Predicting Happiness Across Nations

ANALYZING KEY FACTORS INFLUENCING GLOBAL HAPPINESS SCORES

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INTRODUCTION

The objective of this report is to understand and predict happiness scores across 156 countries by analyzing key socio-economic factors. These include GDP per capita, social support, healthy life expectancy, and perceptions of corruption, all of which are critical in shaping the well-being of a nation. This analysis leverages multiple regression techniques to provide insights into the relationship between these factors and national happiness scores, offering valuable implications for policy-makers.

Understanding the coefficients allows us to measure the strength and direction of the relationship between each independent variable and the happiness score. Metrics like R-Squared (R2), Mean Absolute Error (MAE), Mean Squared Error (MSE), and Root Mean Squared Error (RMSE) quantify the accuracy of our predictions.

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## GLOBAL HAPPINESS ANALYSIS

Impact of Socio-Economic Factors
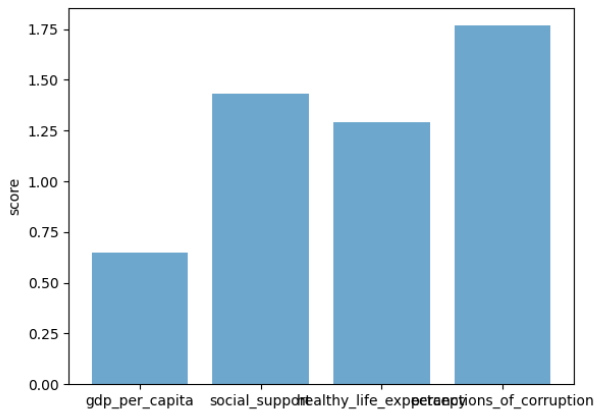
- **GDP PER CAPITA:** coefficient = 0.650. Higher GDP per capita typically indicates better economic conditions, correlating with greater happiness.
- **SOCIAL SUPPORT:** coefficient = 1.432. This suggests that emotional and social support is crucial for enhancing a nation's happiness.
- **HEALTHY LIFE EXPECTANCY:** coefficient = 1.291. Indicates the positive impact of health on happiness.
- **PERCEPTIONS OF CORRUPTION:** coefficient = 1.767. Lower corruption perceptions are linked with higher happiness scores.
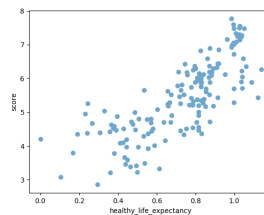
Model Accuracy Metrics
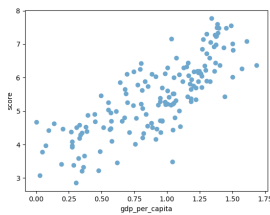
A bar chart displaying the importance of each feature with perceptions of corruption having the highest coefficient followed by healthy life expectancy, social support, and then GDP per capita.
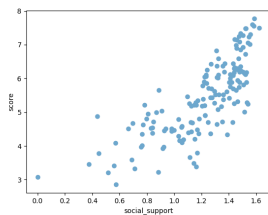
A scatter plot showing a general trend where higher GDP per capita correlates with higher happiness scores.

A scatter plot illustrating a positive correlation between higher social support and higher happiness scores.
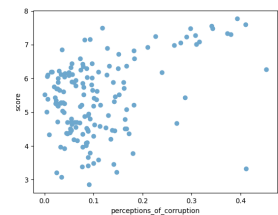
A scatter plot indicating a positive relationship between longer healthy life expectancy and higher happiness scores.

Overall Model Performance

The model's predictive power is indicated by an R2 value of 0.722, suggesting that about 72% of the variability in happiness scores is explained by the included variables. The model predicts happiness scores with a MAE of 0.405, MSE of 0.270, and RMSE of 0.520, indicative of the model's accuracy and precision.

AI WARNING

This document contains content that has been generated by an artificial intelligence model. While the information presented is based on data-driven analysis, it is important to exercise caution and critical thinking when interpreting the results. Human oversight and expert judgment are essential to ensure the accuracy and relevance of the insights provided.