

Academic Year	Module	Assessment Number	Assessment Type
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Analysis of the World Happiness Report: Exploring South Asia And Middle East Perspectives.

Student Name: Diwash Adhikari

Section : L5CG1

Student Id : 2407736

Module Leader : Siman Giri

Tutor : Siman Giri

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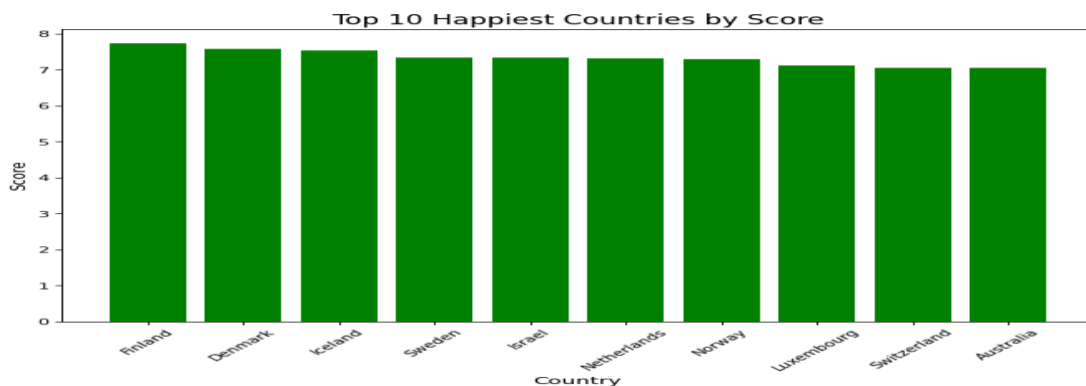
1. Introduction

The World Happiness Report highlights the growing demand for governments to prioritize happiness and well-being in their policies. It explores the present condition of happiness worldwide and explores how the science of happiness accounts for the difference in happiness in both personal and national variations (World Happiness Report, 2024). The Gallup World Poll report, published yearly, ranks countries based on various indicators such as score, social support, log GDP per capita, healthy life expectancy, freedom to make life choices, generosity, and corruption. It is a crucial resource for researchers, decision-makers, and institutions to enhance overall well-being worldwide. This report is structured to achieve three key objectives: data exploration, South Asia analysis, and South Asia vs Middle East comparison. The South Asia analysis evaluates happiness scores, highlighting top and bottom performers, while the South Asia vs Middle East comparison explores regional differences in key indicators like freedom and generosity.

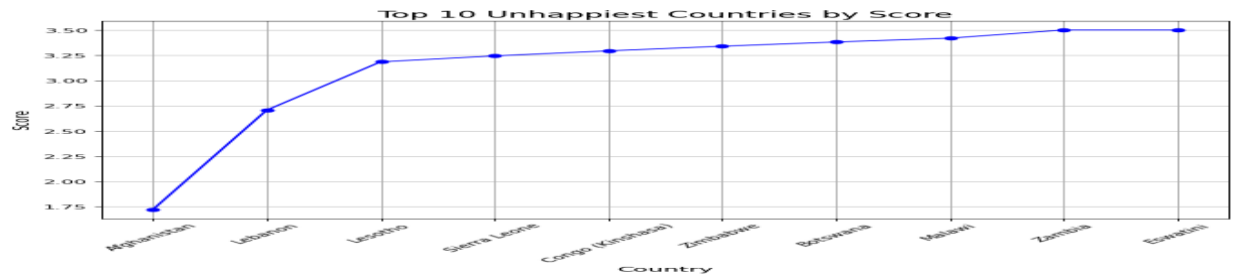
2. Data Exploration of World Happiness Report

This analysis provided a comprehensive overview of datasets, revealing trends in global happiness. Using basic statistics, I found the mean, median, and standard deviation and the country with the highest and lowest happiness scores. Finland has the highest, and Afghanistan has the lowest happiness score. There were a few missing values i displayed their sum. Additionally, I filtered countries with high happiness scores and categorized them into Low, Medium, or High happiness levels

3. Data Visualizations



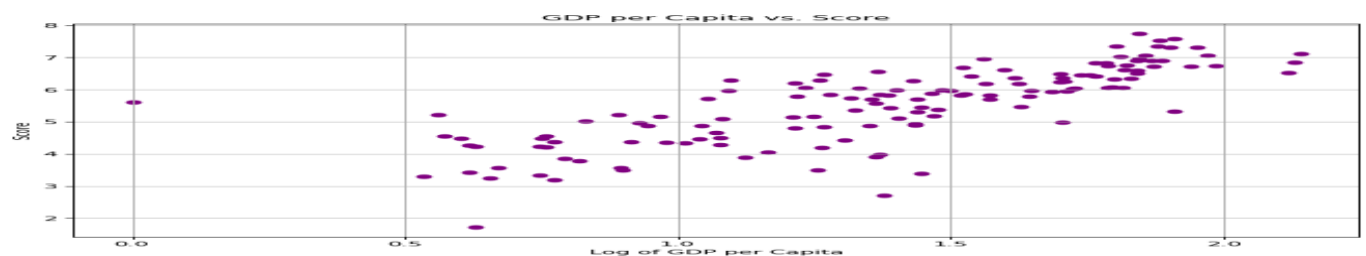
This bar graph displays the top 10 happiest countries by score, with all scores close to 7-8.



This line graph shows the top 10 unhappiest countries by score, with Afghanistan being the lowest and Eswatini having the highest among them.



Observation: This histogram shows the Distribution of Happiness score. The peak of this chart occurs once at a score of 6, so it is an unimodal histogram. The distribution appears slightly skewed to the left. Left skewed condition (Mean < Median < Mode)

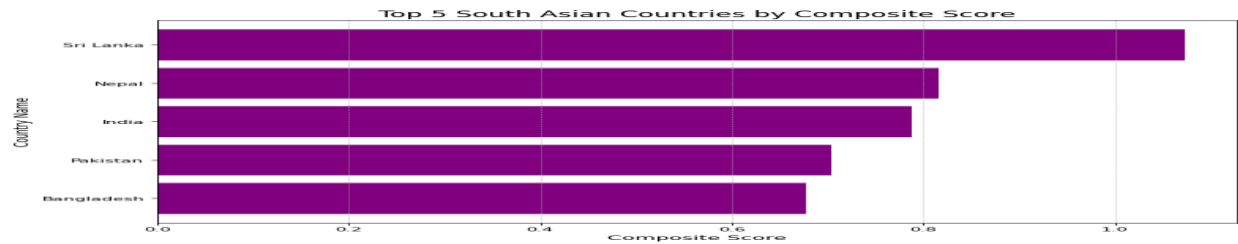


This scatter plot shows a positive correlation between log GDP per capita and happiness score.

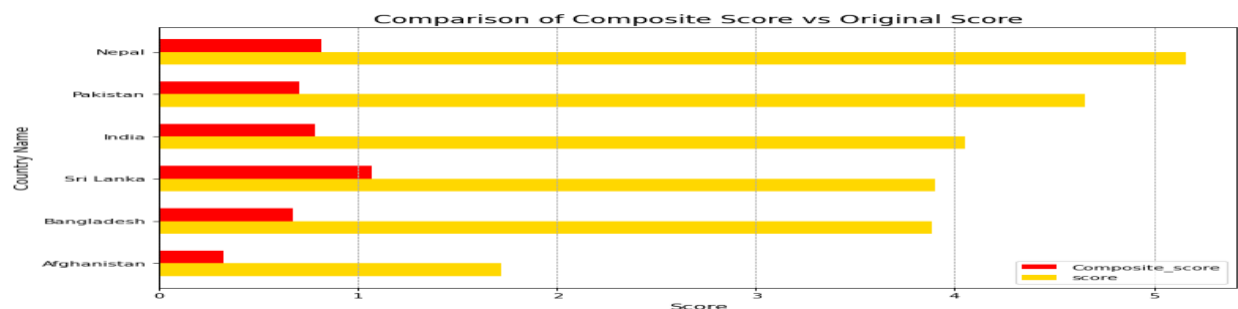
4. South Asia Dataset Analysis

In this task, I extracted South Asia country-specific data from the original dataset and saved it as a separate CSV file for future use. A single value that combines multiple metrics using weights to provide a holistic assessment or ranking is called a composite score. In the case of South Asia analysis. Composite Score =

$0.40 \times \text{GDP per Capita} + 0.30 \times \text{Social Support} + 0.30 \times \text{Healthy Life Expectancy}$.

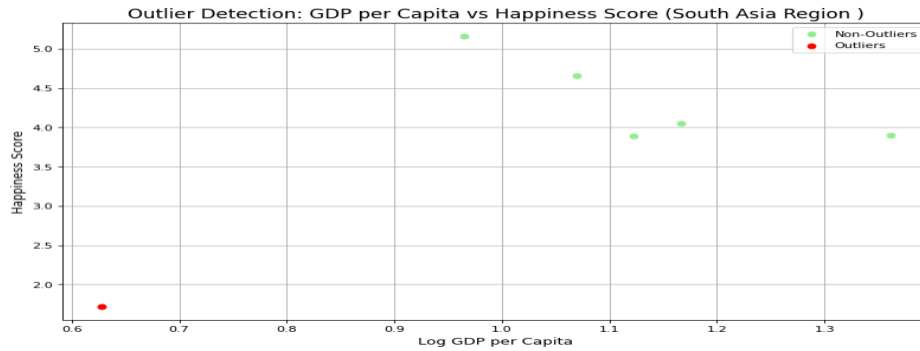


The rankings based on the Composite score do not align with the original score. The Composite Score and the original happiness score measure different dimensions of well-being. While the Composite Score combines objective factors such as GDP and social support, the original happiness score reflects personal self-assessments of life satisfaction. These differences in what each score captures can result in countries with similar economic conditions having very different happiness rankings, as subjective well-being can be influenced by factors beyond just economic performance. I have made a horizontal barplot to support my discussion.



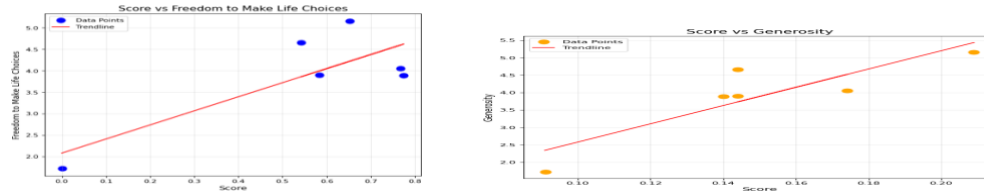
4.1. Outlier Detection

Afghanistan is identified as an outlier in the South Asia region. I defined outliers using the 1.5 X IQR rule and found lower and upper bounds for outliers. Below, we can see the scatter plot for the outlier detection. The Characteristics of these outliers are low GDP and High Scores. Extreme Values: Countries significantly deviating from the regional average in GDP and scores stand out as clear outliers. The potential impact of outliers on the regional average is outliers can obscure key drivers of happiness in typical countries, which can describe misleading trends. Outliers misrepresent regional averages, making them less representative due to skewed averages.



4.2. Exploring Trends Across Metrics

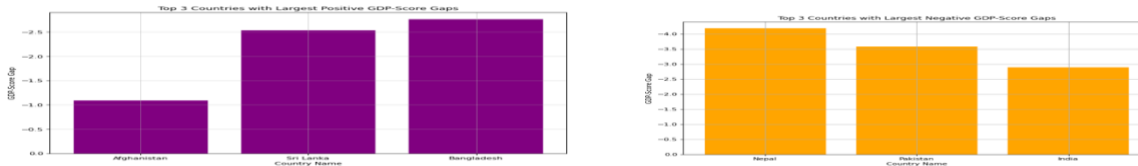
I chose two metrics, generosity and freedom to make life choices and calculated their Pearson correlation coefficient. Below is the scatter plot with trendlines for these metrics against the happiness score.



Freedom to make life choices has a strong relationship with the score (its correlation value is 0.877), while Generosity has a slightly weaker relationship with the score (its correlation value is 0.801).

4.3. Gap Analysis

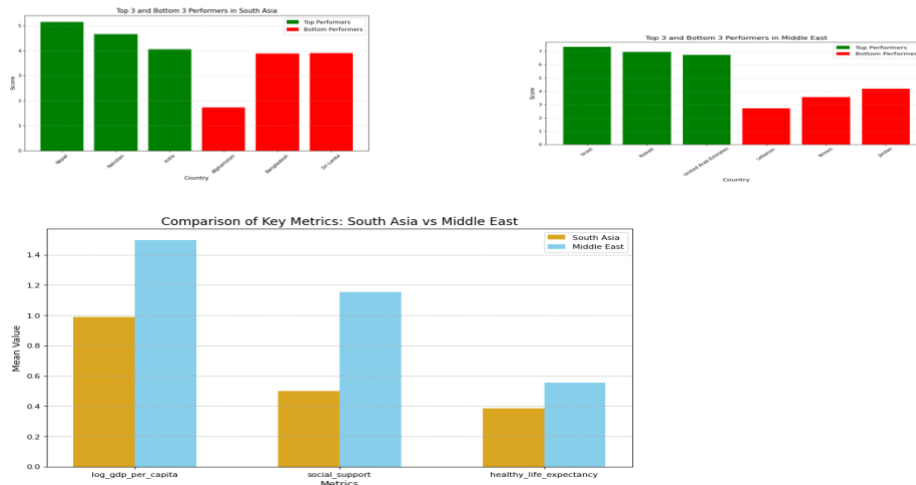
The difference between the log GDP per capita and the happiness score calculates the GDP score gap for South Asia. Then, I ranked South Asian countries by this gap in both ascending and descending order. Below are the bar charts with the top 3 largest positive and largest negative GDP score gap.



The reason behind the gap is that too large a GDP difference by score results in giving a negative value. Above are the bar charts which show the largest positive and largest negative gap. Bangladesh's positive GDP gap signals progress, while Nepal's negative gap highlights challenges needing reform in South Asia.

5. Comparative Analysis (South Asia vs Middle Asia)

The South Asian Region shows slightly less variability in scores. On average, the Middle East region has a higher happiness score (mean=5.41) compared to the South Asian region(mean=3.89).

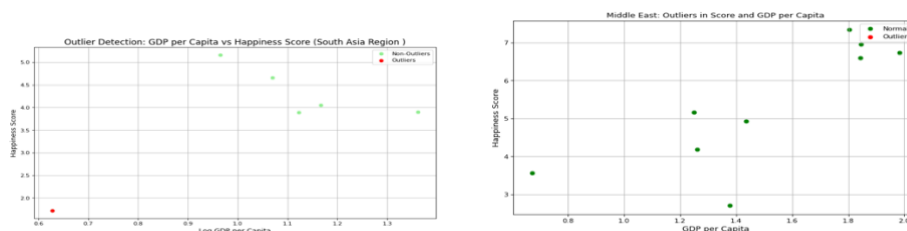


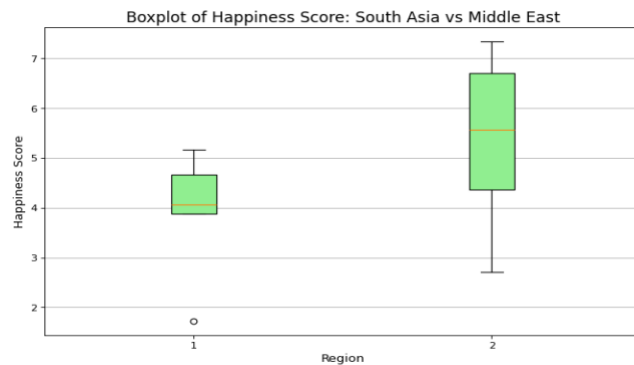
We can see the chart indicates that Social support shows the largest disparity between the two regions. Similarly followed by log GDP per capita and healthy life expectancy show the smallest disparity.

The South Asian region has greater variability in happiness scores (CV=0.34) compared to the Middle East region (CV=0.29). This indicates that happiness scores in South Asia are more dispersed around the center.

Generosity has a strong correlation(0.88) with happiness score than freedom to make life choices(0.80) in the South Asian region. Similarly, in the Middle East, freedom to make life choices shows a stronger correlation(0.86) with scores compared to generosity(0.63).

Afghanistan is identified as an outlier due to its significantly lower Score and GDP per Capita compared to other South Asian countries. No outliers were identified in the Middle East region.





The happiness score reveals key differences between the Middle East and South Asia. South Asia shows a narrow spread with low variability, with most scores near the median of 4, reflecting moderate happiness. In contrast, the Middle East has a wider spread and higher variability, with a median of 6, indicating greater happiness. South Asia has one notable low outlier(Afghanistan), while the Middle East has no outlier. Overall, Middle East displays higher happiness levels and greater variability, whereas South Asia is characterized by lower scores and an outlier that pulls down its mean.

6. Conclusion

In conclusion, this report highlights the differences in happiness levels between South Asia and the Middle East, influenced by key factors such as social support, GDP per capita, and freedom to make life choices. South Asia shows lower happiness scores with greater variability, largely due to outliers like Afghanistan, which emphasize significant regional disparities. An additional insight is that the Middle East benefits from stronger correlations between freedom to make life choices and happiness, suggesting a deeper connection between personal autonomy and well-being. On the other hand, the Middle East experiences higher and more consistent happiness levels. These findings emphasize the importance of targeted policies to reduce regional disparities and enhance quality of life.

Bibliography

World Happiness Report. (2024, feb 18). *World Happiness Report*. From World Happiness Report: <https://worldhappiness.report/about/>