Expenditures of CEE and Non-CEE Spectators in Major International Sport Events in Hungary

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Abstract

Purpose: Investigation of consumer behavior of CEE and non-CEE spectators in Liebherr 2019 ITTF Table Tennis World Championships and 2019 ICF Canoe Sprint and Paracanoe World Championships and its economic impact.

Methodology: In the research on two major international sport events, we surveyed n = 635 foreign spectators. Independent-samples T tests, Mann-Whitney U tests, ANOVA tests, chi-square tests, and linear regression modeling were performed for the statistical tests and fiscal multipliers from the Hungarian sectoral input-output model were applied to calculate economic impact.

Findings: CEE spectators spend on average 2.27 guest nights attending major international sport events in Hungary, whereas non-CEE spectators spend 4.74 guest night on average. All spectators rated Hungarian people's hospitality very high (4.6 out of 5) and were well-satisfied with the quality of organization of the events (4.4 out of 5). Non-CEE spectators visited more sights, rented better accommodation, spent larger amounts on the event than CEE spectators, but they are unlikely to return to Hungary as soon as CEE spectators will. Foreign spectators' expenditure in two events analyzed contributed EUR 1,415,743 to the Hungarian GDP in 2019 and because of their expenditure, EUR 584,524 in taxes was paid to the Hungarian budget in 2019. All in all, CEE spectators came to Hungary to major international sport events mostly for the professional experience, whereas non-CEE spectators came for a complex experience package.

Research limitations: Findings cannot be generalized to expenditure in other countries.

Originality: Results are original for major international events organized in Hungary, but most of the results are original in international comparison as well.

Keywords: major international sport events, spectators' spending, economic impact, consumer behavior of CEE and non-CEE spectators.

JEL: L83, F23, Z29, Z39

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Wydatki widzów z Europy Środkowo-Wschodniej i spoza Europy Środkowo-Wschodniej podczas dużych międzynarodowych imprez sportowych na Węgrzech

Streszczenie

Cel: Zbadanie zachowań konsumenckich widzów z Europy Środkowo-Wschodniej i spoza Europy Środkowo-Wschodniej podczas Mistrzostw Świata w tenisie stołowym ITTF Liebherr w 2019 roku i Mistrzostw Świata ICF w sprincie kajakowym i parakajakarstwie w 2019 roku oraz ich wpływu na gospodarkę.

Metodologia: W ramach badania dwóch dużych międzynarodowych imprez sportowych przeprowadzono ankietę wśród n = 635 zagranicznych widzów. Do celów statystycznych przeprowadzono testy T dla prób niezależnych, testy U Manna-Whitneya, testy ANOVA, testy chi-kwadrat i modelowanie regresji liniowej, a do obliczenia wpływu gospodarczego zastosowano mnożniki fiskalne z węgierskiego sektorowego modelu nakładów i wyników.

Wyniki: Widzowie dużych międzynarodowych imprez sportowych pochodzący z Europy Środkowo-Wschodniej spędzają na Węgrzech średnio 2,27 nocy, a widzowie spoza Europy Środkowo-Wschodniej średnio 4,74 nocy. Wszyscy widzowie bardzo wysoko (4,6 na 5) ocenili gościnność Węgrów i byli bardzo zadowoleni z jakości organizacji imprez (4,4 na 5). Widzowie spoza Europy Środkowo-Wschodniej obejrzeli więcej zabytków, wynajęli lepsze pokoje, wydali na imprezę więcej niż widzowie z Europy Środkowo-Wschodniej, ale raczej nie przyjadą ponownie na Węgry tak szybko, jak widzowie z Europy Środkowo-Wschodniej. Wkład wydatków zagranicznych widzów podczas dwóch analizowanych imprez w węgierski PKB w 2019 roku wyniósł 1 415 743 EUR. Z tytułu ich wydatków do budżetu węgierskiego w 2019 roku wpłynęło 584 524 EUR w postaci podatków. Ogólnie widzowie z Europy Środkowo-Wschodniej przyjechali na Węgry na duże międzynarodowe imprezy sportowe głównie ze względu na chęć obcowania ze sportem zawodowym, natomiast widzowie spoza Europy Środkowo-Wschodniej po kompleksowy pakiet doświadczeń.

Ograniczenia badawcze: Wyników nie można uogólnić na wydatki w innych krajach.

Oryginalność: Wyniki są oryginalne dla dużych międzynarodowych imprez organizowanych na Węgrzech, lecz większość z nich jest również oryginalna w porównaniu międzynarodowym.

Słowa kluczowe: duże międzynarodowe imprezy sportowe, wydatki widzów, wpływ gospodarczy, zachowania konsumenckie widzów z Europy Środkowo-Wschodniej i spoza Europy Środkowo-Wschodniej.

1. Introduction

Research of international sport competitions is becoming a very valuable field of research not only in sport but also in international business. International sport competitions are regularly organized with inherently international associations and participants, but the connection of competitions with other stakeholders is even more interesting. Media, spectators, organizers, suppliers, exhibitors, technical staff are also usually international and the unfolding of the events themselves tackles all these international elements.

International sport competitions are categorized in several ways. Gammon (2012) tried to summarize the relevant dimension with which the classification could be made. Others, like Herstein and Berger (2013), Laczkó and Stocker (2018) or Máté (2018), tried to create a more prag-

matic categorization. Mega-events are the Olympic Games, the FIFA World Championships and UEFA European Championships, hallmark events are famous big events, like Wimbledon Championships, major events are the World Championships of Olympic sports and some highly visible non-Olympic sports, technical events are Formula One or other auto/motorsports events, mass-participant sport events are marathons, half-marathons, ironman and similar events, medium events are usually regional events, but can also be football games, downhill or biathlon events, and minor sport events are smaller-scale events which can be championships of less popular sports, youth championships, or even smaller sport events as well.

Mega-events became a well-researched area in the first two decades of the 21st century (Horne and Manzenreiter, 2006; Preuss, 2006; Fourie & Santana-Gallego, 2011; Preuss & Alfs, 2011; Kim et al., 2014, among others), but events with a lesser scope are still underresearched in comparison.

In this paper, we focus on major sport events organized in Hungary. Business-related research of some Hungarian sport events was done by KPMG (2015), Máté (2018), Laczkó and Stocker (2018), Laczkó and Paár (2018), Paár and Laczkó (2018), Remenyik et al. (2018) and Czeglédi et al. (2018). None of these studies tackle major international Olympic sport events, although almost all other categories were addressed by them.

Hungary offers however a powerful potential for research on major international sport events as the Hungarian government declared sport as a strategic field and international sport events are one of the pillars of the national sport strategy, hence the financial support for international sport events increased in terms of the number of events and in monetary terms as well. Since 2017, more than 100 international sport events have been supported annually by the government in Hungary and this amount seems to be sustainable in the long run (Stocker & Szabó, 2017).

In the supported international sport events, several major events were also supported, like the Judo World Championships, the Wrestling World Championships, the Table Tennis World Championships, the Canoe Sprint World Championships, the Fencing World Championship and the Modern Pentatlon World Championships. All of these sports are Olympic sports and all of them are important in Hungary according to the historical results in the given sports.

To deepen the knowledge about major international sport events, we selected two world championships from important Olympic sports, namely the Liebherr 2019 ITTF Table Tennis World Championships (hereafter: TTWC) and the 2019 ICF Canoe Sprint and Paracanoe World Championships (hereafter: CWC). These events were very important for sport professional reasons, as CWC qualified for world championships and TTWC

was the last individual world championships before the Olympic Games. Hungarian sport diplomacy could be very proud that its sport associations could become the host association of these events.

International sport events are very complex phenomena; therefore, our research had to be focused to be deep enough to create added value and add to the international discourse. From the different impact dimensions of international sport events: sport political, sport professional, economic, social, technological and environmental – defined by Stocker and Szabó (2017) – we have selected only the economic dimension. There are several stakeholders in the economic impact dimension that we intentionally deselected and for this study, we only focused on foreign spectators of the selected international sport events.

As spectators come for the experience and consume in and around the events, their contribution to the host country's economy is very important. Domestic spectators also contribute to the event's economic impact, but their impact contribution is far less than their expenditure as without a given event, they would have spent some or most of the given expenditure on something else in the host country's economy. Most foreign spectators however would not even arrive in the host country if the event did not take place there. Therefore, the expenditure of foreign spectators has special importance. All of the value added tax paid by foreign spectators on merchandise and services they consume is a direct tax revenue increase to the budget of the country. The revenue coming from their expenditure will be covered by costs which would not arise without the event, which means that it drives employment and supplier networks and contributes to corporate taxes, income taxes and social benefits. Although by definition international spectators' expenditure is not export revenue, it behaves similarly to export as it is also an external stimulus to the economy.

Hungary belongs to the Central-Eastern European countries and as intraregional transportation is easier and cultural differences are smaller than in the case of its interregional counterparts, we were curios whether foreign spectators of CEE countries are more frequent in major international sport events or not and how similar their attitudes and expenditures are to those of non-CEE spectators.

Realizing the importance of foreign spectators, we focused on the following research questions:
1. Is there a significant difference between CEE and non-CEE spectators' characteristic?
2. What determines the spending behavior of foreign spectators?
3. Is there a significant difference between CEE and non-CEE spending behavior?
4. How did foreign spectators of major international sport events contribute to the Hungarian economy?

2. Materials and Methods

Information about the consumer behavior of spectators was obtained by the survey methodology. To obtain primary research data, we created slightly different questionnaires for different stakeholder groups in international sport events and we selected the sample with quota sampling. Interviewers were sent to the events and they recorded the answers of the spectators.

In the two major international sport events under study, we surveyed **n = 635** foreign spectators with the spectator questionnaire, a number that easily qualifies as a large sample size.

Further primary research data was provided by the local organizing committee about the budget of the events and the number of different participants. According to secondary sources, we used public data from the national sport associations, the Hungarian Statistical Office (KSH), the Statistical Office of the European Union (Eurostat) and other sport professional fora.

The number of competition days watched by foreign spectators was 17,694 days altogether in the two events under analysis. According to the average number of competition days watched by the foreign spectators, there were 3,810 foreign spectators in TTWC and 1,309 foreign spectators in CWC; therefore, the research population consists of **N = 5,119** foreign spectators altogether. From these spectators, the TTWC sample consists of 461 answers (12%) and the CWC sample consists of 174 answers (13%), with which we have a very robust sample at our disposal.

The spectator questionnaire was created with 12 questions, where question types included open-ended questions (some financial and some textual), closed-ended questions and Likert-scale questions about the basic statistical data of the respondent, the different types of expenditures spent and their amounts, the length of stay, different tourist appeals, the quality of the event organization, the expected rate of returning to the country and the attitude about how spectators rated Hungarian people's hospitality.

Expenditures and spending behavior of spectators, travel and other tourist behavior was calculated by the primary data with inferential statistics and we used other external variables as well, like GDP per capita (PPP) from Eurostat. We wanted to use sportindex from Greatest Sporting Nation for exploratory purposes, but it did not increase the explanatory power of any model (Greatestsportingnation.com, 2020).

The differences of the given variables, depending on the operationalization of the given variable, were calculated with independent-samples T tests, Mann-Whitney U tests, ANOVA tests and chi-square tests. The significance level was set at $p < 0.05$ (Ács, 2009; Ács, 2014).

We estimated the contribution of different variables to the expenditure of spectators with linear regression. The forward method of regression

was applied to capture those variables which had the most contribution to understanding the dependent variable (Sajtos & Mitev, 2007).

The economic impact of foreign spectators' expenditure was estimated with obtained multipliers from the input-output analysis of Hungarian sectors (Stocker & Boda, 2018). Foreign spectators' money was spent on arts, entertainment and recreation; accommodation and food service activities; mmanufacture of food products, beverages, and tobacco products; transportation and storage. Multipliers were applied according to the expenditure in the different segments and the segments multiplier from the Hungarian economy. With these calculated multiplier effects, we could estimate the impact of foreign spectators' expenditures on the Hungarian GDP.

All statistical calculations were made in IBM SPSS Statistics 25 and Microsoft Excel (from Microsoft Office 365 ProPlus) was applied for other calculations.

3. Results

In major international sport events organized in Hungary in 2019, 70.4% of the respondents of the spectator survey were male and the most represented age group was middle-aged adults (30–49 years old) with 41.8%, closely followed by young adults (19–29 years old) with 31.6%.

Four continents were represented by the spectators, 10.2% of the respondents came from Asia (China, Japan, India, Indonesia), 2.5% came from Australia and New Zealand, 0.6% came from the Americas (USA, Canada, Brazil) whereas the vast majority, 86.7%, came from Europe. The biggest group of the respondents represented Western and Northern Europe (45.4%, with 22% coming only from Germany) and 29.3% of the respondents (n = 461) arrived from CEE countries.

Most of the respondents (44.4%) travelled to Hungary by plane, 40.7% arrived by car or van, 14.2% used train and 0.7% reported other means of transportation (n = 626). As regards means of transportation, there is a significant difference between CEE spectators and non-CEE spectators as 64% of the CEE respondents arrived by car or van, 29.8% used train and only 5.1% arrived by plane (chi-square test p = 0.000).

Average nights spent in Hungary were 4.1 ± 2.11 guest nights for foreign spectators visiting Hungary for major international sport events in 2019. More than 50% of the visitors spent their guest nights in 3+ star hotels and 35.1% were staying in 4- and 5-star hotels. It is interesting however that 33.1% of the foreign spectators found accommodation in rented apartments like Airbnb and 10.5% spent their guest nights at friends'. Foreign spectators in the two major international sport events under analysis spent 19,585 guest nights in Hungary and spent EUR 853.9 thousand on accommodation. 4.7% of the spectators had arrived only for one day, which means that they did not generate any single guest night. All of the spectators who

arrived for only one day came from the CEE region and 16.1% of the spectators coming from CEE departed after just one day on which they had seen the competition.

Foreign spectators spent 131.2 ± 98.3 EUR per guest night in Hungary which is increased to EUR 166.4 ± 113.5 per guest night with transportation. Transportation is usually not (fully) paid in the host country; therefore, we excluded transportation spending from our calculations. Foreign spectators spent EUR 3.3 million during the two major international sport events organized in Hungary including transportation expenditures, from which at least EUR 2.6 million was spent in Hungary.

Spectators coming from the CEE countries spent significantly less time in Hungary than spectators coming from non-CEE countries, or even less than the common average for foreign spectators altogether, as CEE spectators generated "only" 2.3 ± 1.6 guest nights per capita ($t = 14.784$, $p = 0.000$) whereas non-CEE spectators generated 4.7 ± 1.9 guest nights per capita. Average expenditure per guest night was also significantly different, CEE spectators spent EUR 107 ± 60 per guest night whereas non-CEE spectators spent EUR 141.3 ± 109 per guest night ($t = 4.052$, $p = 0.000$) during the two major international sport events under research.

Spending distribution (%)	Tickets	Accommodation	Transport	Dining out	Other food	Services	Shopping	Other
Spectators from CEE countries	20.9%	21.1%	16.0%	15.7%	13.0%	2.2%	9.6%	1.4%
Spectators from non-CEE countries	13.8%	27.7%	27.0%	14.4%	8.5%	3.2%	4.4%	1.1%
Total	14.6%	26.9%	25.7%	14.5%	9.0%	3.1%	5.0%	1.1%

Tab. 1. Spending distribution for spectators coming from CEE and non-CEE countries. Source: Authors' calculation.

We also analyzed the different types of expenditures of spectators coming from CEE or non-CEE countries. Spending distribution can be seen in Table 1 whereas daily spending amounts and their standard deviation and standard error can be seen in Table 2. Spectators spent the most amount on accommodation and transportation, then a significantly lower amount was spent on dining out and tickets, and the lowest amounts were spent on shopping, other food, services and others.

Spending behavior of CEE and non-CEE spectators was significantly different as expected. Non-CEE and CEE spectators spent significantly different amounts on accommodation ($t = 9.049$, $p = 0.000$), transportation ($t = 4.717$, $p = 0.000$), dining out ($t = 6.295$, $p = 0.000$), tickets ($t = 9.255$,

p = 0.000), shopping (t = 3.373, p = 0.001), other food (t = 6.612, p = 0.000) and services (t = 3.112, p = 0.002). Only the expenditure on others (t = 1.928, p = 0.057) was not significantly different between the two groups of spectators, but only by a very slight margin as the significance level was set at p < 0.05.

Expenditures by country group		N	Mean	Std. Deviation	Std. Error Mean
Expenditure on accommodation	whole sample	556	195.1871	196.87118	8.34920
	Non-CEE	417	235.9376	209.23757	10.24641
	CEE	139	72.9353	61.87320	5.24802
Expenditure on transportation	whole sample	587	177.0085	429.07493	17.70982
	Non-CEE	421	228.5416	496.49537	24.19770
	CEE	166	46.3133	49.17339	3.81660
Expenditure on dining out	whole sample	508	115.437	139.2864	6.1798
	Non-CEE	369	138.453	154.1105	8.0227
	CEE	139	54.338	52.5979	4.4613
Expenditure on tickets	whole sample	625	94.47	75.083	3.003
	Non-CEE	440	111.39	78.865	3.760
	CEE	185	54.25	44.365	3.262
Expenditure on shopping	whole sample	276	73.36	91.016	5.479
	Non-CEE	181	86.50	106.160	7.891
	CEE	95	48.32	41.086	4.215
Expenditure on other food	whole sample	532	68.6447	68.48181	2.96906
	Non-CEE	374	80.9198	74.55562	3.85518
	CEE	158	39.5886	38.03956	3.02626
Expenditure on services	whole sample	196	62.87	88.404	6.315
	Non-CEE	155	72.75	96.312	7.736
	CEE	41	25.49	24.000	3.748
Expenditure on others	whole sample	87	51.41	55.138	5.911
	Non-CEE	66	57.74	56.824	6.995
	CEE	21	31.52	45.068	9.835
Expenditure by guest night	whole sample	461	166.4230	113.53795	5.28799
	Non-CEE	317	180.4953	125.23622	7.03397
	CEE	144	135.4444	73.50617	6.12551

Tab. 2. cont.

Expenditures by country group		N	Mean	Std. Deviation	Std. Error Mean
Expenditure by guest night without transportation expenses	whole sample	635	131.2400	98.31625	3.90156
	Non-CEE	449	141.2933	108.93622	5.14102
	CEE	186	106.9715	59.58916	4.36929
Total expenditure	whole sample	635	635.7102	653.61381	25.93787
	Non-CEE	449	792.2249	711.93921	33.59849
	CEE	186	257.8871	183.49470	13.45448

Tab. 2. Expenditures of spectators coming from CEE or non-CEE countries per capita. Source: Authors' calculation.

Spectators liked the major international sport events in focus of this research very much as they judged the overall quality of organization of the events very high. 51.2% of the spectators gave 5 (the highest grade in the 5-level Likert scale) on the organization of the events and only 2.6% gave 1 or 2 grades. Overall, foreign spectators gave 4.4 ± 0.52 on the organization of these events and spectators coming from CEE countries (4.6 ± 0.6) judged the event organization significantly better than their non-CEE (4.3 ± 0.8) counterparts ($Z = -3.739$, $p = 0.000$).

Tourism consumption was also part of the whole experience of foreign spectators coming to major international sport events to Hungary. Almost two-thirds of the respondents (62.9%) did sightseeing either in Budapest (TTWC) or Szeged (CWC) and 34.8% of the respondents even answered that they had visited sights more often than once during their stay. Spectators from CEE countries however were less open to sightseeing as less than half of CEE spectators (47.6%) took time for sightseeing and the difference between CEE and non-CEE spectators (68.3%) was significant (chi-square $p = 0.000$). The distribution of sightseeing behavior can be seen in Table 3.

Spectators coming from non-CEE countries spent 0.7 ± 1.3 guest nights more than the number of competition days they visited whereas spectators from CEE countries spent the same amount of guest nights as the number of competition days they visited. The difference between the two groups' behavior was significant ($t = 7.097$, $p = 0.000$). We also analyzed the relationships between guest nights and sightseeing, and those spectators who spent more guest nights were more open to sightseeing as well (chi-square $p = 0.006$).

Hungarian people's hospitality was given very good rating by foreign spectators. On the 5-level Likert scale, Hungarian hospitality was rated 4.6 ± 0.6 on average, where 62.5% gave 5 and 33.2% gave 4 to Hungarian people's hospitality. There was no significant difference between CEE and non-CEE spectators rating the perceived hospitality ($Z = -0.299$, $p = 0.765$).

			Frequency of Sightseeing				Total
			Not and does not care	Did not have time	Some sights	visited daily or more sights	
Spectators from country groups	CEE	No.	19	77	51	36	183
		%	10.4	42.1	27.9	19.7	100.0
	Non- -CEE	No.	20	117	125	182	444
		%	4.5	26.4	28.2	41.0	100.0
Total		No.	39	194	176	218	627
		%	6.2	30.9	28.1	34.8	100.0

Tab. 3. Distribution of sightseeing behavior of CEE and non-CEE spectators. Source: Authors' calculation.

Foreign spectators of major international sport events in Hungary enjoyed a very good experience as 61.6% of them reported that they were eager to return to Hungary again in the next five years and only 2.5% reported that they were not interested in returning in the near future (see Table 4). Spectators coming from the CEE countries reported significantly higher willingness to return than spectators from non-CEE countries ($Z = -6.567$, $p = 0.000$)

			Do you plan to return to Hungary?				Total
			Yes, this year	Yes, in the next 5 years	Someday in the future	No	
Spectators from country groups	CEE	No.	72	70	39	4	185
		%	38.9	37.8	21.1	2.2	100.0
	Non- -CEE	No.	67	181	188	12	448
		%	15.0	40.4	42.0	2.7	100.0
Total		No.	139	251	227	16	633
		%	22.0	39.7	35.9	2.5	100.0

Tab. 4. CEE and non-CEE spectators' willingness to return to Hungary. Source: Authors' calculation.

4. Discussion

Sport fans travelling to major international sport events are mostly young or middle-aged males whereas females are less than 30% of the spectators.

The numbers of foreign spectators were significantly different in the two analyzed events, which was also expected as table tennis and canoeing have a very different spectator base in the world. Table tennis is a very

globalized sport where spectators mainly come from Asia and Germany, whereas canoeing is much less globalized, and Hungary is one of the major bases of the sport. Therefore, we expected that there will be much more foreign spectators in TTWC than in CWC.

According to Ács (2007), there is regional inequality in sport competitiveness in Hungary, but it is unknown whether regional differences inside the country have a significant impact on foreign spectators' spending in major international sport events as well.

According to regional differences in spectators' spending, there was no significant difference between the expenditures in the two regions in accommodation ($p = 0.391$), dining out ($p = 0.703$), other food ($p = 0.019$) and other ($p = 0.013$) expenditure. Ticket ($p = 0.000$) and transportation ($p = 0.004$) spending had to be different as ticket prices were different and the geographical distance of the two regions involved different transportation costs. Expenditures on services ($p = 0.000$) and shopping ($p = 0.000$) were however significantly different, which could be region-specific.

Difference between CEE and non-CEE spectators' characteristics in major international sport events organized in Hungary

Hungarian major international sport events attracted significant attention from Central Eastern European countries and Germany, but this was also expected considering Ghemawat's CAGE model consisting of cultural, administrative, geographical and economic distances (Ghemawat, 2001).

Cultural and geographical distance between Hungary and CEE countries or Germany is short, administrative distance is basically non-existing because of the European Union and economic distance in CEE is short but between Germany and Hungary it is long although very favorable as regards coming to Hungary to gather experiences at an affordable price. Another impact of geographical distance is that the longer the distance, the more the probability of using airplane as a means of transportation, which could be clearly seen from the answers of the spectators. And those spectators who came from longer distances remained also longer in Hungary, which is also understandable, and probably because of the distance they came less frequently as well. Those spectators who live close by either come more frequently or have the ability to come more frequently to Hungary; therefore, they focused their stay more on the event and less around the event. Whereas non-CEE spectators seem to have come for the full experience package as they spent more time in Hungary than the competition days, visited more sights, rented better quality accommodations and spent more in the country.

It is interesting to see however that although hardcore fans from all over the world arrived in these major international events, the African continent was not represented, which can be connected with less purchasing power and less success in these sports. Therefore, these major events did not provide a sufficient drive to the African sport fans.

Hungarians tend to think about themselves as hospitable people and it is good to see that the research data highly supports this as Hungarian hospitality was rated very good and there was no significant difference between the country groups. It is interesting to see however that those spectators who came from CEE countries rated the organization of the event significantly better. We assume that it is because of the difference in cultural distance and maybe those fans who were travelling farther for the event even had much more major international sport event experience and they rated the events in comparison with earlier world championships. The willingness to return to Hungary is connected with experiencing hospitality and good organization and this is also supported by the data as there is a significant correlation between these variables (p = 0.000).

Determinants of foreign spectators' spending behavior

From several potential variables, the following six variables became significant and increased the explanatory power of the linear regression model: how many nights were spent in Budapest or Szeged, what type of accommodation was used, which type of transportation was used, GDP per capita PPP US, any sights visited, and planning to return to Hungary. Table 5 shows the linear regression model of foreign spectators' expenditure in major international sport events in Hungary in 2019 (R = 0.555, $R^2 = 0.308$, F = 41.918, p = 0.000).

	Coefficients[a]					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
6 (Constant)	–582.794	124.058		–4.698	0.000
How many nights did you stay in Budapest/Szeged?	125.731	12.153	0.392	10.345	0.000
Type of accommodation	73.259	11.513	0.229	6.363	0.000
Type of transportation	147.805	35.116	0.161	4.209	0.000
GDP/capita (US PPP)	–0.006	0.002	–0.131	–3.627	0.000
Did you visit sights in Budapest/Szeged?	60.651	19.662	0.110	3.085	0.002
When do you plan to return to Hungary?	86.879	30.550	0.103	2.844	0.005

[a] Dependent variable: Total expenditure

Tab. 5. Linear regression model of foreign spectators' expenditure in major international sport events in Hungary. Source: Authors' calculation.

The negative constant value does not offer any meaningful explanation; it is the residual element. According to the regression model, the more nights spectators spent in the city of the world championships (Budapest or Szeged), the more they spent and spending one more night increased the total expenditure by EUR 125.7 on average. Better accommodation the spectators rented increased also total expenditure, foreign spectators spent EUR 73.3 on each extra star on average. Foreign spectators paid on average EUR 147.8 to upgrade their type of transportation from other to train, or from train to car, or from car to airplane. GDP per capita (US PPP) interestingly decreased spectator spending by EUR -0.006 on average per 1 US dollar of GDP per capita, which means that those spectators who came from wealthier countries spent less in major international sport events by EUR -0.006 per 1 US dollar of GDP per capita of the given country. Where foreign spectators visited sights more frequently, their spending grew on average by EUR 60.6 per frequency level. Finally, the less frequently the spectators were planning to visit Hungary, the more they spent; total expenditure grew on average by EUR 86.9 if the spectator planned to decrease the frequency of returning to Hungary (as planning the return was measured in a reverse scale as can be seen in Table 4).

What is the difference between CEE and non-CEE spending determinants?

New regression models were created according to the country group selection (CEE or non-CEE). With the country group selection, some variables were excluded and some new variables came into the model. Explanatory variables of the CEE regression are how many nights were spent in Budapest or Szeged, which type of transportation was used, what type of accommodation was used, age and planning to return to Hungary (see Table 6). The explanatory power of the CEE model exceeds significantly the explanatory power of the whole population model ($R = .696$, $R^2 = 0.484$, $F = 24.010$, $p = 0.000$).

Residual constant is also negative in this model. GDP per capita was excluded as it could not increase the explanatory power of the model, this exclusion is understandable as GDP per capita of the countries in the CEE region is quite similar. Sightseeing was also excluded from this model, which is also understandable as it seems that CEE spectators come more frequently to Hungary and we can assume that they are more goal-oriented instead of synergy-oriented. If CEE spectators come, they come for their main goal and focus on it more than non-CEE spectators.

According to the regression model, the more nights spectators from CEE countries spent in the city of the world championships (Budapest or Szeged), the more they spent and spending one more night increased their total expenditure by EUR 47 on average. CEE spectators paid on average EUR 124.1 to upgrade their type of transportation from other to train, or from train to car, or from car to airplane. Better accommodation CEE spec-

tators rented increased also their total expenditure, CEE spectators spent EUR 38.2 on each extra star on average. The older the CEE spectators were, the less they spent, with on average EUR 3.4 less spending per each year of age. Finally, the less frequently the CEE spectators were planning to visit Hungary, the more they spent; total expenditure grew on average by EUR 42.4 if the CEE spectator planned to decrease the frequency of returning to Hungary.

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
5	(Constant)	–121.539	68.738		–1.768	0.079
	How many nights did you stay in Budapest/Szeged?	47.026	10.306	0.352	4.563	0.000
	Type of transportation	124.111	26.404	0.403	4.700	0.000
	Type of accommodation	38.160	7.257	0.433	5.258	0.000
	Age	–3.376	1.080	–0.227	–3.127	0.002
	When do you plan to return to Hungary?	42.422	14.919	0.190	2.843	0.005

[a] Dependent Variable: Total Expenditure

Tab. 6. Linear regression model of CEE spectators' expenditure in major international sport events in Hungary. Source: Authors' calculation.

Explanatory variables of the non-CEE regression are how many nights were spent in Budapest or Szeged, what type of accommodation was used, GDP per capita PPP US, which type of transportation was used, planning to return to Hungary, age and whether any sights were visited (see Table 7). The explanatory power of the non-CEE model is significantly lower than the explanatory power of CEE model or the whole population model ($R = .496$, $R^2 = 0.246$, $F = 19.702$, $p = 0.000$).

Residual constant is also negative in this model. According to the regression model, the more nights spectators from non-CEE countries spent in the city of the world championships (Budapest or Szeged), the more they spent and spending one more night increased their total expenditure by EUR 118.6 on average. Better accommodation non-CEE spectators rented increased also their total expenditure; non-CEE spectators spent EUR 66.3 on each extra star on average. GDP per capita (US PPP) decreased spectator spending again by EUR –0.008 on average per 1 US dollar of GDP per capita, which means that those non-CEE spectators who came from wealthier countries spent less in major international sport events by EUR –0.006 per 1 US dollar of GDP per capita of the given country. Non-

CEE spectators paid on average EUR 131.7 to upgrade their type of transportation from other to train, or from train to car, or from car to airplane. The less frequently non-CEE spectators were planning to visit Hungary, the more they spent; total expenditure grew on average by EUR 114.4 if the non-CEE spectator planned to decrease the frequency of returning to Hungary. Age of non-CEE spectators influenced their spending differently than it influenced CEE spectators' spending as the older non-CEE spectators were, the more they spent, by EUR 4.5 on average per one year of age. Finally, where foreign spectators visited sights more frequently, their spending grew on average by EUR 52.4 per frequency level.

Coefficients[a]					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
7 (Constant)	–603.930	216.737		–2.786	0.006
How many nights did you stay in Budapest/Szeged?	118.603	15.698	0.326	7.555	0.000
Type of accommodation	66.346	14.998	0.199	4.424	0.000
GDP/capita (US PPP)	–0.008	0.002	–0.163	–3.768	0.000
Type of transportation	131.714	45.244	0.124	2.911	0.004
When do you plan to return to Hungary?	114.416	40.050	0.124	2.857	0.004
Age	4.480	2.131	0.093	2.103	0.036
Did you visit sights in Budapest/Szeged?	52.380	25.142	0.091	2.083	0.038

[a] Dependent Variable: Total expenditure.

Tab. 7. Linear regression model of non-CEE spectators' expenditure in major international sport events in Hungary. Source: Authors' calculation.

Contribution to the Hungarian economy by foreign spectators entertained in major international sport events (TTWC and CWC)

In the two major international sport events researched, the Liebherr 2019 ITTF Table Tennis World Championships and the 2019 ICF Canoe Sprint and Paracanoe World Championships, 5,119 foreign spectators were entertained. These foreign spectators watched 17,694 competition days from the two championships altogether and spent 20,749 guest nights in Hungary.

Foreign spectators spent EUR 3,253,876 in connection with the two events; however, the expenditure spent in the home country has to be

deducted from this amount as those amounts do not fuel the economy of the host country. With this adjustment, total expenditure in Hungary was EUR 2,583,852 for foreign spectators of TTWC and CWC.

Figure 1 shows the contribution of foreign spectators' spending. According to the expenditure structure in the sample and the different VAT proportions in the given segments, EUR 418,803 in VAT was paid to the Hungarian budget. In Hungary, the VAT balance is paid to the budget, but it has to be taken into account that the VAT balance of one company is connected to the VAT balance of other companies, which means after all that the VAT paid by foreign spectators flows into the Hungarian budget. On top of this, tax revenues from foreign spectators' occupancy tax was EUR 31,437 regarding the two world championships under analysis.
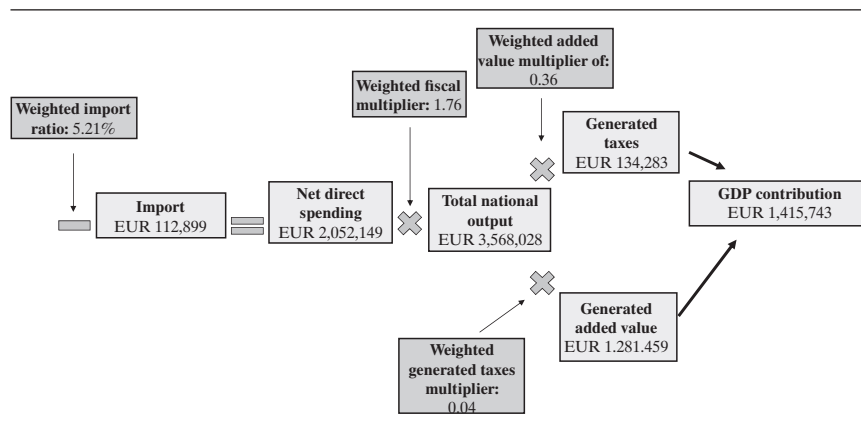

Fig. 1. Contribution to the Hungarian economy of foreign spectators entertained in TTWC and CWC. Source: Authors' calculation.

Net spending of foreign spectators in the two world championships under analysis was EUR 2,165,049, from which 5.21% went for imported goods. According to the Hungarian economy's input-output model, the sectoral fiscal multipliers weighted by the net expenditure minus import was 1.76, which means that foreign spectators' expenditure generated EUR 3,568,028 net revenue in Hungarian companies. Calculating further with the weighted sectoral added value proportion, this spending generated EUR 1,281,459 added value. Generated taxes minus grants and tax incentives above added value was EUR 134,283, which means that altogether Hungarian GDP increased by EUR 1,415,743 from foreign spectators' spending in the two world championships under analysis.

5. Conclusion

Consumption of foreign spectators entertained in major international sport events contribute significantly to the economy of the host country, even though this is only a smaller part of the total economic impact of the given major international sport events.

Cultural, administrative, geographic, and economic distances seem to matter in foreign spectators' expenditure in major international sport events. In fact, consumer behavior of spectators coming from the CEE countries were significantly different from that of other spectators as spectators from the CEE countries visited fewer sights and spent fewer guest nights in Hungary, spent lesser amounts on accommodation per guest night, on dining out, on tickets, on shopping, on services, on other food, on others and certainly on transportation. Hungarian people's hospitality was rated very highly by CEE (4.58) and non-CEE (4.59) spectators as well, but CEE spectators (4.6) were significantly more satisfied with the organization of the event than non-CEE spectators (4.3).

Regression models showed that total expenditure of foreign spectators can be explained by guest nights, type of transportation, type of accommodation, GDP/capita, when the spectator planned to return to Hungary and how often they visited sights. Non-CEE spectators' expenditure can also be explained by age, whereas CEE spectators' expenditure was not influenced by GDP/capita or how often they visited sights. Interestingly, the explanatory power of the CEE linear regression model exceeds significantly the explanatory power of the whole population model and the explanatory power of the non-CEE model as well.

Foreign spectators' expenditure in Liebherr 2019 ITTF Table Tennis World Championships and 2019 ICF Canoe Sprint and Paracanoe World Championships contributed EUR 1,415,743 to the Hungarian GDP in 2019 and because of their expenditure, EUR 584,524 in taxes was paid to the Hungarian budget in 2019.

CEE spectators come to Hungary to major international sport events mostly for the professional experience, whereas non-CEE spectators come for a complex experience package.

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