# The Social Impacts of Euro 2020: An Analysis of Budapest Residents' Perceptions

**Abstract of PhD Thesis** 

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#### **INTRODUCTION**

As part of the globalization of sport (Graeff and Knijnik 2021), the worldwide expansion of international sports events have also taken place. Consequently, international sports events have appeared with increasing frequency across the globe over the past decades (Borgers et al 2013; Földesi 2014). Given that the economic, social, and environmental impacts of international sports events can vary in nature and extent depending on the size and type of the event, the analysis of the effects of these events on hosting countries and cities has garnered significant research interest (Mair et al 2023; Taks et al 2015). Most studies focus on evaluating the potential benefits as well as the possible or actual shortfalls associated with such events (Zourgani and Ait-Bihi 2023). Within the scope of impact assessments, the personal and subjective perceptions of residents in host cities have become an important scientific question, especially concerning the social impacts of sports events. Numerous international studies have explored these perceptions by examining the views of residents in the host country or city, focusing on their experiences before, during, and after the event (Kaplanidou 2021; Thomson et al 2019; Helsen et al 2022; Polcsik and Perényi 2022). Research into these perceived impacts provides insights into individuals' expectations prior to the event as well as their actual experiences during and after the event (Twynham and Johnston 2004).

Since 2010, the Hungarian Government has prioritized sport as a key strategic sector, resulting in an increased number of international sports events hosted in Hungarian cities. This trend has also spurred academic interest within Hungary (András et al 2019; Laczkó and Stocker 2018; Polcsik and Perényi 2020). Domestic research has focused on various aspects, including economic returns (Czeglédi et al 2018; Emődy and Polcsik 2021), tourism benefits (Laczkó and Stocker 2018; Remenyik and Sikó 2019), as well as sports management and policy outcomes (Paár and Laczkó 2018). Some studies have also examined perceptions among local residents in host cities regarding international sports events held domestically (András et al 2020; Máté 2019; Polcsik et al 2023). However, considering the number of international sports events held in Hungary and the hosting cities, the quantity of analyses available in Hungarian-language scholarly literature remains relatively limited.

Given that Budapest has become an acknowledged member of the circle of cities bidding for international sports events over the past two decades, and considering that it hosts most of Hungary's international events (Garamvölgyi and Dóczi 2021), understanding local community opinions has gained particular significance. On the one hand, residents' perceptions regarding the impacts of these events influence whether they support or oppose the staging of international sports events in their communities (Gursoy and Kendall 2006; Johnston et al 2023). On the other hand, the waning social support for Hungary's "Budapest 2024" Olympic bid – and its subsequent withdrawal – was primarily associated with the sentiments of the capital's residents (Perényi, Laczkó and Polcsik 2023).

Based on these considerations, the question arises as to how sport – emerging as a national strategic sector – along with infrastructure development and the staging of numerous international sports events, especially during the period of the COVID-19 pandemic, influence the perceptions of residents in host cities regarding the impacts of continental and world events. The research is particularly noteworthy and valuable, perhaps even pioneering, in that it has not yet examined public opinions concerning the effects of major international sports events held in Budapest. Furthermore, this study is the first in Hungary to measure perceptions at two points in time – before and after the event—using a representative sample of Budapest residents. It illustrates this approach through the example of the 2020 UEFA European Championship (Euro 2020) hosted in Budapest.

#### **OBJECTIVES**

Within the broad scope of this dissertation, four primary goals have been defined. The main aims of this research are to investigate how local residents perceive the impacts of the international sports event before and after its occurrence; to compare public opinions across the two data collection periods; to identify potential differences in perceptions based on residents' various socio-demographic characteristics – such as gender, age group, and levels of education – as well as their degree of involvement in sports; and to examine how concern and fear related to COVID-19 influence residents' perceptions of the event's impacts. Additionally, the study aims to present possible relationships between perceptions and these variables through comprehensive statistical analyses.

#### **Research Questions**

Aligned with the research objectives, four specific questions guide this dissertation:

- 1. How can perceptions related to the impacts of Euro 2020 be characterized before and after the event? What differences can be observed between these two periods?
- 2. What disparities exist in residents' perceptions of the perceived impacts of the sport event along socio-demographic variables namely, gender, age group, and levels of education?
- 3. How does involvement in sports influence residents' perceptions of the impacts of Euro 2020?
- 4. What is the effect of COVID-19-related fear and anxiety on perceptions of Euro 2020's expected impacts? Furthermore, how do varying levels of concern reflect differences in opinions across segmented subgroups based on these perception profiles?

#### **Research Hypotheses**

This study is founded on the assumption that residents of Budapest may hold strong opinions regarding the organization of international sports events, as these events can influence their daily lives. However, perceptions of these impacts are expected to vary. Opinions about the effects on the host community may change depending on the timing of the survey, and differences may also exist based on various socio-demographic characteristics. Furthermore, it is anticipated that individuals involved in sports and those not involved will perceive impacts differently. Interest or active participation in sports may influence the perception of event effects, with those more involved likely to harbour more favourable opinions. Despite COVID-19's profound societal impact - altering living conditions – the levels of concern and fear evoked by the virus have varied across different segments of society. Consequently, perceptions of the impacts of international sports events may also differ among population subgroups. These assumptions underpin the hypotheses of this research, which focus on differences and their development in residents' perceptions of Euro 2020 impacts, taking into account possible temporal changes, respondents' socio-demographic characteristics, involvement in sports, and the role of COVID-19-related fear.

Based on previous research findings, the following four specific hypotheses have been formulated:

- 1. **Hypothesis**: There are significant differences in residents' perceptions of the impacts of Euro 2020 between the period before and after the event.
- Hypothesis: There are statistically significant differences in perceptions across socio-demographic variables – namely, gender, age group, and levels of education.

2.a. Perceptions differ by gender: men perceive more positive the positive impacts and hold more favourable views regarding negative impacts.

2.b. Perceptions vary by age group: younger residents tend to evaluate the impacts more positively and perceive fewer "costs" and issues than older residents.

2.c. Residents with different levels of education exhibit statistically significant differences in their perceptions.

- 3. **Hypothesis**: Different forms of involvement in sports positively influence perceptions, with individuals involved in sports perceiving Euro 2020 impacts more favourably.
- 4. **Hypothesis**: The levels of COVID-19-related fear and concern influences perceptions of Euro 2020's expected impacts, with variations observable across segmented subgroups characterized by differing concern levels.

#### METHODOLOGY

This study employed a quantitative measurement approach targeting residents of Budapest. Data collection was conducted through repeated cross-sectional surveys, utilizing telephone interviews that took into account age and place of residence, with a representative sample of Budapest residents (N=2005), consisting of adults aged 18 and over. The data collection was carried out by a professional polling company. Surveys were conducted at two different time points: first, immediately prior to the start of the matches in June 2021 (N<sub>1</sub>=1003), and then – similar to the studies by Lorde et al. (2011) and Taks and Rocha (2022) – six months after the event, in December 2021 (N<sub>2</sub>=1002). According to the 2011 Hungarian census data, Budapest, the capital of Hungary, had a population of 1,729,040 residents, constituting 17.4% of the country's total population. The baseline population for sampling comprised Budapest's adult residents aged 18-89,

totalling 1,464,739 individuals. During the pre-event survey, 44.7% of respondents were male and 55.3% female. In the post-event survey, 44.8% were male and 55.2% female. The average age of respondents across both data collection waves was M=47.8 years (SD=17.65). Regarding the levels of education, the majority of residents held secondary education qualifications (65.6% pre-event, 63.5% post-event). When comparing the sample data with the Hungarian Central Statistical Office (KSH) census data (by gender and age group), no significant differences were found, with only marginal discrepancies of about 1% observed in certain cases.

#### Instruments

In this study, previously used questionnaires from international research on the integrated assessment of positive and negative impacts were adapted to the Hungarian context (Polcsik and Perényi 2023). These questionnaires have been employed in prior studies (Duan et al 2020; Garbacz et al 2017; Kim et al 2015; Kim et al 2006; Ohmann et al 2006). The applied questionnaire contained a total of 19 statements – 10 reflecting positive impacts and 9 negative impacts – and measurements were conducted on a five-point Likert scale (1: strongly disagree – 5: strongly agree). The 19 items represented five impact areas identified in the literature review: Economic and tourism benefits (five items), Social interactions (five items), Traffic problems (three items), Security risks (three items), and Economic costs (three items).

Following the methodological recommendations of Taks et al. (2020) – where relevant and applicable – some statements (particularly concerning social interactions, transportation issues, and security risks) were formulated in the first-person singular. The questionnaires administered before and after the event were identical. The questions for the initial data collection were phrased in the future tense to measure anticipated impacts prior to the event. Conversely, the post-event questionnaire was phrased in the past tense, as it aimed to assess actual and perceived impacts following the event.

The measurement tools also included socio-demographic variables such as gender, age, and levels of education. Residents' involvement or interest in sports was also gauged. The assessment of football interest offered two response options: "yes" and "no."

Prior to the Euro 2020 event, attendance at matches was measured by participants' intentions to follow or visit the matches, specifically whether respondents planned to attend or watch the matches. After the event, actual following or attendance was assessed

by asking whether participants had watched or visited the matches (via television, radio, newspapers, or social media) or not. Active participation in sports was measured by inquiring about the frequency of engagement over the twelve months preceding data collection, with response options: at least five times per week; three to four times per week; once to twice per week; or never.

Variables related to sports involvement – namely, following Euro 2020, liking football, and active participation in sports – were encoded as dichotomous variables (yes/no) and incorporated into the analysis. The questionnaire also included two items related to COVID-19 concern and fear of increased infections: (1) "*How worried are you about the COVID-19 pandemic*?" and (2) "*To what extent do you fear that the event will increase the number of COVID-19 cases*?" These questions were measured on a five-point Likert scale, where 1 indicated "not at all" and 5 indicated "extremely."

The factor structure of the questionnaire was explored using principal component analysis (PCA) based on the data from the first sample (N<sub>1</sub>=1003). The resulting factor structure was then tested for confirmation using confirmatory factor analysis (CFA) on the data from the second sample (N<sub>2</sub>=1002). Model fit and reliability were evaluated through several fit indices and reliability measures, including the chi-square test ( $\chi^2$ ), the ratio of chi-square to degrees of freedom (CMIN/d.f.), root mean square error of approximation (RMSEA), Tucker-Lewis Index (TLI), comparative fit index (CFI), and standardized root mean square residual (SRMR).

The scale's reliability was assessed using three indicators: average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha. Conventional thresholds for acceptable model fit were applied: CFI > 0.90, TLI > 0.90, RMSEA < 0.08 (Hu & Bentler, 1999), and for reliability, AVE > 0.50, CR > 0.70, and Cronbach's alpha > 0.70 (Nunnally & Bernstein, 1994).

The PCA with varimax rotation grouped the 19 statements into five factors, explaining 75% of the variance. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.86, indicating good data suitability for factor analysis. The five-factor structure derived from PCA was subsequently tested with CFA on the second dataset, providing more robust evidence of the model's validity. Regarding model fit, the indices obtained for the pre-event data (Pre) were:  $\chi^2/df = 2.92$  (163), p < 0.001; CFI=0.95; TLI=0.96; SRMR=0.063; RMSEA=0.06.

For the post-event data (Post), the fit indices were:  $\chi^2/df=3.02$  (155), p < 0.001; CFI=0.96; TLI=0.95; SRMR=0.067; RMSEA=0.05. These results demonstrate that both measurement models fit the data well.

Additionally, the composite reliability (CR) values ranged between 0.77 and 0.93, and AVE values ranged between 0.53 and 0.81, indicating good reliability and convergent validity (Fornell and Larcker 1981). Discriminant validity was established as the squared correlations between constructs exceeded the AVE values, consistent with established criteria (Hair et al 2014; Fornell and Larcker 1981; Kline 2005).

The factor analysis identified five dimensions, each demonstrating acceptable reliability metrics (Cronbach's alpha:  $\alpha = 0.73-0.92$ ):

- Economic and Tourism Benefits (ETB): Comprising five statements, this factor assesses residents' perceptions regarding investments directed toward the host city, benefits to local businesses, and the positive impacts of sports events on city image and marketing. The Cronbach's alpha values were  $\alpha pre = 0.91$  and  $\alpha post = 0.87$ .
- Social Interactions (SI): Consisting of five statements, this dimension investigates intangible effects such as residents' pride, opportunities for social acquaintance, and the sense of community among individuals. The reliability coefficients were  $\alpha pre = 0.92$  and  $\alpha post = 0.91$ .
- **Traffic Problems** (TP): Made up of three statements, this factor examines residents' perceptions of traffic congestion and parking difficulties associated with the event. The Cronbach's alpha values were  $\alpha pre = 0.91$  and  $\alpha post = 0.89$ .
- Security Risks (SR): Comprising three statements, this dimension addresses concerns related to spectator riots and terrorism threats. Its reliability indicators were  $\alpha pre = 0.88$  and  $\alpha post = 0.87$ .
- Economic Costs (EC): Consisting of three statements, this factor explores perceived negative economic impacts linked to the event, such as increased prices for local services, future underutilization of facilities, and event-related expenditures. The  $\alpha$ -values were  $\alpha$ pre = 0.73 and  $\alpha$ post = 0.76.

#### **Data Analysis**

The data were analysed using SPSS version 24 and AMOS version 26 within the framework of a comprehensive analytical methodology. The normality of the scales was assessed based on skewness and kurtosis values, and the data exhibited normal distribution in accordance with the acceptance criteria recommended by Chou and Bentler (1995). Statistical tests employed in the analysis were selected considering this normality assumption. The research incorporated both descriptive statistical techniques and parametric procedures such as independent two-sample t-tests, one-way analysis of variance (ANOVA), as well as multivariate statistical methods including principal component analysis (PCA), confirmatory factor analysis (CFA), multivariate analysis of variance (MANOVA), cluster analysis, and binary logistic regression.

The analysis was conducted following the guiding principle of comparing effects and identifying relationships as follows:

a) Comparisons of responses to questions regarding impacts and their associations were performed using MANOVA, ANOVA, and the Welch's robust t-test.

b) The assessment of residents' perceptions based on their responses to perceived impacts, considering data collected both before and after the event (N=2005), was carried out with respect to the socio-demographic background variables – namely gender, age group, and levels of education. The MANOVA test served to examine the influence of socio-demographic factors. Comparisons across gender were conducted via independent t-tests. Relationships between age groups, levels of education, and impact perceptions were analysed through one-way ANOVA and Tukey's post hoc tests. When the assumption of homogeneity of variances was violated—as indicated by Levene's test – Welch's ANOVA and Games-Howell post hoc analyses were employed.

c) Cluster analysis was used to identify potential subgroups within the pre-event sample (N=1003) of respondents who exhibit similar opinions regarding concerns related to COVID-19. The final cluster structure was derived through a combination of hierarchical and non-hierarchical methods. The K-means clustering algorithm was based on the centroids obtained from the hierarchical approach. Both MANOVA and chi-square ( $\chi^2$ ) statistics demonstrated differences between the

subgroups segmented by COVID-19-related anxiety in terms of their perceptions of expected impacts and the profile characteristics of these subgroups.

d) The relationship between perceived impact dimensions and participants' involvement in sports was analysed using binary logistic regression. In this model, the impact factors served as independent variables, socio-demographic variables and data collection time points were included as control variables, and various forms of involvement in sports were modelled as dichotomous dependent variables.

# RESULTS

The findings are presented in the order of the research questions and hypotheses.

# **Temporal Changes in Perceptions of Positive and Negative Impacts**

ANOVA tests revealed significant differences between pre- and post-event evaluations across all impact dimensions: economic and tourism benefits (F=12.04; p=0.003), social interactions (F=76.02; p<0.001), transportation problems (F=183.20; p<0.001), security risks (F=18.94; p=0.002), and economic costs (F=49.75; p<0.001). In all cases, the average perceived impacts decreased following the event. Compared to expectations prior to Euro 2020 matches, some perceived changes are positive, while others are negative. Notably, respondents reported experiencing fewer economic and social benefits after the tournament than anticipated economic costs, transportation issues, and security risks significantly diminished after Euro 2020 relative to initial expectations.

Separate index variables were created by averaging responses related to positive and negative impacts respectively: The "Positive Impacts" variable comprises the factors of economic and tourism benefits and social interactions. The "Negative Impacts" variable includes traffic problems, security risks, and economic costs. The analysis of overall change confirms the direction of perception shifts: both the positive and negative impact scores decreased after the event. Perceptions of positive impacts were 5.1% lower than pre-event expectations, whereas perceptions of negative impacts decreased by 8.1%.

#### Perceptions of Impacts Across Different Socio-Demographic Variables

Differences associated with socio-demographic variables (gender, age group, levels of education) emerge in relation to the factorized variables and frequently indicate statistically significant variations. Specifically, significant differences are observed in

perceptions of economic and tourism benefits across gender and age groups. For social interactions and security risks, all three socio-demographic variables show statistically significant differences. Regarding transportation problems, significant differences are found between gender and levels of education, while for economic costs, significance is observed only in relation to educational level.

For the positive impact dimensions (GTE, TI), male respondents generally report higher average scores compared to female respondents. Conversely, in the case of negative impacts (KP, BK, GK), males tend to have lower average scores. Except for the economic costs dimension (GK), all impact dimensions show statistically significant differences based on gender: F(GTE) = 1.11, p < 0.001; F(TI) = 6.24, p < 0.001; F(KP) = 20.59, p < 0.001; F(BK) = 8.98, p = 0.004. In summary, men generally perceive both positive and negative impacts more favourably. Significant statistical differences are observed only for the GTE, TI, and BK dimensions across age groups: F(GTE) = 7.59, p < 0.001; F(TI) = 15.09, p < 0.001; F(BK) = 3.22, p = 0.04. According to post hoc test results, perceptions of GTE show significant differences (p < 0.05). The youngest age group (18–29 years) and the oldest group (over 70 years), as well as the 30–39 and 60–69 age groups, exhibit significant differences; younger respondents tend to rate economic and tourism benefits 0.36 and 0.22 points higher on average, respectively.

In the TI dimension, the age groups 18-29, 30-39, 40-49, and 50-59 perceive social interactions more positively than the 60- and 70-plus age groups. The younger cohorts rate social interactions an average of 0.45 points higher. Regarding perceptions of security risks, significant differences are only observed between the youngest group (18–29) and the groups over 60, particularly 60–69 and 70+ years (p < 0.05).

In relation to levels of education, significant differences are found across all impact dimensions except GTE: F(TI) = 6.24, p < 0.05; F(KP) = 20.59, p < 0.001; F(BK) = 8.98, p < 0.01; F(GK) = 14.21, p < 0.001.

According to the post hoc test results, perceptions of social interactions (TI) are approximately 0.2 points higher on average among respondents with secondary education compared to those with primary or tertiary education, indicating that this group perceives social interactions most positively. Significant statistical differences are observed across all education levels in the assessment of transportation problems (KP) and economic costs (GK) dimensions (p < 0.05). Respondents with higher education rated transportation difficulties as less problematic (with mean differences of -0.35 and -0.25 points). Concerns regarding security risks are highest among respondents with secondary education (M = 0.23), compared to those with primary or higher education level.

Overall, men and younger age groups tend to evaluate the impacts of the event more favourably than women and older respondents. Respondents with secondary education perceive positive impacts more positively, whereas those with primary education tend to perceive negative impacts more strongly.

#### **Perceptions of Impact Dimensions According to Sports Involvement**

Different forms of sports involvement—such as following international sports events, liking football, and active participation in sports—show similar distributions among residents of Budapest both before and after the event. Regarding Euro 2020, 36.8% of respondents planned to follow the tournament matches immediately prior to the event, increasing slightly to 37.5% in the post-event sample. Nearly half of the residents identify as football enthusiasts: 48.2% before the event and 48.0% afterward. The proportion of active sports participation remains similarly consistent across both data collection periods.

Analysis of different forms of sports involvement (Euro 2020 following; liking football; active participation) based on the two data collection points indicates no significant differences in these dimensions: Euro 2020 following (t = -0.53; p = 0.59), Liking football (t = 0.32; p = 0.74), Active participation in sports (t = 0.04; p = 0.96). Binary logistic regression analyses further examine the relationships between specific forms of sports involvement, perceptions of impacts, socio-demographic background variables, and the timing of data collection. The initial models, which included the five impact dimensions (GTE, TI, KP, BK, GK), explained between 27.50% and 31.00% of the variance. These models demonstrated good fit: for the model including the event follow-up (EK),  $\chi^2(5) = 405.12$  (p < 0.001); for liking football (LK),  $\chi^2(5) = 467.46$  (p < 0.001); and for active participation in sports (SA),  $\chi^2(5) = 93.16$  (p < 0.001). Models constructed in the second step incorporated socio-demographic control variables, resulting in improved fit indices: for EK,  $\chi^2(13) = 637.96$  (p < 0.001); for LK,  $\chi^2(13) = 739.29$  (p < 0.001); and for SA,  $\chi^2(13) = 498.79$  (p < 0.001). These models explained an additional 13–15% of the variance. In the third modelling step, the models accounted for the data collection time

point, further enhancing fit. The final models' fit indices are as follows: for EK, Nagelkerke R<sup>2</sup> = 0.401,  $\chi^2(14) = 638.17$  (p < 0.001); for LK, Nagelkerke R<sup>2</sup> = 0.453,  $\chi^2(14) = 739.71$  (p < 0.001); and for SA, Nagelkerke R<sup>2</sup> = 0.407,  $\chi^2(14) = 499.58$  (p < 0.001). The binary logistic regression correctly classifies between 70.80% and 76.20% of cases. According to Nagelkerke R<sup>2</sup>, the variables in the models explain between 40.10% and 45.30% of the variance. VIF values are below 1.12, indicating no multicollinearity among variables (Hair et al., 2014). The  $\beta$  coefficients indicate the direction of the relationship between impact dimensions and the dependent variables. The reference categories in the models are: gender (male), age group (18–29 years), levels of education (primary), and data collection time (before the event).

The dependent variable of the first model (EK: Model 1) is following Euro 2020. Respondents who followed the matches of Euro 2020 generally expressed more favourable opinions regarding the impacts of the event compared to those who did not follow it. The odds ratios for individual impact dimensions vary. For economic and tourism impacts, followers are 44.8% more likely to have a positive opinion (ExpB = 1.448). In the dimension of social interactions, this likelihood increases to 53.3% (ExpB = 1.533). Conversely, the odds of holding negative opinions about security risks and economic costs are 19.7% (ExpB = 0.803) and 18.8% (ExpB = 0.812) lower, respectively, among followers compared to non-followers. Furthermore, women are 32.1% less likely than men to follow Euro 2020 (ExpB = 0.679). Regarding educational level, those with higher education are 19.6% more likely to follow Euro 2020 matches than individuals with primary education (ExpB = 1.196). The probability of following decreases with advancing age; the most prominent decline is observed among respondents over 70 years old, with their likelihood of following being 70.8% lower (ExpB = 0.292) than in the youngest age group.

The dependent variable of second model (LK: Model 2) is the liking of football. Among respondents who favour football, the likelihood of perceiving economic and tourism benefits is 4.9% higher (ExpB=1.049), and the probability of holding positive opinions about social interactions is 40.9% higher (ExpB=1.409). Conversely, negative perceptions regarding security risks are 8.1% lower (ExpB=0.919), and perceptions of economic costs are 27.4% lower (ExpB=0.726). Women are 81.9% less likely to like football (ExpB=0.181), and the likelihood decreases further with increasing age.

The dependent variable of third model (SA: Model 3) is active participation in sports. Respondents who actively participate in sports are 14.8% more likely to perceive economic and tourism benefits positively (ExpB=1.148) and 15.5% more likely to view social interactions favourably (ExpB=1.155). In terms of negative perceptions, the likelihood of holding negative opinions about security risks is 10.8% lower (ExpB=0.892), and perceptions of economic costs are 28.8% lower (ExpB=0.712). Women have a 59.4% lower probability of actively participating in sports (ExpB=0.406). Moreover, older age groups (over 30) are less likely to be actively involved in sports—for example, the 30–39 age group shows a 12.1% decrease (ExpB=0.879), and the 40–49 age group shows a 32.5% decrease (ExpB=0.675) in active participation likelihood.

Overall, the models constructed based on different dependent variables related to sports involvement indicate that respondents who are engaged with sports in some manner tend to hold more positive opinions about the impact dimensions. The only dimension that does not follow this pattern is the transportation problems dimension. The relationships between impacts and involvement are further reinforced by socio-demographic background variables: men, younger age groups, and individuals with higher levels of education are more likely to be involved in sports. However, the timing of data collection does not influence either the degree of sports involvement among residents or the relationship between involvement and perceptions of impacts.

# Differences in Opinions Regarding the Expected Impacts of Euro 2020 in Light of COVID-19 Fears

The levels of fear related to COVID-19 was assessed through two statements, where lower scores indicate less concern and higher scores reflect greater anxiety. Regarding the question "*How worried are you about the COVID-19 pandemic?*", 29.4% of respondents reported a lower levels of concern, while 47.5% expressed higher anxiety. Responses to the question "*To what extent are you afraid that the event will increase the number of COVID-19 cases*?" showed a similar distribution: 32.1% of participants reported lower concern, and 44.9% indicated higher fear. In both cases, responses covered a broad range, but the average scores (M=3.22 and M=3.29) suggest a moderate levels of concern about COVID-19. The standard deviations indicate considerable variability in

responses, meaning many respondents expressed high anxiety, while others were not worried at all.

As a result of cluster analysis, three segments were identified: Cluster 1: "Concerned" representing 41.1% of the sample, composed of residents who are most worried about the virus and the potential increase in COVID-19 cases (M=4.56, SD=0.25). Cluster 2: "Neutral" – comprising 32.3% of respondents, with a mean of M=3.06 (SD=0.18), representing those with moderate concern. Cluster 3: "Unconcerned" – accounting for 26.6% of the sample, with members showing the least concern about COVID-19 (M=1.49, SD=0.41). The MANOVA test indicates that the variable "Levels of COVID-19 Fear" has a statistically significant effect on residents' perceptions of the anticipated impacts (Wilks' Lambda = 0.749, F = 23.45, p < 0.001). Significant differences between clusters were found across all impact dimensions: economic and tourism benefits (F = 18.3; p < 0.001), social interactions (F = 21.2; p < 0.001), transportation problems (F = 30.2; p < 0.001), security risks (F = 41.3; p < 0.001), and economic costs (F = 10.7; p < 0.001). For the factors representing positive impacts (economic and tourism benefits and social interactions) and transportation issues, all three clusters showed significantly different scores. The "Unconcerned" group consistently expressed the most positive perceptions, whereas the "Anxious" cluster exhibited the most negative expectations regarding the event's impacts. Similarly, concerns about security risks were rated most positively by the "Unconcerned" cluster, while perceptions between the "Concerned" and "Neutral" groups were similar. Regarding expenses related to organizing Euro 2020, both the "Concerned" and "Unconcerned" clusters viewed these costs negatively and similarly. Conversely, members of the "Indifferent" cluster held significantly more favourable opinions, perceiving the costs of the event in a more positive light than the other groups, despite generally favouring the positive impacts and expressing fewer concerns about negative impacts. The "Concerned" cluster's members had the most unfavourable expectations across all impact dimensions, rating transportation problems and eventrelated costs highest in severity, and perceiving the least benefits in terms of economic, tourism, and social impacts. The "Neutral" group's opinions largely aligned with the sample average across four of the five impact dimensions, but they held significantly more positive expectations specifically regarding costs associated with organizing the event compared to the other clusters.

# CONCLUSIONS

# Hypothesis Testing

The assumptions of this dissertation—that residents' perceptions of Euro 2020 impacts show:

- Significant differences between pre- and post-event periods: this was confirmed. Significant differences were observed across all five impact dimensions when comparing perceptions before and after the event, indicating that perceptions changed significantly over time.
- 2. Differences based on socio-demographic variables:

2.a. There are significant differences by gender, this **was confirmed**. Men rated the economic and tourism benefits, as well as social interactions, more favourably, while women expressed more negative opinions regarding event costs and security risks.

2.b. Age also influences perceptions, this **was confirmed**; younger respondents generally held more positive views, whereas older respondents perceived more potential problems, including higher costs associated with the event.

2.c. Significant differences were found across education levels, this **was confirmed.** Those with secondary education evaluated the positive impacts more favourably, while individuals with primary education expressed more negative opinions about economic costs. Several impact dimensions showed statistically significant variations based on education level.

- 3. Sports involvement positively influences perceptions of Euro 2020 impacts: this **was confirmed**. Residents involved in sports—e.g., following Euro 2020, liking football, or actively participating—had more favourable opinions about both positive and negative impacts.
- 4. The levels of fear and concern regarding COVID-19 has a significant influence: this **was confirmed**. Residents exhibiting the highest levels of fear and concern related to the pandemic provided more negative evaluations across all impact dimensions. Their opinions showed significant differences compared to other segmented subgroups of the population.

#### **Practical and Policy Relevance of the Research**

The scientific findings of this dissertation contribute to the academic literature in several important ways. Firstly, similar to a few international studies (e.g., Helsen et al 2022; Oshimi et al 2021), it examined residents' opinions in a representative sample – an approach still relatively rare in the field. Secondly, it conducted this analysis at two different points in time: before and after the event. To date, perceptions of residents in cities hosting the UEFA European Championship have not only been underexplored in Hungary but also scarcely addressed in the international scholarly literature.

The opinions of residents in cities hosting international sports events are particularly important for cities where organizing international sports competitions is a priority for economic, tourism, and (sports) infrastructure development. Since Budapest is already a city with significant international recognition for hosting continental and global events— and with the potential to further strengthen this role – the findings of this dissertation can provide valuable feedback and guidance for city authorities and local communities alike. They can form a basis for developing targeted communication strategies and informing decision-making processes.

Based on prior domestic and international experience, cities applying to host large-scale international sports events often face resistance from local populations regarding the organization process and associated costs. This resistance poses a considerable challenge in many host cities. Today more than ever, it is crucial for international sports organizations to organize events with societal consensus – security in the economy, political stability, and freedom from scandals, social unrest, and social dissatisfaction being essential prerequisites – to ensure sustainable and responsibly managed events.

The investigation into perceptions of impacts revealed that these perceptions vary over time among Budapest residents, as significant differences were found between opinions expressed before and after the event. Taking these findings into account, future international sports events should emphasize differentiation in their pre- and post-event communication strategies. Organizers can better tailor information to meet the needs of local residents, providing solutions and responses to their concerns.

An illustrative example is the role of socio-demographic variables in identifying differences in residents' opinions regarding the impacts of Euro 2020; these roles manifested in a differentiated manner. Based on these results, it would be advisable for

future planning of international sports events to deliver targeted information and messages separately for women and older age groups, considering channels such as families, schools, workplaces, and sports clubs. This approach could enhance understanding, acceptance, and support among diverse demographic segments.

Furthermore, it is recommended that the planning and execution of international sports events consider the level and pattern of local residents' engagement in sports. Stakeholders should involve groups that are less active or not involved in sports at all. Such targeted approaches can increase interest in sports and foster support for community activities related to the event. Active participation of local communities in sports can significantly enhance the social acceptance and support of sports events. Therefore, promoting participation in sports holds particular value for strengthening societal backing for such events.

Despite the pandemic, most respondents believed that the anticipated economic, tourism, and social benefits of Euro 2020 would benefit the city's community, leading them to express positive opinions about the impacts. They held these views even though Budapest was the only host city among the ten organizers that did not impose spectator limitations for the four matches held there. The city's approach became a model in implementing COVID-19 regulations related to events. Understanding residents' opinions about the expected impacts of Euro 2020 during the pandemic provides valuable lessons and insights for future planning of similar international sports events under comparable circumstances.

In summary, this doctoral thesis links the impacts of Euro 2020 with residents' perceptions, offering conclusions that can be particularly useful in managing, planning, and communicating the candidature processes of domestic international sports events. Optimizing communication strategies could maximize positive effects and minimize negative consequences, thereby contributing to the sustainability of sports events.

#### Limitations

When applying the findings of this study, it is important to consider its potential limitations. One such limitation is that the research focuses solely on Budapest, one of the eleven host cities of Euro 2020; thus, the results can only be interpreted within the Hungarian socio-cultural context and are country-specific. Although perceptions of

impacts were examined based on a representative sample of the city's population both before and after the event, the basic population of the study comprised Budapest's adult residents (aged 18–89), excluding minors (under 18 years). The measurement tools were designed to align with Hungarian cultural interpretability and the social and environmental context of Euro 2020. The impact-related statements used in the questionnaire included a selected number of perceived positive and negative impacts. Despite the multidimensional approach, a limitation may be that the study did not incorporate additional impacts. The research analysed residents' perceptions across five impact dimensions and their temporal changes; however, it did not explore the links between perceived impacts and the social support for the sports event (e.g., Al-Emadi et al., 2017; Balduck et al., 2011; Duan et al., 2020), as extending into this area would have exceeded the scope of the dissertation.

#### **Future Research**

The social support for international sports events should be examined separately to ensure their sustainability (Perényi, Laczkó and Polcsik 2023). It would be useful to incorporate background variables such as occupation, marital status, income, distance between residence and event location, time spent in the city, and trust in government during future analyses (e.g., Kim and Petrick 2005; Gursoy et al 2017). Further research could help clarify how different forms of sports involvement influence perceptions of international sports events, subjective quality of life, and social support (e.g., Kaplanidou et al 2013; Ribeiro et al 2022). The various dimensions of involvement should be explored in greater detail, possibly by categorizing participation levels or fan engagement on scales (Beaton et al 2011; Wann et al 1999). Finally, longer-term longitudinal studies could provide a more accurate understanding of how perceived impacts evolve over time.

#### LIST OF PUBLICATIONS

#### List of publications related to the topic of the dissertation

- Polcsik B, Perényi Sz. (2022) Residents' perceptions of sporting events: A review of the literature. Sport in Society. 25(4), 748-767.
- Polcsik B, Laczkó T, Perényi Sz. (2022) Euro 2020 held during the COVID-19 period: Budapest residents' perceptions. Sustainability. 14(18), 11601.
- Polcsik B, Laczkó T, Perényi Sz. (2022) A budapesti lakosok percepciói az Euro2020 várt hatásairól. Magyar Sporttudományi Szemle. 23(3), 36-45.
- Polcsik B, Laczkó T., Perényi Sz. (2023) Az Euro 2020 észlelt hatásai: A budapesti lakosok előzetes és az eseményt követő percepcióinak összehasonlító elemzése. Magyar Sporttudományi Szemle. 24(4), 5-12.
- Polcsik B, Perényi Sz. (2023) Helyi lakosok percepciói a sportesemény hatásairól: a kérdőív bemutatása. Testnevelés, Sport, Tudomány. 1-12.