

# Data Analysis Report of Olympic Games (1896-2022)

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## Introduction

The Olympic Games is a global sporting event that brings together athletes from all corners of the world. The event has a rich history dating back to 1896 and has since then evolved into a spectacle that captures the attention of millions of people worldwide. In this data analysis report, we will examine various aspects of the Olympic Games from 1896 to 2022.

## Overview of Olympic Games

The Olympic Games are a quadrennial event that includes both summer and winter sports. The first modern Olympic Games were held in Athens, Greece, in 1896 and have since been held in various cities around the world. The Summer Olympics and Winter Olympics are held separately, with the Summer Olympics being the larger of the two events.

The Olympic Games have become one of the most prestigious sporting events in the world. They bring together athletes from different countries and cultures, offering

them a platform to showcase their skills and talent. The games have grown significantly over the years and have become a symbol of unity, sportsmanship, and peace.

## Methodology

The dataset used in this report was obtained from Kaggle, a data source. The data analysis tools used included the Python programming language, Jupyter Notebook, and Python libraries such as pandas, NumPy, Seaborn, and Matplotlib. Python code was written for cleaning, processing, visualizing, and analyzing the data.

## Findings and Analysis:

### 1. Which years, cities and countries the Olympics were held in ?

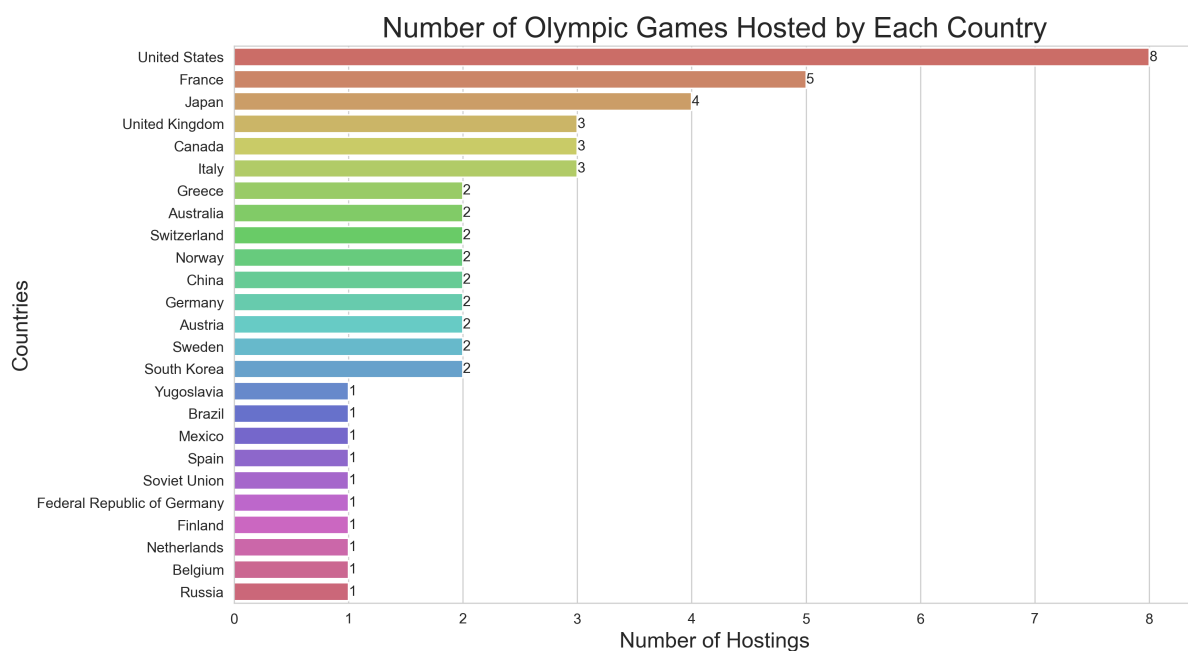
The Olympic Games were held in various years, cities and countries throughout their history.

Year	Season	Host City	Country
1896	Summer	Athens	Greece
1900	Summer	Paris	France
1904	Summer	St. Louis	United States
1908	Summer	London	United Kingdom
1912	Summer	Stockholm	Sweden
1920	Summer	Antwerp	Belgium
1924	Winter	Chamonix	France
1924	Summer	Paris	France
1928	Winter	St. Moritz	Switzerland
1928	Summer	Amsterdam	Netherlands
1932	Winter	Lake Placid	United States
1932	Summer	Los Angeles	United States
1936	Winter	Garmisch-	Germany

		Partenkirchen	
1936	Summer	Berlin	Germany
1948	Winter	St. Moritz	Switzerland
1948	Summer	London	United Kingdom
1952	Winter	Oslo	Norway
1952	Summer	Helsinki	Finland
1956	Winter	Cortina d'Ampezzo	Italy
1956	Summer	Melbourne	Australia
1960	Winter	Squaw Valley	United States
1960	Summer	Rome	Italy
1964	Winter	Innsbruck	Austria
1964	Summer	Tokyo	Japan
1968	Winter	Grenoble	France
1968	Summer	Mexico City	Mexico
1972	Winter	Sapporo	Japan
1972	Summer	Munich	Federal Republic of Germany
1976	Winter	Innsbruck	Austria
1976	Summer	Montreal	Canada
1980	Winter	Lake Placid	United States
1980	Summer	Moscow	Soviet Union
1984	Winter	Sarajevo	Yugoslavia
1984	Summer	Los Angeles	United States
1988	Winter	Calgary	Canada
1988	Summer	Seoul	South Korea
1992	Winter	Albertville	France
1992	Summer	Barcelona	Spain
1994	Winter	Lillehammer	Norway
1996	Summer	Atlanta	United States
1998	Winter	Nagano	Japan
2000	Summer	Sydney	Australia
2002	Winter	Salt Lake City	United States

2004	Summer	Athens	Greece
2006	Winter	Turin	Italy
2008	Summer	Beijing	China
2010	Winter	Vancouver	Canada
2012	Summer	London	United Kingdom
2014	Winter	Sochi	Russia
2016	Summer	Rio de Janeiro	Brazil
2018	Winter	PyeongChang	South Korea
2020	Summer	Tokyo	Japan
2022	Winter	Beijing	China

**The following graphic shows number of Olympic Games hosted by each country:**



### **Important information:**

1956 Equestrian Olympics was not a separate event but rather part of the Melbourne Olympics. The IOC awarded the Games of the XVIth Olympiad to Melbourne, Victoria, Australia but learned that Australian quarantine laws required a six-month quarantine period for horses entering the country. As a result, the equestrian events were held in Stockholm, Sweden.

### **Olympic games that could not be held due to war**

One of the most notable disruptions of the Olympic Games occurred during World War I. The 1916 Summer Olympics, which were originally scheduled to take place in Berlin, Germany, had to be canceled due to the outbreak of the war in 1914.

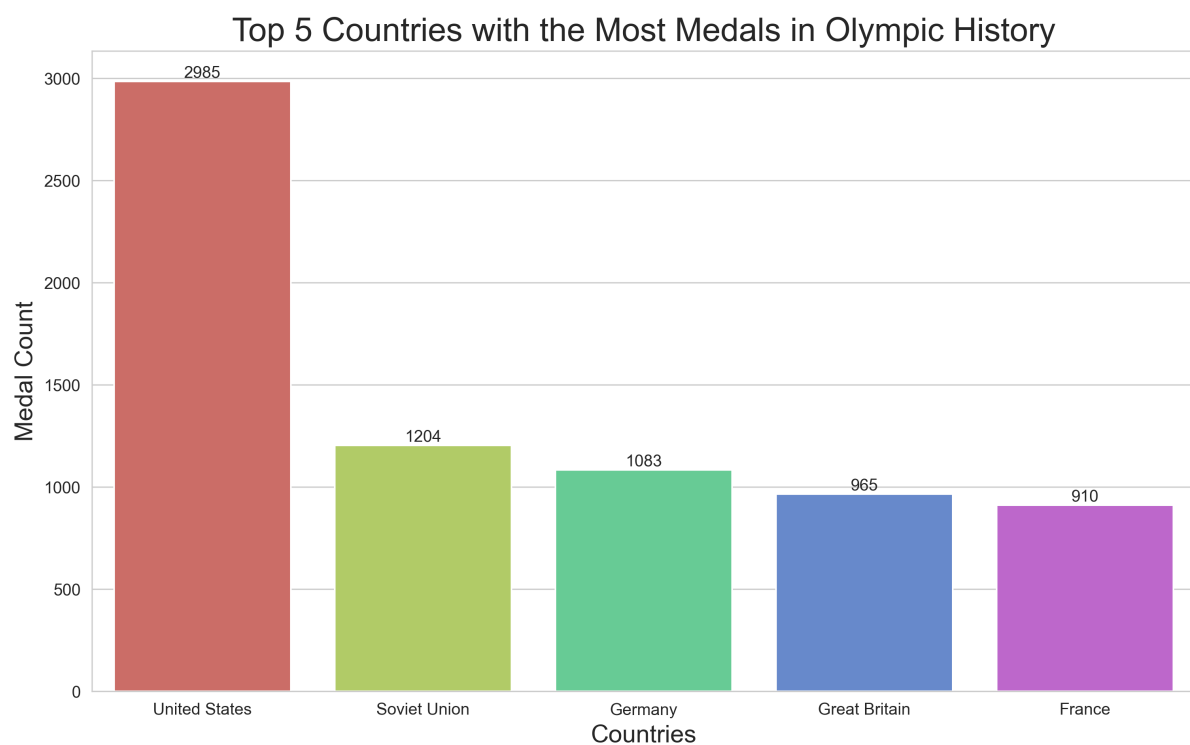
Similarly, the Second World War also affected the Olympic Games. The 1940 Summer Olympics, initially awarded to Tokyo, Japan, had to be abandoned due to Japan's invasion of China and the escalating tensions in the Asia-Pacific region. The Olympics were subsequently rescheduled for Helsinki, Finland, but were ultimately canceled due to World War II. Later, the 1944 Winter Olympics, planned for Cortina d'Ampezzo, Italy, and the 1944 Summer Olympics, designated for London, United Kingdom, were also canceled as the war continued to ravage Europe.

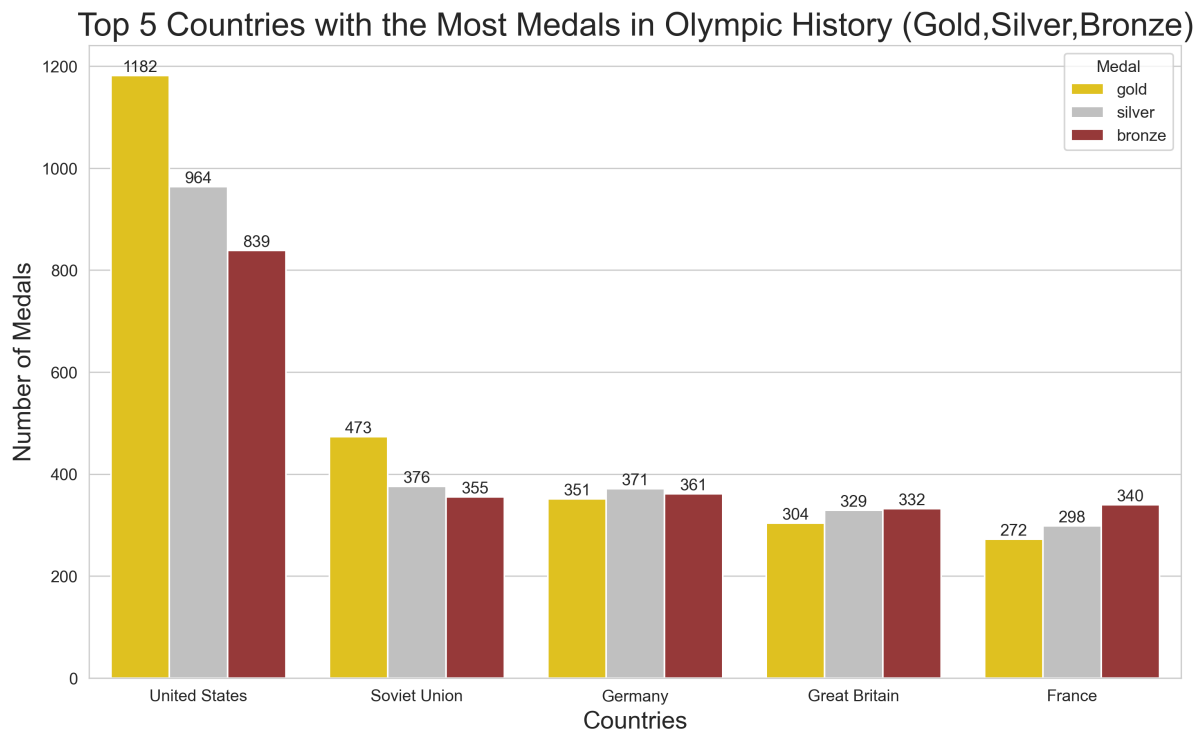
### **Notable Olympic games:**

- 1896 Summer Olympics, Athens, Greece: Holds historical significance as the first modern Olympic Games.
- 1936 Summer Olympics, Berlin, Germany: Games organized by the Nazi regime and holds great political importance.
- 1960 Summer Olympics, Rome, Italy: Games where television broadcasting became widespread and technological advancements were observed.
- 1972 Summer Olympics, Munich, West Germany: Games where the politically significant "Munich Massacre" occurred.
- 1980 Summer Olympics, Moscow, Soviet Union: These games were boycotted by the United States and several other Western countries due to the Soviet Union's invasion of Afghanistan.
- 1984 Summer Olympics, Los Angeles, USA: Games that took place during the Cold War and only some countries participated due to boycotts.
- 2008 Summer Olympics, Beijing, China: Games where China emerged as a rising power and organized a huge event.
- 2016 Summer Olympics, Rio de Janeiro, Brazil: A significant milestone as the first Summer Olympics held in Latin America.
- 2022 Summer Olympics, Tokyo, Japan: Games that were postponed due to the COVID-19 pandemic and held with limited spectators.

## 2. Which country has won the most medals?

The United States has won the most medals in the Olympic Games from 1896 to 2022, with a total of 2,985 medals (1,182 gold, 964 silver, and 839 bronze). The second-highest medal count belongs to the Soviet Union (including the Unified Team), with a total of 1,204 medals (473 gold, 376 silver, and 355 bronze), followed by Germany with 1,083 medals (351 gold, 371 silver, and 361 bronze). In fourth place is Great Britain with 965 medals (304 gold, 329 silver, and 332 bronze), and in fifth place is France with 910 medals (272 gold, 298 silver, and 340 bronze).





## Total medals by year:

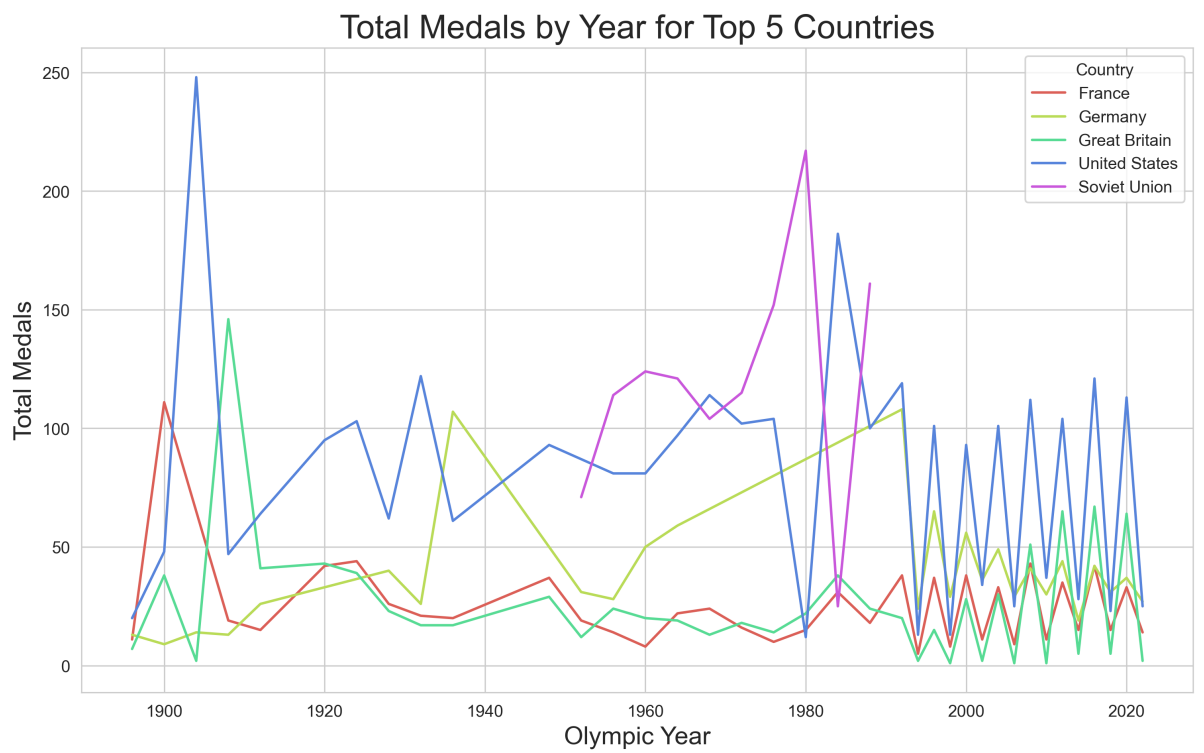
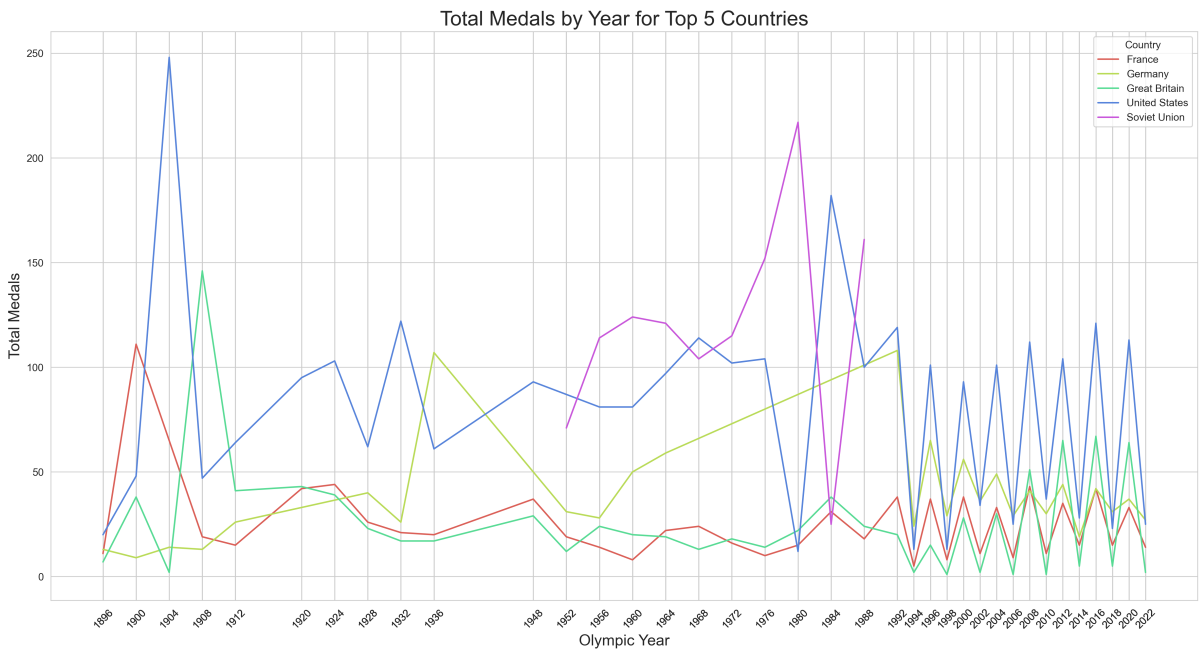
The sharp declines and rises in the 1980 and 1984 Olympic games in the "Total Medals by Year for Top 5 Countries" line plot are due to the boycotts organized by the United States and the Soviet Union.

The United States boycotted the 1980 Summer Olympics held in Moscow in protest of Soviet Union's invasion of Afghanistan. The boycott was a part of a larger political strategy of the United States, which aimed to isolate the Soviet Union internationally and weaken its influence in the world.

On the other hand, the Soviet Union boycotted the 1984 Summer Olympics held in Los Angeles in response to the United States' boycott of the previous Olympics. The Soviet Union saw the boycott as a provocation and a violation of the Olympic principles of non-discrimination and the right to participate in international sporting events.

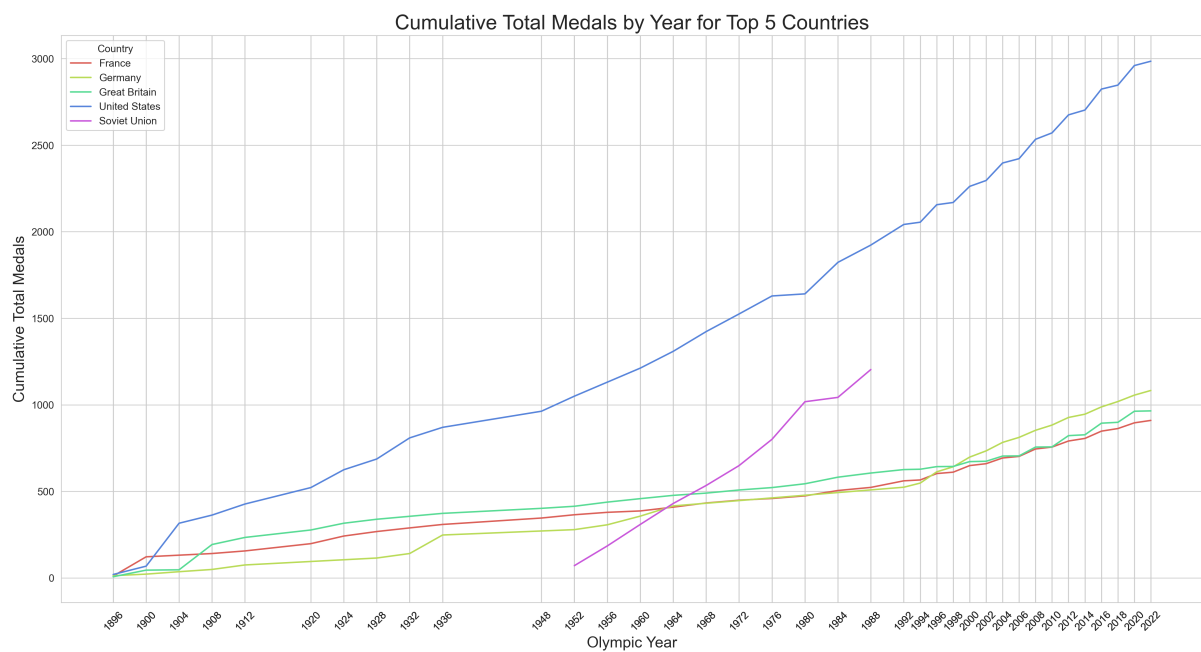
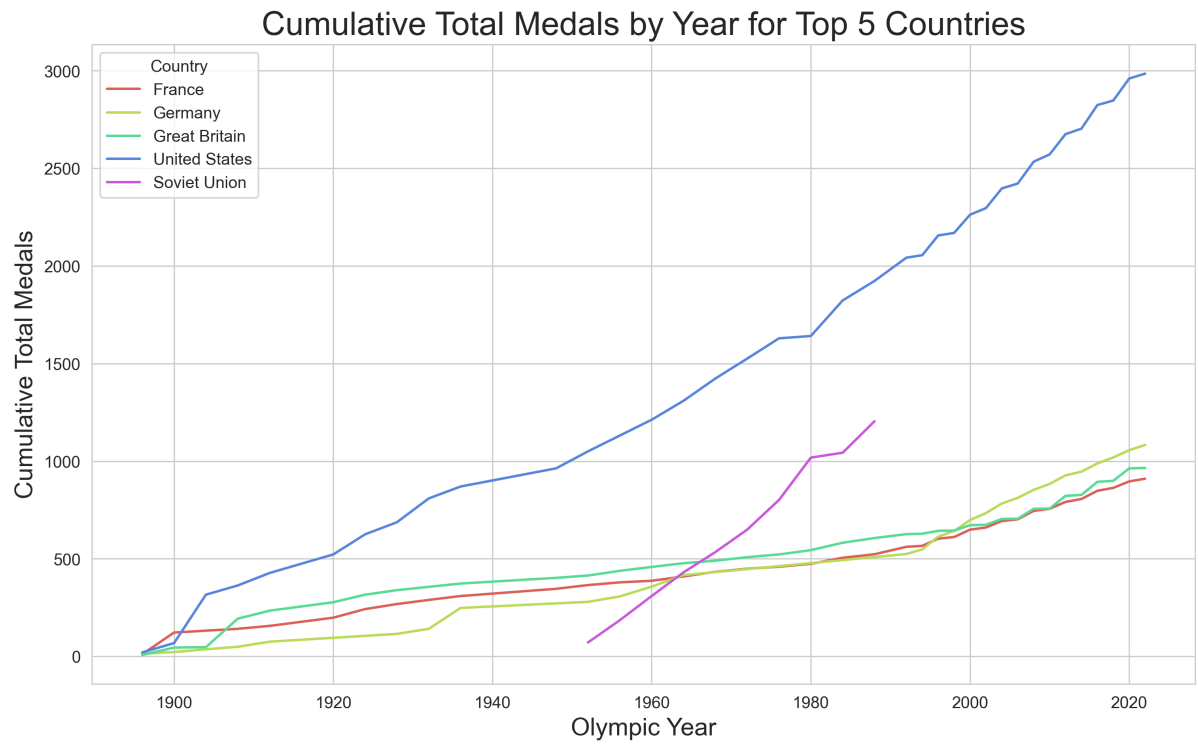
As a result of these boycotts, many countries did not participate in these Olympics, leading to a noticeable decrease in the number of medals awarded. The boycotts also had a long-lasting impact on the Olympic movement, highlighting the political and ideological tensions that often surround international sports events.

It is important to note that the boycotts affected not only the United States and the Soviet Union but also many other countries that chose to follow their lead. The 1980 and 1984 Olympic games thus stand as a reminder of the complex and often contentious relationships between sports, politics, and international relations.





## Cumulative Total Medals by year

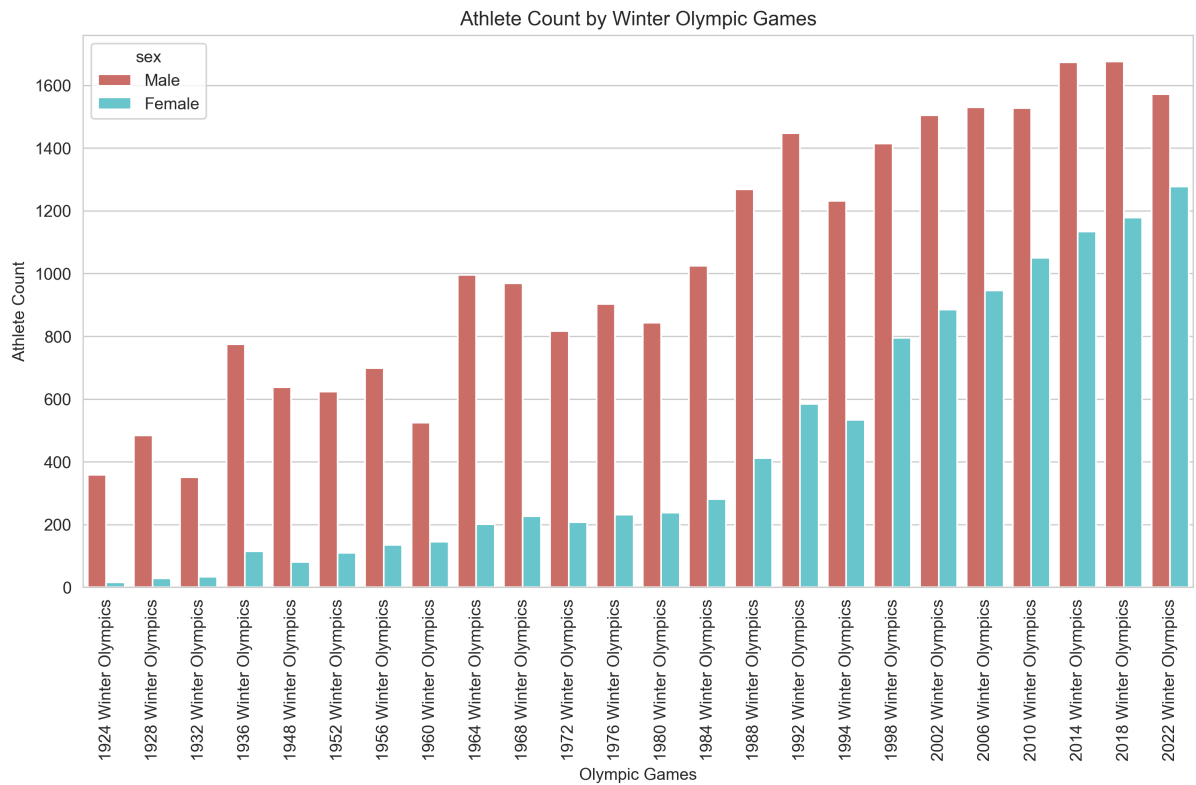
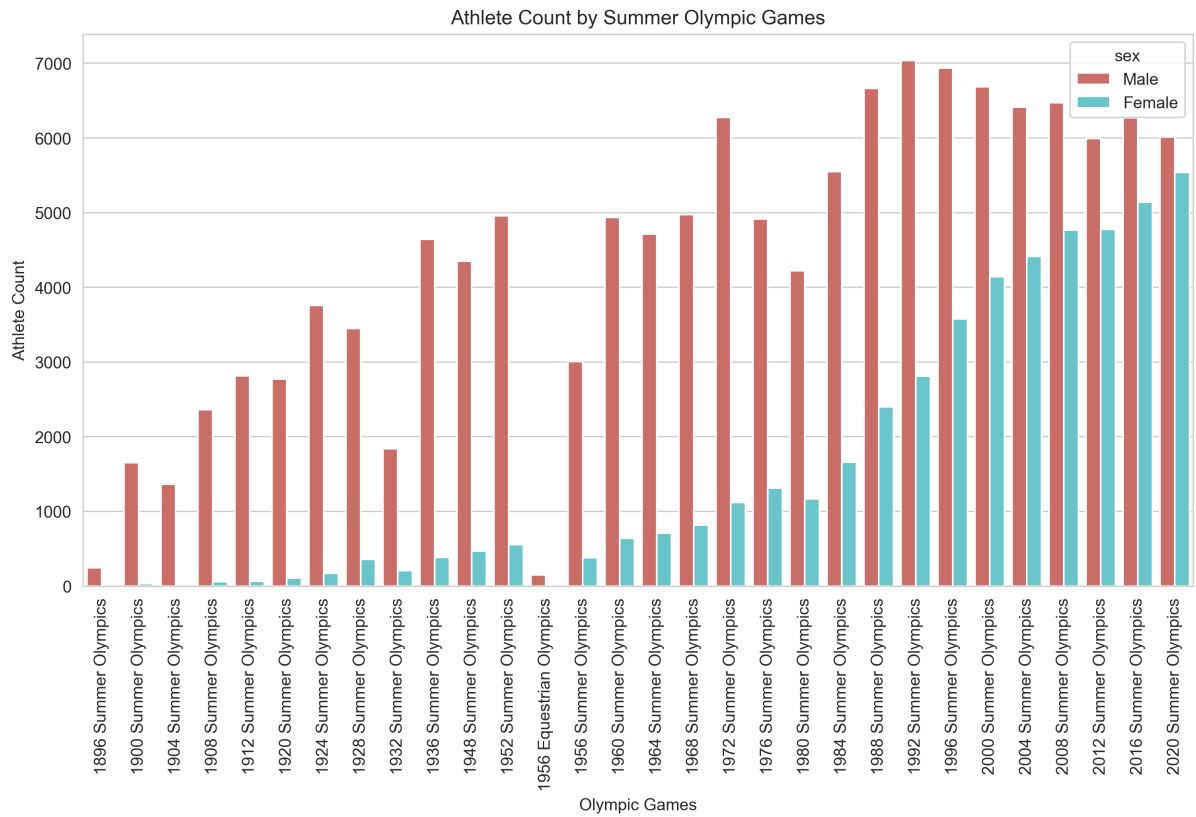


## **Russian Empire, Russian Federation and ROC ?**

Looking at the top 5 countries with the most medals, we see that all except the Soviet Union have participated continuously from 1896 to 2022. However, the Soviet Union only participated in the Olympic Games from 1952 to 1988. Russians did not only participate in the Olympics under the Soviet Union, here are other names representing the Russian people:

- The Russian Empire participated in 3 Olympics, namely the 1900 Summer Olympics, 1908 Summer Olympics, and 1912 Summer Olympics, and won a total of 8 medals.
- The Russian Federation participated in 12 Olympic games from 1994 to 2016 and won a total of 543 medals.
- In 2016, Russian athletes were allowed to participate in the Summer Olympics in Rio de Janeiro under the name "Russian Federation". However, in 2017, the International Olympic Committee (IOC) suspended Russia for the state-sponsored doping scandal. As a result, Russian athletes were not allowed to participate in the 2018 Winter Olympics in Pyeongchang, South Korea, under the Russian flag. Instead, they were allowed to participate under the Olympic Athletes from Russia (OAR) delegation. At the 2020 Summer Olympics in Tokyo and the 2022 Winter Olympics in Beijing, Russian athletes were allowed to participate under the banner of the Russian Olympic Committee (ROC) . The IOC rules state that all public displays of the organization's participant name should use the acronym "ROC," not the full name "Russian Olympic Committee" If an ROC athlete wins a medal, a Tchaikovsky song piece is played instead of the Russian national anthem, and the ROC flag, which features the Olympic rings and red, blue, and white stripes, is flown. ROC won a total of 120 medals.

## **3. How has the participation of women in the Olympic Games changed over time?**



When we examine the above graphs, we see that the number of female athletes participating in the Winter and Summer Olympics has been gradually increasing over time. When we look at the graph of the Number of Athletes Participating in the Winter Olympics, the 1994 Winter Olympics stand out. This is because, while the number of female athletes generally increased before and after this date, the 1994 Winter Olympics disrupted this trend. So why is that?

Because there were fewer sports at the 1994 Winter Olympics compared to other Olympic Games in other years. Therefore, the number of participating athletes had decreased. This decrease was not only for female athletes but also for male athletes.

## **Why there were less sports comparing to other years in 1994 Winter Olympics ?**

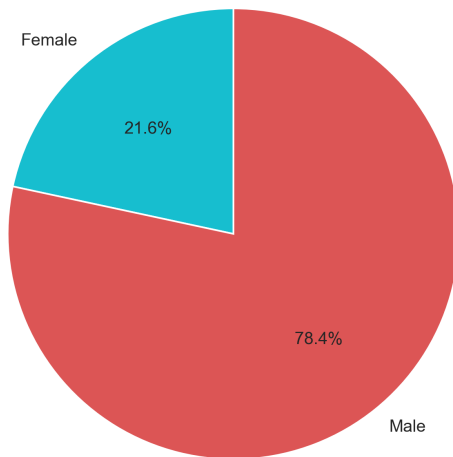
There were a few reasons why there were fewer sports in the 1994 Winter Olympics than in other years.

- **The International Olympic Committee (IOC) was trying to reduce the cost of the Games.** The 1992 Winter Olympics in Albertville, France, had been very expensive, and the IOC was looking for ways to save money. Reducing the number of sports was one way to do this.
- **Some sports were not considered to be "Olympic" enough.** The IOC has a set of criteria that sports must meet in order to be included in the Olympic Games. Some sports, such as ski ballet, did not meet these criteria.
- **Some sports were not popular enough.** The IOC also considers the popularity of a sport when making decisions about whether or not to include it in the Olympic Games. Some sports, such as bandy, were not popular enough to warrant inclusion.

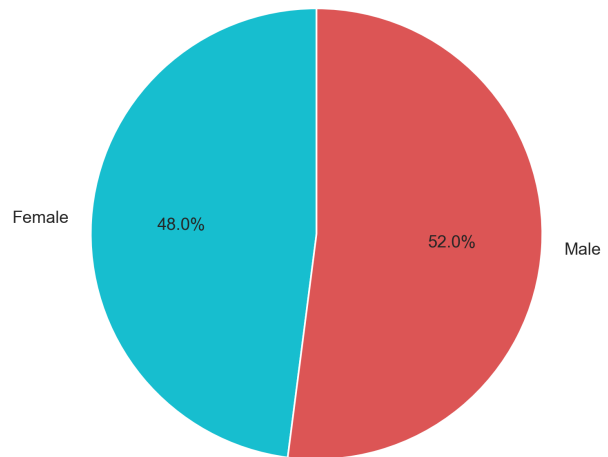
As a result of these factors, the 1994 Winter Olympics featured 61 events in 12 sports. This was fewer events than the 64 events in 14 sports that were contested at the 1992 Winter Olympics.

The IOC has since reversed some of these decisions, and the 2022 Winter Olympics in Beijing featured 109 events in 15 sports. However, the IOC is still committed to keeping the cost of the Games under control, and it is possible that the number of sports in the Winter Olympics could be reduced again in the future.

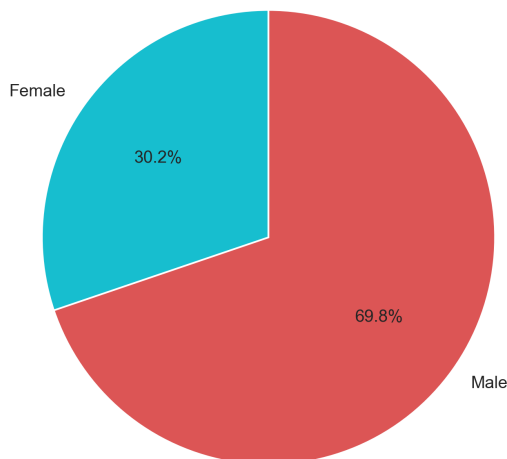
Women Percentage - 1980 Summer Olympics



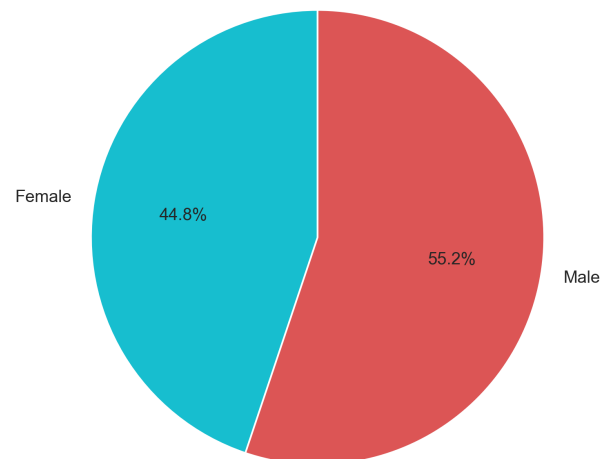
Women Percentage - 2020 Summer Olympics



Women Percentage - 1994 Winter Olympics



Women Percentage - 2022 Winter Olympics

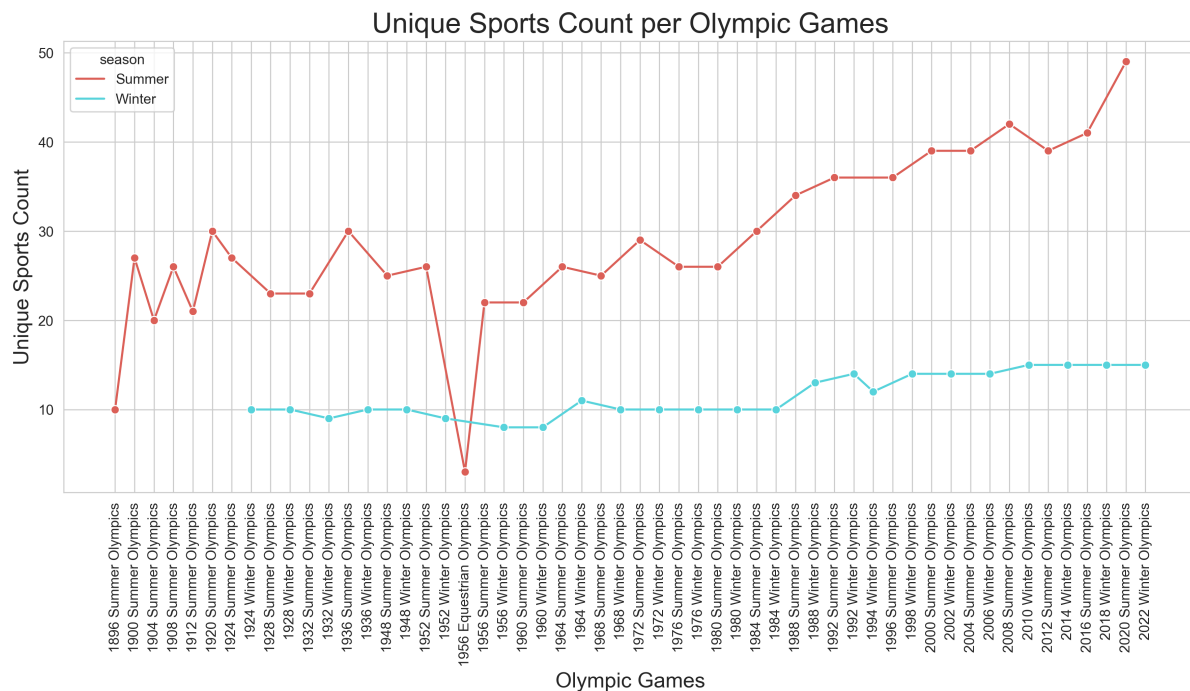


#### 4. Do host countries generally win more medals in the Olympics?

According to the analysis, in 54 Olympic Games held between 1896 and 2022, the host country became the country with the most medals in 12 of them. On average, in every 5 Olympic games, the host country reached the position of the country with the most medals at the end of the games. The ranking of the host countries according to

the total number of medals was an average of 5.24 out of an average of 33.13 medal winners per Olympic Games.

## 5. How has the number of sports in the Olympics changed over time?



Looking at the graph above, we can see that the number of sports in the 1956 Equestrian Olympics was very low because it was actually part of the 1956 Summer Olympics, as we mentioned at the beginning of the report. Similarly, we can see in the graph the decrease in the number of sports at the 1994 Winter Olympics that we mentioned earlier.

Overall, we can see that the number of sports in the Summer Olympics is increasing and reached its peak at the 2020 Summer Olympics. We also see that the number of sports in the Winter Olympics is increasing over time, but is more stable compared to the previous Winter Olympics.

## Conclusion

The Olympic Games is a global event that has grown significantly since its inception in 1896. The number of participating countries, athletes, events, and medals

awarded has increased significantly over the years. This data analysis report provides a comprehensive overview of the growth and evolution of the Olympic Games from 1896 to 2022.

The Olympic Games have become a symbol of unity, sportsmanship, and peace. They provide a platform for athletes to showcase their skills and inspire others to pursue their dreams. The games have grown significantly over the years, reflecting the growing interest in sports and the global appeal of the games.

Moving forward, the Olympic Games will continue to evolve and adapt to the changing landscape of sports and society. They will remain a symbol of excellence and achievement, inspiring generations to come.