Nathan Evans

World Happiness Storyboard Plan

Beginning:

Slide 1: Overview of World Happiness

- Display a geospatial global map illustrating world happiness scores and associated variables.
- Utilize concise text to provide a brief description of the concept of world happiness.

Slide 2: Introduction to Hypothesis

- Introduce the hypothesis related to the factors influencing world happiness.
- Present a visualization of the correlation matrix of variables and a scatter plot highlighting the relationship between world happiness and GDP per capita.

Middle:

Slide 3: Hypothesis Validation

- Restate the hypothesis and present the scatter plot with a trendline and highlighted R-squared value (0.62) to emphasize the strength of the linear relationship.
- Display the top 10 and bottom 10 average GDP per capita by country for additional context and informational purposes.

Slide 4: Cluster Analysis

- Introduce cluster analysis using k-means machine learning to segment the data.
- Display a scatterplot of GDP per capita vs happiness scores by cluster and plot the mean values of each cluster for comparison.
- Describe and classify each cluster based on an analysis of the data, assigning meaningful names to the clusters.

Slide 5: Advanced Machine Learning Techniques

- Utilize the identified clusters for further machine learning techniques, such as random forest for feature importance and Shap values for impact on model output.
- Present evidence supporting GDP per capita as the most valuable factor in determining happiness.

Slide 6: Nuanced Analysis with Clusters

- Place the new cluster names back onto the original dataset to analyze global and regional trends in the happiness landscape.
- Provide insights into how these clusters contribute to a more nuanced understanding of world happiness.

End:

Slide 7: Stability and Volatility Analysis

- Analyze the top 10 most stable and top 10 most volatile countries over time using absolute change calculations.
- Derive insights, identify trends, and highlight notable points from the stability and volatility analysis.

Slide 8: Conclusion and Recommendations

- Conclude that GDP per capita is the single most important variable influencing world happiness.
- Recommend policies for governments or NGOs to improve each variable affecting happiness.
- Discuss the limitations of the study and propose next steps for future, in-depth studies.