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ECONOMIC IMPACT AND CONSUMER BEHAVIOR OF DOMESTIC SPECTATORS IN TWO MAJOR INTERNATIONAL SPORT EVENTS ORGANIZED IN HUNGARY IN 2019

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ABSTRACT. In this paper we describe the consumer behavior of domestic spectators in international sport events organized in Hungary in 2019. Two major international sport events are researched, the Liebherr 2019 ITTF Table Tennis World Championships and the 2019 ICF Canoe Sprint and Paracanoe World Championships. We explore the settlements level social, economic and demographic factors which influence the attendance in the researched international sport events, and we calculate the generated tourism related economic impact. In TTWC and CWC we surveyed altogether n=901 domestic spectators with the domestic spectator questionnaire and further settlements level statistical data was used in the calculations. Domestic spectators have seen on average 2.31(SD=1.71) event days, and the mean distance travelled by them were 128.1 km. Domestic spectators spent €51.7 (SD=48.86) on average per day which is significantly higher than any respective group of domestic tourist to compare. Domestic spectators of individual Olympic sports come from those settlements to the World Championships where there is strong culture of the given sport because of high level clubs. Purchasing power seems to be another significant factor as broadband was positively associated and jobseekers were negatively associated with going to the world championships as a domestic spectator. The Hungarian budget realized from the domestic spectators' expenditure in the Liebherr 2019 ITTF Table Tennis World Championships and the 2019 ICF Canoe Sprint and Paracanoe World Championships 572,901 EUR tax revenue. Whereas the Hungarian GDP grew 717,319 EUR because of the two events in analysis.

Keywords*: major international sport events, domestic spectators' spending, economic impact, consumer behavior*

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Introduction

Tourism connected to sport events are the biggest and most dynamically improving sector of sport tourism (Dreyer, 2002; Weed, 2006; Bánhidi, 2015; Borbély & Müller, 2015; Laflin, 2018). International elite sport events are the most significant type of sport events, because of their social and economic impact, their complexity and the number of different stakeholders and their influence (Stocker & Szabó, 2017). In the last few years strong trend of globalisation could be observed in international sport events and in harmony with it grew the number of spectators and the obtained revenues of the events. In major sport events the organizers shifted their focus to entertainment and providing experience to increase their events' appeal to spectators and even new type of events emerged, such as new multisport events which draw even more attention to the organizing city or country to create even more social and economic impact (Laflin, 2018; Laczkó & Stocker, 2020). In 2020 the COVID-19 pandemic caused a shock in the tourism sector and also in the sport sector and had serious negative total economic effect as well. The length and the resolution of the pandemic will determine the short- and medium-term changes in the international sport events (Campbell, Gregory & Shibata, 2020; Cooper, Alderman & Derek, 2020).

The Hungarian Government defined sport as a strategic sector in 2010 and created a sport strategy which included the objective to organize international sport events. Because of the sport strategy and the connected financial support, the number of international sport events skyrocketed and from 2017 more than 100 international sport events were organized in Hungary annually (Stocker & Szabó, 2017). In fact, in 2019 more than 120 international sport events were organized in Hungary which included the Hungarian Formula One Race, the Table Tennis World Championships, the Canoe Sprint World Championships, the Fencing World Championships and the Modern Pentathlon World Championships among others. The decade of the sport strategy resulted that in 2019 Budapest became the 3rd and Szeged the 216th in the cities ranking of organizing international sport events, and Hungary became the 18th in the country ranking (Sportcal, 2019a).

Spectators and especially domestic spectators are a very important group of the participant groups of international sport events. They are important for the organizers mostly because of their numbers, but most of them are domestic tourists, their consumption generate economic impact, and they are also affected by most of the social and environmental impact of the event as well (Kim et al., 2015; Laczkó & Stocker, 2018; Laczkó & Paár, 2018; Polcsik & Perényi, 2020). According to empirical results domestic spectators

are elemental in international sport events organized in the European Union as their proportion is from 70% to 99% of all spectators depending on the given sport (Schwark, 2005; Sportcal, 2017; Sportcal, 2018; Sportcal, 2019a; Sportcal, 2019b).

According to Laczkó and Bánhidi (2018) the Eurostat data shows that 25% of the Hungarian population has been at least once in sport events in 2015 and 9.8% of the population has been at least four times. In the European Union however, the average was 5.5% points higher for those who have been at least once in sport events in 2015. Hungarian spectators are coming from those groups in the society who have better means, geographically they are coming from medium towns and cities and families with child(ren) are over representing their proportion from the society. These characteristics are similar in other EU countries as well.

In this paper we describe the consumer behaviour of domestic spectators in international sport events organized in Hungary in 2019.Two major international sport events are researched, the Liebherr 2019 ITTF Table Tennis World Championships (heretofore: TTWC) and the 2019 ICF Canoe Sprint and Paracanoe World Championships (heretofore: CWC). We explore the settlements level social, economic and demographic factors which influence the attendance in the researched international sport events, and we calculate the generated tourism related economic impact.

Objectives

The main objectives of this paper are to understand the underlying factors which determine from what kind of settlements domestic spectators came to major international sport events in Hungary in 2019 and what determined how many domestic spectators came from different settlements. We also aim to identify the economic impact of domestic spectators in major international sport events organized in Hungary in 2019.

Materials and Methods

To obtain information about domestic spectators' consumer behavior we used the survey methodology. We created a questionnaire specialized to domestic spectators and interviewers were sent to the events to select a simple random sample from domestic spectators and record their answers.

In TTWC and CWC we surveyed altogether n=901 domestic spectators with the domestic spectator questionnaire, which means our sample easily qualifies as a large sample.

The differences of the given variables, depending on the type of variables will be calculated with One-sample T tests, Independent-Samples T tests, Chi-square tests and ANOVA tests. Significance level is set at $p < 0.05$ (Ács, 2009; Ács, 2014).

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 about the clubs in Hungary, the Hungarian Statistical Office (KSH) database from which we downloaded data about Hungarian settlements, especially all 175 townships of Hungary are covered with demographic, development related, sport infrastructure statistical data. Geographical data was also used about the distance between host city and home settlement.

We estimated the different variables' contribution to the likelihood of whether people go to international sport events with logistic regression and the different variables' contribution to the number of people going to international sport events as domestic spectators in Hungary with linear regression. Forward method of regression was applied to capture those variables which has the most contribution to understanding the dependent variable (Sajtos & Mitev, 2007).

The economic impact of the domestic spectators' expenditure was estimated with obtained multipliers from the input-output analysis of Hungarian sectors (Stocker & Boda, 2018). Domestic spectators' spending were directed to Arts, entertainment and recreation, Accommodation and food service activities, Manufacture of food products, beverages, and tobacco products, Transportation and storage. Multipliers were applied according to the expenditure in the different segment and the segments multiplier from the Hungarian economy. With these calculated multiplier effect, we could estimate the impact of foreign spectators' expenditures on the Hungarian GDP.

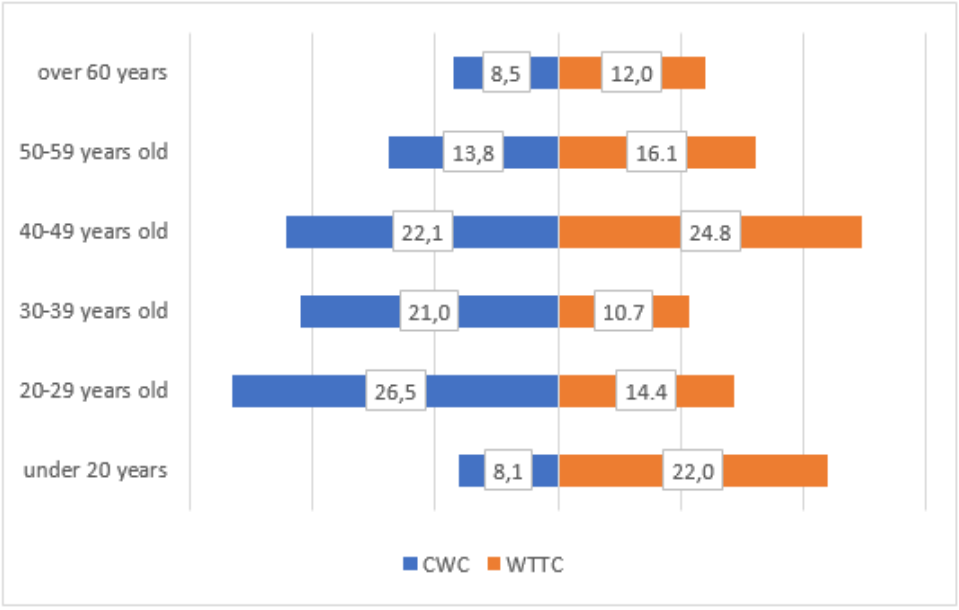
All statistical calculations were made in IBM SPSS Statistics 25 and for other calculations Microsoft Excel (from Microsoft Office 365 ProPlus) were applied.

Results

In the two world championships in analysis 62.4% of the domestic spectators were men. There was significant difference between domestic spectators' gender in the table tennis and canoe world championships ($\chi^2=41.023$, $p=0.000$) as in WTTC domestic spectators were mostly men (75.2%) but in CWC only 54% was men. This difference is because the two Olympic sport has very different audience in Hungary. CWC seems to be a family event as WTTC was more for the professional audience.

The age distribution of domestic spectators can be seen in table 1. According to age in WTTC there were more people from the younger generations and from the older generations, but in CWC the 20-29 and 30-39 years old were in bigger proportion. Differences between the two event was significant (χ^2=34.373, p=0.000).

Table 1. The age distribution in Canoe World Championships and Table Tennis World Championships (in %)



Source: Authors' compilation

Spectators came from every county of Hungary to the two world championships in analysis, although solely to the Canoe World Championships spectators came only 17 out of 19 counties. From the organizing city came 30.6% of the domestic spectators and the mean distance travelled by all domestic spectators were 128.1 km (SD=95.76). According to distance measured in time 29.3% of the domestic spectators came from more than 2 hours distance. Car or minivan was the most used for transportation as 74.2% of the domestic spectators reported this type. Public transportation was also a well-used method

to arrive to the event (15.8%) used by some spectators coming from the organizing city. Train and bus were used by 6.4% of the domestic spectators and other methods were used by only 3.7% to arrive to the event.

Around half of domestic spectators arrived with family and relatives (47.8%) and 27% reported to arrive with friends, 19.8% with teammates and only 11.3% arrived alone. According to differences in the two events analyzed CWC turned out to be even more of a family and friends event, as 79.1% reported to come with them to the event (χ^2=52.749; p=0.000). In WTTC more professional audience (37.4%) were in attendance and 22.1% came alone (χ^2=94.765; p=0,000).

There were altogether 15,402 domestic spectators in the two world championships in analysis (WTTC: 5,577 person, CWC 9,825 person) and they have seen on average 2.31 (SD=1.71) event days. Accommodation in connection with the event was rented by 31.5% of the spectators. Domestic spectators of the two world championships were responsible for 14,671 guest nights, which means on average 0.94 (SD=1.74) guest night per domestic spectator. In Szeged there was significantly (F=17.47, p=0.000) more guest nights per domestic spectator on average 1.13 (SD=1.73) than in Budapest (0.64, SD=1.71). Rented apartment were the most common type of accommodation used by those who rented accommodation with 30.3%, which was closely followed by sleeping by friends (28.2%). Higher quality accommodations like 3-star or higher hotels were only used by 20.7% of domestic spectators and the rest rented 1-2-star hotels (9.5%) or other accommodations (11.3%).

Domestic spectators in CWC spent on average € 54.4 (SD=45.2) per event day whereas in WTTC they spent on average € 47.5 (SD=49.1) per event day which means altogether €51.7 on average per day (SD=46.9) was spent by domestic spectators in the two world championships in analysis. These spending amounts are significantly higher than the average € 20.6 EUR (t=19.9, p=0.000) spent daily by the average Hungarian tourists on multi-day trips in Hungary in 2019, and also significantly higher (t=17.3, p=0.000) than the average spending of domestic sport tourist, which is € 24.7.

In table 2 the spending distribution of domestic spectators can be seen in the world championships in analysis. It is interesting to see that domestic spectators spent the most on average on entrance fees, as world championships usually have medium or low entry fees. Domestic spectators spent 27.8% of their total expenditure in connection with the event on entrance fees, 17.6% on travel costs, 15.3% on accommodations, 17.8% on hot meals or restaurants, 10.4% on other consumption, 10.5% on shopping an only 0.6% on anything else.

Table 2. Spending distribution of domestic spectators in the world championships in analysis

	Entrance fee	Travel costs	Accommodation	Hot meal/ Restaurant	Other consumption	Shopping	Others
WTTC	31.7%	18.8%	6.6%	14.1%	6.8%	21.7%	0.2%
CWC	25.7%	16.9%	19.8%	19.7%	12.2%	4.8%	0.8%
Total	27.8%	17.6%	15.3%	17.8%	10.4%	10.5%	0.6%

Source: Authors' compilation

Discussion

Descriptive statistics are very important about domestic spectators in different type of international sport events. As we explored the characteristics of Hungarian domestic spectators coming to major international sport events their per capita or per event day data can used in other major international sport events. These benchmarks can only be used however in similar type of event, i.e. other World Championships of individual Olympic sports, team sports, hallmark events, or world cup events would need their own empirical based benchmarks.

It is also interesting to see which factors determine whether spectators come from given settlements or how many spectators come from the different settlements as well. We have created the first regression about whether domestic spectators arrived from a given settlement to the two World Championships or not? The logistic regression model created can be seen in table 3.

Table 3. Logistic regression model of the determinants whether domestic spectators came from a given settlement or not

What determines whether domestic spectators came from a given settlement or not?			
	T-test	**logistic regression**	
Demographic variables	**p value**	**p value**	**Exp(B)**
Number of inhabitants	**0.009**	0.162	
Natural increase per 1000 inhabitants	0.230	0.066	
Migration balance per 1000 inhabitants	**0.000**	0.280	
Number of marriages per 1000 inhabitants	0.393	0.818	
Infant mortality rate per 1000 inhabitants	**0.010**	0.429	

What determines whether domestic spectators came from a given settlement or not?			
	T-test	**logistic regression**	
Developmental variables (labour market or economic related)			
Built dwellings (pcs) per 1000 inhabitants	**0.000**	0.785	
Broadband connectivity (pcs) per 1000 inhabitants	**0.000**	**0.022**	**1.01**
Number of registered jobseekers (person) per 1000 inhabitants	**0.000**	**0.000**	**0.958**
Number of fostered workers (person) per 1000 inhabitants	**0.000**	0.457	
Revenues of local government per inhabitant	**0.020**	0.770	
Expenditures of local government per inhabitant	0.100	0.397	
Variables related to sport infrastructure			
Playgrounds, gymnasia, resting areas (m2) per 1000 inhabitants	0.754	0.227	
Number of sport stadia, sports-grounds (pcs.) per 1000 inhabitants	**0.000**	0.129	
Level of table tennis and canoe/kayak club(s)	**0.000**	**0.000**	**1.538**
Geographical variables			
Distance from the World Championship(s)	**0.000**	0.058	
Model values	χ^2 test	***76.313***	
	Sig .	***0.000***	
	Nag. R^2	***0.474***	

Source: Authors' compilation

Table 3 shows, that the explanatory power of the model is 0.474 and three variables are influencing whether domestic spectators come from a given settlement or not (including other significant variables did not increase the explanatory power of the model). The better the table tennis or canoe/kayak club is in the settlement the more chance there is that people will go to world championships. Broadband connectivity was also positively influencing the dependent variable, therefore the more broadband connections are in a settlement the more chance there is that people will go to world championships. Definitely there were advertisement on the internet but most probably this variable is in connection with the purchasing power of people in the given settlement instead of internet advertisement. Number of registered jobseekers are negatively associated with the dependent variable, which means the more jobseeker in a settlement are the less people will go to world championships. This variable is also connected with purchasing power.

The results are even more clear if we try to identify the variables which determine how many domestic spectators come to the world championships from a given settlement (see table 4.)

Table 4. Linear regression model of the determinants of how many domestic spectators come from a given settlement

Number of domestic spectators if they come from a given settlement				
	corr	**Linear regression**		
	p value	**p value**	**Exp(B)**	**B**
Demographic variables				
Number of inhabitants	**0.000**	**0.000**	**0.702**	**0.000097**
Natural increase per 1000 inhabitants	0.345	0.675		
Migration balance per 1000 inhabitants	0.341	0.633		
Number of marriages per 1000 inhabitants	0.760	0.723		
Infant mortality rate per 1000 inhabitants	0.911	0.828		
Developmental variables (labor market or economic related)				
Built dwellings (pcs) per 1000 inhabitants	**0.012**	0.831		
Broadband connectivity (pcs) per 1000 inhabitants	**0.000**	0.633		
Number of registered jobseekers (person) per 1000 inhabitants	**0.008**	0.730		
Number of fostered workers (person) per 1000 inhabitants	**0.014**	0.822		
Revenues of local government per inhabitant	0.394	0.629		
Expenditures of local government per inhabitant	0.806	0.657		
Variables related to sport infrastructure				
Playgrounds, gymnasia, resting areas (m2) per 1000 inhabitants	0.903	0.734		
Number of sport stadia, sports-grounds (pcs.) per 1000 inhabitants	**0.003**	0.919		
Level of table tennis and canoe/kayak club(s)	**0.000**	**0.010**	**0.194**	**1.855**
Geographical variables				
Distance from the World Championship(s)	**0.003**	0.069		
Constant				**-5.132**
Model values	Ftest	***68.538***		
	Sig.	***0.000***		
	Adj. R^2	***0.622***		

Source: Authors' compilation

It can be seen in table 4 that if domestic spectators come from a settlement than the number of domestic spectators are determined by the level of table tennis or canoe/kayak club(s) in the settlement and the number of inhabitants in the given settlement. The explanatory power of the model is quite high with the adjusted R^2 is 0.622.

This can be explained as there are fans in those settlements where there are bigger clubs in the given sport and in bigger settlements there are more potential domestic spectators.

In the two major international sport events researched, TTWC and CWC 15.402 domestic spectators were entertained. These spectators watched 35.300 competition days from the two championships altogether and spent 14.671 guest nights in Hungary.

Figure 1 shows the GDP contribution of domestic spectators' spending. According to the expenditure structure in the sample and the different VAT proportion in the given segments 403.666 EUR VAT was paid to the Hungarian budget. In Hungary, 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 the VAT paid by domestic spectators flows into the Hungarian budget. On top of this, tax revenues from domestic spectators' occupancy tax was 17.179 EUR and social security and personal income tax was 83.785 EUR regarding the two world championships in analysis.

Net spending of domestic spectators in the two world championships in analysis was 1.138.264 EUR from which 7.97% went on import goods. According to the Hungarian economy's input-output model the sectoral fiscal multipliers weighted by the net expenditure minus import was 1.68, which means the domestic spectators' expenditure generated 1.746.433 EUR net revenue in Hungarian companies. Calculating further with the weighted sectoral added value proportion these spending generated 649,048 EUR added value. Generated taxes minus grants and tax incentives above added value was 68.270 EUR, which means altogether Hungarian GDP increased with 717.390 EUR from the domestic spectators' spending of the two world championships in the analysis.

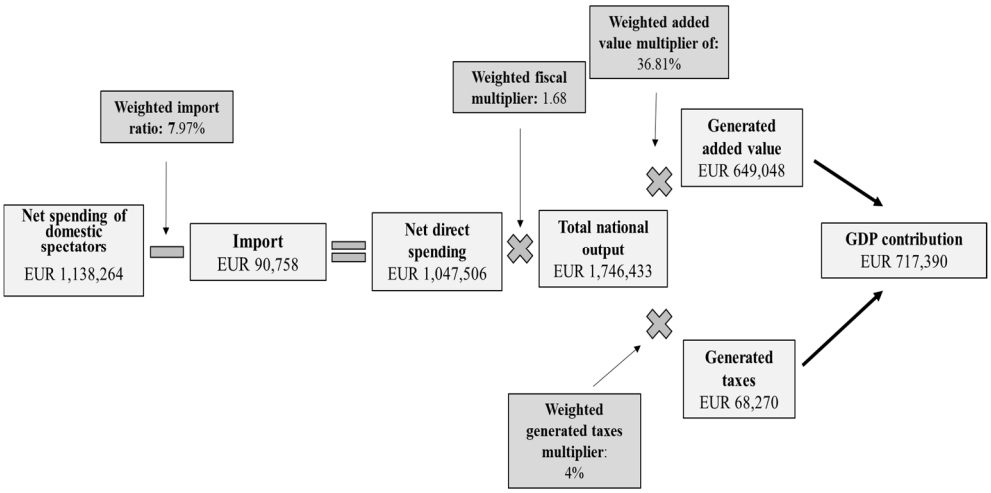


Figure 1. Contribution to the Hungarian economy of domestic spectators entertained in TTWC and CWC (Source: Authors' compilation)

Conclusions

Major international sport events from Olympic sports are changing from professional focused events to entertainment and experience providing events with strong professional focus. Most of the domestic spectators are coming with family, friends or mates and only a handful of spectators are coming alone as the experience can be even better if shared with others. Domestic spectators of the two world championships were responsible for 14.671 guest nights altogether.

Although the differences in organizing world championships in the capital or in the country can be clearly seen, such as more guest nights and more expenditure on accommodations in the countryside, and more people coming from the capital without spending guest nights but shopping for professional items in the event organized in the capital, but these two world championships shared several common characteristics.

Domestic spectators of individual Olympic sports come from those settlements to the World Championships where there is strong culture of the given sport because of high level clubs. Purchasing power seems to be another significant factor as broadband was positively associated and jobseekers were negatively associated with going to the world championships as a domestic spectator.

If we focus on those settlements from where domestic spectators arrived to the world championships we can see, that the better the club in the given sport and the bigger the settlement is the more domestic spectator arrive to the event.

The Hungarian budget realized from the domestic spectators' expenditure in the Liebherr 2019 ITTF Table Tennis World Championships and the 2019 ICF Canoe Sprint and Paracanoe World Championships 572.901 EUR tax revenue. Whereas the Hungarian GDP grew 717.319 EUR because of the two events in analysis.

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