

REPORT: BASKETBALL DATA ANALYSIS

FROM OLYMPICS DATASET

ABOUT

The project aims to analyze the height, weight, and age of athletes in basketball to determine their impact on the likelihood of winning a medal in both the male and female categories.

Hypothesis

1

Taller athletes have a higher probability of winning a medal in basketball, regardless of the gender category.

2

Weight has a minimal impact on the chances of winning a medal in basketball, once other factors such as height and skill level are considered.

3

Younger athletes have a higher likelihood of winning a medal in basketball compared to older athletes.

Data Analysis Approach

Descriptive Statistics

Calculate descriptive statistics, such as mean, mode, minimum, and maximum, for height, weight, and age within different medal categories and sexes. This provides an overview of the central tendency, variability, and range of the variables.

Data Visualization

Utilize various visualization techniques, to visually explore the relationships between height, weight, age, and medal outcomes. Visualizations can help identify patterns, trends, or outliers in the data.

Correlational Analysis

Conduct correlation analysis, such as Pearson's correlation coefficient, to measure the strength and direction of the relationships between height, weight, age, and medal-winning probability. This helps identify any significant associations between variables.

Initial Analysis

MALE

Medal	Avg. Age	Avg. Height	Avg. Weight
Gold	25.1	197.8	95.4
Silver	25.1	198.7	95.0
Bronze	25.2	197.5	94.6
No Medal	25.5	194.7	90.7

FEMALE

Medal	Avg. Age	Avg. Height	Avg. Weight
Gold	26.6	184.1	75.2
Silver	25.1	181.8	73.2
Bronze	25.1	183.1	72.7
No Medal	25.6	182.3	73.7

The average data reveals potential differences in height, weight, and age among athletes who have won medals in different categories. These variations provide insights into the factors that may impact winning a medal.

Deeper Analysis (Pearson's Correlation)

Correlation coefficient (Male)

(Medal, Weight): 0.13446885831903715

(Medal, Height): 0.13001835481679622

(Medal, Age): -0.04048118078494961

Correlation coefficient (Female)

(Medal, Weight): 0.027912740774933383

(Medal, Height): 0.04533754392170162

(Medal, Age): 0.037049829760615695

The analysis shows a weak positive correlation between the number of medals and weight as well as height for both males and females, suggesting a slight tendency for higher weight and height to be associated with more medals. However, there is no significant linear correlation between the number of medals and age for either gender.

FINAL FINDINGS (RESULTS OF HYPOTHESIS)

1

There is a weak positive correlation between the number of medals and height for both males and females.

This indicates a slight tendency for height to increase as the number of medals increases, but the correlation is not significant.

2

There is a weak positive correlation between the number of medals and height for both males and females.

This indicates a slight tendency for height to increase as the number of medals increases, but the correlation is not significant.

3

There is no significant linear correlation between the number of medals and age for both males and females.

Age does not seem to have a strong association with the chances of winning a medal