

The Participation Legacy at Olympic Games

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The legacy of participating in Olympic Games has not been extensively researched when it is compared with the huge literature of bidding/hosting Olympic Games and the determinants of Olympic success and failures in winning Olympic medals. This paper addresses this issue descriptively by emphasizing the need to do more theoretical and empirical research to explain why so many countries and athletes participate at the Olympic Games even though they have no chance of winning any medal and/or bid and host future Olympic Games. Apart from the personal joy of the participating athlete and the national pride of a participating country, one possible additional explanation might be the human capital generated by participating which can be used to promote youth and grassroots sport participation. The extent that this has been used by national sports policy authorities is suggested to be the subject of future empirical research.

Keywords: *Olympic Games, sports participation, cost-benefit analysis, Olympic legacy, Olympic medals, national sports policy*

Introduction

In the Olympic Games literature, two issues have dominated the relevant field of study. Firstly, the costs and benefits of hosting Olympic Games have been thoroughly examined. Why do countries want to host mega events such as Olympic Games? Numerous explanations have been offered. From an economic point of view, there is a dichotomy of findings. Baade and Matheson (2016) persuasively argue that it is a waste of taxpayers' money. They concluded that "the Olympic Games as currently conducted are not economically viable for most cities. The most important reasons include infrastructure costs relating to the venues hosting the events; the monopoly rents that flow to the International Olympic Committee, poor management, corruption, and the specter of unreasonable and unrealizable economic expectations for the host city and nation. Concerns about costs are nothing new" (pp. 214–215).

Kasimati (2003) has provided a concise review of these studies which included post-Olympic use of sports venues. More recently, Kasimati (2015) examined the post-Olympic use of the Athens-2004 Olympic venues while Ziakas and Boukas (2014) examined the legacy of the 2004 Olympic to develop sports and tourism in a post-Olympic Athens and Greece. On the other hand, Costas (2017) using the 2012 Olympic Games looked at the legacy the games left to youth participation in swimming. Many studies looked at the Olympic legacy itself in terms of culture (community and individual values), social and political pattern

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of behaviour, development of institutional structures and physical infrastructures and in general enhancing the quality of life. Máté (2018) is an example of such an empirical study.

The second strand of this research relates to the medals won by participating countries at the Olympic Games. What are the determinants of success and failure at Olympic Games? Success/failure is measured by the number of absolute or relative medals won qualified to the number of medals expected to win before the games. There is a huge literature which addresses this question. Population size, strength of the economy, political systems, cultures, geography, national sports policy (e.g., government spending on sports) and many other variables have been included in the list of determinants. Allegedly, successes at Olympic Games increase citizens' welfare and therefore taxpayers are willing to pay more for preparing and participating at Olympic Games. Bakkenbüll and Dilger (2020) and Humphreys et al. (2020) are recent examples of such studies. As a corollary, this literature includes studies which aim at increasing the performance of athletes at Olympic Games and therefore increase their chance to become Olympic champions. Ortiz et al. (2020) and Stefani (2017) are examples of such studies. It is not the objective of this paper to examine these determinants of Olympic successes/failures.

Most of participating countries have no chance of either ever hosting Olympic Games or ever winning any Olympic medal in the near future. It is difficult to explain why these countries do participate given that winning no medals might be interpreted as a failure and therefore as a national disgrace. Being there which is the essence of participating at Olympic Games seems not to be a high priority in setting the research agenda of Olympic Games studies. It is really surprising that there is a dearth of research in explaining why do countries participate when the probability of winning even one medal is zero. I was not able to find any single study which examined this non-trivial issue. The literature is dominated by bidding to host the Olympic Games or to analyze the determinants of winning more medals. Of course, this literature relates legacy to participation but only for countries which host the games and/or win medals. The term post-Olympic strictly applies to hosting cities (countries) and not to participating countries. Similarly, the term applies to post-Olympic development of a particular sport but only in cases that a country won medals in this sport. There is a dearth of research for all other cases of countries which neither hosted the games nor won medals.

This descriptive paper aims at pointing out the absence of such research by emphasizing that this issue is of concern of the majority of participating countries at Olympic Games which win no medals. It is even more important for the thousands of athletes who participate without any hope of winning a medal. They exert huge effort and sometimes use scarce personal financial resources to just be there. Why do participate? What is the utility (satisfaction) derived from such a participation? Is it only a consumption good such as going to a party? Being there in the opening and closing ceremonies with their country uniform, label and flag is one possible answer but, still, is this sufficient given the disutility obtained by failing to win a single medal which in the eyes of the participating nation's citizens would be considered as a failure? The issue that participation per se might have its

own value seems not to be a main issue. However, in this paper an attempt is made to bring this issue at the forefront by making a call for more empirical research to discern why countries and athletes participate when all odds are against them in winning medals.

This paper is organized in five sections including this introduction. The second section sketches a theoretical framework which can be tested empirically using a country by country analysis. This section addresses the question of what are the benefits of participating when the chances to win medals are zero. The third section is using data from all previous summer Olympic Games to demonstrate the extent of the number of countries which have participated in all previous Olympic Games without winning any medal. Despite this the number of participating countries increases along with the number of sports included in the games and therefore the number of medals awarded. The fourth section outlines the elements of such empirical research. The last section concludes.

A Theoretical Sketch

Participating at Olympic Games entails costs and benefits. The costs are aggravated when the probability of success is almost zero. On the other hand, non-participation may entail more costs and less benefits. Then the decision to participate may be expressed with the following utility function:

$$U_p = (B_p, B_{np}, C_p, C_{np})$$

where U_p : the participating country's utility at the Olympic Games; B_p : the benefits from participating; B_{np} : the benefits of non-participating; C_p : the cost of participating and C_{np} : the cost of non-participating.

If all costs and benefits were monetized, then the decision to participate is a simple one and can be expressed with the following arithmetic expression:

$$B_p - C_p > B_{np} - C_{np}$$

This inequality states that if and only if the net benefits of participating exceed the net benefits of non-participating then the country may decide to participate with a team bearing its flag. If the opposite holds, then the country is better off not to participate. The fact that more and more countries participate shows that the above inequality holds by Paul Samuelson's revealed preference theory: the bundle of commodities of participation is preferred to the bundle of commodities of non-participation at the Olympic Games. This sketch can be further developed into a general theory of participation at Olympic Games.

The above conceptualization is straightforward and can be easily understood if the costs and benefits have a monetary value using either market and/or shadow prices. For example, the money cost of participating is easily calculated. However,

the other costs and benefits are non-monetary such as national pride. In such cases, it might be useful to apply a direct measure of utility using the contingency evaluation method, i.e., citizens are asked how much satisfaction derive from their country's participation at the Olympic Games. Many studies have applied this method in different contexts. Humphreys et al. (2020) is a recent example of applying this method to Olympic Games with reference to Canada. Papanikos (2003) applied it to evaluate the post-Olympic use of the Athens-2004 Olympic venues. This method has been also applied to environment (see for an example the study by Dardanoni and Guerriero 2021), culture (Wiśniewska et al. 2020), health (Himmler et al. 2020), water quality (Keeler 2020), transportation (Hsu 2020), tourism (Lissner and Mayer 2020) and in many other areas.

Nevertheless, one of the original contributors to this method in the 1990s (see Diamond and Hausman 1994) claimed that the contingency evaluation method is hopeless. In his own words, Hausman (2012, p. 43) stated that "I have concluded ... that contingent valuation is hopeless. ... I find that three long-standing problems continue to exist: 1) hypothetical response bias that leads contingent valuation to overstatements of value; 2) large differences between willingness to pay and willingness to accept; and 3) the embedding problem which encompasses scope problems". In an accompanying paper in the same issue Kling et al. (2012) addressed all these three issues.

I do think that there is hope in evaluating the cost and benefits of bidding/hosting Olympic Games and participating at the Olympic Games. After all there is a direct way of deciding through a referendum. Direct democracy is the best solution in countries with well-developed democratic institutions and long history of making decisions through this mechanism. For example, in countries like the USA, there is no experience of direct democracy through referendums at the federal level albeit such experiences do exist at the state and county level.

But for countries as large as the USA, the benefits and costs of participation are easily measured. The monetary cost can be evaluated since the private sector through sponsoring finances the individual athletes and sports federations participation. Thus, the monetary cost is fully covered. On the other hand, the benefits can be monotonically measured by the number of medals won. Similarly, to the USA, other advanced countries face similar conditions.

Smaller and less developed countries have neither the resources nor the elite athletes to participate and compete at Olympic Games. In this case for reasons not examined in this study the International Olympic Committee (IOC) steps in and finances the participation of such smaller countries or group of athletes (e.g. refugees) because the IOC considers as success the number of participating countries and the number of competing athletes. They simply add countries and popular sports in order to maximize their revenue and other objectives.

Most Countries and Even More Athletes Do Not Win Medals at Olympic Games

The determinants of winning medals have been extensively examined in the relevant literature. It goes beyond the purpose of this paper to refer to them. Athletes and countries compete for medals but most athletes and most countries will return home without any medals in their suitcases. However, most of them are happy that they were there. In the remaining of their lives will remember with joy their participation. They will proudly tell their children, grandchildren and many others that once they competed at Olympic Games. These people make up the human capital of each country who can be used to promote sports participation at the youth and grassroots level.

Table 1 should be seen from this perspective. According to this viewpoint, the number of athletes who have been participating at Olympics has been increasing even though not at a constant rate. Up to the 1960s, distance was an important determining factor. However, given the decrease in the cost of transportation more athletes have been participating but the Games have suffered from boycotts such as the 1980 and the 1984 games. Despite all these, the number of athletes has doubled in the last fifty years. From just over 5,000 athletes in the 1960s to more than 10,000 in the last decades. It seems that the number of athletes has stabilized over 10,000. As reported by IOC, in the last (2016) games a record number of 11,238 athletes participated. This number of athletes is the legacy of the Olympic Games. These are the ones who make up the human capital and returning back to their country, they should use their experience to promote youth and grassroots participation.

The number of athletes has been increasing for three reasons. Firstly, countries have a tendency to send more and more athletes yielding to the tremendous pressure from athletes to be part of their national Olympic team. This is a global phenomenon. Secondly, more and more countries are added to the list of participating nations resulting to an increase in the number of participating athletes. Thirdly, more and more games are added to the list of Olympic sports.

However, the increasing number of countries participating at the Olympic Games cannot increase indefinitely. There is an upper limit given by the existing number of countries. Similarly, the number of medals awarded cannot increase without any bound. Many sports events have been added which have inflated the number of medals from 122 medals in the 1896 Olympic Games to 973 medals in 2016.

After the 1960 Olympic Games, less than half of the participating countries did not return home with even one single medal. Four-fifths of the countries do come home with at least one medal. In the last Olympic Games of 2016, a record number of countries participated (207) and 86 (42% of the total) won at least one medal. Despite the increase in medals, the number of medals per participating athlete has declined. In the 1896 games, the ratio of medals per one hundred participating athletes was 50.6. Since then, this ratio has been declining reaching 8.7 medals per one hundred athletes in the 2016 Olympic Games. If one takes into consideration that one athlete may win two or more medals, then more than 90%

of participating athletes return home without a medal. Based on their pre-Olympic personal records, most athletes had no chance of winning a medal.

A final note on Table 1 relates to the number of cities/countries which have hosted previous Olympic Games. The total number of countries which hosted Olympic Games is only 10% of the total countries which participated at the last Olympic Games of 2016. 20 countries and 23 cities organized all previous 28 Olympic Games from 1896 to 2016. Some cities/countries organized the games two or three times.

Table 1. *Countries, Athletes and Medals in the Olympic Games, 1896–2016*

G	Year	City	Country	TPC	TCWM	TNA	TNMA	TCWM/ TPC	TNMA/ TNA
1	1896	Athens	Greece	14	11	241	122	78.57%	50.6
2	1900	Paris	France	24	21	997	286	87.50%	28.7
3	1904	St. Louis	United States	12	10	651	280	83.33%	43.0
4	1908	London	United Kingdom	22	19	2008	324	86.36%	16.1
5	1912	Stockholm	Sweden	28	18	2407	310	64.29%	12.9
6	1920	Antwerp	Belgium	29	22	2622	439	75.86%	16.7
7	1924	Paris	France	44	27	3088	378	61.36%	12.2
8	1928	Amsterdam	Netherlands	46	33	2883	327	71.74%	11.3
9	1932	Los Angeles	United States	37	27	1334	346	72.97%	25.9
10	1936	Berlin	Germany	49	32	3963	388	65.31%	9.8
11	1948	London	United Kingdom	59	37	4104	411	62.71%	10.0
12	1952	Helsinki	Finland	69	43	4955	459	62.32%	9.3
13	1956	Melbourne	Australia	72	38	3314	469	52.78%	14.2
14	1960	Rome	Italy	83	44	5338	461	53.01%	8.6
15	1964	Tokyo	Japan	93	41	5151	504	44.09%	9.8
16	1968	Mexico City	Mexico	112	44	5516	527	39.29%	9.6
17	1972	Munich	West Germany	121	48	7134	600	39.67%	8.4
18	1976	Montreal	Canada	92	41	6084	613	44.57%	10.1
19	1980	Moscow	Soviet Union	80	36	5179	631	45.00%	12.2
20	1984	Los Angeles	United States	140	47	6829	688	33.57%	10.1
21	1988	Seoul	South Korea	159	52	8397	739	32.70%	8.8
22	1992	Barcelona	Spain	169	64	9356	815	37.87%	8.7
23	1996	Atlanta	United States	197	79	10318	842	40.10%	8.2
24	2000	Sydney	Australia	199	80	10651	927	40.20%	8.7
25	2004	Athens	Greece	201	74	10625	927	36.82%	8.7
26	2008	Beijing	China	204	87	10942	958	42.65%	8.8
27	2012	London	United Kingdom	204	86	10568	959	42.16%	9.1
28	2016	Rio de Janeiro	Brazil	207	86	11238	973	41.55%	8.7

TPC: Total Participating Countries; TCWM: Total Countries Winning Medals; TNA: Total Number of Athletes; TNMA: Total Number of Medals Awarded per 100 participating athletes.

The literature has examined the costs and benefits of both bidding and hosting cities/countries. However, this is a very small issue of what is at stake at the Olympic Games. The number of participating countries and the number of participating athletes is more important. After all, the tremendous publicity of

Olympic Games is not because a specific city hosts the games but because all around the world people want to see their country's flag and athletes proudly parading at the opening and closing ceremonies which by no means can be considered as sport contests. They nevertheless attract huge attendance and media publicity.

The number of athletes participating at the Olympic Games per country is not equally distributed. Tables 2 and 3 report summary statistics of the number of athletes per country who participated at the last 2016 Olympic Games, and 21 categories in terms of the number of participating athletes, respectively.

Table 2. *Measure of Summary Statistics*

Measure	Total Number
Total Number of Countries/Groups	207
Total Number of participating athletes*	11238/11249
Average number of athletes per country	54
Median number of athletes per country	10
Maximum (USA)	552
Minimum (Tuvalu)	1
Standard Deviation	95.28
Skewness	2.85
Kurtosis	11.34

*The official figure reported by the IOC is 11238 (see Table 1). However, the IOC does not report participating athletes by country. The unofficial figures found from various sources by country when they add up to 11249; a discrepancy of 11 athletes. The 207 includes the independent and refugee Olympic athletes.

On average, the number of participating athletes per country was 54 athletes and the median was only 10 showing a strong positive skewness (2.85). The distribution is far from normal as this is indicated by the high value of kurtosis (11.34). As shown in Table 3, five countries sent more than 400 athletes. However, 56% of participating countries sent less than 20 athletes. Even though the number of athletes a country sends to the Olympics depends on a number of variables such as a population and the economy, the inequality of representation remains the same if the number of athletes is divided by the population of the country or each country's Gross Domestic Product.

It seems that other variables play a more important role in determining the number of athletes who are participating at the Olympic Games representing a specific country. One such variable is its tradition or past experiences with participation in such mega sports events. This relates very much to the emphasis of this paper of developing a human sports capital which is made of athletes who have a participating experience. The higher the number of past participants, the higher the number of athletes a country will send to participate at future Olympic Games.

Table 3. *Group of Participating Countries by the Number of Participating Athletes*

Number of Athletes	Countries	Percent	Cumulative Count of Countries	Cumulative Percent
[0, 20)	116	56.04	116	56.04
[20, 40)	26	12.56	142	68.60
[40, 60)	17	8.21	159	76.81
[60, 80)	6	2.90	165	79.71
[80, 100)	8	3.86	173	83.57
[100, 120)	8	3.86	181	87.44
[120, 140)	5	2.42	186	89.86
[140, 160)	3	1.45	189	91.30
[180, 200)	1	0.48	190	91.79
[200, 220)	3	1.45	193	93.24
[220, 240)	1	0.48	194	93.72
[240, 260)	1	0.48	195	94.20
[260, 280)	1	0.48	196	94.69
[280, 300)	1	0.48	197	95.17
[300, 320)	2	0.97	199	96.14
[320, 340)	1	0.48	200	96.62
[360, 380)	1	0.48	201	97.10
[380, 400)	1	0.48	202	97.58
[400, 420)	2	0.97	204	98.55
[420, 440)	1	0.48	205	99.03
[460, 480)	1	0.48	206	99.52
[540, 560)	1	0.48	207	100.00
Total	207	100.00	207	100.00

The conclusion which emerges from this section descriptive analysis is that the majority of the participating countries (60%) and participating athletes (over 90%) did not win a single medal. With very few exceptions, most of participating countries and athletes knew in advance that they had no chance of winning a medal. Thus, the question arises: why did they participate? Of course, the answer is the joy of participation. It is a consumption good. They get satisfaction. But it may be more than that. It may be considered as an investment in human capital which if it is used effectively and efficiently it might promote public policy objectives such as youth and grassroot sport participation. However, this is an empirical question at the country level. An outline of such an empirical analysis is provided in the following section of the paper.

An Outline of an Empirical Approach

The traditional methods used to evaluate the bidding/hosting of Olympic Games and the participation to them when the objective is to win more medals must be adjusted to explain why countries with no hope of winning medals do participate. The cost of participating is (a) the monetary costs of training a national Olympic team all previous years and the cost of sending the team to compete

during the days of the games; and (b) the non-monetary cost of failing to win a medal. The latter non-monetary costs depend very much on the expectations of participation which are shaped by the national sports policy and of course the national media. Raising expectations beyond any logical reason is doomed to bring disappointment after the games. Similarly, overreacting with joy after an unexpected success might raise citizens' expectations of similar and more successes at future Olympic Games. Thus, the second cost relates very much to the strategy of public sports policy. If citizens are well educated starting as early as during their elementary school years along the lines that participating in sports is not only winning but constitutes an end in itself, then the very fact of participation is a measure of success.

Thus, how many athletes participate at Olympic Games under one flag is an important measure of success. This explains then why an increasing number of countries send an ever-increasing number of their athletes to Olympic Games even though they have no chance to win a medal. One possible answer may come from the human capital approach. If we assume that sports amateur and professional participation provides benefits beyond the direct consumption utility of the joy that sports provide to each individual and contributes to health and wellbeing as this has been demonstrated by many studies, then athletes who participated in previous Olympic Games become the human capital in a production function which provides more and better sports services. In addition, previous participants to Olympic Games become a strong marketing tool to promote youth and grassroots participation in the various sports activities. It is not an accident that big multinational companies use athletes to promote their products and services which have no relation to sports. Similarly, as part of national promotion of sport participation at the grassroots level and youth age, participants to previous Olympic Games can be used to promote participation.

This can be empirically tested by examining how participants in previous Olympic Games have been used by national authorities to promote national sports policy objectives. In some cases, it may promote more general policy objectives using sports as an example. Thus, participation alone without medals may bring benefits to national authorities if the experience of these athletes is appropriately used to promote public policy objectives. Thus, the researcher may examine to what extent previous athletes have been used by directly looking at the post-Olympic career of previous participants to Olympic Games. In addition, such studies will reveal the best approach of exploiting the human capital embedded in all athletes who competed in Olympic Games.

These empirical studies can be similar to the study of Cabralis et al. (2018). They examined what happened to graduates of a course-programme offered by the Trinidad & Tobago Olympic Committee (TTOC). This paper here proposes similar empirical studies which will have as their subject of investigation previous participants to Olympic Games. As with the study of Cabralis et al. (2018), the proposed empirical studies should look at (a) the current position of previous athlete participants; (b) their educational and in general knowledge background; (c) the relation of their Olympic experience to their current position; (d) what were the skills obtained by participating at the Olympic Games that they found useful in

their present involvement; (e) what additional educational and knowledge resources would have been useful; (f) the history of their professional career after the athlete career was over; (g) the main obstacles; and (h) their recommendations in maximizing the human capital use of previous athletes for forming a national strategic sports policy.

Conclusion

Research on Olympic Games has been focused on bidding/hosting this mega event and determining the success in winning medals. In this paper an argument has been raised to examine another area which relates to the decision made by countries and athletes to participate despite the fact that the probability of success in winning medals or bidding and hosting one of future Olympic Games is not different from zero. Of course, participation may be explained by the utility derived from the joy of being there but this applies more to the individual athlete and not so much to the participating country. There must be something more which may explain this huge urgency to participate. One possible explanation emphasized in this paper is the development of human capital by participating at Olympic Games. Countries and athletes may use their participation to promote youth and grassroot community participation in sports as well as in other activities. This is a testable hypothesis. Thus, future research may look at how athletes who participating at previous Olympic Games have used this experience to produce benefits for themselves and their countries.

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