

Olympics versus Paralympic Games: comparative study

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Abbreviated abstract: In high performance sports, small changes have a big impact, fractions of a second can be of paramount importance. Statistics also started to be incorporated into sports practices to monitor and predict each step of an athlete in competition. For disabled people, playing sports can mean much more than health, but also, gain in factors like accessibility, agility and independence. We intend to evaluate, in statistical terms, sports practice by disabled people.

Related publications: (up to 2 references)

– Pinto *et al*, *Conexões*, 15(3):316-337 (2017). Olympic and Paralympic performance: a comparative analysis between countries in Rio-2016



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Problem, Data, Previous Works

- Disabled people have few health prospects, lower education levels, less economic participation and a high poverty rate, and also; face barriers to access services such as health, education, employment, transport and information.
- Sport is important for the feeling that everything is possible within our imitations and adaptations of what we want to do or practice. In addition to physical gains, sports practice is a social interaction form, of exceeding limits, improving our self-esteem and positioning disabled disabilities in society.
- Statistics are incorporated into the sport to monitor and predict each step of an athlete in competition. It is through it that the coaches are able to climb athletes, outline strategies, make decisions during a match and evaluate opponents. It is present in different sports such as football, athletics, basketball, volleyball and others.
- In this work we intend to carry out a comparative study of the performances between people with and without disabilities in different sports at the Olympic and Paralympic Games . in academic terms, there are few works that deal with this question type.

Problem, Data, Previous Works

- The Olympic Games of the modern era began in Athens in 1896 with the last edition held in 2016 in Rio de Janeiro consisting of 41 sports, while the Paralympic Games started in England in Aylesbury through the neurologist Ludwig Gutman with the purpose of improving the quality of life of people injured in World War II.
- The adapted sport became official in 1948 with the Stoke Maudeville games. His internationalization took place in 1952 with the games played by the Doorn Military Rehabilitation Center (Netherlands). Following a progressive historical rhythm, in 1960 in Rome, the first Paralympic games were played and the last version took place in 2016 in Rio de Janeiro in Brazil with the participation of 22 sports.
- For this work we are considering the quantities of gold, silver and bronze medals obtained by the United States, China, Russia, Brazil and Cuba in the Olympic and Paralympic Games of the years 2000, 2004, 2008, 2012 and 2016.



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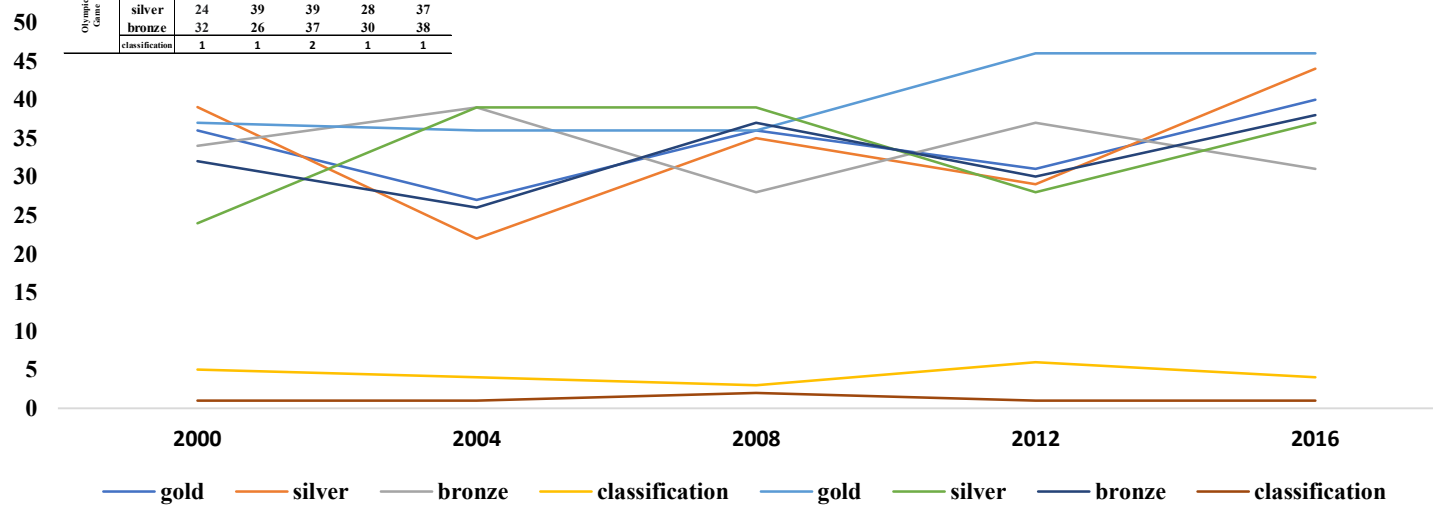
Methods

- Explanation(s) of methods used to obtain data or perform theoretical modeling
Profile behavior analysis for comparative study between the evolution of the number of medals in the Olympic and Paralympic games in the Olympics of the years 200, 2004, 2008, 2012 and 2016.
- Profile analysis be constructed for each group. In this case. We shall concentrate on five groups (200, 2004, 2008, 2012 and 2016). We shall concentrate on two groups (Paralympic and Olympic). The hypothesis H_0 implies that the treatments have the same (average) effect on the two populations.
- Graphics for profile data, We are presented for USA, China, Brazil, Russia and Cuba.

Results and Conclusions

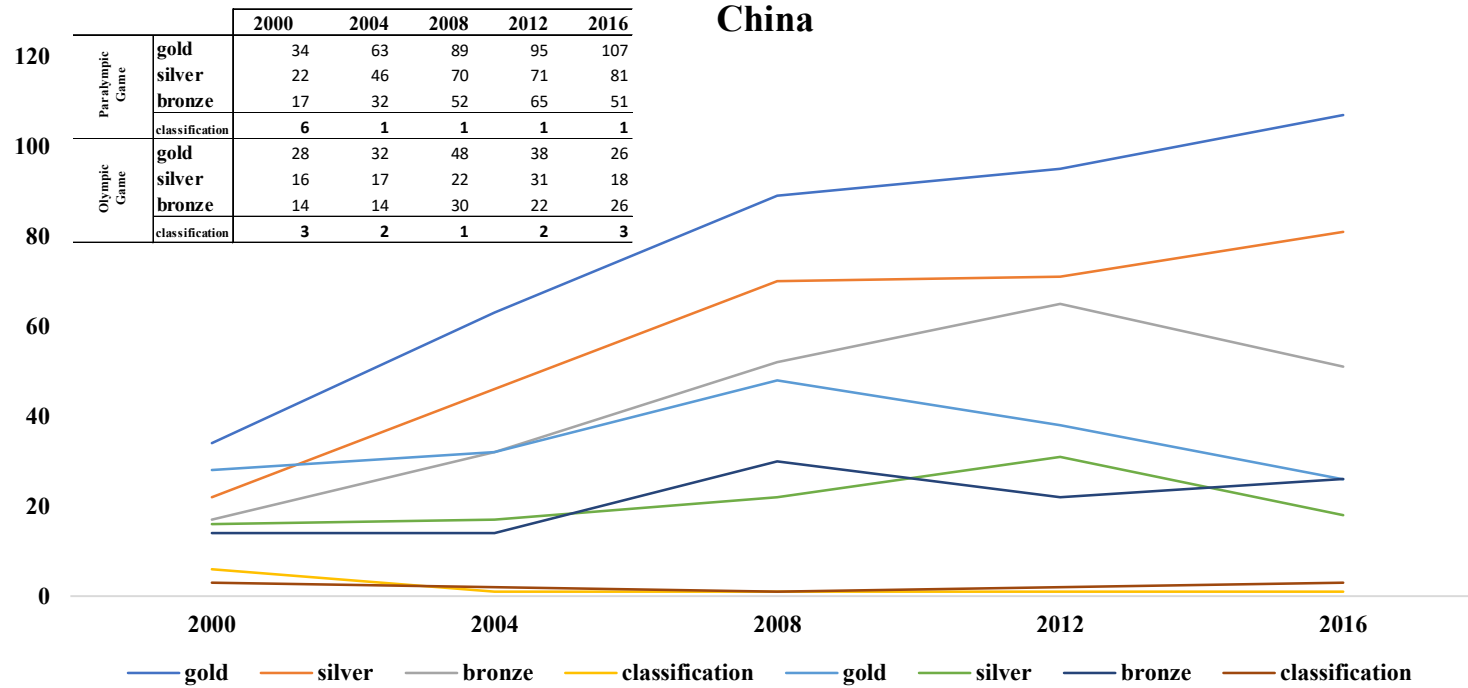
		2000	2004	2008	2012	2016
Paralympic Game	gold	36	27	36	31	40
	silver	39	22	35	29	44
	bronze	34	39	28	37	31
	classification	5	4	3	6	4
Olympic Game	gold	37	36	36	46	46
	silver	24	39	39	28	37
	bronze	32	26	37	30	38
	classification	1	1	2	1	1

United States of America



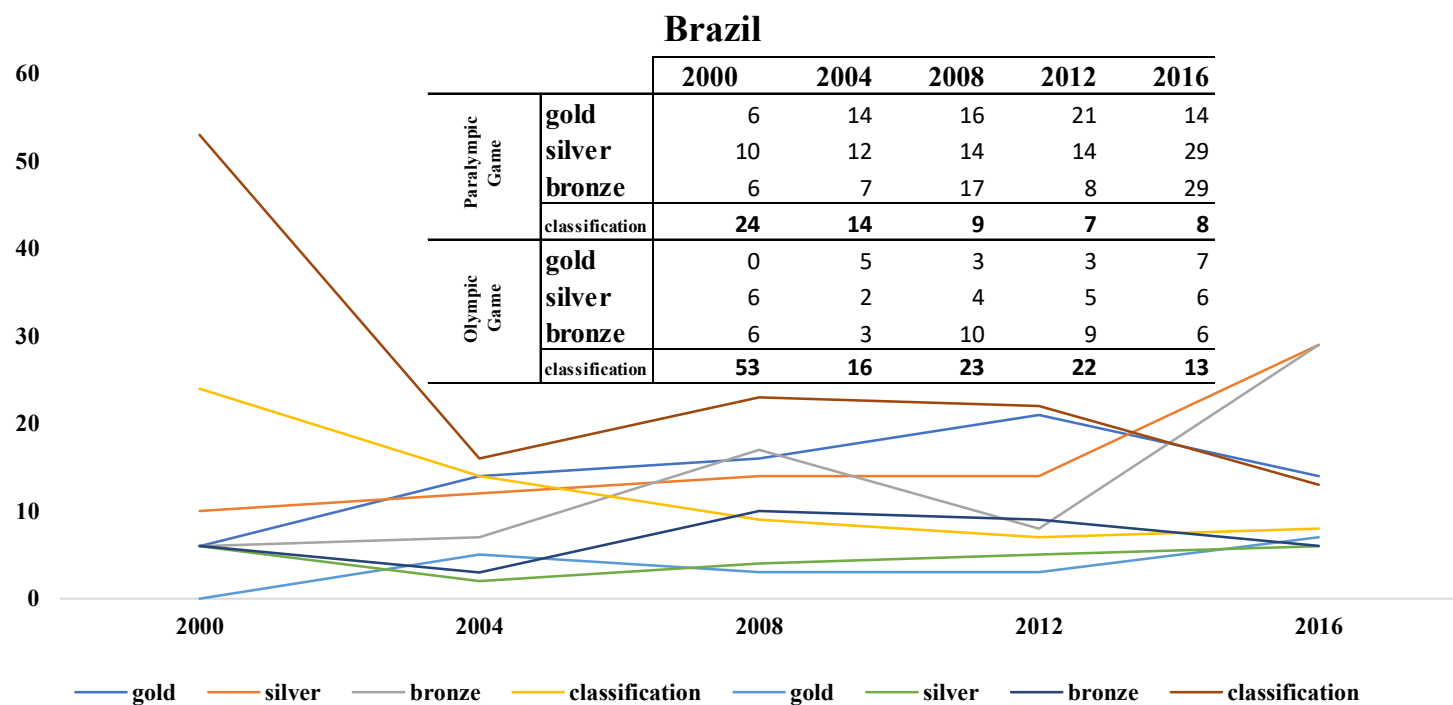
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Results and Conclusions



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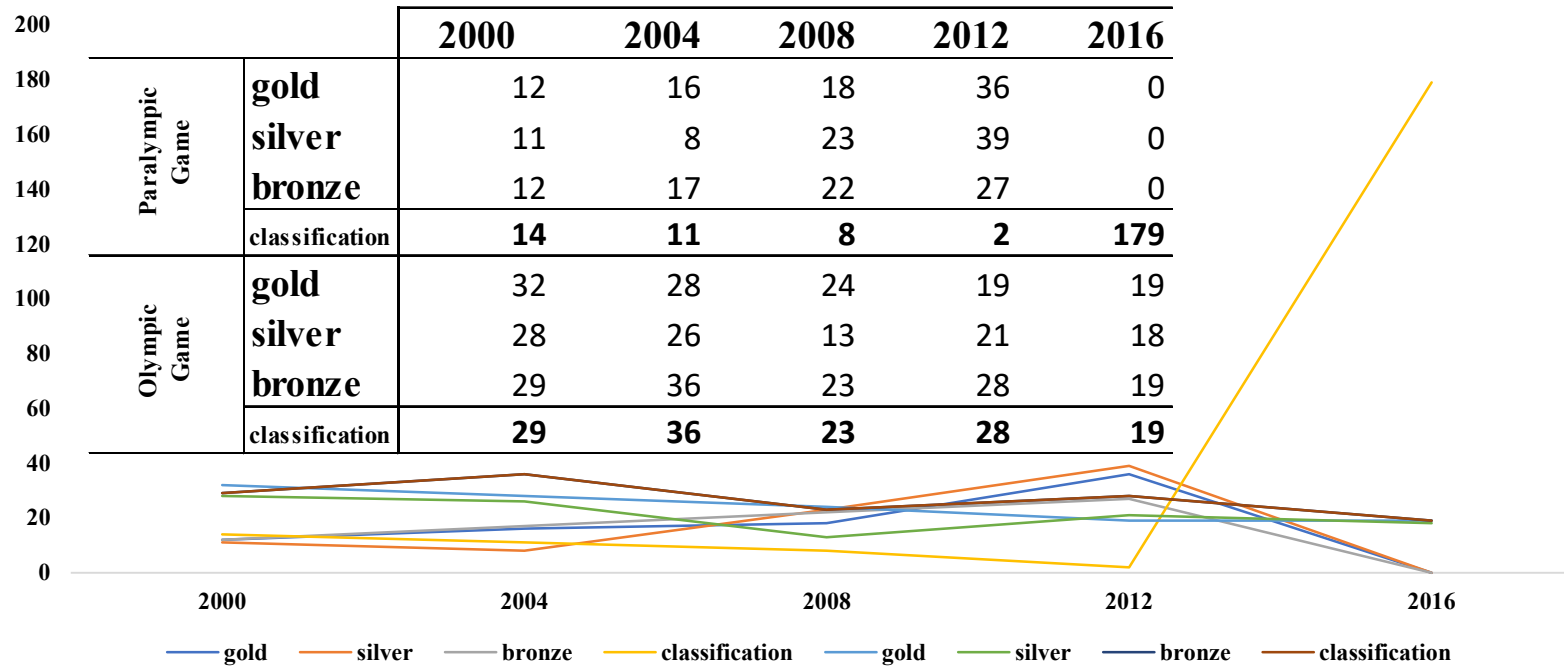
Results and Conclusions



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Results and Conclusions

Russia

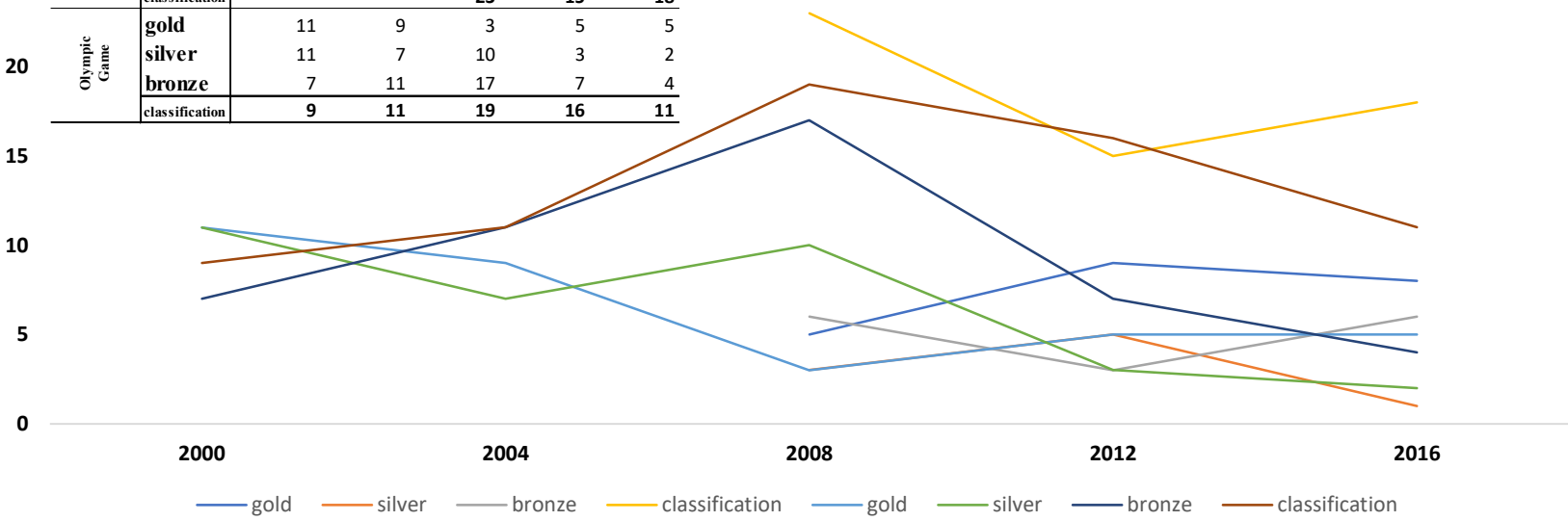


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Results and Conclusions

		2000	2004	2008	2012	2016
25	Paralympic Game					
	gold			5	9	8
	silver			3	5	1
	bronze			6	3	6
	classification			23	15	18
20	Olympic Game					
	gold	11	9	3	5	5
	silver	11	7	10	3	2
	bronze	7	11	17	7	4
	classification	9	11	19	16	11

Cuba



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Results and Conclusions

For each of the different countries considered, we had the following conclusions:

- **United States of America:** In the Olympic and Paralympic games, in terms of classification they were stable, with classification in the Olympic games superior to that of the Paralympics;
- **China:** greater number of medals in the Paralympic games and since 2004 they have remained in the first place and in the Olympic games in classifications between first and third;
- **Brazil:** better results are noted in the Paralympic games and results on the rise culminating with better results in 2016;
- **Russia:** in the Paralympic Games it got the best ranking in 2012 with second place and did not show up in 2016, while in the Olympic Games the average performance with the best ranking in nineteenth place, and, by the end;
- **Cuba:** there are average results with better results in the Olympic games than in the Paralympics, which inclusive did not participate in the Paralympics of 2000 and 2004.
- **In general,** it is noted that among these countries a better participation and interest in the Olympic games than in the Paralympic games due to reasons such as: Olympic games have existed for a longer time, better promotion and no discrimination that exists in the case of Paralympic games.



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