

Louis G Consulting

120 YEARS OF OLYMPIC HISTORY

Analysis on Athletes and Results

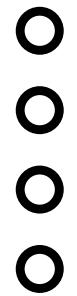
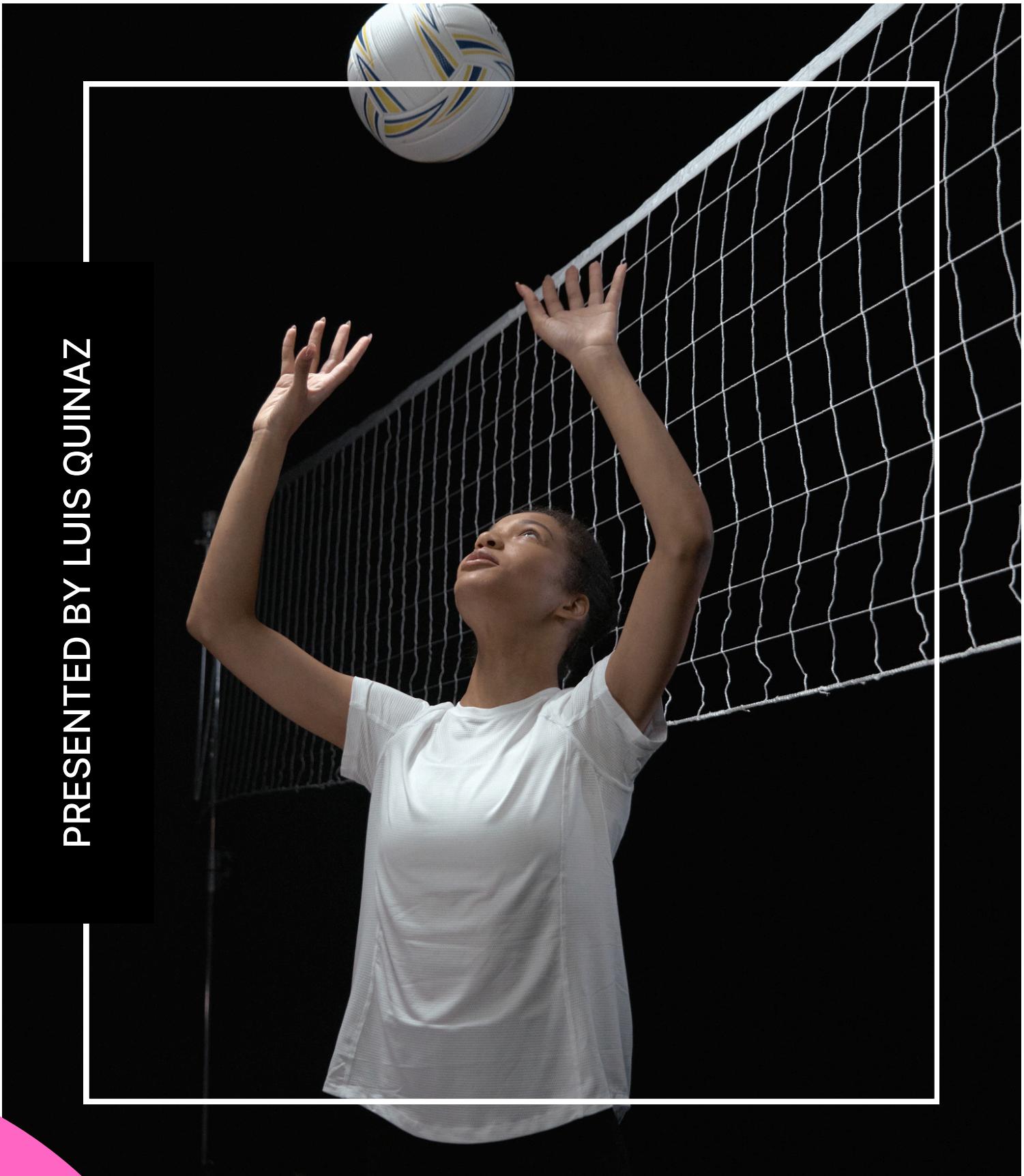
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GOVERNO DE
PORTUGAL



PRESENTED BY LUIS QUINAZ



HOW EVERYTHING STARTED?

Público
<https://www.publico.pt> › ... ::

Poucas medalhas e muita frustração – o que falha em ...

08/08/2024 — A má performance de Portugal não se explica apenas pela questão da pobreza – há países muitíssimo mais pobres à nossa frente no medalheiro ...

Público
<https://www.publico.pt> › 2024/08/05 › desporto › noticia ::

Dez dias em Paris: menos medalhas e menos diplomas ...

05/08/2024 — Em comparação com Tóquio, os Jogos de 2024 estão a dar menos resultados de topo a Portugal. Mas ainda podem melhorar. Marco Vaza em Paris.

Expresso
<https://expresso.pt> › opiniao › 2024-08-07-jogos-olimp... ::

Jogos Olímpicos: pretendemos medalhas, mas ignoramos ...

07/08/2024 — Este ano, temos 73 atletas portugueses a competir nos Jogos Olímpicos, em 15 modalidades diferentes. A todos eles, os meus parabéns.

206 Nations Participate in Olimpic Games.

- Can we take any big conclusion from individual performance?
- Why do some nations win more than others?
- Are there any endogenous factors for atlete success?

Relevant Metrics

- Number of Medals awarded
- Public Investment in Sports and Health
- Number of athletes and sports played by each Nation
- Athlete genetics

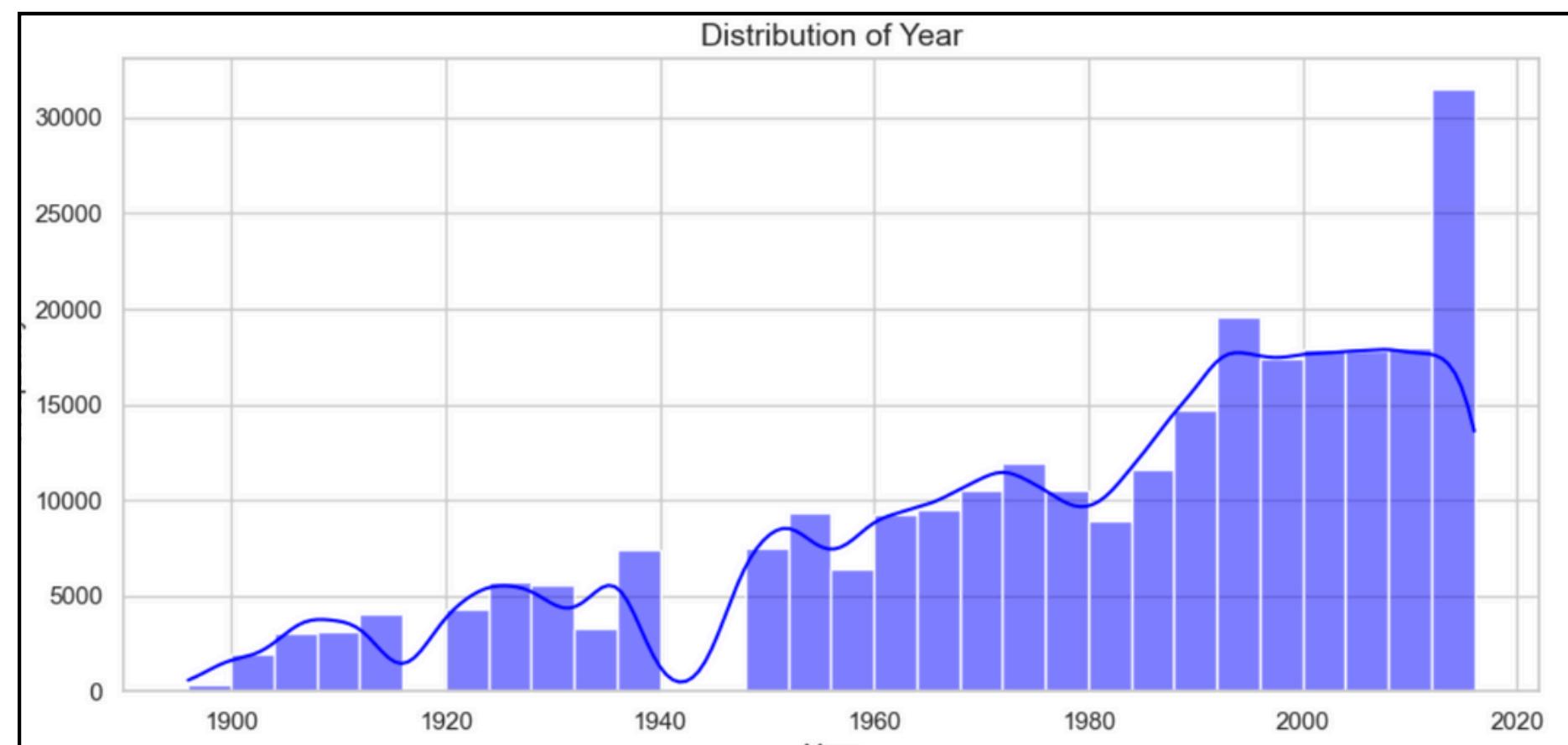
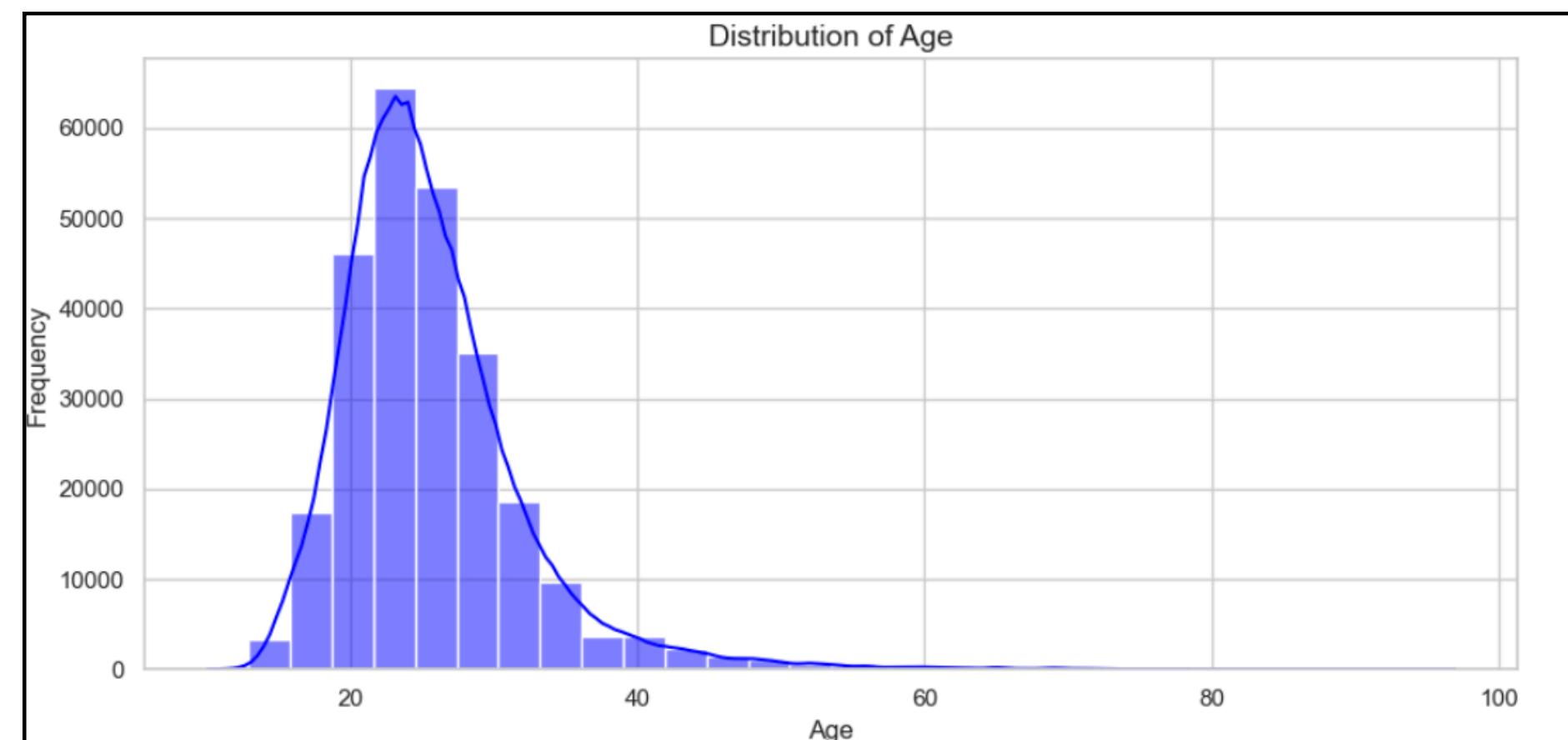
DATASET

ID	Name	Sex	Age	Team	NOC	Year	Season	City	Sport	Event	Medal
1	A Dijiang	M	24.0	China	CHN	1992	Summer	Barcelona	Basketball	Basketball Men's Basketball	NaN
2	A Lamusi	M	23.0	China	CHN	2012	Summer	London	Judo	Judo Men's Extra-Lightweight	NaN
3	Gunnar Nielsen Aaby	M	24.0	Denmark	DEN	1920	Summer	Antwerpen	Football	Football Men's Football	NaN
4	Edgar Lindenau Aabye	M	34.0	Denmark/Sweden	DEN	1900	Summer	Paris	Tug-Of-War	Tug-Of-War Men's Tug-Of-War	Gold
5	Christine Jacoba Aaftink	F	21.0	Netherlands	NED	1988	Winter	Calgary	Speed Skating	Speed Skating Women's 500 metres	NaN

df.dtypes

ID	int64	Year	int64
Name	object	Season	object
Sex	object	City	object
Age	float64	Sport	object
Height	float64	Event	object
Weight	float64	Medal	object
Team	object		
NOC	object		
Games	object		
			dtype: object

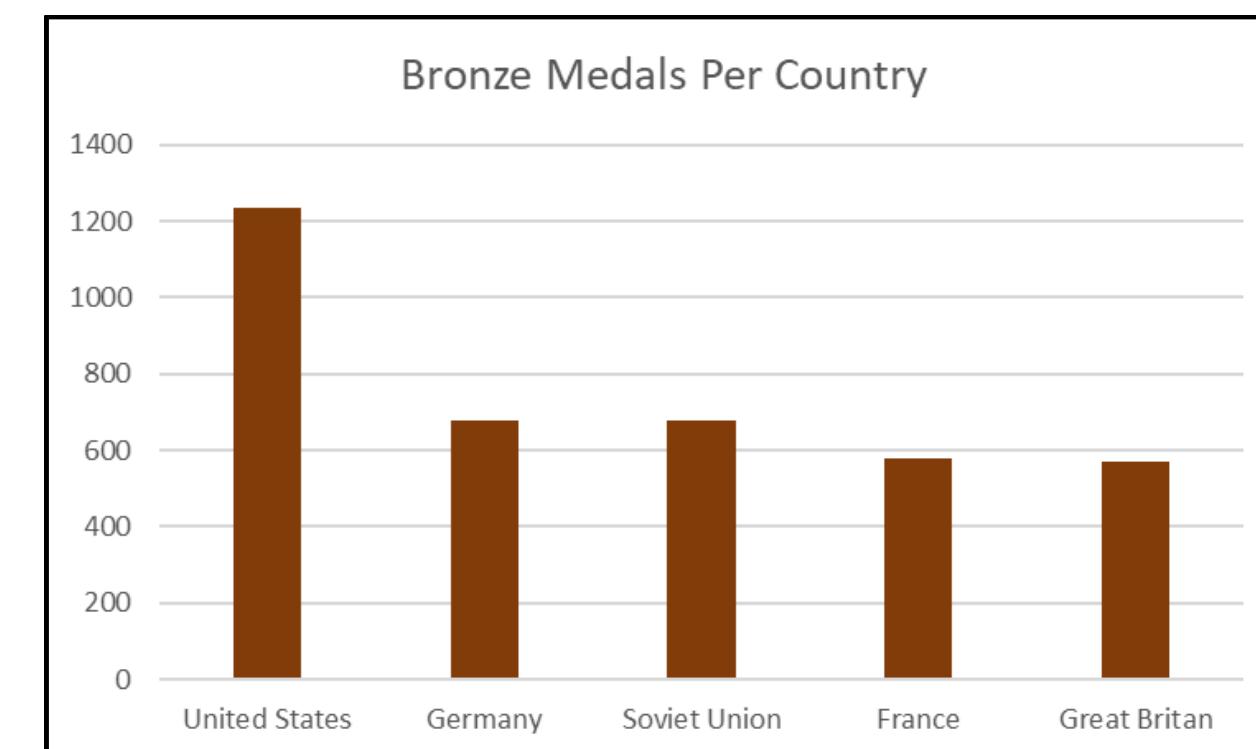
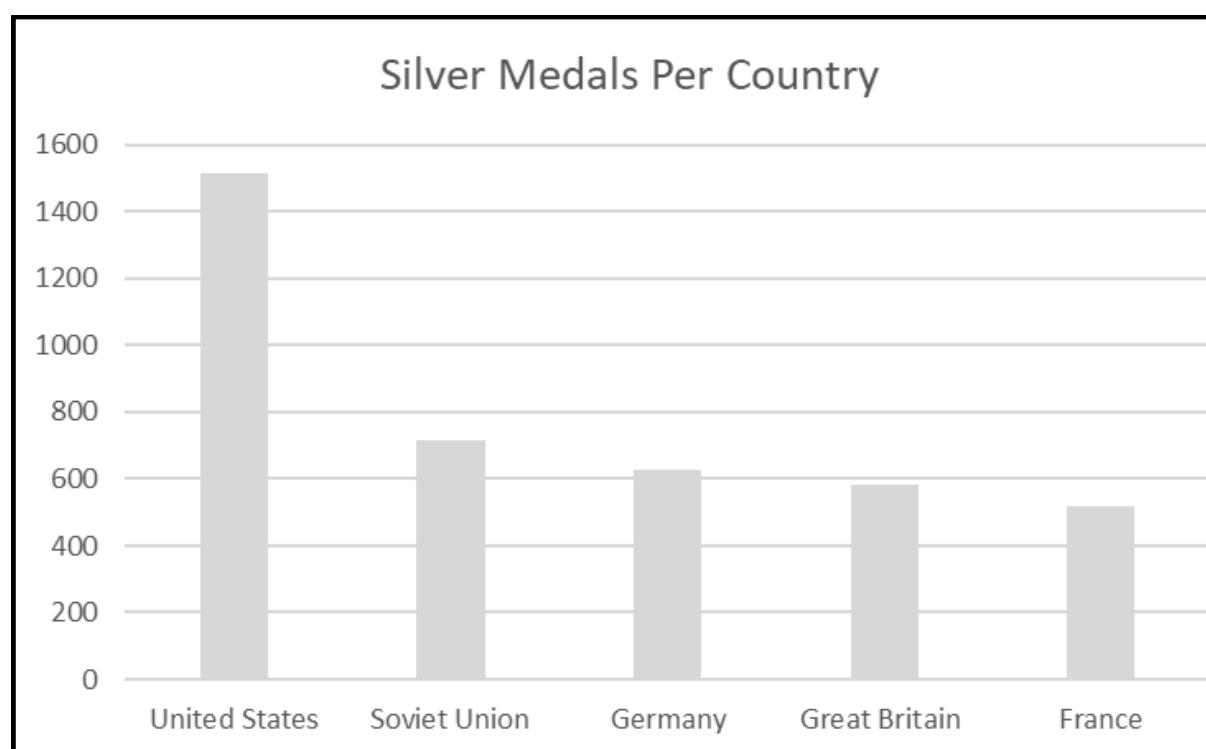
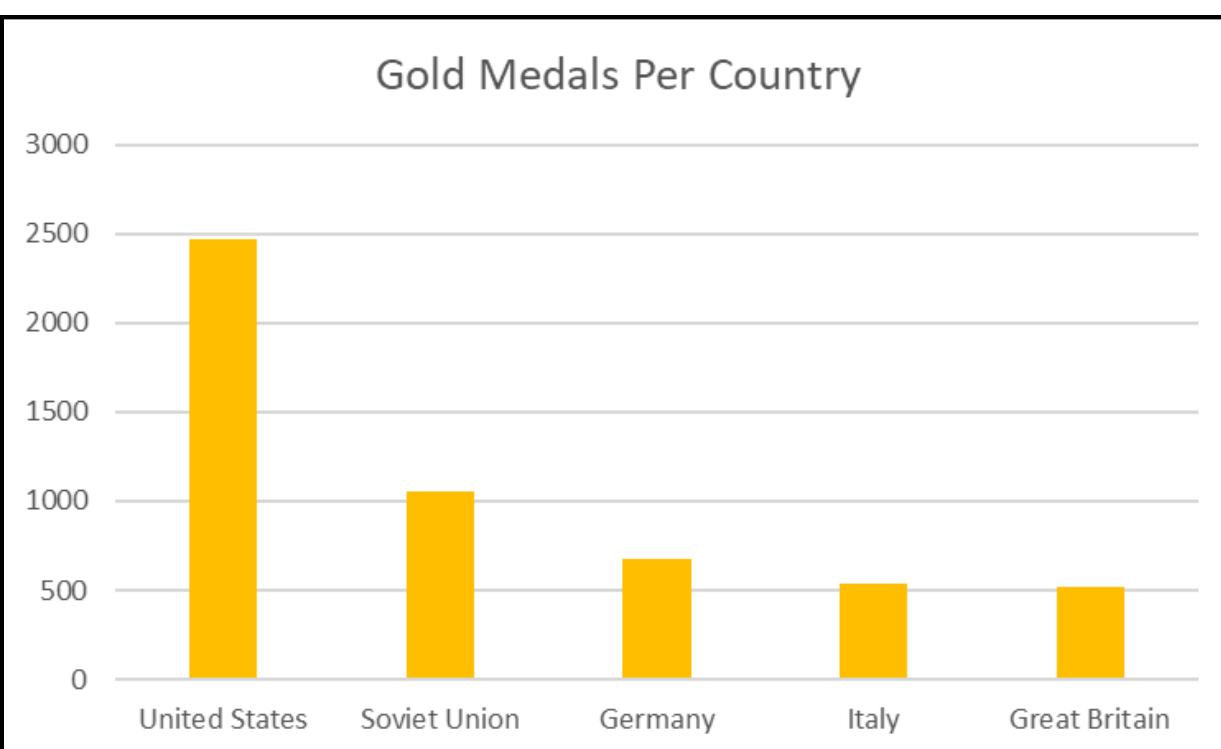
DATASET



	count	mean	std	min	25%	50%	75%	max
Age	261642.0	25.556898	6.393561	10.0	21.0	24.0	28.0	97.0
Year	271116.0	1978.378480	29.877632	1896.0	1960.0	1988.0	2002.0	2016.0

DATASET

Top 5 Winners per Medal



TOP MEDALISTS AGE DISTRIBUTION:

Gold	
Age	#Medals Won
23	1136
24	1135
22	1096
25	1056
26	976

Silver	
Age	#Medals Won
23	1143
24	1048
25	1023
22	972
26	947

Bronze	
Age	#Medals Won
23	1116
24	1106
22	1081
25	1045
26	1001

INVESTMENT ANALYSIS

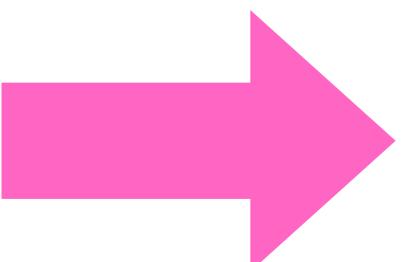
Countries with more Medals	Expenditure(Bilions)	Habitants (Milions)	Investment per capita
United States	8,2	331	2%
China	6,5	1410	0%
Russia	4,7	143	3%
Germany	3,2	83	4%
United Kingdom	3	67	4%
Japan	2,8	125	2%
Australia	2,6	26	10%
France	2,4	65	4%
South Korea	2,2	52	4%
Italia	2,1	60	4%
Canada	2,9	38	8%
Netherlands	1,8	17	11%
Brazil	1,6	213	1%
Spain	1,5	47	3%
Hungary	1,3	9,6	14%



SIGNIFICANCE IN MEDALS AND AGE?

WHAT IS BEING TESTED?

- **Null Hypothesis (H₀)**: There is no significant difference in the average ages of athletes who win gold medals and those who win silver or bronze medals.
- **Alternative Hypothesis (H_A)**: There is a significant difference in the average ages of athletes between these two groups.



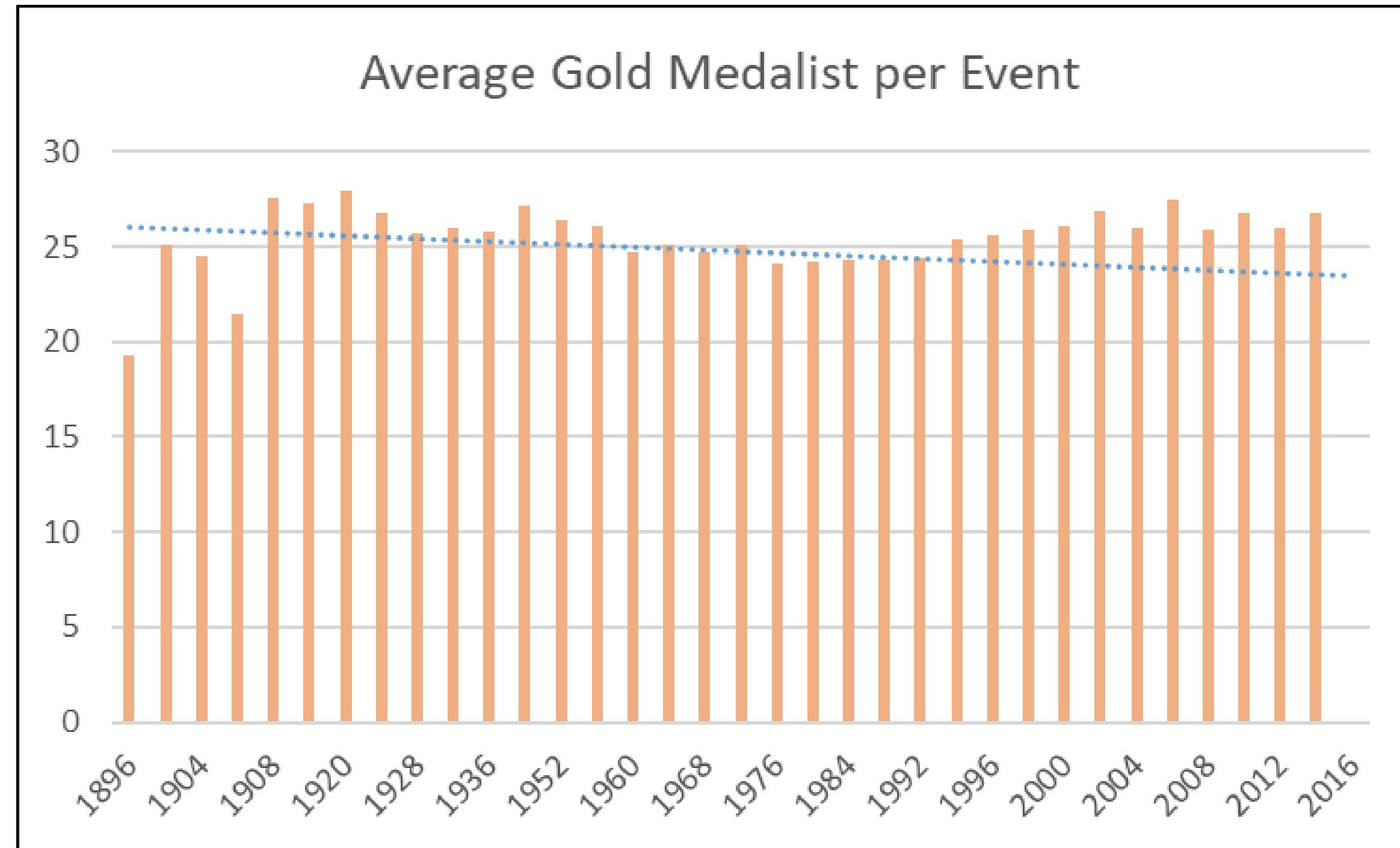
FAIL TO REJECT NULL HYPOTHESIS

```
gold_age = df[df['Medal'] == 'Gold']['Age'].dropna()
other_medals_age = df[df['Medal'].isin(['Silver', 'Bronze'])]['Age'].dropna()

t_stat, p_value = ttest_ind(gold_age, other_medals_age, equal_var=False)
print(f"T-statistic: {t_stat}, P-value: {p_value}")

T-statistic: -0.5787034552853947, P-value: 0.5627941508964953
```

EXTRA INSIGHT





SUMMARY



1.

Government Expenditure

Investing in Sports and Health is a sign of positive results.

2.

Private Investment

Economies with access to big brands/sponsors allow the sector to keep evolving.

3.

Number of Olimpic Medals

It's hard to compare Nations with different values in terms of Habitants. However, it can be seen as a sign of success.

4.

Resilience

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THANK YOU!