

ORIGINAL ARTICLE



An Examination of Mass Sporting Event Effects on Local Government Economy: The Case of 41st Istanbul Marathon

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ABSTRACT

Background. Today, the importance of budget performances has become more evident in the public and local sectors. In terms of transparency and accountability, it is essential to analyse the benefits and costs of the activities supported by the local government budget. **Objectives.** This study aims to the satisfaction of participants of the Istanbul Marathon is compared with the cost items spent during the organization. **Material.** The sample of this study consisted of 247 non-residents, and 1341 resident runners participated by voluntary selection. **Methods.** Who participated in the 41st Istanbul Marathon. In the research, questions were asked by the participants during or before the Marathon in the questionnaire form. Also, the Likert system with a five-point scale was used in the questions to obtain the participants' experience. The relations between variables are tested with factor analysis and correlation analysis. **Results.** The results of this study have shown that the most dominant variable among non-resident participants in the cost items in the event process was the start and finish organizations with 82%. Resident participants were found to have chip service with 91% of the dominant group. Also, prize money is the least dominant variable in the cost process in both non-resident and resident groups. In prize money, it has 47% in the non-resident group and 49% in the resident group. Moreover, all other cost items were deemed necessary by the participants between 59% and 91%. **Conclusion.** In conclusion, the cost items spent within the scope of the Istanbul Marathon were evaluated by both resident and non-resident participants; it was determined that the lowest factor in both groups was the prize money. The requirement of all other cost items perceived by both resident and non-resident participants is over 50%. Therefore, the local government-sponsored the Marathon was supported by both non-resident and resident participants, where the principal expenditure items were required.

KEYWORDS: *Mass Sport Events, Economic Impact, Sport Tourism, Sport Economy, Marathon*

INTRODUCTION

Today, the importance of budget performances has become more prominent not only in the private sector but also in the public and local. Effective service delivery in local government is also of great importance for the country's economy. Therefore, it is essential to analyse the benefit and cost of the activities sponsored by the local government budget with regards to transparency and accountability. Recreational running activities have become popular in the world, and there is increasing interest and

participation in the Marathon, which is among the most popular of these activities (1). The number of runners in road races reaches more than one hundred thousand participants in more than one thousand races worldwide. The number of runners who completed the Marathon in the world in 2016 increased from 138,267 in 2011 to 276,535 in 2016 (2). In recent years both the marathon and road race events in Turkey have become quite popular. Which is one of Turkey's most significant road running event Istanbul Marathon

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Istanbul Metropolitan Municipality of Istanbul in 2008, according to data while sports participation in 7630 this number increased to 37,000 in 2019 (3).

Sport is not only having crucial cultural importance in the life of modern society but also is become an important industry today. Countries use sports events to promote themselves and their cities, develop their tourism potential and economies (4). Road-running events, such as the Marathon, are becoming an increasingly important instrument for cities to attract tourists from domestically and abroad, the country and encourage economic activity to generate tourism revenue (5). Major events such as the Istanbul Marathon includes participants from more than 100 countries have a potential bear the expenses of extra operational costs. Aside from sport, there is much research that has been done for both variables in the literature. Many studies have been analysed on the economic impacts of the mass sports event. However, there is a minimal number of studies in Turkey. Besides, many sports events are financed by the public in our country. In this case, there are criticisms about whether the public spending on Events is suitable for the purpose. The subject of our research is to the satisfaction of participants of the Istanbul Marathon is compared with the expenditures during the organization.

This study tries to estimate the economic impact of non-resident participants' spending during the 2019 Vodafone Istanbul Marathon event. The first section uses national and international literature to define the concepts of economic impacts of sports tourism. In the second part, empirical data is explained as well as data collection and analysis. Based on these empirical findings, the third section analyses the effect of mass sports events on the local economy. As a result, the discussion summarizes the main findings.

Sport Tourism. Sports tourism has taken its place among many types of tourism and is an activity that climbs to the top of the top step day by day. Sports tourism can be defined as travels that people make to monitor or participate in sports activities by leaving the place where they constantly live for fun (6). In other words, sports tourism is travel and experience to conduct or monitor sports-related activities (7). Sports tourism to discipline that examines the type of tourism consisting of individuals or groups participating in sports activities that may include competition as well as being actively or passively made for fun by travelling to a place outside the place of residence. (8).

Many studies in the field literature deal with international sports organizations and sports tourism and examine these two variables in various aspects. In

the first place, however, these efforts often regarded international sports organizations as an essential motivator for tourism and focused on the impact of these organizations on local, regional and national economies (9, 10). Initially, studies examining the social, cultural and environmental impacts of such organizations and the perceptions and attitudes of the local society towards these effects were relatively ignored. In the following period, international events; research on its importance, economic, social, political, political advantages, cultural influences, social perceptions and attitudes have increased for the host country, region and city (11, 12).

Economic Impact. Candidate cities are working through very sensitive to host mega-sports events. One of the main reasons for this was analysed the economic benefit of the hosting events. Many host cities have supported this process through various infrastructure investments, subsidies and incentives by governments (13, 14). The extent of public subsidies, incentives, subsidies and supports have created economic analysis. The size of public funds invested to support sports activities constituted the economic analysis of the sector (15, 16). Studies are also available to analyse the economic dimensions of regional and mass sports activities (5, 17).

It refers to the net changes in the local economy in the city, which hosts mega or major sports events of the economic impact of sporting events. These net changes include a variety of transactions related to new investments, cost of sporting events, participants' expenses, service purchases, procurement processes (18). The impact of such funds on the local, regional and national economy consists of three components: direct, indirect and stimulated. The direct impact is consist of household expenditures in the economy, household expenditures and savings in non-economy household expenditures and increases in non-economic expenditures, such as food, shelter, transportation and game tickets by foreign visitors, include injections and leaks in macroeconomic terms such as cross-industry purchases, increasing direct household revenues and government revenues. The indirect effect is consisting of inter-industrial acquisitions for all businesses, household income as a result of secondary activities, government revenues and infiltrations, while the increase in domestic and non-economic household expenditures and savings in the next stage. Finally, it expresses the effects of the increases in household revenues that will emerge with stimulating games on other sectors of the economy. Indirect and exciting effects mentioned here are

generally combined under the name of secondary effects (9, 19).

The impacts of sports events on the general economy are the main objectives of the research. However, a conventional model should be established to predict the economic impact (20). The Input-Output Model or multiplier model was developed by Leontief 1986. This Model is one of the most widely used models in economic impact research. Input-Output model analysis can be defined as "a systematic method for digitizing complex relationship dimensions across various industries (21). The Model's impact on the economy can provide a comprehensive view of investors and organizers as well as analyze the extent of the relationships between various components in the economy. These opportunities provide the Model make a powerful instrument for analyzing the economic impact of sporting events on tourism (22-24). This model is used to measure participation costs, accommodation costs, local expenses and other economic benefits during the event. Istanbul Marathon is the only marathon in the World, where the course includes two continents between Asia and Europe that takes place every year in Turkey. It attracts the attention of athletes 106 different countries from all around the World, and more than 37.000 athletes participated in the event in 2019. This article aims to determine the impact of the Istanbul Marathon has on the City of Istanbul economy.

Research Objective. To the satisfaction of participants of the Istanbul Marathon is compared with the cost items spent during the organization.

METHODS

Participants. The universe of the research is composed of 1420 non-resident and 28580 resident runners who participated in the 41st Istanbul Marathon on 3 November 2019. The sample of this study consisted of 247 non-resident, and 1341 resident runners participated by voluntary selection method who participated in the Marathon.

Data Collection. The data collection process was carried out between 13.12.2019 – 18.12.2019 through online questionnaire forms on the internet. The participants asked several questions during or before the Marathon with demographic information in the questionnaire form (15 questions). Also, the "Likert" system with a five-point scale was used in the questions to obtain the participants' experience on Marathon. The options included in Likert-type questions indicate the level of participation in expression and statement containing attitude or opinion about the subject under investigation. For this

reason, the level of participation is determined by offering multiple options between the two extremes in Likert-type questions. During the analysis, these options are coded by giving a numerical value according to their degrees. In this way, qualitative data is converted into quantitative data. (25).

Table 1. Scale of Research Questions Method

Minimum	Low	Medium	High	Maximum
1	2	3	4	5

A measure of central tendency is attempted to be identified in the research questions. Therefore, there are no trap questions. Therefore, the questionnaire is not contained trick questions.

Factor analysis was applied to the data obtained as a result of the survey form. The underlying assumption of factor analysis is that the correlation matrix between variables is different from the unit matrix. In the unit matrix, dimensions cannot be reduced, and factors cannot be obtained. In other words, there are no significant correlations between the variables of interest. Therefore, the equation of the correlation matrix to the unit matrix should be measured. The zero hypothesis is tested with Bartlett's sphericity test. Refusal of the hypothesis means that the data are suitable for factor analysis. Another statistic used to measure the suitability of the data for factor analysis is the Kaiser-Meyer-Olkin (KMO) statistic. Correlation coefficients between the variables are obtained by proportioning them to partial correlation coefficients. It is in the range of 0 and 1. If the KMO value is close to 1, it means that the data are suitable for factor analysis. The KMO value below 0.5 means that the data are not suitable for factor analysis. Therefore, Bartlett's sphericity test and the results of the KMO value should be examined first and whether the data are suitable for factor analysis should be evaluated (26). There are four primary stages in factor analysis. These stages (27):

- The stage of determining the suitability of the data set for factor analysis: The determination of the suitability of the data set for factor analysis is also carried out in 3 stages. These stages are the creation of the correlation matrix, the Bartlett test and the Kaiser-Meyer-Olkin (KMO) test.

- Factor acquisition phase: At the Factor Acquisition stage, it is aimed to find a small number of factors with the highest rating in representing the relationships between the variables.

- Rotation factors: In the stage of rotation of the factors, it is aimed to obtain names and interpretable factors.

- Factor naming stage: During the naming factor, the relevant information is interpreted with SPSS outputs.

Data Analysis. In this study, factor analysis was applied to the data obtained from the questionnaire form in SPSS 20 program. In the study, the participants were asked to determine the items containing the organizational processes before the marathon and the cost items required for these processes in order of importance. Since the sentence "Please tick the most appropriate option for you" was added to the questionnaire, any participant could not mark more than one option. The first part of the analysis was made for "non-resident" participants and the second part for "resident" participants. The purpose of this analysis is to compare the satisfaction rate of the participants for the marathon in some aspects of the organization process, and the costs incurred in these processes. Thus, it is determined how the issues in organizational processes are important for the participants, and how the costs of these issues are perceived for them.

RESULTS

The satisfaction level of "non-resident participants" are measured in essential issues in the organization of the event in question 14.

KMO test and Bartlett Analysis results are shown in Table 2.

Table 2. KMO and Bartlett's Test- Non-Resident

Kaiser-Meyer-Olkin Measure Sampling Adequacy.	0.966
Bartlett's test of sphericity	
Approx.chi-square	3524.140
df	136
Sig.	0.000

Table 3. Reliability Analysis- Non-Resident

Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alfa
0.964	17	0.963

In this research, sampling adequacy is measured by KMO (Kaiser-Mayer-Olkin) test. There are sample size results with the test. The ratio is expected to be higher than 0.50 for performing factor analysis

applications. The fact that the rates of Barlett analysis are close to 0 shows that the results are significant. At the same time, the statistical significance of chi-square value shows that the research data is appropriately structured (28). As can be seen in Table 2, the KMO test is measured as 0.966 and is suitable for factor analysis of the data set. Also, Bartlett analysis must be $P < 0.05$. This condition is also met. The data are suitable for factor analysis. As these statistical tests are suitable for factor analysis, it is understood that there are high correlations between variables. "Total Variance Explained" method is used to determine the number of factors. As can be seen in Table 3, Cronbach's Alpha value is 0,963. This value is qualified as a highly reliable scale.

Table 4, the sample suitability criterion of all components is observed in the anti-image correlation matrices created where the acceptability limit is higher than 0.5.

Table 5 shows how much each factor affects the total factor. Extraction values in this table are expected to be over 30. The factor "I would recommend the event to someone else" is the most influential factor in shaping the total factor with a rate of 76%. The "I will definitely participate again" is the factor that has the least impact on shaping the total factor with 38%.

In the cumulative (%) column, the percentage of factors explained is given. In Table 6, the factors in the total column with an eigenvalue more significant than one are evaluated as the number of factors. It can be seen from the values given in Table 6, where the number of factors is 1. The contribution of one factor to variance is 63.641%. Participants were asked to mark the most appropriate option for them in question 15, which is prepared for evaluating the cost items specified in the articles in terms of necessity. The results of the KMO test and Bartlett Analysis are shown in Table 7.

Table 4. Anti-Image Correlation Matrix-Non-Resident

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17
A1	.968	-.226	.005	-.059	.066	-.070	-.023	-.011	.046	-.005	-.095	-.096	-.058	.146	.057	-.152	-.002
A2	-.226	.965	-.205	-.126	-.224	.123	.069	-.007	.021	-.062	-.007	.007	-.130	-.104	-.043	.016	-.170
A3	.005	-.205	.970	-.064	-.086	.000	-.073	-.009	-.144	-.128	.056	.119	.010	-.114	-.048	.015	-.272
A4	-.059	-.126	-.064	.983	-.028	-.174	-.057	-.092	-.011	-.069	.011	.076	-.040	-.079	-.140	-.051	-.042
A5	.066	-.224	-.086	-.028	.956	-.250	-.182	-.113	-.216	.160	-.005	-.036	.028	.105	-.102	.068	-.133
A6	-.070	.123	.000	-.174	-.250	.961	-.128	-.072	-.025	-.154	-.066	.094	-.218	-.012	-.234	.002	.049
A7	-.023	.069	-.073	-.057	-.182	-.128	.973	-.051	-.110	.054	.057	-.172	-.004	-.109	.091	.014	-.118
A8	-.011	-.007	-.009	-.092	-.113	-.072	-.051	.982	.027	.021	-.100	-.036	-.137	-.037	-.062	.013	.083
A9	.046	.021	-.144	-.011	-.216	-.025	-.110	.027	.956	-.278	-.199	-.104	-.040	0.64	-.055	-.086	.212
A10	-.005	-.062	-.128	-.069	.160	-.154	.054	.021	-.278	.957	-.204	-.257	-.066	-.044	.106	-.031	-.189
A11	-.095	-.007	.056	.011	-.005	-.066	.057	-.100	-.199	-.204	.970	-.134	.012	.052	-.056	.125	-.148
A12	-.096	.007	.119	.076	-.036	.094	-.172	-.036	-.104	-.257	-.134	.963	-.220	-.146	-.151	-.004	-.125
A13	-.058	-.130	.010	-.040	.028	-.218	-.004	-.137	-.040	-.066	.012	-.220	.976	-.147	-.001	.006	-.026
A14	-.146	-.104	-.114	-.079	.105	-.012	-.109	-.037	.064	-.044	.052	-.146	-.147	.965	-.258	-.077	.038
A15	-.057	-.043	-.048	-.140	-.102	-.234	.091	-.062	-.055	.106	-.056	-.151	-.001	-.258	.969	-.068	-.125
A16	-.152	0.16	.015	-.051	.068	.002	.014	.013	-.086	-.031	.125	-.004	.006	-.077	-.068	.961	-.307
A17	-.002	-.170	-.272	-.042	-.133	.049	-.118	.083	.212	-.189	-.148	-.125	-.026	.038	-.125	-.307	.951

Table 5. Communalities- Non-Resident

	Initial	Extraction
I was pleased with the registration process	1.000	0.447
I was satisfied with the event area	1.000	0.706
I was satisfied with the racecourse	1.000	0.692
I was pleased with the refreshment stations	1.000	0.670
I was satisfied with the start area	1.000	0.666
I was satisfied with pace gate	1.000	0.713
I was satisfied with the luggage buses and drop bags	1.000	0.568
I was satisfied with toilet facilities	1.000	0.427
I was satisfied with transportation to the start area	1.000	0.620
I was satisfied with security services	1.000	0.741
I was satisfied with timing system	1.000	0.585
I was pleased with the attitude and behavior of the officials	1.000	0.742
I was pleased with the health services of the event	1.000	0.712
I was satisfied with the food packages delivered after the race	1.000	0.590
I was satisfied with the event operation process	1.000	0.755
I will definitely participate again	1.000	0.424
I would recommend the event to someone else	1.000	0.761

Table 6. Total Variance Explained- Non-Resident

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	(%) of Variance	Cumulative (%)	Total	(%) of Variance	Cumulative (%)
1	10.819	63.641	63.641	10.819	63.641	63.641
2	0.794	4.671	68.312			
3	0.660	3.881	72.193			
4	0.619	3.641	75.834			
5	0.543	3.193	79.027			
6	0.493	2.900	81.928			
7	0.458	2.691	84.619			
8	0.407	2.393	87.012			
9	0.342	2.10	89.022			
10	0.330	1.943	90.965			
11	0.313	1.840	92.805			
12	0.270	1.589	94.393			
13	0.243	1.431	95.824			
14	0.213	1.253	97.077			
15	0.194	1.143	98.219			
16	0.161	0.946	99.166			
17	0.142	0.834	100.000			

Extraction method: principal component analysis.

Table 7. KMO and Bartlett's Test- Non-Resident

Kaiser-Meyer-Olkin Measure Sampling Adequacy	0.915
Bartlett's test of sphericity	
Approx. chi-square	3032.910
df	105
Sig.	0.000

Table 8. Reliability Analysis- Non-Resident

Cronbach Alpha Based on Standardized Items	No of items	Cronbach's Alfa
0.941	16	0.940

As can be seen in Table 7, the KMO test increased to 0.915. This result is a good result for analysis. The data set of $0.915 > 0.50$ appears to be suitable for factor analysis. Also, Barlett analysis must be $P < 0.50$. This condition is also met. The data are suitable for factor analysis. "Total Variance Explained" method is used to determine the number of factors. Cronbach's Alpha value has increased to 0.940 in Table 8. This value is qualified as a highly reliable scale.

Table 9, it is observed in the anti-image correlation matrices that the sample suitability criterion of all components is higher than the acceptable limit of 0.5.

Table 9. Anti-Image Correlation Matrix- Non-Resident

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
B1	.880	-0.461	-0.032	0.035	-0.002	-0.120	0.033	-0.106	0.132	0.071	-0.076	-0.032	0.141	-0.141	-0.012
B2	-0.461	0.888	-0.123	-0.063	0.072	-0.069	-0.072	0.209	-0.311	-0.053	-0.152	-0.149	0.044	-0.025	0.027
B3	-0.032	-0.123	0.917	-0.547	-0.227	0.003	-0.037	-0.082	0.051	-0.001	0.180	-0.094	-0.126	0.021	-0.038
B4	0.035	-0.063	-0.547	0.898	0.015	-0.070	0.119	-0.417	0.095	-0.066	-0.052	0.018	-0.081	0.072	-0.056
B5	-0.002	0.072	-0.227	0.015	0.932	-0.440	-0.060	-0.057	-0.123	-0.001	-0.076	0.127	-0.005	-0.067	-0.070
B6	-0.120	-0.069	0.003	-0.070	-0.440	0.938	-0.159	-0.024	-0.092	0.000	-0.032	0.038	-0.060	0.070	0.030
B7	0.033	-0.072	-0.037	0.119	-0.060	-0.159	0.947	-0.409	-0.047	0.009	0.049	-0.156	-0.081	-0.035	-0.037
B8	-0.106	0.209	-0.082	-0.417	-0.057	-0.024	-0.409	0.912	-0.134	-0.178	-0.008	0.051	0.080	-0.074	-0.016
B9	0.132	-0.311	0.051	0.095	-0.123	-0.092	-0.047	-0.134	0.919	0.113	0.025	-0.324	-0.060	-0.050	-0.040
B10	0.071	-0.053	-0.001	-0.066	-0.001	0.000	0.009	-0.178	0.113	0.880	-0.087	0.101	-0.094	-0.095	-0.672
B11	-0.076	-0.152	0.180	-0.052	-0.076	-0.032	0.049	-0.008	0.025	-0.087	0.917	-0.476	-0.128	-0.017	-0.053
B12	-0.032	-0.149	-0.094	0.018	0.127	0.038	-0.156	0.051	-0.324	0.101	-0.476	0.893	-0.152	-0.157	-0.006
B13	0.141	0.044	-0.126	-0.081	-0.005	-0.060	-0.081	0.080	-0.060	-0.094	-0.128	-0.152	0.947	-0.340	0.039
B14	-0.141	-0.025	0.021	0.072	-0.067	0.070	-0.035	-0.074	-0.050	-0.095	-0.017	-0.157	-0.340	0.951	-0.040

B15 -0.012 0.027 -0.038 -0.056 -0.070 0.030 -0.037 -0.016 -0.040 -0.672 -0.053 -0.006 0.039 -0.040 0.894

Table 10. Communalities- Non-Resident

	Initial	Extraction
Prize purse is required	1.000	0.468
Live broadcast service is required	1.000	0.735
Bib number is required	1.000	0.772
Timing system is required	1.000	0.803
Race t-shirts are required	1.000	0.649
Race bags are required	1.000	0.583
EXPO organization are required	1.000	0.658
Start and finish organizations are required	1.000	0.817
Posters, vinyl and other promotional materials are required	10.000	.664
Transportation service required on race morning	10.000	.723
Age groups award ceremony is required	10.000	.691
Press conference organizations are required0.	1.000	0.804
Barriers are required in the event areas and the course	1.000	0.594
Sponsorship activities are required	1.000	0.589
Free transportation to the start area is required	1.000	0.694

Table 11. Total Variance Explained- Non-Resident

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	(%) of Variance	Cumulative (%)	Total	(%) of Variance	Cumulative (%)
1	8.267	55.115	55.115	8.267	55.115	55.115
2	1.979	13.190	68.306	1.979	13.190	68.306
3	0.869	5.794	74.100			
4	0.718	4.786	78.886			
5	0.499	3.324	82.210			
6	0.476	3.172	85.382			
7	0.428	2.850	88.232			
8	0.381	2.538	90.771			
9	0.300	2.001	92.772			
10	0.252	1.677	94.449			
11	0.243	1.617	96.066			
12	0.199	1.329	97.395			
13	0.148	0.987	98.381			
14	0.133	0.888	99.269			
15	0.110	0.731	100.000			

Extraction method: principal component analysis.

Table 10 shows how much each factor affects the total factor. Extraction values in this table are expected to be over 0.30. The “Start and finish organizations are required” is the factor that is the most impact on shaping the total factor with a rate of 81%. “The Prize purse is required” is the factor that has the least impact on shaping the total factor with its 46% ratio.

The cumulative (%) column gives the percentage of factors explained. In Table 11, there are factors in the total column with an eigenvalue greater than 1. It is seen that the number of factors is 2 in the values given in Table 11. The contribution of 2 factors to variance is 68,306%. It also has a two-dimensional structure.

Table 12. Rotated Component Matrix- Non-Resident

	Factors	
	1	2
Start and finish organizations are required	0.819	-0.382
Bib number is required	0.815	-0.329
EXPO organization is required	0.808	
Timing System is required	0.799	-0.405
Race t-shirts are required	0.768	-0.245
Barriers are required in the event areas and the course	0.765	
Race bags are required	0.760	
Transportation service required on race morning	0.742	-0.379
Sponsorship activities are required	0.740	0.205
Free transportation to the start area is required	0.736	-0.426
Press conference organizations are required.	0.717	0.538
Age groups award ceremony is required	0.703	0.443
Live broadcast service is required	0.682	0.520
Posters, vinyl and other promotional materials are required	0.680	0.450
Prize purse is required	0.561	0.392

Extraction method: principal component analysis. A.2 components extracted.

Table 13. Marathon Process- Non-Resident

F01	I would like to recommend the event to someone else	(0.761)
F02	I was satisfied with the event operation process	(0.755)
F03	I was pleased with the attitude and behaviour of the officials	(0.742)
F04	I was satisfied with security services	(0.741)
F05	I was satisfied with pace gate	(0.713)
F06	I was pleased with the health services of the event	(0.712)
F07	I was satisfied with the event area	(0.706)
F08	I was satisfied with the racecourse	(0.692)
F09	I was pleased with the refreshment stations	(0.670)
F010	I was satisfied with the start area	(0.666)
F011	I was satisfied with transportation to the start area	(0.620)
F012	I was satisfied with the food packages delivered after the race	(0.590)
F013	I was satisfied with timing system	(0.585)
F014	I was satisfied with the luggage buses and drop bags	(0.568)
F015	I was pleased with the registration process	(0.447)
F016	I was satisfied with toilet facilities	(0.427)
F017	I will definitely participate again	(0.424)

KMO = 0.966, Chi-square = 3524.140. P = 0.000, Cronbach's Alpha =0. 963, Total variance explanation rate = 63.641%

Table 14. Costs in the Marathon Process- Non-Resident

F01	Start and finish organizations are required	(0.817)
F02	Press conference organizations are required	(0.804)
F03	Timing System is required	(0.803)
F04	Bib number is required	(0.772)
F05	Live broadcast service is required	(0.735)
F06	Transportation service required on race morning	(0.723)
F07	Free transportation to the start area is required	(0.694)
F08	Age groups award ceremony is required	(0.691)
F09	Posters, vinyl and other promotional materials are required	(0.664)
F010	EXPO organization is required	(0.658)
F011	Race t-shirts are required	(0.649)
F012	Barriers are required in the event areas and the course	(0.594)
F013	Sponsorship activities are required	(0.589)
F014	Race bags are required	(0.583)
F015	Prize purse is required	(0.468)

KMO = 0.915, Chi-square = 3261.119 P = 0.000, Cronbach's Alpha =, 940, Total variance disclosure rate = 68,306%

Table 15. KMO and Bartlett's Test- Resident

Kaiser-Meyer-Olkin Measure Sampling Adequacy.	0.974
Bartlett's test of sphericity	
Approx.chi-square	28768.224
df	136
Sig.	0.000

Table 16. Reliability Analysis- Resident

Cronbach's Alpha Based on Standarized Items	No of Items	Cronbach's Alfa
0.964	17	0.978

Two factors (columns) and weights of each variable under factors (factor loadings - correlation coefficient between variables and factors) are given in Table 12. In this table, the "Start and finish organizations are required" variable has taken the highest weight under the first factor 0 819) in the line, the "Bib number is required" variable (0 815) and "EXPO organization is required" variable (0 808). It has the highest weight under the 1st factor, while "Press conference organizations required variable" had the highest weights under the 2nd factor (0.538).

The sample created to determine the contribution of major sports events to the city economy is interpreted as follows as a result of the factor analysis applied.

The satisfaction level of "resident participants" are measured in important issues in the organization of the event in question 14. KMO test and Barlett Analysis results are shown in Table 13.

The KMO test is 0.974 in Table 15. This result is a good result for analysis. It is seen that the data set is suitable for factor analysis because KMO is 0.974 > 0.60. Barlett analysis must also be P < 0.05. The data are suitable for factor analysis. As these statistical tests are suitable for factor analysis, it is understood that there are high correlations between variables. "Total Variance Explained" method is determinate the number of factors.

As can be seen in Table 16, Cronbach's Alpha value has increased to 0.978. This value is qualified as a highly reliable scale.

As can be seen in Table 15, it is observed in the anti-image correlation matrices that the sample

suitability criterion of all components is higher than the acceptable limit of 0.5.

Table 16 shows how much each factor affects the total factor. Extraction values in this table are expected to be over 30. The factor “I was satisfied with the event operation process” is the most influential in shaping the total factor with a rate of 86%. The “I was satisfied

with toilet facilities” is the factor that has the least impact on shaping the total factor with 44%.

The cumulative (%) column gives the percentage of factors explained. In Table 17, there are factors in the total column with an eigenvalue greater than 1. It is seen that the number of factors is 1 in the values given in Table 17.

Table 17. Anti-image Correlation Matrix- Resident

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17
A1	0.985	-0.213	-0.020	-0.088	0.039	0.028	-0.095	-0.009	0.020	-0.042	-0.156	-0.019	-0.016	0.053	-0.149	-0.077	0.038
A2	-0.213	0.982	-0.179	-0.027	-0.188	-0.017	-0.010	-0.024	-0.060	-0.060	0.021	0.039	-0.039	-0.033	-0.138	0.033	-
A3	-0.020	-0.179	0.990	-0.061	-0.021	-0.085	-0.044	0.019	-0.011	-0.075	-0.028	-0.076	-0.011	0.027	0.035	0.012	0.120
A4	-0.088	-0.027	-0.061	0.984	-0.141	-0.145	-0.019	-0.071	-0.004	-0.050	0.022	-0.029	-0.080	-0.253	-0.050	-0.014	-
A5	0.039	-0.188	-0.021	-0.141	0.966	-0.368	-0.095	-0.046	-0.094	-0.003	-0.011	0.103	0.001	0.100	-0.115	0.008	0.034
A6	0.028	-0.017	-0.085	-0.145	-0.368	0.975	-0.144	-0.058	-0.008	-0.052	0.012	-0.095	0.013	0.012	-0.062	0.009	-
A7	-0.095	-0.010	-0.044	-0.019	-0.095	-0.144	0.984	-0.164	-0.164	0.008	-0.151	-0.057	-0.091	-0.068	0.056	-0.001	0.001
A8	-0.009	-0.024	0.019	-0.071	-0.046	-0.058	-0.164	0.986	-0.106	-0.007	-0.002	0.012	-0.083	-0.108	0.036	0.030	-
A9	0.020	-0.060	-0.011	-0.004	-0.094	-0.008	-0.164	-0.106	0.980	-0.255	0.065	0.043	0.012	-0.055	-0.087	-0.061	0.048
A10	-0.042	-0.060	-0.075	-0.050	-0.003	-0.052	0.008	-0.007	-0.255	0.981	-0.168	-0.217	-0.138	0.043	-0.044	-0.056	0.040
A11	-0.156	0.021	-0.028	0.022	-0.011	0.012	-0.151	-0.002	0.065	-0.168	0.978	-0.333	-0.100	-0.006	-0.044	-0.052	-
A12	-0.019	0.039	-0.076	-0.029	0.103	-0.095	-0.057	0.012	0.043	-0.217	-0.333	0.971	-0.273	0.016	-0.152	-0.021	0.016
A13	-0.016	-0.039	-0.011	-0.080	0.001	0.013	-0.091	-0.083	0.012	-0.138	-0.100	-0.273	0.986	-0.057	-0.071	-0.019	-
A14	0.053	-0.033	0.027	-0.253	0.100	0.012	-0.068	-0.108	-0.055	0.043	-0.006	0.016	-0.057	0.974	-0.309	-0.049	0.001
A15	-0.149	-0.138	0.035	-0.050	-0.115	-0.062	0.056	0.036	-0.087	-0.044	-0.044	-0.152	-0.071	-0.309	0.978	-0.021	-
A16	-0.077	0.033	0.012	-0.014	0.008	0.009	-0.001	0.030	-0.061	-0.056	-0.052	-0.021	-0.019	-0.049	-0.021	0.936	-
A17	0.038	-0.120	-0.163	0.034	-0.003	-0.001	-0.018	-0.002	0.048	0.040	-0.016	-0.049	-0.035	0.001	-0.143	-0.794	0.932

Table 18. Communalities – Resident

	Initial	Extraction
I was pleased with the registration process	1.000	0.728
I was satisfied with the event area	1.000	0.787
I was satisfied with the racecourse	1.000	0.728
I was pleased with the refreshment stations	1.000	0.721
I was satisfied with the start area	1.000	0.628
I was satisfied with pace gate	1.000	0.713
I was satisfied with the luggage buses and drop bags.	1.000	0.756
I was satisfied with toilet facilities	1.000	0.442
I was satisfied with transportation to the start area	1.000	0.616
I was satisfied with security services	1.000	0.820
I was satisfied with timing system	1.000	0.815
I was pleased with the attitude and behavior of the officials	1.000	0.848
I was pleased with the health services of the event	1.000	0.822
I was satisfied with the food packages delivered after the race	1.000	0.666
I was satisfied with the event operation process	1.000	0.869
I will definitely participate again	1.000	0.829
I would recommend the event to someone else	1.000	0.838

Extraction method: principal component analysis.

Table 19. Total Variance Explained – Resident

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	(%) of Variance	Cumulative (%)	Total	(%) of Variance	Cumulative (%)
1	12.625	74.264	74.264	12.625	74.264	74.264
2	0.696	4.095	78.358			
3	0.525	3.088	81.446			
4	0.419	2.467	83.912			
5	0.405	2.385	86.297			
6	0.346	2.035	88.332			
7	0.306	1.800	90.132			
8	0.270	1.589	91.721			
9	0.249	1.467	93.187			
10	0.222	1.304	94.492			
11	0.210	1.236	95.728			
12	0.181	1.066	96.794			
13	0.154	0.909	97.702			
14	0.140	0.822	98.524			
15	0.118	0.696	99.220			

16	0.096	0.562	99.781
17	0.037	0.219	100.000

Extraction method: principal component analysis.

Table 20. KMO and Bartlett's Test- Resident

Kaiser-Meyer-Olkin Measure Sampling Adequacy	0.976
Bartlett's test of sphericity	
Approx. chi-square	31061.494
df	105
Sig.	0.000

Table 21. Reliability Analysis

Cronbach Alpha Based on Standardized Items	No of items	Cronbach's Alfa
0.983	16	0.983

Table 22. Anti-Image Correlation Matrix- Resident

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
B1	0.973	-0.326	-0.027	0.020	0.033	0.001	-0.022	-0.012	0.007	-0.050	-0.162	-0.026	0.004	0.079	-0.012
B2	-0.326	0.975	-0.177	-0.125	-0.113	-0.009	-0.071	0.035	-0.007	0.080	0.000	-0.185	-0.058	-0.019	-0.038
B3	-0.027	-0.177	0.976	-0.430	-0.028	-0.051	-0.002	-0.079	0.007	0.002	-0.010	-0.008	-0.017	0.018	-0.059
B4	0.020	-0.125	-0.430	0.969	-0.092	0.041	-0.027	-0.151	0.020	-0.131	0.035	0.031	-0.039	-0.228	-0.134
B5	0.033	-0.113	-0.028	-0.092	0.973	-0.414	-0.099	-0.137	-0.078	-0.014	0.011	0.100	0.003	-0.125	-0.040
B6	0.001	-0.009	-0.051	0.041	-0.414	0.975	-0.136	-0.010	-0.046	-0.036	-0.052	-0.052	0.024	0.036	-0.053
B7	-0.022	-0.071	-0.002	-0.027	-0.099	-0.136	0.982	-0.268	-0.191	0.068	-0.048	-0.108	0.024	-0.032	0.016
B8	-0.012	0.035	-0.079	-0.151	-0.137	-0.010	-0.268	0.982	-0.177	-0.126	-0.048	0.044	-0.073	-0.088	-0.028
B9	0.007	-0.007	0.007	0.020	-0.078	-0.046	-0.191	-0.177	0.983	-0.060	-0.051	-0.255	-0.014	0.003	0.027
B10	-0.050	0.080	0.002	-0.131	-0.014	-0.036	0.068	-0.126	-0.060	0.963	-0.106	0.027	-0.127	-0.126	-0.537
B11	-0.162	0.000	-0.010	0.035	0.011	-0.052	-0.048	-0.048	-0.051	-0.106	0.980	-0.324	-0.142	-0.097	-0.010
B12	-0.026	-0.185	-0.008	0.031	0.100	-0.052	-0.108	0.044	-0.255	0.027	-0.324	0.969	-0.118	-0.114	0.033
B13	0.004	-0.058	-0.017	-0.039	0.003	0.024	0.024	-0.073	-0.014	-0.127	-0.142	-0.118	0.988	-0.211	-0.047
B14	0.079	-0.019	0.018	-0.228	-0.125	0.036	-0.032	-0.088	0.003	-0.126	-0.097	-0.114	-0.211	0.981	-0.164
B15	-0.012	-0.038	-0.059	-0.134	-0.040	-0.053	0.016	-0.028	0.027	-0.537	-0.010	0.033	-0.047	-0.164	0.966

Table 23. Communalities – Resident

	Initial	Extraction
Prize purse is required	1.000	0.489
Live broadcast service is required	1.000	0.791
Bib number is required	1.000	0.848
Timing system is required	1.000	0.906
Race t-shirts are required	1.000	0.845
Race bags are required	1.000	0.745
EXPO organization are required	1.000	0.792
Start and finish organizations are required	1.000	0.894
Posters, vinyl and other promotional materials are required	1.000	0.770
Transportation service required on race morning	1.000	0.893
Age groups award ceremony is required	1.000	0.817
Press conference organizations are required.	1.000	0.752
Barriers are required in the event areas and the course	1.000	0.837
Sponsorship activities are required	1.000	0.903
Free transportation to the start area is required	1.000	0.888

Table 24. Total Variance Explained- Resident

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	(%) of Variance	Cumulative (%)	Total	(%) of Variance	Cumulative (%)
1	12.168	81.123	81.123	12.168	81.123	81.123
2	0.592	3.947	85.069			
3	0.399	2.661	87.730			
4	0.356	2.370	90.100			
5	0.241	1.607	91.707			
6	0.233	1.551	93.258			
7	0.183	1.222	94.480			
8	0.154	1.027	95.507			
9	0.141	0.941	96.447			
10	0.132	0.879	97.326			
11	0.120	0.801	98.127			
12	0.093	0.618	98.745			
13	0.081	0.541	99.286			
14	0.058	0.387	99.673			
15	0.049	0.327	100.000			

Extraction method: principal component analysis.

The contribution of 1 factor to variance is %74,264. Participants were asked to mark the most appropriate option for them in question 15, which is prepared for evaluating the cost items specified in the articles in terms of necessity. The results of the KMO test and Barlett Analysis are shown in Table 17.

As can be seen in Table 20, the KMO test increased to 0.976. This result is a good result for analysis. The data set of $0.976 > 0.50$ appears to be suitable for factor analysis. Also, Barlett analysis must be $P < 0.50$. This condition is also met. The data are suitable for factor analysis. "Total Variance Explained" method is used to determine the number of factors. As can be seen in Table 21, Cronbach's Alpha value has increased to 0.983. This value is qualified as a highly reliable scale.

As can be seen in Table 20, it is observed that the sample suitability criterion of all components is higher than the acceptable limit of 0.5 in the anti-image correlation matrices created for the 15th question.

Table 21 shows how much each factor affects the total factor. Extraction values in this table are expected to be over 0.30. The "Timing System is required" is the factor that is the most impact on shaping the total factor with a rate of 90%. "The Prize purse is required" is the factor that has the least impact on shaping the total factor with its 48% ratio.

The cumulative (%) column gives the percentage of factors explained. In Table 22, there are factors in the total column with an eigenvalue greater than 1. It is seen that the number of factors is given in Table 17. The contribution of 1 factor to variance is %81,123. The sample created to determine the contribution of major sports events to the city economy is interpreted as follows as a result of the factor analysis applied.

Table 25. Marathon Process- Resident

F01	I was satisfied with the event operation process	(0.869)
F02	I was pleased with the attitude and behaviour of the officials	(0.848)
F03	I would like to recommend the event to someone else	(0.838)
F04	I will definitely participate again	(0.829)
F05	I was pleased with the health services of the event	(0.822)
F06	I was satisfied with security services	(0.820)
F07	I was satisfied with timing system	(0.815)
F08	I was satisfied with the event area	(0.787)
F09	I was satisfied with the luggage buses and drop bags	(0.756)
F010	I was pleased with the registration process	(0.728)
F011	I was satisfied with the racecourse	(0.728)
F012	I was satisfied with the food packages delivered after the race	(0.721)
F013	I was satisfied with pace gate	(0.713)
F014	I was satisfied with the food packages delivered after the race	(0.666)
F015	I was satisfied with the start area	(0.628)
F016	I was satisfied with transportation to the start area	(0.616)
F017	I was satisfied with toilet facilities	(0.442)

KMO = 0.974, Chi-square = 28768.2224 P = 0.000, Cronbach's Alpha = 0.978, Total variance explanation rate = 74.264%

Table 26. Costs in the Marathon Process- Resident

F01	Timing system is required	(0.906)
F02	Sponsorship activities are required	(0.903)
F03	Start and finish organizations are required	(0.894)
F04	Transportation service required on race morning	(0.893)
F05	Free transportation to the start area is required	(0.888)
F06	Bib number is required	(0.848)
F07	Race t-shirts are required	(0.845)
F08	Barriers are required in the event areas and the course	(0.837)
F09	Age groups award ceremony is required	(0.817)
F010	EXPO organization is required	(0.792)
F011	Live broadcast service is required	(0.791)
F012	Posters, vinyl and other promotional materials are required	(0.770)
F013	Press conference organizations are required	(0.752)
F014	Race bags are required	(0.745)
F015	Prize purse is required	(0.489)

KMO = 0.973, Chi-square = 31061,494 P = 0.000, Cronbach's Alpha = 0.983, Total variance disclosure rate = 81,123%

The relationship between the variables is examined, and a process for finding factors is performed in the exploratory factor analysis in Tables 27 and 28. The predetermined model or hypothesis regarding the relationship between variables is tested in confirmatory factor analysis (27).

Confirmatory factor analysis is used in scale development and validity analysis. The analyses is aimed to verify a structure that has been previously determined or constructed (28).

The table shows the level 1 confirmatory factor analysis for the model. Fit indices related to the model were examined to ensure an acceptable fit in the model.

As a result of the analysis, the fit values of the model is presented in the table below.

Table 27. Values of the Measurement Model-Non-Resident

Model Fit Index	Model Suitability Value	Measured Value
$\chi^2/d.f.$	≤ 5.00	3.736
GFI (Goodness of Fit Index)	≥ 0.90	0.635
AGFI (Adjusted Goodness of Fit Index)	≥ 0.80	0.584
NFI (Normed Fit Index)	≤ 0.90	0.762
RFI (Relative Fit Index)	≥ 0.90	0.745
CFI (Comparative Fit Index)	≥ 0.90	0.813
RMR (Root Mean Square Residual)	0-1	0.066
RMSEA (Root Mean Square Error of Approximation)	0.05-0.08	0.106

The fit index value is obtained by dividing the chi-square value by the degree of freedom. If this ratio is equal to a value of three or less than three, the model is a good model; equal to a value of five or less indicates that the model has an acceptable goodness of fit. In the model discussed in the study, the mentioned value is 3.736 and it is below the value of 5.

GFI, RFI, CFI, RMSEA values are not granted proper for the model. Therefore, some changes have been made to the measurement model. An incorrect variable was not obtained by examining expression and residual values. Since most of the goodness of fit indices are within acceptable limits, it is not necessary to exclude any variables from the model. Covariance has been established only among some variables.

Table 28. Values of Post-Modified Measurement Model-Non-Resident

Model Fit Index	Model Suitability Value	Measured Value
$\chi^2/d.f.$	≤ 5.00	2.453
GFI (Goodness of Fit Index)	≥ 0.90	0.768
AGFI (Adjusted Goodness of Fit Index)	≥ 0.80	0.731
NFI (Normed Fit Index)	≤ 0.90	0.847
RFI (Relative Fit Index)	≥ 0.90	0.833
CFI (Comparative Fit Index)	≥ 0.90	0.902
RMR (Root Mean Square Residual)	0-1	0.057
RMSEA (Root Mean Square Error of Approximation)	0.05-0.08	0.077

The model $\chi^2/d.f.$ value (2.453) is sensitive to sample size. Although an acceptable fit is mentioned in the fit index value when checking these index values, they slightly below the expected values when it comes to other values. As a result, it will not be possible to mention complete construct validity.

For the model, $\chi^2/d.f.$, GFI, AGFI, NFI, RMSEA values are not considered suitable. Therefore, some changes have been made to the measurement model. An incorrect variable was not obtained by examining expression and residual values. B04, B10 and B14 questions were removed from the analysis considering the standardized regression weights values, and covariance was created among some variables by

checking at the covariance values under the modification indices heading.

Table 29. Values of the Measurement Model-Resident

Model Fit Index	Model Suitability Value	Measured Value
$\chi^2/d.f.$	≤ 5.00	10.617
GFI (Goodness of Fit Index)	≥ 0.90	0.788
AGFI (Adjusted Goodness of Fit Index)	≥ 0.80	0.751
NFI (Normed Fit Index)	≤ 0.90	0.923
RFI (Relative Fit Index)	≥ 0.90	0.915
CFI (Comparative Fit Index)	≥ 0.90	0.930
RMR (Root Mean Square Residual)	0-1	0.059
RMSEA (Root Mean Square Error of Approximation)	0.05-0.08	0.085

Table 30. Values of Post-Modified Measurement Model-Resident

Model Fit Index	Model Suitability Value	Measured Value
$\chi^2/d.f.$	≤ 5.00	4.966
GFI (Goodness of Fit Index)	≥ 0.90	0.911
AGFI (Adjusted Goodness of Fit Index)	≥ 0.80	0.890
NFI (Normed Fit Index)	≤ 0.90	0.966
RFI (Relative Fit Index)	≥ 0.90	0.961
CFI (Comparative Fit Index)	≥ 0.90	0.973
RMR (Root Mean Square Residual)	0-1	0.049
RMSEA (Root Mean Square Error of Approximation)	0.05-0.08	0.054

The model $\chi^2/d.f.$ value (4.966) is sensitive to sample size. Although an acceptable fit is mentioned in the fit index value when checking these index values, they slightly below the expected values when it comes to other values. As a result, it will not be possible to mention complete construct validity.

DISCUSSION

Changing world standards with globalization have also affected the economies of the country. In the changing and developing economic conditions, sports are also developing and increasing their position in the sector day by day. Sport is positively affected as a result of developments in the world. At the same time, it has created its industry and has become an essential sector in itself due to its contribution to the growth values in the country's economies, from its former position where other industrial sectors are sub-sectors. Sports has taken an essential place in the world market today.

Today, sports have become an activity with economic potential. It has taken a great place in the tourism and media fields of the countries, especially in recent years. For this reason, it has been one of the crucial elements of both economic and social life. Therefore, it has a complementary relationship with other sectors. Sport has taken a prominent place not only in sports events but also in activities around sports events by staying out of the fields. Sports activities have become a sector that includes advertising, promotion and promotional activities. In this regard,

investments in sports organizations and athletes have increased day by day. This led to a further understanding of the economic effects of sports. Shortly, countries are making more significant efforts to bring large sports organizations to their countries, as they are aware of the contribution of the sports sector to the GNP of the country's economies. In the study, the satisfaction of participants of the Istanbul Marathon is compared with the cost items spent during the organization. As a result of the survey results, the opinions of non-resident and resident participants are compared.

Non-resident participants mostly chose the "I would like to recommend the event to someone else" variable, whereas resident participants preferred the "I was satisfied with the event operation process" variable. While the non-resident participants selected the variables "I was satisfied with the event operation process", "I was pleased with the attitude and behavior of the officials", "I was satisfied with security services", resident participants selected "I was pleased with the attitude and behavior of the officials" and "I will participate again". Non-resident participants determined the most necessary elements of the organization's cost items as "Start and finish organizations are required", while resident participants preferred the "Timing System is required". Moreover, other answers of the non-resident participants are respectively as "Press conference organizations are required", "Timing System is required", "Bib number is required" variables. In contrast, resident participants answers are respectively as "Sponsorship activities are required", "Start and finish organizations are required", "Free transportation to the start area" is required.

While the variable "I would like to recommend the event to someone else" was the highest rate of the non-resident participants with the 76%, the variable "I will participate again" was the lowest rate of the non-resident with 42%. World Marathons (29) which is an online marathon registration service provider, found that the primary motivation for the runners to participate in the Event compared to 66.30% was to discover new cities through Marathon. This study similar to the survey of the World Marathons. In resident participants, the variable "I was satisfied with the event operation process" was the highest rate with the 87.4%, while the variable "I was satisfied with toilet facilities" was the lowest rate of the resident with 44%. When we compare the resident and non-resident groups in terms of participant satisfaction, the most dominant first three variables in both groups were the essential factors in both groups. Toilet services were the most satisfying service in both groups. The dissatisfaction of foreigners regarding the registration process of the Event may be the payment problems experienced during online registration. The variable of "I will participate again" is not dissatisfaction, because

the participants coming from abroad to participate in the Event like sports tourism. Organizers should ensure that non-resident participants have good event experience and recommend the Event to other participants.

The highest expenditure items of the Istanbul Marathon organized by the Istanbul Metropolitan Municipality were also discussed. The most dominant variable among non-resident participants in the cost items in the event process was the start and finish organizations with 82%. The other two dominant factors were press conference and chip services. Resident participants were found to chip service with 91% of the dominant group. Although the chip service is less costly than the installation of the start and finish organizations, this service is a fundamental issue for the resident to make the race fair and transparent. Therefore, it is expected that this variable will be the dominant variable for resident people.

Prize money is the least dominant variable in the cost process in both non-resident and resident groups. In prize money, it has 47% in the non-resident group and 49% in the resident group. Çetin (30)'s study indicates that the highest factor motivating triathletes' participation in the Ironman Events were life satisfaction and achievement perception. Similarly, Çetin and Özman's (3) study found that there was a significant relationship between the sub-dimensions of the self-esteem, psychological coping and life meaningfulness with male ultra-marathoners.

Similarly, bags distribution appeared as the second-lowest variable in both groups. Race bags service in a non-resident group has 58% importance, while the resident group has 74.5%. Even though the participants are considered to have a lower importance than other variables, the organizer distributes these bags to the participants both for luggage bus operation and safety measures. However, the organizer may implement a cost leadership strategy for this cost item. In general terms, the sponsorship activities and press conference variables placed similar importance when the costs of both groups in the marathon process are analyzed. Therefore, the perceived costs of the organizer by both groups are consistent with the two variables above.

While the answers about sponsorship have the third-lowest density with 59% in the non-resident group and the second highest variable in the resident group with 90%, generally, this kind of sports events are carried out by private sector, and public support may not be vital for foreign participants. Because sporting events are often done with public support in Turkey, the perception of citizens can be regarded as usual. The press conference was determined as the second-highest variable in non-resident with 80%, while it was the third most crucial cost item in resident with 75%. It can be concluded that they attach more importance to the publications published in the press

about the events that the participants will participate abroad. As a result, cost items spent within the scope of the Istanbul Marathon were evaluated by both resident and non-resident participants; it was determined that the lowest factor in both groups was the prize money. The requirement of all other cost items perceived by both resident and non-resident participants between 59% and 91%.

CONCLUSION

In conclusion, the cost items spent within the scope of the Istanbul Marathon were evaluated by both resident and non-resident participants; it was determined that the lowest factor in both groups was the prize money. The requirement of all other cost items perceived by both resident and non-resident participants is over 50%. Therefore, the local government-sponsored the Marathon was supported by both non-resident and resident participants, where the principal expenditure items were required.

REFERENCES

- Hoffman MD, Ong JC, Wang G. Historical analysis of participation in 161 km ultramarathons in North America. *Int J Hist Sport*. 2010;**27**(11):1877-1891. doi: 10.1080/09523367.2010.494385 pmid: 20684085
- Hoffman MD, Krouse R. Ultra-obligatory running among ultramarathon runners. *Res Sports Med*. 2018;**26**(2):211-221. doi: 10.1080/15438627.2018.1431533 pmid: 29378427
- Çetin A, Özman C. Runners' motivational dimensions for participation in the ultra-marathon events and the comparison of these factors with their life satisfaction and success perceptions *Sportmetre Beden Eğitimi ve Spor Bilimleri Dergisi*. 2019;**17**(2):177-187.
- Gratton C, Shibli S, Coleman R. Sport and Economic Regeneration in Cities. *Urb Stud*. 2016;**42**(5-6):985-999. doi: 10.1080/00420980500107045
- Papanikos GT. The real exchange rate of euro and Greek economic growth. *J Econ Asymmetries*. 2015;**12**(2):100-109. doi: 10.1016/j.jeca.2015.04.002
- Gibson HJ. Sport Tourism: A Critical Analysis of Research. *Sport Manage Rev*. 1998;**1**(1):45-76. doi: 10.1016/s1441-3523(98)70099-3
- Ross D. Developing Sports Tourism. An eGuide for Destination Marketers and sports Events Planners, National Laboratory for Tourism and eCommerce. University of Illinois at Urbana Champaign: University of Illinois at Urbana Champaign; 2001.
- Robinson T, Gammon S. A question of primary and secondary motives: revisiting and applying the sport tourism framework. *J Sport Tourism*. 2007;**9**(3):221-233. doi: 10.1080/1477508042000320223
- Kasimati E. Economic aspects and the Summer Olympics: a review of related research. *Int J Tourism Res*. 2003;**5**(6):433-444. doi: 10.1002/jtr.449
- Matheson V. Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies. *Int Assoc Sports Econ*. 2006.
- Kim W, Jun HM, Walker M, Drane D. Evaluating the perceived social impacts of hosting large-scale sport tourism events: Scale development and validation. *Tourism Manage*. 2015;**48**:21-32. doi: 10.1016/j.tourman.2014.10.015
- Kaplanidou K, Karadakis K, Gibson H, Thapa B, Walker M, Geldenhuys S, et al. Quality of Life, Event Impacts, and Mega-Event Support among South African Residents before and after the 2010 FIFA World Cup. *J Trav Res*. 2013;**52**(5):631-645. doi: 10.1177/0047287513478501
- Roche S, Spake DF, Joseph M. A model of sporting event tourism as economic development. *Sport Busin Manage Int J*. 2013;**3**(2):147-157. doi: 10.1108/20426781311325078
- Wilson JK, Siegfried JJ. Who Sits in Australia's Grandstands? *J Sports Econ*. 2016;**19**(3):389-397. doi: 10.1177/1527002516656728
- Castro SBEd, Starepravo FA, Coakley J, Souza DLd. Mega sporting events and public funding of sport in Brazil (2004–2011). *Leis Stud*. 2015;**35**(3):369-386. doi: 10.1080/02614367.2015.1037789
- Mitchell H, Stewart MF. What should you pay to host a party? An economic analysis of hosting sports mega-events. *Appl Econ*. 2015;**47**(15):1550-1561. doi: 10.1080/00036846.2014.1000522
- Conejo RA, Pino JB, Dominguez JFC, Guerrero PR. The economic impact of football on the regional economy. *Int J Sport Manage Mark*. 2007;**2**(5/6). doi: 10.1504/ijsmm.2007.013961

APPLICABLE REMARKS

- Local governments have a responsibility to their citizens-taxers. Therefore, it is recommended for local governments to analyze spending for sports events in terms of transparency and accountability with similar studies.
- Non-resident participants consider mass events as sports tourism activities. Therefore, local administrations can make an extra contribution to the local economy by promoting mass sports events in international markets in cooperation with tourism agencies.
- Organizers need to set their priorities to determine prize money in the scope of elite athletes and recreational runners.
- Local governments should continue to support mass sports events both as sponsors and organizers.

18. Turco DM. Host Residents' Perceived Social Costs and Benefits Toward a Staged Tourist Attraction. *J Trav Tourism Mark.* 1997;7(1):21-30. doi: [10.1300/J073v07n01_02](https://doi.org/10.1300/J073v07n01_02)
19. Preuss H. Calculating the regional economic impact of the olympic games. *Eur Sport Manage Q.* 2004;4(4):234-253. doi: [10.1080/16184740408737479](https://doi.org/10.1080/16184740408737479)
20. Frechtling DC, Horváth E. Estimating the Multiplier Effects of Tourism Expenditures on a Local Economy through a Regional Input-Output Model. *J Trav Res.* 2016;37(4):324-332. doi: [10.1177/004728759903700402](https://doi.org/10.1177/004728759903700402)
21. Leontief W. Input-Output Analysis. The New Palgrave Dictionary of Economics; 1987. p. 1-8.
22. Kim MK, Kim S-K, Park J-A, Carroll M, Yu J-G, Na K. Measuring the economic impacts of major sports events: the case of Formula One Grand Prix (F1). *Asia Pacific J Tourism Res.* 2016;22(1):64-73. doi: [10.1080/10941665.2016.1176061](https://doi.org/10.1080/10941665.2016.1176061)
23. Aydoğuş PDO, Değer APDÇ, Tunalı Çalışkan E, Gürel Günel Gl. Regional Input-Output Analysis of A Mega-Event: Possible Impact of EXPO on Izmir Economy. *Anadolu Üniversitesi Sosyal Bilimler Dergisi.* 2015;15(2). doi: [10.18037/ausbd.62788](https://doi.org/10.18037/ausbd.62788)
24. Li S, Jago L. Evaluating economic impacts of major sports events – a meta analysis of the key trends. *Curr Issu Tourism.* 2013;16(6):591-611. doi: [10.1080/13683500.2012.736482](https://doi.org/10.1080/13683500.2012.736482)
25. Turan İ, Şimşek Ü, Aslan H. The Use and Analysis of Likert Scales and Likert-Type Items in Educational Research. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi.* 2015(30):188.
26. Mert M. Yatay Kesit Veri Analizi Bilgisayar Uygulamaları. Ankara: Detay Yayıncılık; 2016.
27. Kalaycı Ş. SPSS Uygulamalı Çok Değişkenli İstatistik Teknikleri. 7. bsk: Asil Yayın Dağıtım Ankara, Turkey; 2016.
28. Büyüköztürk Ş. Faktör analizi: Temel kavramlar ve ölçek geliştirmede kullanımı. *Kuram ve uygulamada eğitim yönetimi.* 2002;32(32):470-483.
29. Presentations erbc 2019 2019 [cited 2020]. Available from: <http://www.erbc2019.com/presentations.html>.
30. Çetin A. Triathletes' Motivational Dimensions for Participation in Ironman, and Comparison of these Factors with Their Life Satisfaction and Achievement Perceptions. *Int J Hum Mov Sports Sci.* 2019;7(3):43-50. doi: [10.13189/saj.2019.070301](https://doi.org/10.13189/saj.2019.070301)