

STUDY REGARDING THE CORRELATION BETWEEN THE NUMBER OF PARTICIPANTS, THE NUMBER OF SPORTS, AND THE NUMBER OF COUNTRIES PARTICIPATING IN THE SUMMER OLYMPIC GAMES

Article DOI: <https://doi.org/10.35219/efms.2018.1.02>

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Abstract

Sports are some of most dynamic social activities aimed to perfect the human being. For this reason, the specialists' preoccupation to periodically conduct prognosis analyses for spotting the sports' evolution tendencies, seems justified.

This paper aims to emphasize the way in which the International Olympic Committee, through a positive policy and a good management has managed over the course of 114 years to become the largest international organization, surpassing from this point of view the United Nations.

This study observed three components - the number of participants, the number of countries, and the number of sports in the program of the Olympic Games throughout time.

The results of the research highlight the relatively ascendant evolution of the number of participants, with the mentioned synopses, and the fact that the 241 participants in the first edition of the Olympics changed into 11238 participants in the last edition in 2016.

Key words: correlation, sports, countries, Olympic Games

1. Introduction

Compared to its origins, the Olympic Games are not organized in the same country anymore, they do not belong to a single gender anymore, today they are accessible to women, all athletes in the world being able to participate, regardless of their nationality, race, or religion. They have become a planetary holiday, which people would like to be permanent. Unfortunately, this is impossible because, as Ilie Goga in his book *The Heroes of The Olympic Games*, there is still injustice and misery in the world, there are still enslaved and divided nations. But the Olympic Games, through the energy with which they combine the equity and the value criteria, shows that this permanent holiday is still possible (Ababei, C., 2007).

Sports are some of most dynamic social activities aimed to perfect the human being. For this reason, the specialists' preoccupation to periodically conduct prognosis analyses for spotting the sports' evolution tendencies, seems justified. I'm referring, in particular, to top professional sports, with its social role that has continuously amplified, a phenomenon that made some authors think that this peak will be followed by an imminent fall. (Ababei, R., 2006)

Over the last decades, sports have evolved in society, from a way to pass leisure time to a major industry, with a direct contribution to the increase of social wellbeing, through the effects of socialization that it generates, through the improvement of the biological condition of the members of society, through the ways of passing one's leisure time, and through the improvement of the economy, by bringing incomes, jobs, and local, regional, and national economic development.

The success of the Games can be attributed to a number of significant factors. Despite the enthusiastic support, in many cases of entire countries, or governments, one can speak of three main factors for the success of the Games: the openness of the governments, the recognition of the fundamental role of the Games' Organizing Committee by delegating many of the attributions of the national Olympic committee and organizing certain "test games" with the national athletes to "train" the officials and the volunteers, and to verify the technical installations, for the best possible development of the Games.

2. Research purpose, subject and methods

This paper aims to highlight the ascendant organizational progress of the modern Olympic Games, trying to underline the interdependence between the number of given medals and the number of competing athletes.

Also, this paper aims to emphasize the way in which the International Olympic Committee, through a positive policy and a good management has managed over the course of 114 years to become the largest international organization, surpassing from this point of view the United Nations.

This study started from the hypothesis stating that one can establish a correlation between the number of participants, the number of events, and the number of sports comprised in the Summer Olympic Games throughout the years.

The research methods used were: the historical method, by consulting the data referring to the quantitative aspects of the organization of the Olympic Games (Olympic.org), and the statistical-mathematical method to establish the correlation coefficient between the three analyzed components - the number of participants, the number of sports, and the number of countries in the Summer Olympic Games, starting with their first edition, in Athens, 1896, up to the last one, the 31st, in Rio de Janeiro, 2016.

3. Results and Discussions

This study observed three components - the number of participants, the number of countries, and the number of sports in the program of the Olympic Games throughout time, results presented in table 1.

Table 1. The number of participants, the number of countries, and the number of sports in the program of the Olympic Games

Year	No. Participants	No. countries	No. sports
1896	241	14	43
1900	997	24	95
1904	651	12	95
1908	2008	22	110
1912	2407	28	102
1920	2622	29	156
1924	3088	44	126

Year	No. Participants	No. countries	No. sports
1928	2883	46	109
1932	1334	37	117
1936	3963	49	129
1948	4104	59	136
1952	4955	69	149
1956	3314	72	151
1960	5338	83	150

Year	No. Participants	No. countries	No. sports
1964	5152	93	163
1968	5516	112	172
1972	7134	121	195
1976	6084	92	198
1980	5179	80	203
1984	6829	140	221
1988	8397	159	237

Year	No. Participants	No. countries	No. sports
1992	9356	169	257
1996	10318	197	271
2000	10651	199	300
2004	10625	201	301
2008	10942	204	302
2012	10568	204	302
2016	11238	207	306

Figure 1 presents the evolution of the number of participants in the Summer Olympics, from the first edition to the last.

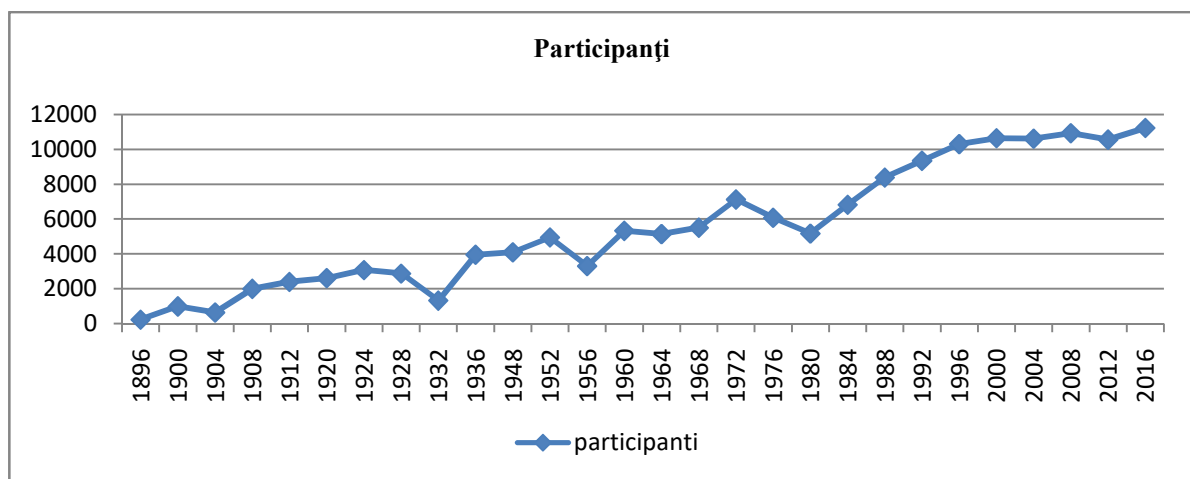


Figure 1 Evolution of the number of participants in the Summer Olympics

The analysis of the figure shows a quasi-ascendant evolution of the number of participants in the Summer Olympics, however there are syncopes due to various reasons that this author will try to explain as follows:

A first drop in the number of participants can be noticed in the 3rd edition of the Games, at St. Louis, USA. The reduced number of participants can be explained by the historical conditions of the time, trans-oceanic traveling being possible only by boat, this taking up to three weeks. This kind of travel was also quite expensive, and the third class passengers were complaining of sea sick. This can explain why the Games could be attended only by wealthy Europeans, especially westerners, for who the travel was reduced to a week.

There was an ascending progress up to 1924, then between 1928 and 1932 there was another drop in the number of participants. In 1928, the reduction in relation to the previous edition is of 205 participants, this being caused by the relatively low capacity of the city of Amsterdam, the athletes being lodged on ships anchored in harbors, or on the city canals.

A significant drop is recorded in 1932, when the Olympics are organized again on American soil, and although the time to cross the ocean was now of about 10 days, not many Europeans wanted to start an expensive and tiring journey to participate in the Games.

Between 1936 and 1952 there was an ascension in the number of athletes participating in the Olympics, but it must be said that two editions of the Games did not take place because of World War 2.

In the ascending evolution of the number of participants, there are only two other synopses, one in 1956, at the 16th edition, in Melbourne, when the distance and the specificity of Australia reduced the number of participating athletes. It must be said that because Australia is a continent where people and animals lack immunity to certain European diseases, the IOC decided to organize the equestrian competition in Stockholm, the Australian government at that time not permitting the European horses to set foot in the country, fearing the risk of a pandemic. Even today, introducing unauthorized foods on Australian soil constitutes an offense that is severely punished.

The second synopsis is recorded during the 22nd edition of the Games, when the democratic countries have boycotted the Olympics because of the USSR invasion of Afghanistan, this causing a sporadic participation from the Western European athletes.

The results of the research highlight the relatively ascendant evolution of the number of participants, with the mentioned synopses, and the fact that the 241 participants in the first edition of the Olympics changed into 11238 participants in the last edition, of 2016.

Figure 2 presents the evolution of the number of countries participating in the Summer Olympics, from the first edition to the last.

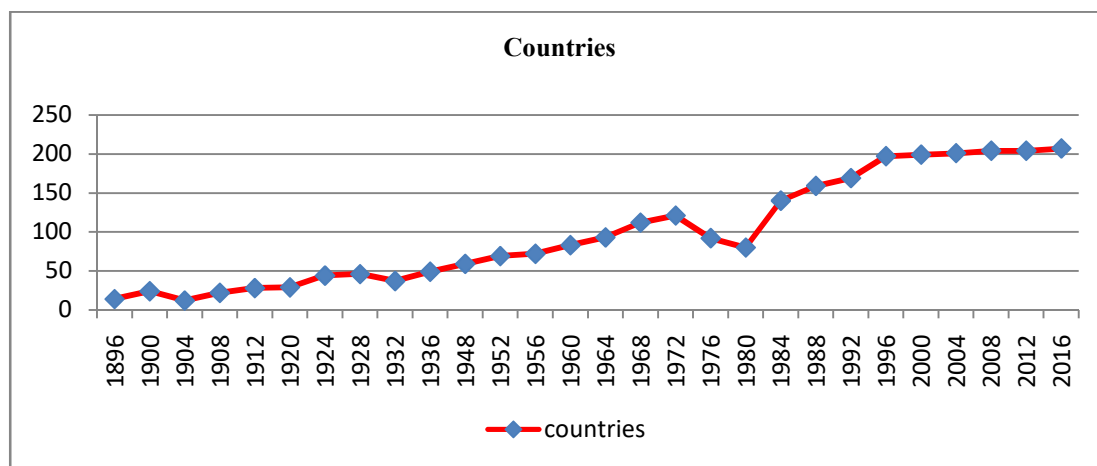


Figure 2 Evolution of the number of countries participating in the Summer Olympics

The analysis of the number of participating countries to the Summer Olympics follows generally the tendency of the number of participating athletes, the synopses being recorded during the 1904, 1932 and 1980 editions, the causes being the same as in the case of the athletes (Figure 1).

It can be said that starting with 1996 one can speak of a certain consistency in the number of participating countries, arriving at an average number of 200, with variations of a few countries. This is due also to a relative stabilization of the number of states worldwide, as opposed to the 1990s, when new states were created, as a result of the fall of the Iron Curtain, the dissolution of the USSR and Yugoslavia, which only they have brought in the IOC no less than 13 new states.

The evolution of the events in the Summer Olympics is presented in Figure 3.

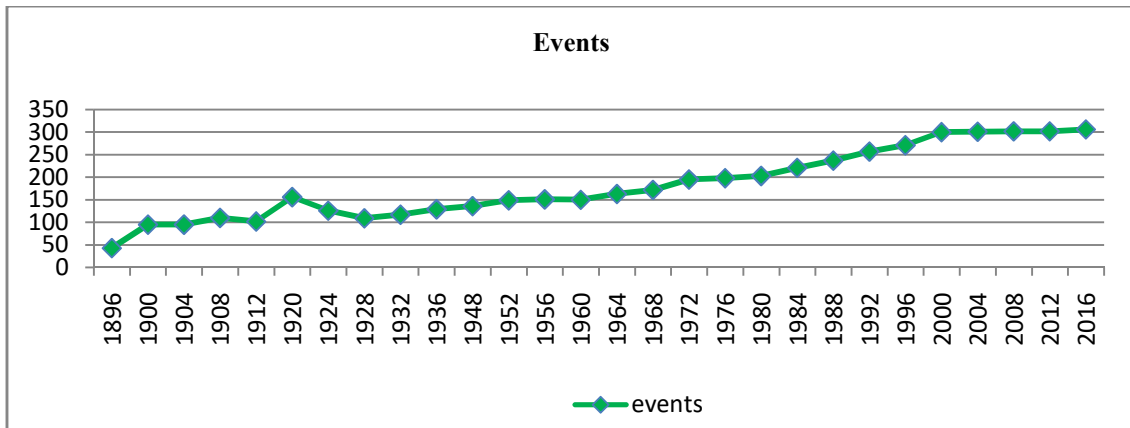


Figure 3. Evolution of the events in the Summer Olympics

The analysis of figure 3 highlights another dynamics than the one recorded in the other two studied components. Thus, one can see that over the course of time, there is a permanently ascending progress, followed by stabilization, starting with the year 2000, when a maximum bearable point has been reached from an organizational viewpoint - approximately 300 events. Considering what has been said above, there are discussions in the IOC about their intent to give up some classic Olympic sports (wrestling, boxing), to make room for new sports that are more popular (GSP, 2013, Reuters, 2018).

One can notice that from 43 sports in the inaugural edition of Athens, 1896, it got to 306 in the last edition of the Games. This spectacular growth generates organizational problems, from the point of view of the infrastructure that must be made available, and of the actual time for the competitions, which is always limited. Thus, some sports start the competition, most of the times the qualifications, before the official opening of the Games, which is considered to be the most viewed television broadcast in the world.

The correlation indices between the 3 studied factors were calculated. Table 2 presents the calculated correlation indices, and figures 4, 5, and 6 represent the correlation between the factors.

Table 2 The Pearson correlation between the studied indices

		No_participants	No_countrie s	No_sports
No_participants	Pearson Correlation	1	.985**	.975**
	Sig. (2-tailed)		.000	.000
	N	28	28	28
No_countries	Pearson Correlation	.985**	1	.970**
	Sig. (2-tailed)	.000		.000
	N	28	28	28
No_sports	Pearson Correlation	.975**	.970**	1
	Sig. (2-tailed)	.000	.000	
	N	28	28	28
**. Correlation is significant at the 0.01 level (2-tailed).				

Statistically, the correlation index 0.985, $p < 0.01$ indicates a direct positive correlation between the number of countries and the number of participants, meaning that the number of participants increases with the number of countries. The positive linear dependency is presented in Figure 4.

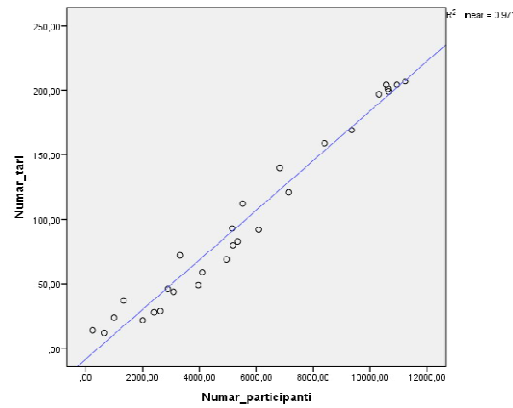


Figure 4 The positive linear dependency between the number of participants and the number of countries

The correlation index 0.975, $p < 0.01$ indicates a direct positive correlation between the number of participants and the number of sports, meaning that the number of sports increases with the number of participants. The positive linear dependency is presented in Figure 5.

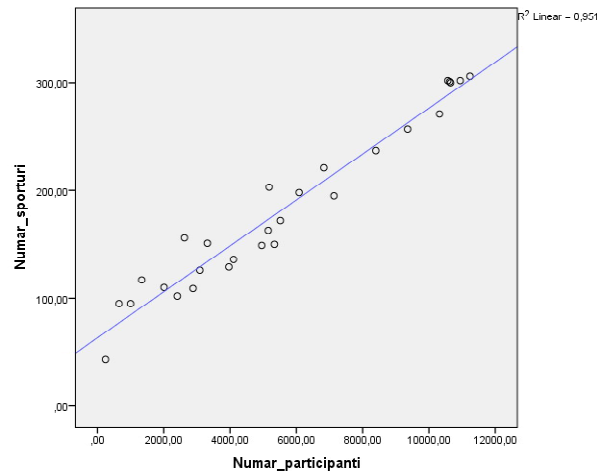


Figure 5 The positive linear dependency between the number of participants and the number of sports

The correlation index 0.970, $p < 0.01$ indicates a direct positive correlation between the number of countries and the number of sports, meaning that the number of sports increases with the number of countries. The positive linear dependency is presented in Figure 6.

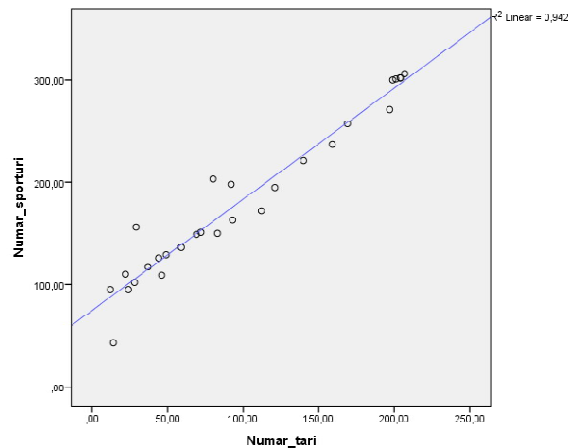


Figure 6 The positive linear dependency between the number of countries and the number of sports

4. Conclusions

The calculated correlation indices confirm the working hypothesis, in the sense that there is a tight significant positive correlation between the three factors taken into consideration.

It can be said that, from an organizational standpoint, the Olympics are close to reaching the maximum limit of bearability, mainly in regards to the existing events, the International Olympic Committee drastically tightening the qualification criteria. In this context, Pierre de Coubertin's saying, "what's important is to participate," becomes even more current as the simple participation in the Olympic Games involves extremely restrictive series of qualification.

In regards to the participating countries, one can say that their number will not increase significantly, considering the current geopolitical situation.

Not in the least, one must emphasize the fact that in calculating the organizational effort for the Games, one must take into consideration also the mass media and the technical staff of the delegations, making the number of the actual participating persons to be higher than the number of athletes, a real image being given also by the number of volunteers and of the security people, which makes the Olympic Games the amplest organized manifestation in the world.

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