. Time							1

Source: author using the SAS package.

1994) or 200 (Comrey, 1978, in: Zakrzewska, 1994). Cronbach's alpha coefficient at a high level (0.824) indicates the reliability of the scale used. The KMO measure shows a level indicating that correlations between pairs of variables can be explained by other variables (MSA = 0.85709256).⁴ Bartlett's test (Table 15) result suggests that one can reject the hypothesis that the correlation matrix is a unit matrix at a significance level of less than 0.05, which means that variables are not independent from each other and there are common factors in the data set (Zakrzewska, 1994).

Table 15. Value of coefficients in Bartlett's sphericity test

	Bartlett's sphericity test					
	Chi square Degrees of freedom <i>p</i> value					
1	8869.850	253	0.0000			

Source: author using the STATISTICA package.

In the analysis, five common factors were obtained with a value greater than one with 16 input variables (5/16), which meets the criterion of Kaiser concerning the number of common factors necessary and sufficient to explain the interrelationship within the group of variables.⁵

Due to the excessive number of distinguished components that would explain 75% of the variance recommended in the literature (Zakrzewska, 1994), in order to avoid interpretation problems of the factorial structure, the criterion of 50% variance was applied and five common factors were distinguished (Table 16). The distinguishing of five common factors is justified by the scree test for the eigenvalues characterizing the individual com-

Table 16. Eigenvalues of the correlation matrix

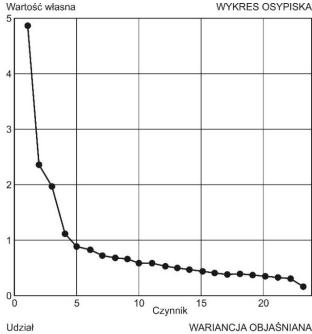
	Correlation matrix eigenvalues:					
Components	total = 23, mean = 1					
	Eigenvalue	Difference	Share	Cumulative		
1	4.897	2.442	0.213	0.213		
2	2.455	0.389	0.107	0.320		
3	2.066	0.815	0.090	0.410		
4	1.251	0.225	0.054	0.464		
5	1.026	0.060	0.045	0.509		
6	0.966	0.110	0.042	0.551		
7	0.856	0.039	0.037	0.588		
8	0.817	0.010	0.036	0.623		
9	0.807	0.060	0.035	0.658		
10	0.746	0.028	0.032	0.691		
()						
23	0.312		0.014	1.000		

Source: author using the SAS package.

ponents (Figure 1). With a certain degree of caution, they can be used to deduce from the population surveyed.

In the analysis of the saturation of the distinguished factors by particular raw variables (Table 17), the values of loadings higher than or very close to 0.5 were treated as significant (Zakrzewska, 1994).

The obtained common factors were interpreted and ordered from the most to the least differentiating group (Table 18). A five-element factorial model determining the motivation of the respondents to participate in sports events was achieved.



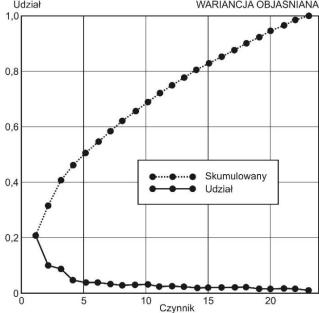


Figure 1. Scree test Source: author using the SAS package

Table 17. Factor loadings: system of factors rotated using the 'orthogonal varimax' method [bold values of correlation coefficients greater or very close to 0.5]

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
stnd_8.2. Nature	0.797	0.170	0.078	0.037	-0.016
stnd_8.4. Culture	0.782	0.067	0.087	0.170	-0.118
stnd_8.5. Parties	0.775	0.095	0.046	0.129	0.045
stnd_8.3. Entertainment	0.736	0.105	0.040	0.026	0.154
stnd_8.1. Recreation, sport	0.645	0.164	0.016	-0.007	0.223
stnd_3.3. Safety	0.135	0.710	-0.013	0.039	0.153
stnd_3.4. Promotion	0.149	0.682	0.014	-0.021	0.088
stnd_3.6. Offer	0.182	0.665	0.046	-0.019	0.249
stnd_3.1.Date	0.132	0.650	0.173	-0.036	-0.005
stnd_3.7. Ttime	-0.018	0.582	0.205	0.024	-0.201
stnd_3.2. Cost	0.080	0.538	0.041	0.153	-0.145
stnd_3.5. Acquisition	0.013	0.496	0.058	0.032	0.280
stnd_7.1. Type	0.077	0.079	0.732	0.056	0.008
stnd_7.3. Brand	0.005	0.124	0.683	0.064	0.102
stnd_7.2. Rivalry	0.054	0.034	0.661	0.233	-0.040
stnd_7.8. Level	0.024	0.040	0.626	0.083	0.300
stnd_7.7. Stake	0.050	0.115	0.570	-0.030	0.442
stnd_7.11. Place	0.124	0.169	0.363	0.290	-0.083
stnd_7.4. Relax	0.081	0.100	0.130	0.710	0.036
stnd_7.5. Live	0.028	-0.116	0.140	0.704	0.058
stnd_7.10. Family	0.131	0.101	0.077	0.684	0.206
stnd_7.6. Prestige	0.152	0.174	0.132	0.164	0.700
stnd_7.9. Star	0.093	-0.036	0.329	0.323	0.494

Source: author using the SAS package.

Table 18. Interpretation of the layout of common factors

Factor	Items in the Factor	Decription	Interpretation
1	8.1. Rekreacja, sport	Physical recreation, sport	Availability of additional services
	8.2. Przyroda	Natural attractions	(tourist attractions) accompanying
	8.3. Rozrywka	Entertainment offer	the event
	8.4. Kultura	Cultural attractions	
	8.5. Imprezy	Additional events	
2	3.1. Termin	The match timeframe constrains fans	Barriers
	3.2. Koszty	Travel expenses for volleyball matches	
	3.3. Bhp	Safety concerns during travel and match	
	3.4. Promocja	Inappropriate promotion of national team matches	
	3.5. Zakup	Buying tickets for matches	
	3.6. Oferta	Offer at the matches alone	
	3.7. Czas	Lack of free time	
3	7.1. Rodzaj	Type of competition (e.g. European Championship)	Attractiveness of a sporting event
	7.2. Walka	Possibility of a close-knit sports match	in terms of its sport level
	7.3. Marka	Brand (fame) of rival teams	
	7.7. Stawka	Match stake	
	7.8. Poziom	Anticipated sports level	
4	7.4. Relax	Relaxation, entertainment	Recreational function of the show
	7.5. Na żywo	The willingness to watch the match live	- free time spent with the family
	7.10. Rodzina	Opportunity to go to a match with beloved ones	in an attractive way
5	7.6. Prestiż	Prestige of being a fan of the national team	Prestige - feeling the prestige of an
	7.9. Gwiazda	Live view of a volleyball star	event

Source: author.

9. CONCLUSION

On the basis of the presented research results it is possible to check the verification of the hypotheses formulated in the research process (Table 19).

The conclusions of the verification of the hypotheses can be considered as the theoretical contribution. It can be compared to the results obtained by authors using the MSSC scale (Table 20).

The comparison of the obtained results with selected cases using the popular MSSC scale or its modification shows several similarities. The high position of the motives of Dramaturgy and Achievements, as well as the position of family motives seem to be consistent with other studies. The escape motive is always visible in the middle. The place of social meetings in the hierarchy, which can be both at the end and at the beginning, is

unclear. Differences in the obtained results may be caused by differences between the studied groups, as well as on the applied research scale.

The obtained five factor model of attendance in sports events is also a contribution to the theory (Fig. 2, Table 18).

Due to the reliability merits of the model obtained, the measurement scale used in the research questionnaire may be considered an alternative way of analysing the willingness to attend major sports events. In comparison to the approaches already used in Poland and abroad for fan research, one should pay attention to the innovation in the construction of this scale. This approach is an attempt to combine a classic set of factors used to study the motivation of fans – Funk, Filo, Beaton, Pritchard (2009); Kim, Trail (2010); Milne, McDonald (1999), in: Won, Kitamura (2007); Neale, Funk (2006); Sloan (1989); Trail, James (2001); Wann (1999),

Table 19. Verification of hypotheses

Hypothesis	Verification of hypotheses
1	Significant differences in the perception of importance of particular barriers/factors were identified between
	women and men, as well as between Polish fans and foreigners (Tables 11,12).
2	Average assessments of the importance of individual factors differ, which makes it possible to create lists of
	factors ordered by importance (Tables 6, 8, 10).
3	The assessment of the importance of attendance factors in sports events is partly correlated with the variables
	describing the demographic profile of the respondents (Table 13).
4	The studied barriers and factors allow five hidden factors to be identified (Table 16).

Source: author.

Table 20. Comparison of the obtained hierarchy of factors in the author's research with the measured importance of motives on an MSSC scale in selected studies

	Own research [see also table 8]	MSSC modified (research results) N=222 (Ryśnik, Żylak, Tomik, 2018)	MSSC Korean fans N=511 (Won, Kitamura 2007)	MSSC Japan jans; N=593 (Won, Kitamura, 2007)	MSSC (when the favorite player is play- ing) N=142 (Fink, Parker, 2009)	MSSC (when the favorite player is not playing) N=142 (Fink, Parker, 2009)
Factors	1. The willingness to	1. Aesthetics,	1. Drama	1. Achievements		1. Drama
in order	watch the match live	Drama.	2. Achievements	2. Entertainment	2. Drama	2. Skills
of importance	2. Type of competition	2. Achievements	3. Entertainment	3. Drama	3. Meetings	3. Meetings
(measured	(e.g. European Champi-	and Knowledge	4. Escape	4. Skills	4. Achieve-	4. Escape
average	onship), Possibility of	3. Escape	5. Pride in being	5. Escape	ments	5. Aesthetics
value	a close-knit sports fight,	4. Social meeting	in a group	6. Pride in being	5. Escape	6. Family
of factors or	Relaxation, Live view of	5. Family	6. Family	in a group	6. Aesthetics	7. Knowledge
subscale)	a volleyball star, Oppor-		7. Skills	7. Family	7. Family	8. Achievements
	tunity to go to a match		8. Social Meet-	8. Social	8. Knowledge	9. Physical
	with family		ings	Meetings	9. Physical	Attractiveness
	3. Fame of rival teams		9. Attractiveness	9. Attractiveness	Attractiveness	
	4. Anticipated sports		of players	of players		
	level, Place of competi-		- v	1 ,		
	tion (match)					
	5. Match stake					
	6. Prestige of being a fan					

Source: author's compilation based on the sources in the table.

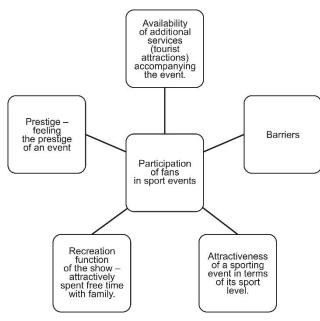


Figure 2. Factors influencing attendance by fans at a sporting event

Source: author

in: Hadzik (2016); with barriers to attendance – Anthony, Kahn, Madison, Paul, Weinbach (2014); Mohan, Thomas (2012); Nishio (2014); Simmons, Popp, McEvoy, Ho-

well (2018); Yu (2010); making the author's approach conceptually similar to the synthetic approach used by Kim & Trail (2010). At the same time it is an attempt to search for a specific 'common space' created at the junction of sports and tourism (Szczechowicz, 2015) by attaching to the model a broader context of the event in the form of entertainment events or tourist products, for instance.

The results obtained confirm that tourism and sport are phenomena that can and should be studied together.

10. INDICATIONS FOR PRACTITIONERS

Conclusions from the verification of hypotheses can be considered from the point of view of usefulness for managers of entities responsible for the development of products in sports tourism. A set of postulates was formulated for the management practice of major sporting events in order to meet the preferences of travelling fans (Table 21).

The use of the recommendations and suggestions in Table 19 should foster the attendance of fans in major sporting events.

Table 21. Practical conclusions based on the verification of the hypotheses

Hipotesis	Verification of the hypothesis	Practical conclusions
1	Significant differences in the perception of importance of particular barriers/factors were identified between women and men, as well as between Polish fans and foreigners (Tables 11, 12)	The design of the offer and the distribution of accents in the message promoting the event should be differentiated according to the target group (gender, origin). 1) The offer and promotional message aimed at men should be more focused on highlighting: - the convenience of the dates and accessibility of the venue of the event - the rank of the event and its sporting level - availability of additional entertainment events 2) The offer and promotional message aimed at women should emphasise to a greater extent: - the price of the event's attractiveness - the potential level of relaxation associated with the event - the prestigious nature of the event - availability in a package of other additional events involving fans in the field of physical recreation and sport 3) The offer and promotion aimed at people from abroad should be particularly focused on: - high safety standards at the event - high quality information about the event - access to additional services at the venue itself - easily accessible cultural and natural attractions 4) The offer and promotion addressing persons in the country should emphasize: - cost-attractiveness - sporting level - watching live, interacting with sports stars - possibility of relaxation with the family
2	Average assessments of the importance of individual factors differ, which makes it possible to create lists of factors ordered by importance – the hierarchy of factors (Tables 6, 8, 10)	1) Taking under consideration the two most important barriers for fans, while developing the offer and formulating the promotional message it is recommended first of all to focus at reduction the cost and time inconveniences of attendance in a sport event (Table 9).

Table 21 (cont.)

Hipotesis	Verification of the hypothesis	Practical conclusions
		2) Factors assessed as the most important (Table 11, 13) indicate the need for
		special treatment of the following issues:
		- the value of watching the event live (authenticity and uniqueness of the
		event and the possibility of dealing with celebrities)
		- the sporting level of the event
		 the qualities contributing to relaxation in the family circle
3	The assessment of the importance of	Event organisers should be aware of the fact that attracting an older and wealthier
	attendance factors in sports events is	sports fan requires addressing time constraints and the problem of setting a con-
	partly correlated with the variables	venient date for an event. It is therefore necessary to choose the best time for the target
	describing the demographic profile	group or to introduce various time-saving improvements to optimise the use of their
	of the respondents (Table 13)	time.
4	The studied barriers and factors al-	The derived model is a guideline for managers on the issue of how the individual
	low five hidden factors to be iden-	characteristics of an event are processed in the perception process of a sport fan.
	tified (Table 16)	1. There is a substitution between the variables making up a given common fac-
		tor and therefore they may be treated interchangeably.
		2. However, substitution does not occur between variables forming different
		common factors.
		Managers should consider separately the efforts/effects of actions aimed at five
		different elements of the model (there is no substitution in the range of variables
		of different factors). For example, it is not possible to compensate the poor quality of
		sport level of the event with the elimination of some barriers.
		Managers should make equally strong, parallel efforts in terms of:
		 availability of additional services, events, attractions,
		- levelling of barriers
		 increasing the attractiveness of the sporting event with regard to the sporting level
		- increasing the attractiveness of the spectacle for those who seek relaxation and
		pleasant time spent with their families
		- building the prestige of fans at a given sporting event and the involvement
		of sporting stars in the event

Source: author.

ENDNOTES

- ¹ "Tourism demand can be understood as the sum of the services and goods that tourists are willing to purchase at a given price level and over a given period of time" (Niezgoda, Zmyślony, 2006, in: Kachniewska, Nawrocka, Niezgoda, Pawlicz, 2012, p. 31).
- ² Some results based on an incomplete sample (N=434) were published in Hadzik, Ryśnik, Tomik (2015).
- ³ Total estimated attendance of fans at matches from phases I, II, III at the "Spodek" arena in Katowice, where research was conducted on the basis of data from the Polish Volleyball Federation (PZPS).
- ⁴ "KMO lower than 0.5 very low (unacceptable)" (Zakrzewska, 1994).
- 5 This number should be within the range from $1/\!\!/_6$ to $1/\!\!/_3$ of the total number of examined variables (Zakrzewska,1994).

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