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Comparative Analysis on the Sprint Performances of Track Events between London, 2012 and Rio, 2016 Olympics

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Abstract

The purpose of the study was to analyse the sprint performances of track events between London and Rio Olympics. There may be significant differences in sprints performances in Rio (2016) Olympics than London (2012) Olympics. There may not be significant differences in sprints performances in Rio, 2016 Olympics than London 2012 Olympics. The data collected for this study were through secondary sources and the census sampling was considered for collecting data. In order to find the differences in performances of these two Olympics, descriptive statistics and t-test were employed by Excel 2016 statistical tool packages. The results of the study showed that the Performances of Rio Olympics (2016) 100 mts is in line with the performances of London 2012 Olympics. The Performances of Rio Olympics (2016) 200 mts is in line with the performances of London 2012 Olympics. The performance of 400mts in Rio Olympics (2016) were better than the performance of 400mts in London 2012 Olympics.

Keywords: London, Rio, Performances, Sprint events, Olympics.

Introduction

The sport of track and field has its roots in human prehistory. Track and field-style events are among the oldest of all sporting competitions, as running, jumping and throwing are natural and universal forms of human physical expression (Wikipedia,2016). The first recorded examples of organized track and field events at asports festival are the Ancient Olympic Games. At the first Games in 776 BC in Olympia, Greece, only one event was contested: the stadion footrace (Instone, Stephen,2009).The scope of the Games expanded in later years to include further running competitions, but the introduction of the Ancient Olympic pentathlon marked a step towards track and field as it is recognized today-it comprised a five-event competition of the long jump, javelin throw, discus throw, stadion footrace, and wrestling (Waldo E. Sweet, Erich Segal,1987). Track and field events were also present at the Panhellenic Games in Greece around this period, and they spread to Rome in Italy around 200 BC (Jean-Paul Thuillier,1996).After the period of Classical antiquity (in which the sport was largely Greco-Roman influenced) new track and field events began developing in parts of Northern Europe in the Middle Ages. The stone put and weight throw competitions popular among Celtic societies in Ireland and Scotland were precursors to the modern shot put and hammer throw events. One of the last track and field events to develop was the pole vault, which stemmed from competitions such as the Fierljeppen contests in the Northern European Lowlands in the 18th century (Wikipedia, 2016).

Chatterjee & Chatterjee (1982) described an analysis of running times in the Olympic Games between the years 1900 and 1976. Arguing that a lower limit on running time must exist for each individual event, they fitted exponential models of the form $yj = \theta 1 \exp(j\theta 2)$, where yj is the time for year j ($0 \leq j \leq 76$). Hence, this study entirely focuses on the sprinting performances (limited to 100mts, 200mts and 400mts) of two different Olympics Viz. London 2012 and Rio 2016 Olympics. The performances of 100 mts have been considerably increased since 2000 Olympics. It was mainly due to the raising stars such as Greene, Asafa Powell, Tysan Gay, Blake and Bolt. The scholar indebted to study the performances of all eight finalists of London, 2012 and Rio, 2016 Olympics.

Objectives of the study

1. The objective of the study was to analyse the sprinting performances of 100 mts of Track event between London 2012 and Rio 2016 Olympics.
2. The objective of the study was to analyse the sprinting performances of 200 mts of Track event between London 2012 and Rio 2016 Olympics.
3. The objective of the study was to analyse the sprinting performances of 400 mts of Track event between London 2012 and Rio 2016 Olympics.

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Methodology

The source of data for this study was exclusively secondary data. It means all the data collected and used for this study were the e- sources. The census sampling method was used to collect data. The data were collected based on three categories such as the finalists males performances of 100mts, 200mts and 400mts of these two Olympics Viz. London, 2012 and Rio, 2016 Olympics. The top 8 finalists performances were analysed and compared systematically. The DNA (Did Not Complete) athlete's performances were considered and computed as Zero.

Statistical Analysis

The descriptive statistics and t-test were used as statistical tools to find out the significant differences between London,2012 and Rio, 2016 Olympics. The Level of significance was set at 0.05 for testing the significance differences if any. The Excel 2016 statistical tool packages were used to find the differences in performances of these two East African countries.

Analysis of the study

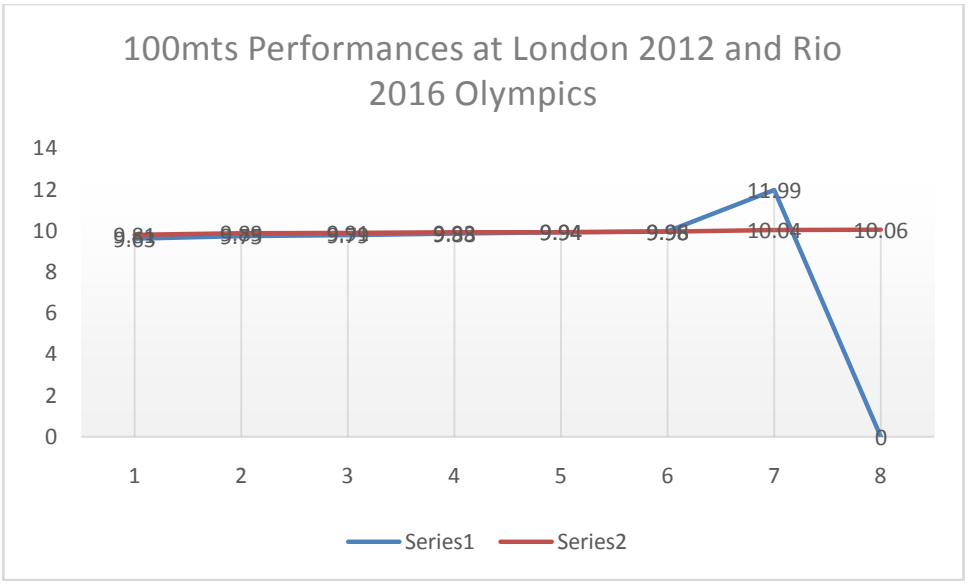
Table 1

The male Sprint Performances of track event of 100 mts at London and Rio Olympics (2012&2016)

Olympics	X	SD	Computed T-Value	Table t-Value
London	8.87	3.66	-.82	2.144
Rio	9.94	0.80		

Significant at 0.05 level

Table 1 shows that the sum performances of all eight finalists of 100 mts in London 2012 and Rio 2016 Olympics are8.87 Sec. and 9.94 sec. Thus, the standard deviation of these two Olympics is 3.66 and -.82. Since, the computed T-value is greater than the table t-value, there was no significant difference in the male's performances of 100 mts between2012 and 2016 Olympics. Because seven athletes were completed 100mts race in 2012 Olympics where as one athlete did not complete 100mts. Hence, DNA (Did Not Complete) data were assumed and computed as Zero. It is clearly showed the below Figure I that there was some similar performance of first seven athletes in London and Rio Olympics.



Series 1: London 2012, Series 2: Rio 2016

Figure I

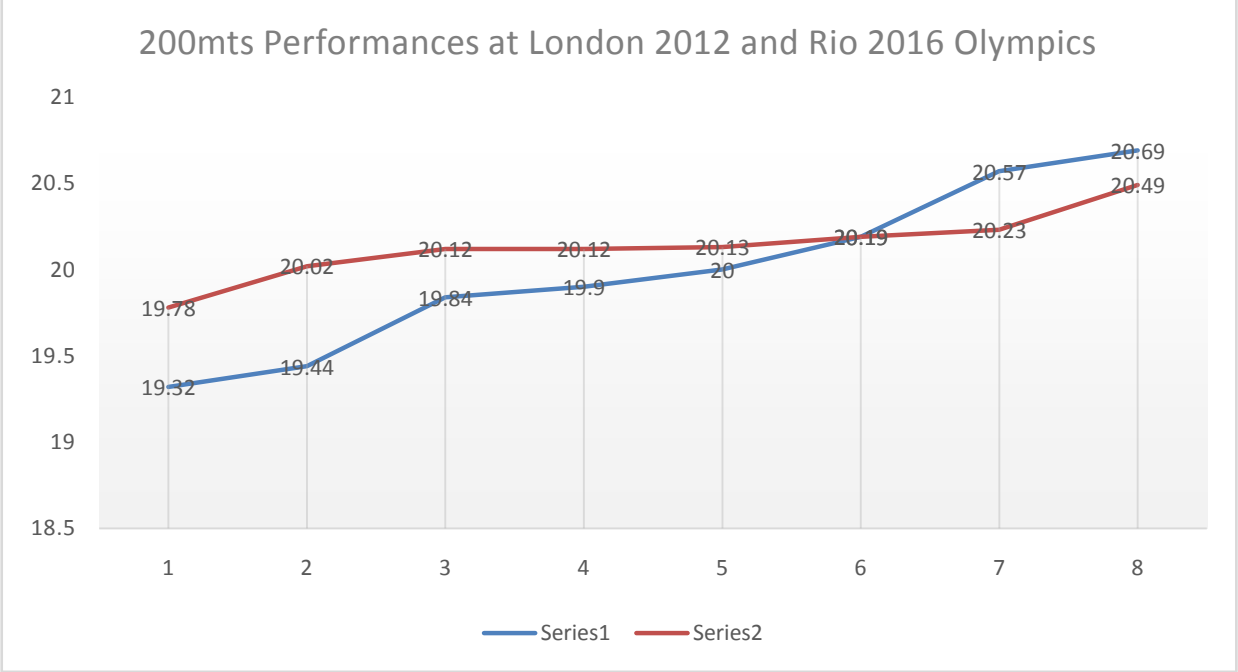
The Male Performances of 100 meters in London 2012 and Rio 2016 Olympics

Table 2
The male Sprint Performances of track of 200 mts at London and Rio Olympics (2012&2016)

Olympics	X	SD	ComputedT-Value	Tablet-Value
London	19.99	0.485	-0.76	2.144
Rio	20.13	0.199		

Significant at 0.05 level

Table 2 shows that the sum performances of all eight finalists of 200 mts in London 2012 and Rio2016 Olympics are19.99 Sec. and 2013 sec. Thus, the standard deviation of these two Olympicsis0.485 and 0.199. Since, the computed T-value lies in the range of the table t-value, there was no significant difference in the male's performances of 200 mts between2012 and 2016 Olympics.



Series 1: London 2012 , Series 2: Rio 2016

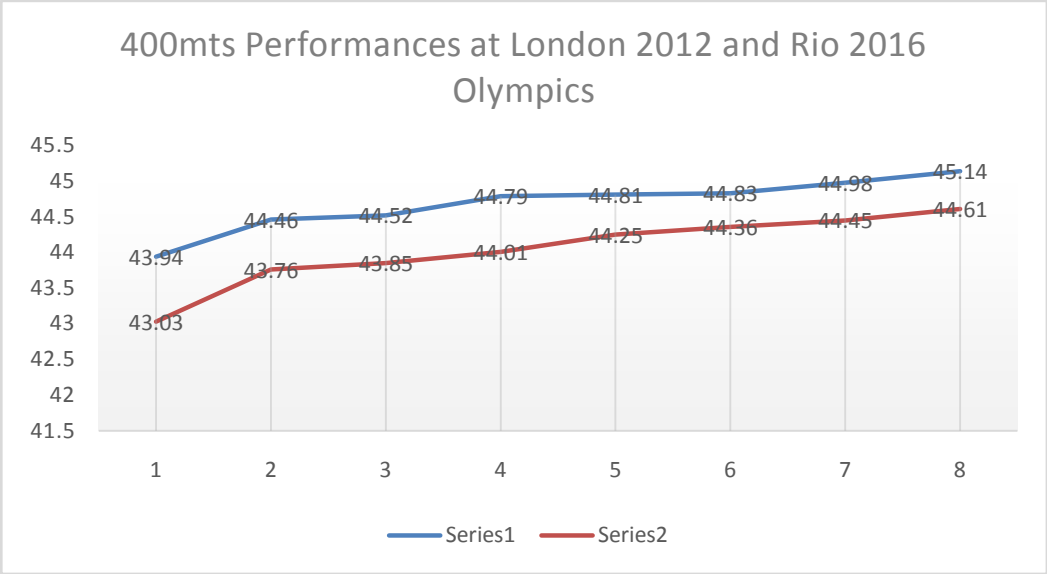
Figure II
The Male Performances of 200 meters in London 2012 and Rio 2016 Olympics

Table 3
The male Sprint Performances of track event of 400 mts at London and Rio Olympics (2012&2016)

Olympics	X	SD	ComputedT-Value	Table t-Value
London	44.68	0.373	2.90	2.144
Rio	44.04	0.503		

Significant at 0.05 level

Table 3 shows that the sum performances of all eight finalists of 400 mts in London 2012 and Rio 2016 Olympics are44.68 Sec. and 44.04 sec. Thus, the standard deviation of these two Olympics is 0.373 and 0.503. Since, the computed T-value is greater than the table t-value, there was a significant difference in the male's performances of 400 mts between2012 and 2016 Olympics.



Series 1: London 2012, Series 2: Rio 2016

Figure III
The Male Performances of 400 meters in London 2012 and Rio 2016 Olympics

Conclusions

The following conclusion were drawn from the results of the study.

1. The Performances of Rio Olympics (2016) 100 mts is in line with the performances of London 2012 Olympics. Though the values are statistically showed that there was a significant difference in 100 mts performances of these two Olympics. The vast differences occurred due to DNA value computed as Zero.
2. The Performances of Rio Olympics (2016) 200 mts is in line with the performances of London 2012 Olympics. There was no much differences in performances.
3. The performance of 400mts in Rio Olympics (2016) was greater than the performance of 400mts in London 2012 Olympics.

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