Correlation Between GDP per Capita and Happiness Score
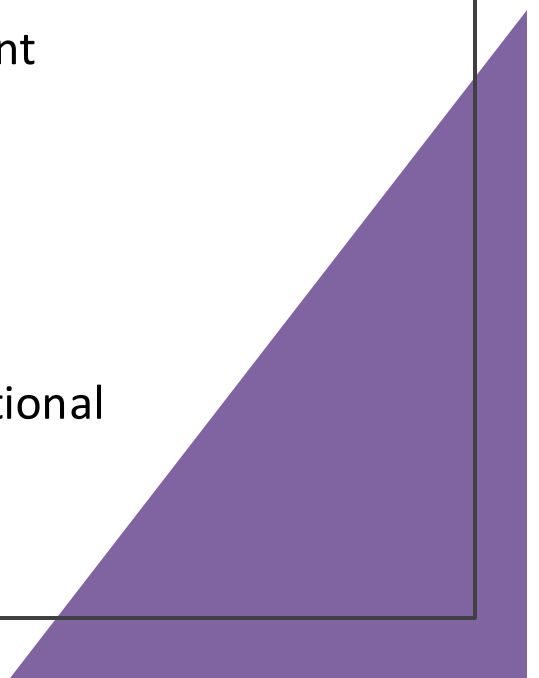
CS 2704 - Final Project Proposal

Malek Karoui, Tusshar Gopaul, Tishant Doorgapersand, Fady Haytham Elgohary

Introduction to the Dataset

- Dataset Name: World Happiness Report 2019
- Source: Kaggle
- Key Variables:
- - GDP per Capita
- - Happiness Score
- - Social Support, Life Expectancy, etc.
- Number of Countries: 156

Hypothesis

- Statement:

"We hypothesize that GDP per Capita has a significant positive correlation with Happiness Score."

- Why This is Relevant:

   - Economic factors can influence well-being.

   - Helps policymakers target economic growth for national well-being.

Plan for Testing the Hypothesis

- Descriptive Analysis:
  - Summary statistics for GDP per Capita and Happiness Score
  - Visualizations: Scatter plots, correlation heatmaps

- Predictive Analysis:
  - Linear Regression: Predict Happiness Score

- Statistical Tests:
  - Pearson correlation and p-value

Visualizations

- Scatter Plot: GDP per Capita vs Happiness Score

- Correlation Heatmap: Correlations between GDP per Capita, Happiness Score, and other variables

Data Snippet

# Overall rank	△ Country or region	# Score	# GDP per capita	# Social support	# Healthy life expe...
1 — 156	156 unique values	2.85 — 7.77	0 — 1.68	0 — 1.62	0 — 1.14
1	Finland	7.769	1.340	1.587	0.986
2	Denmark	7.600	1.383	1.573	0.996
3	Norway	7.554	1.488	1.582	1.028
4	Iceland	7.494	1.380	1.624	1.026
5	Netherlands	7.488	1.396	1.522	0.999
6	Switzerland	7.480	1.452	1.526	1.052
7	Sweden	7.343	1.387	1.487	1.009
8	New Zealand	7.307	1.303	1.557	1.026
9	Canada	7.278	1.365	1.505	1.039
10	Austria	7.246	1.376	1.475	1.016

Expected Results

- Anticipated Outcome:

   - Positive correlation between GDP per Capita and Happiness Score.

   - Wealthier countries tend to have higher Happiness Scores.

- Model Predictions:

   - Linear regression to check if GDP per Capita predicts Happiness Score.

Next Steps

- Data Analysis:

    - Conduct exploratory analysis and visualize trends

    - Run correlation tests

- Modeling:

    - Implement linear regression

    - Validate model with statistical tests

Conclusion & Questions

- Wrap-Up:

   - The project explores the relationship between GDP per Capita and Happiness Score.

   - Expected result: Strong positive correlation.

- Questions?