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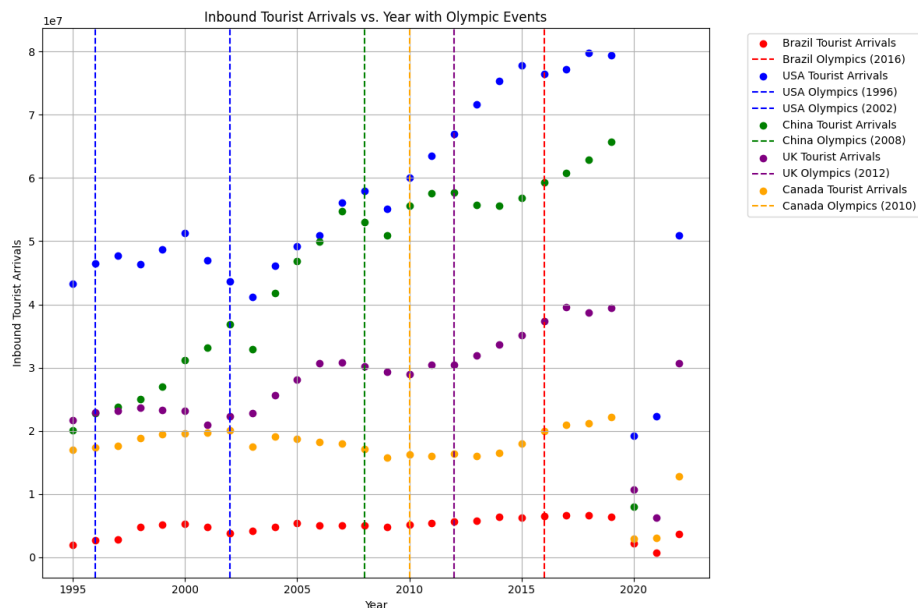
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Analysis of the Olympic Games' Impact on Tourism

For our project, we examined how hosting the Olympic Games influences tourism levels in host countries. Our central research question asked whether hosting the Olympics leads to meaningful increases in inbound tourist arrivals, holding broader global trends constant. The null hypothesis is that the Olympics, although grand in scale, do not bring enough additional tourism to a country to be considered an economic booster. To explore this, we analyzed tourism data for Brazil, the United States, China, the United Kingdom, and Canada using a Generalized Linear Model (GLM) and visual trend comparisons with Olympic host-year markers.



The visualization shows that in most cases, tourism increased slightly in the years surrounding Olympic events. In countries like China (2008) and the United Kingdom (2012), there is a noticeable increase in tourist arrivals in the years following their Olympics. This suggests that hosting the Olympics may temporarily raise global awareness of a country, encouraging more international travel due to increased global media attention and infrastructure investments.

However, when examining the trends more closely, it becomes clear that the Olympics do not dramatically change the long-term trajectory of tourism. Instead, most countries appear to follow steady growth paths that are already present. For example, Brazil's tourism prior to 2016 was already slowly rising, and while there is a modest increase around the Olympic year, the overall trend does not show a strong shift afterward. This indicates that while the Olympics may act as a short-term boost, they do not appear to cause sustained tourism growth on their own.

The GLM results further support this conclusion. The model showed a positive coefficient for time (Year), suggesting tourism tends to grow over time regardless of Olympic hosting. However, the effect was not statistically significant, indicating that year-to-year increases were not strong enough to definitively be because of hosting the Olympics. The p-values are greater than 0.05, so we fail to reject the null. This implies that other long-term economic and global factors, such as international travel trends, income growth, and global mobility likely play a much larger role in determining tourism levels. As shown in the graph, the COVID-19 pandemic had a huge impact on tourism rates. The visualization shows extreme drops in tourist arrivals around the year 2020 for all countries analyzed. These declines are far more dramatic than any Olympic-related increases. This highlights that major global crises can easily outweigh the economic and tourism benefits that the Olympics might bring.

From our perspective, this was a valuable finding because it challenges the common assumption that hosting the Olympics guarantees major economic or tourism benefits. We thought that hosting would be of great benefit to countries, but that does not seem to be the case. While there are clearly symbolic and cultural benefits to hosting, the data suggests that the tourism gains are limited and often temporary. It suggests that countries considering hosting the Olympics should weigh the extremely high costs of preparation and infrastructure against relatively modest tourism impacts. Overall, it seems more of a flex of personal wealth for the country to be able to host.

A limitation of our project is that we focused on aggregating national tourism data rather than city-level data. The Olympic Games are highly localized events, and it is possible that host cities will experience stronger effects than the national averages show. Future research could improve this analysis by using regional datasets to better isolate Olympic effects from other global trends. In conclusion, based on our visualization and statistical modeling, we believe that the Olympic Games tend to produce small, short-term increases in tourism, but they do not significantly alter long-term tourism trends once broader global factors are considered. Hosting the Olympics appears to function more as a global visibility event than a long-term economic driver of tourism.

REFERENCES

Data Link:

<https://ourworldindata.org/grapher/international-tourist-trips?tab=line&country=>

Workbook:

https://colab.research.google.com/drive/156ylkN9q25VOj8pwQkxTNX6Tkq6XCSV6?usp=sharing#scrollTo=oBg0MgzQ_Ss8