# Spanish women athletes' performance in the **Summer Olympic Games history**

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#### ABSTRACT

In this study, an analysis was made of the qualitative and quantitative evolution of the participation and results obtained by the Spanish athletes throughout the Olympic Games, for which their records were compared to those of the men's team from Paris 1900 to Rio 2016. During the study, the growing weight of Spanish women athletes was analysed, resulting in the Women and Sport programme (2007), which seems to have been a determining factor in the improvement of the performance of Spanish women athletes, which surpassed that of the men's team in the last two editions, for the first time in history and in a consecutive manner. The data revealed a growing weight of women, with a historical representation much lower in the Olympic Games (less than 14% until Barcelona 1992) and significantly lower than men from the same (beginning to be more than 30%). This progression has been accompanied by a greater value in the variable weight of the medals, this fact was accentuated in the last editions of London 2012 (65%) and Rio de Janeiro 2016 (60%). It is clear from the results that there is plenty of room for improvement in women's sport. Empowering Spanish female athletes, increasing social and economic recognition, and identifying which are the differential factors that make them more efficient with respect to the male team, can optimize strategies and results in the third sector of sport in Spain.

**Keywords:** Gender; Results; Spanish women; Sport performance; Participation.

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#### INTRODUCTION

The purpose of this study is to analyse women's participation and the results obtained in the Olympic Games (OGC) from the beginning to the last edition held in Rio 2016. It is expected to show how the increase in women's participation in the Olympic editions has been associated with an improvement in the efficiency and effectiveness of Spanish women's sport, highlighting its importance within Spanish Olympic sport and giving it visibility within society.

Social relations between different genders have been the object of study during the last decades within the field of sociology and anthropology. In the field of elite sport, Gil-Gascón & Cabezaa-Deogracias (2012) make a deep reflection on the interrelationship between principles and social values ordered from the ideology of a particular group and how it affects gender relations, in the position that men and women occupy in the social fabric. In other words, most studies in the field of sport coincide in situating physical activity as a reflection of the "ethos" of the communities of individuals in which it takes place (Guttmann, 1991; Hargreaves, 1993; Sarasúa & Galvez, 2003; Ramón-Vegas, 2016).

Women, from a traditional gender culture perspective as defined by Butler (2001:35) "sex, by definition, has always been gender", are rarely and reluctantly admitted into elite sport from its inception. A good example of this could be the quote by Pierre de Coubertin, father of the modern Olympic Games, who declared "as far as female participation in the Games is concerned, I am against it. It has been against my will that they have been admitted to an increasing number of events" (1973: 70).

The first female participation in a modern Olympic Games would be in the Paris 1900 edition, where 19 women out of a total of 1066 athletes started the path that until today has never stopped, being present in the following editions until today. Spanish women athletes would have to wait twenty-four years to begin their journey, specifically until the 1924 edition, which was also curiously held in Paris. Rosa Torres and Lili Álvarez in the tennis trials, broke that glass ceiling, these first advances will be amputated by the economic crisis of 1929 worldwide but especially in our historical and social context by the outbreak of civil war in Spain from 1936 and the subsequent dictatorship of Francisco Franco (1936-1975).

It took Franco's dictatorship almost 30 years to give importance again to women's sport in the international context, as Pereda & Martínez (2016) state. The appearance of Elola-Olaso as the new director of the National Sports Delegation and as the president of the Spanish Olympic Committee, had a lot to do with the participation of Spanish sportswomen in the 1960 Rome Olympic Games. At that time, it was seen as another form of the regime propaganda but it meant the incorporation of the sportswomen to the national team in an uninterrupted way until now. During this period of Franco's dictatorship, Mari Paz Corominas was the first Spanish Olympic finalist in the 1968 Olympic Games in Mexico, obtaining an Olympic Diploma (7th place) in the final of the 200m backstroke. That circumstance helped to surpass another goal, being the first Spanish woman to reach an Olympic final (Pereda, 2017). Inspired by the same author, this study aims to provide exhaustive information to complement the historiography of women's Olympic sport.

After the transition from dictatorship and the consolidation of democracy, Spain opted for the organization of the 1992 games, the concession of the organization of the Olympic Games of Barcelona 1992, marked a before and after in Spanish sport and without a doubt they were the definitive push to women's sport (Jiménez, 2015).

The 1992 Barcelona Games, the advantages as an organizing country, together with all the previous efforts to prepare them, which were embodied in the ADO program of Spanish sport which provided the national team with the necessary economic resources to be really competitive at international level, allowed to achieve the best results in the Spanish Olympic history. These games also represented the historical milestone of materializing the first gold medal for Spanish women's sport; judoka Miriam Blasco became the first Spanish woman to climb to the top of the podium, starting a growing path of success for Spanish athletes that will be analysed next.

In 2007 the Consejo Superior de Deportes (CSD) created the Women and Sport programme, with the aim of strengthening the economic and logistical support of Spanish female athletes. According to the same CSD. in 2008 there were 683,768 women's federal licenses in Spain, 20.14% of the total number of licenses in Spain. This was the first year in which this percentage was reached in the whole historical series. In 2018 (last results published), there were 888,617 female federal licences, 22.98% of the total (CSD 2013 and 2019).

This mixed, quantitative and descriptive research seeks: 1) To carry out a historical study of the female presence in Olympic sport; 2) To analyse and interpret the results obtained; 3) To discuss and evaluate the growing importance of elite female sport in Spain. 4) To draw up future lines of research that will help to improve the results of Spanish sport.

#### MATERIALS AND METHODS

In order to map, in a general sense, the participation of women in the Olympic Games, a documentary analysis has been carried out based on the identification, selection and interpretation of data obtained from primary sources and specialized bibliography on the subject (Puga-González et al., 2018). The data originate from documents of public and private entities and bodies, as well as official statistics published by the International Olympic Committee.

Table 1. Sources consulted.

Institution	Web*
Consejo Superior de Deportes (CSD, 2020).	www.csd.gob.es
Instituto Nacional de Estadística (INE. 2020).	www.ine.es
Las Federaciones Españolas (FF.EE, 2020).	https://www.csd.gob.es/es/federaciones-y-asociaciones/federaciones-deportivas-espanolas
Comité Olímpico Español (COE, 2020).	www.coe.es

<sup>\*</sup> Date of consulting: 6/May/2020.

Those modern Olympic Games with Spanish participation were selected for the study: from Paris 1900 to Rio de Janeiro 2016. Specifically 23: Paris 1900, Antwerp 1920, Paris 1924, Amsterdam 1928, Los Angeles 1932, London 1948, Helsinki 1952, Melbourne 1956, Rome 1960; Tokyo 1964; Mexico 1968; Munich 1972; Montreal 1976; Moscow 1980; Los Angeles 1984; Seoul 1988; Barcelona 1992; Atlanta 1996; Sydney 2000; Athens 2004; Beijing 2008; London 2012 and Rio 2016. The editions in Athens 1896, St. Louis 1904, London 1908, Stockholm 1912, Berlin 1916, and Berlin 1936, in which there was no Spanish participation, are omitted.

#### Research variables

The following variables were found:

- a) The total number of athletes in each edition (No. ATLETES).
- b) The total number of women who participated in each edition (No. WOMEN JJOO PARTICIPATION).
- c) The percentage of female participation in the total number of athletes who participated in each edition (% WOMEN JJOO PARTICIPATION).
- d) The total number of athletes from the Spanish Olympic team in each edition (No. ATLETES SPAIN).
- e) The number of men (No. MEN SPAIN) and women (No. WOMEN SPAIN) who were part of that Olympic team in each edition.
- The percentage of male participation (% MEN SPAIN) and female participation (% WOMEN SPAIN GAME PARTICIPATION) over the total of the Olympic team in each edition.
- g) The number of total medals won by the Spanish Olympic team in each edition (SPAIN ATHLETES MEDALS).
- h) The number of medals obtained by the women of the Spanish Olympic team (WOMEN'S MEDALS TOTAL SPAIN).
- The percentage of medals obtained by the women out of the total medals of the team in each edition (% FEMALE MEDALS).
- The total weight of the medals obtained by the Spanish Olympic team in each edition (SPAIN MEDAL WEIGHT) A numerical value was assigned to the metal of the medal obtained providing a ponderable idea of the relevance of the medals achieved (gold = 4 points, silver = 2 points, bronze = 1 point). This system of quantification is accepted by specialized sports institutions and organizations as well as in the different media (Klein, 2008).
- k) The weight of the medals obtained by men (WEIGHT MEN MEDALS) and women (WEIGHT WOMEN MEDALS) of the Spanish team in each edition.
- The percentage of weight of the medals obtained by men (% MEN MEDAL WEIGHT) and Spanish women (% WOMEN MEDAL WEIGHT).
- m) Finally, a performance index has been established as a result of the relationship between the % Medal weight and % participation. Under the assumption that a % of the Weight of the medals obtained with the same % of participation would provide an Index 1 (e.g.: 20% vs 20%, 60% vs 60%), a greater or lesser data relative to both variables is key to be able to visualize the real evolution of the performance in men and women.

# Analysis

A descriptive analysis of each of the variables was performed, showing the mean and standard deviation.

Test of normality and homogeneity of variance correlation tests were performed using Spearman's Rho for a level of statistical significance set at p < .05 for all tests. The size of the effect obtained in each concurrent case was evaluated according to the levels proposed by Cohen (1988; 1992): 0.10 (small), 0.30 (medium) and 0.50 (large).

To observe possible differences between men and women, try Mann-Whitney U for independent samples. A significance level of 95% was considered.

The statistical analysis was performed using the SPSS statistical package, version 25.0 (IBM SPSS Statistics).

#### RESULTS

The results obtained in all the Olympic Games in which Spanish athletes have participated (men and women) are shown in Table 2. The participation of women in Spain has been analysed in those Olympic Games where there was some possibility of representation. Of the 23 Olympic Games analysed, 16 were held in Rome (1960) plus Paris (1924), where the first participation was recorded. This decision is motivated by the fact that, one could say that intentionally, it is from these Olympic Games that women's participation in Spain begins to be counted on (sic). To consider the same sample of Olympic Games for both women and men (23) would falsify many results and the subsequent analysis.

Table 2. Variable descriptive research data: mean and standard deviation. Participation in the Olympic Games, comparison between men (n = 23) and women (n = 16).

Variables	Media (±Sd)
N° ATHLETES	6408.17 (±3344.03)
WOMEN NUMBER PARTICIPATION OG	1770.78 (±1779.66)
% WOMEN PARTICIPATION OG	20.90 (±14.15)
AT NUMBER. SPAIN	162.17 (±122.63)
MEN NUMBER SPAIN	121.35 (±75.99)
WOMEN NUMBER SPAIN	58.69 (±58.50)
% MEN ESP	85.75 (±17.12)
% WOMEN PARTICIPATION OG SPAIN	20.48 (±17.14)
MEDALS AT SPAIN	6.22 (±7.48)
MEDALS WOMEN TOTAL SPAIN	3.27 (±4.08)
% WOMEN'S MEDALS	19.51 (±23.54)
SPANISH MEDAL WEIGHT	14.74 (±19.66)
MEN'S MEDAL WEIGHT	10.04 (±12.84)
WOMEN MEDAL WEIGHT	7.20 (±9.70)
% WEIGHT OF MEN'S MEDAL	88.63 (±19.96)
% WEIGHT MEDAL WOMEN	17.44 (±22.65)

Figure 1 shows the evolution of women's participation both from a global perspective, from all the participating countries, and from that of women in Spain in all the Olympic Games where there was Spanish participation. Both participations find a great association (Rho = 0.937, Table 1). In this figure it can be seen how the % of women participation in Spain is lower than in the global participation in the Olympic Games, being from Barcelona 1992 when it starts to be equal.

Relevant aspects have been observed in the variables Medal weight in symbiosis with the degree of participation. Figure 2 shows the narrowing of the range of participation and the alternation in the value of the Medal Weight. On the other hand, by relating the Medal Weight (%) with the participation (%) a performance index has been obtained represented in Figure 3. The highest performance in women is achieved in Barcelona (1992: 1.13), London (2012: 1.61) and Rio (2016: 1.28) higher than the male indices Athens (2004: 1.43) and Beijing (2008: 1.4).

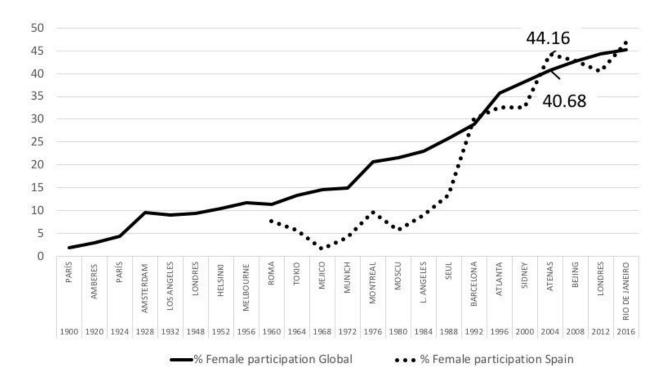


Figure 1. Evolution % of female participation in the Olympic Games Comparative global participation vs Spain.

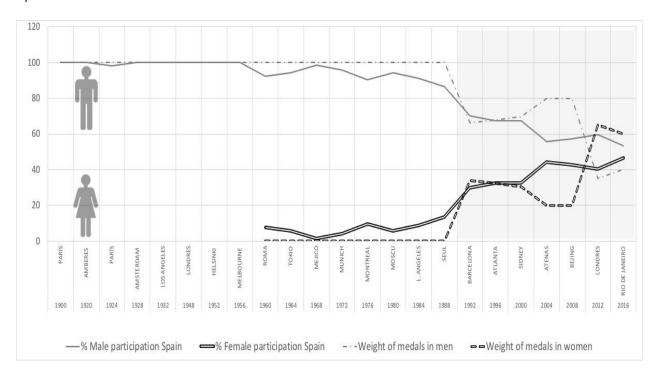


Figure 2. Evolution of % of representation and weight of medals in men and women in the Olympic Games with the participation of Spain.

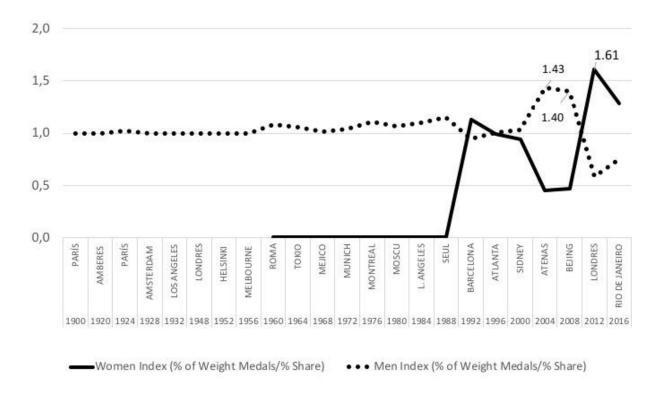


Figure 3. Evolution of Performance Index (% of Weight Medals/% Share). Differentiation between men and women in the Olympic Games.

For the data obtained, the hypothesis of normality is rejected (Shapiro-Wilk < 0.05) except in the variable participation of men in Spain (0.964, p = .54) and the hypothesis of heterogeneity of variances is accepted for all (Levene, F > 0.05).

Table 3. Correlation analysis.

Variables	Rho Spearman	n	Effect Size (sz)	р
Women's participation Spain/Global	0.937	23/16	0.88 (Large)	.000*
Women's participation/weight medals	0.837	16	0.7 (Large)	.000*
Participation men/weight medals	0.741	23	0.55 (Medium)	.001*

The association of participation numbers, regardless of gender, with the weight of the medals seems obvious. Positive and statistically significant correlations were found for both women and men.

Table 4. Contrast of hypotheses between the sexes. Variables: Weight of medals and participation in Olympic Games.

Variables	U Mann-Whitney	df	Effect Size (sz)	р
Medal weight/gender	46.0	24.1	0.63	.326
Participation/Sex	275	38.1	0.53	.009*

\*p < .05.

In the contrast of hypotheses regarding the differences between participation and weight of medals between sexes (Table 4), statistically significant differences were found in the degree of participation, not in the weight of medals. That is, the higher historical participation of men has not been supported by the differences in the weight of medals.

# **DISCUSSION**

The data obtained in this study indicate that the evolution of women's participation both from a global perspective, from all participating countries, as the women in Spain in the whole of the Olympic Games where there was Spanish participation find a great association, this data suggests to interpret that women internationally have been able to have the same difficulties or limitations in different social contexts united in the same historical context and the celebration of each of the Olympic events. As has been obvious, society in general has prevented equality between the sexes, perpetuating in the particular case of sport in a system designed by and for the male gender, as many authors and studies argue (Wenner 2006; Pfister, 2010; Alfaro et al., 2012; Ramón-Vegas, 2012, Leurite et al., 2015).

In the Spanish case, it seems evident that those participation and real support curves for Olympic sport do not materialize until democracy was able to consolidate itself and allocate real means to Olympic sport in general and women's sport in particular. The study reveals that the % of participation of Spanish athletes is lower than the global participation in the Olympic Games, being from Barcelona 1992 onwards when it starts to be equalised. It is far from the scope of this study the detailed analysis of each country and how its historical context and level of maturity and social progress affected women's participation in Olympic events, which could be the subject of future studies to deepen in this field.

There are studies that review the participation and results in Spanish sport Olympic events such as those carried out by Leiva (2012), Jiménez (2015), Pereda (2017) or Nunes (2018). But no studies have been found that mention performance indices beyond the number of medals. During the realization of this study, relevant aspects in the Medal Weight variables have been appreciated in symbiosis with the degree of participation as it was found by Cabello et al. (2011).

When comparing the weight of the medals obtained throughout history by sexes, the same value was obtained in the weight of medals but with a difference in the participation in the Olympic Games throughout history, evidently in favour of men. A lower participation of women historically, statistically verified, has not meant statistically significant differences (large effect size) in terms of medal weight.

However, if the analysis is reduced to the period that comprises the final stretch of the analysis (since Barcelona 1992) such differences obtain even more value. In a hypothetical weighting, adjusting even more the results to the last Olympic Games, where it could be affirmed the existence of a real policy of women's participation in sport, perhaps the data would have evolved differently. In successive analyses, increasing the number of Olympic Games, and even with the other national and international events in sports participation, the true scope of these variables can be determined.

The performance index has been obtained by relating the Medal Weight (%) to the participation (%). The greater or lesser data relative to both variables has been key to being able to visualize the real evolution of performance in men and women. The highest performance in women is achieved in Barcelona (1992), London (2012) and Rio (2016) with values higher than the men's indexes in Athens (2004) and Beijing (2008). If we cross these data with their historical context, in addition to the data already commented of Barcelona (1992), the greater rates of performance in women seem to come after the consolidation of the support received through the program Woman and Sport (2007), that seems to have been determining in the increase of the feminine performance.

The association of the number of participations, independently of the sex, with the weight of the medals seems obvious. Positive and statistically significant correlations were found for both women and men.

Following the line of Wenner (2006), (Lopez 2011), Sainz de Baranda (2013) Ramón-Vegas (2016) Gómez-Colell, et al., (2017) it seems clear that the social recognition of women's sport, represented by its presence in the media and its presence in society is practically non-existent or anecdotal. It can easily be deduced that these factors have a negative impact on the perception of sport and its capacity to generate economic resources, whether through its own resources or sponsorship.

# **CONCLUSIONS**

The participation of Spanish women athletes throughout the history of the modern games has been practically non-existent until 1960, when in spite of starting a continuous presence until our days, it continued with a lower representation than women from the rest of the participating countries. The beginning of the real performance with the achievement of the first medals for the female sport, comes with the Barcelona games (1992) where the participation of the Spanish athletes reaches a % similar to the average of female participation at international level.

The data show better results in Spanish women's sports than those obtained by men, both in the number and weight of the athletes, despite a lower participation rate. This places them with better performance indices in the last editions of the Olympic Games, probably as a result of the success of the Women and Sport programme (2007), which suggests that this type of measure is moving in the right direction for increasing sports performance. These results are especially encouraging if we consider that the number of women's federal licenses represents a fifth of the total, when the country's female population is larger than its male population, which can be considered a great opportunity to work on improvements from the grassroots level.

Based on the review and analysis of data, it can be deduced from the results that the margin for improvement in women's sport is very wide. Empowering Spanish female athletes, increasing social and economic recognition, and identifying which are the differential factors that make them more efficient with respect to the male team, can optimize strategies and results in the third sector of sport in Spain.

# **AUTHOR CONTRIBUTIONS**

Esther Puga-Gonzalez: methodology and discussion. Josué González: literature review, introduction and conclusions. Pedro T. Gómez-Píriz: results and data analysis. David Cabello-Manrique: material, conclusions and general review.

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# DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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