

# Correlation Between GDP and Life Expectancy

Learn / Courses / Introduction to Statistics in Python

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Daily XP 969

Exercise

What can't correlation measure?

While the correlation coefficient is a convenient way to quantify the strength of a relationship between two variables, it's far from perfect. In this exercise, you'll explore one of the caveats of the correlation coefficient by examining the relationship between a country's GDP per capita (gdp\_per\_cap) and happiness score.

pandas as pd, matplotlib.pyplot as plt, and seaborn as sns are imported, and world\_happiness is loaded.

Instructions 2/3

55 XP

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Calculate the correlation between gdp\_per\_cap and life\_exp and store as cor.

Take Hint (-10 XP)

script.py

Light Mode

1 # Scatterplot of gdp\_per\_cap and life\_exp

2 sns.scatterplot(x='gdp\_per\_cap',

3 y='life\_exp', data=world\_happiness)

4

5 # Show plot

6 plt.show()

7

8 # Correlation between gdp\_per\_cap and

9 life\_exp

10 cor = \_\_\_\_

11

12 print(cor)

Run Code

Submit Answer

Plots

85

80

75

70

65

60

55

0

20000

40000

60000

80000

100000

gdp\_per\_cap

life\_exp

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Next Plot →

IPython Shell

Slides

In [1]:

## Question:

Calculate the correlation between 'gdp\_per\_cap' and 'life\_exp' using the dataset `world\_happiness`. Store the correlation value as `cor` and display it after creating a scatterplot showing their relationship.

## Explanation of the Question:

The task requires both visualizing the relationship between GDP per capita and life expectancy and quantifying this relationship using the correlation coefficient. Scatterplots provide a graphical view, while the correlation coefficient provides a numerical measure of linear association.

## Answer:

```
# Import necessary libraries
import seaborn as sns
import matplotlib.pyplot as plt

# Scatterplot of gdp_per_cap and life_exp
sns.scatterplot(x='gdp_per_cap', y='life_exp', data=world_happiness)
plt.show()

# Calculate the correlation between gdp_per_cap and life_exp
cor = world_happiness['gdp_per_cap'].corr(world_happiness['life_exp'])

# Print the correlation
print(cor)
```

## Explanation of the Answer:

The scatterplot is created using seaborn's scatterplot function to visually inspect the relationship between GDP per capita and life expectancy. The correlation is calculated using pandas' `corr()` function, which computes the Pearson correlation coefficient. The result is stored in the variable `cor` and printed to verify the linear association.