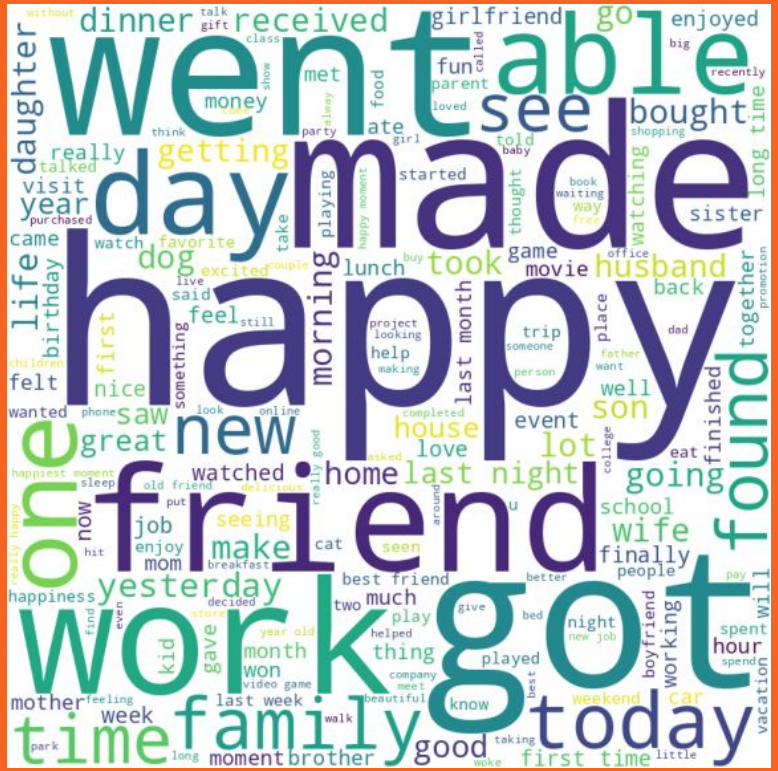

Where Will I Be Happy Next?

Group 14

Achyut Pillai

Alexis Yu

Dominique Hernandez

Riya Joshi

Tripti Chanda

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Plot reference : WordCloud Visual

Why do we measure happiness?

GOAL

Examining worldwide happiness is a scientific endeavor that enables us to assess the effects of significant global occurrences.

- Assess the quality of life
- Develop policies that address impactful factors
- Targeted resource allocation
- Inciteful international comparisons including cultural biases
- A quantitative way of measuring social progress
- Getting the “pulse” of the world

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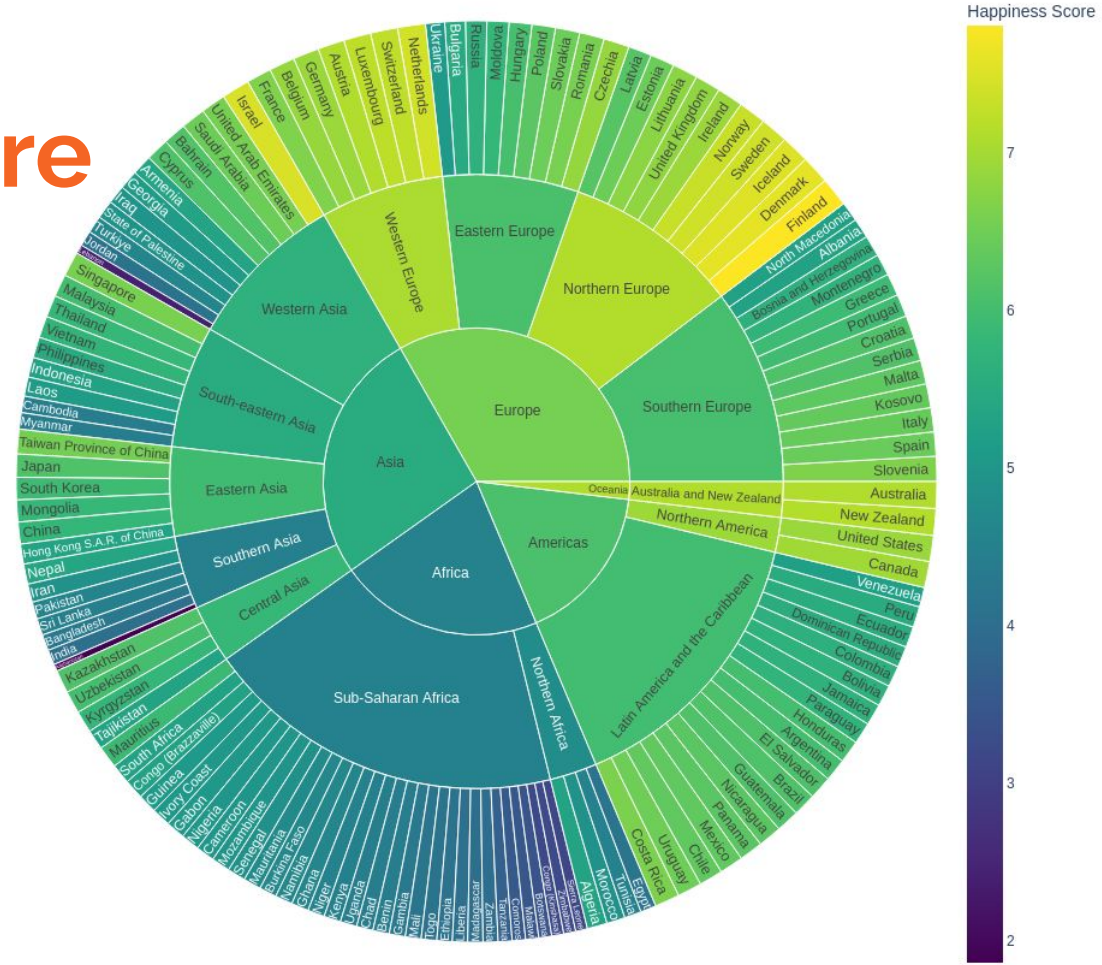
Happiness Score Sunburst



Plot reference : [Sunburst Visual]

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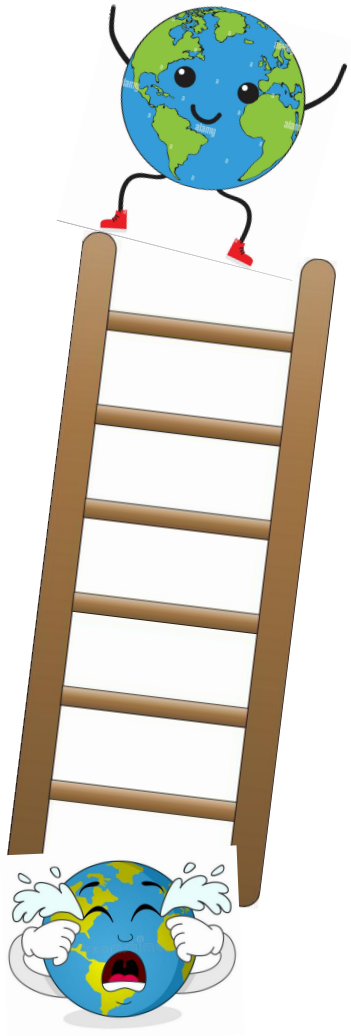
Introduction

The World Happiness Report is a report by the United Nations Sustainable Development Solutions Network. It ranks countries around the world based on how happy their citizens perceive themselves to be.

Key term to understand:

Happiness/Ladder Score : The survey measure of this is from the Jan 20, 2023 release of the Gallup World Poll covering years from 2005 to 2022. It is the national average response to the question of life evaluations. This measure is also referred to as life ladder in our analysis.



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Datasets

World Happiness Report :
Helliwell, J. F., Layard, R., Sachs, J. D., Aknin, L. B., De Neve, J.-E., & Wang, S. (Eds.). (2023). World Happiness Report 2023 (11th ed.). Sustainable Development Solutions Network.

WorldBank:
International Comparison Program, World Bank | World Development Indicators database, World Bank | Eurostat-OECD PPP Programme.

WHO:
“Global Health Estimates Technical Paper WHO/DDI/DNA/GHE/2020.1”

HappyDB:
Akari Asai, Sara Evensen, Behzad Golshan, Alon Halevy, Vivian Li, Andrei Lopatenko, Daniela Stepanov, Yoshihiko Suhara, Wang-Chiew Tan, Yinzhan Xu,
``HappyDB: A Corpus of 100,000 Crowdsourced Happy Moments'', LREC '18, May 2018. (to appear)

Global Air Pollution Dataset:
Muzdadid, Hasib Al. “Global Air Pollution Dataset.” *Kaggle*, Mar. 2023, Accessed Mar. 2024.

Corruption Perceptions Index Dataset:
“2012-2021 CPI Dataset.” Transparency.Org, Oct. 2021, www.transparency.org/en/cpi/2021.

“2023 Corruption Perceptions Index: Explore the Results.” Transparency.Org, Oct. 2023, www.transparency.org/en/cpi/2023.

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Example Methodology Overview

Preprocessing

Data Cleaning and Standardization:

- Irrelevant Columns Removal: Unwanted Columns/ topics were removed from data frames
- Standardization: Renamed Columns to match over all data sets

Missing Data:

We identified and manually updated missing regional data for specific countries, ensuring our dataset was complete and accurate for analysis.

Data Integration:

- Country Name Standardization: Changed names in data frames to match Happiness Report(e.g., 'Turkey' to 'Turkiye', 'Czech Republic' to 'Czechia').
- Merging Datasets: Merged all data sets by Country name

Analysis and Visualization

- **Pandas and Numpy**: For data manipulation and cleaning.
- **Seaborn and Matplotlib**: For creating static visualizations such as bar graphs and heat maps.
- **Plotly**: For interactive visualizations, including animated bar graphs and pie charts, enhancing the exploration and presentation of our findings.

Visualizations Created:

- Animated Bar Graphs
- Pie Charts
- Heat Maps
- Word Clouds
- Sunburst Charts
- Scatter Plots
- Box Plots

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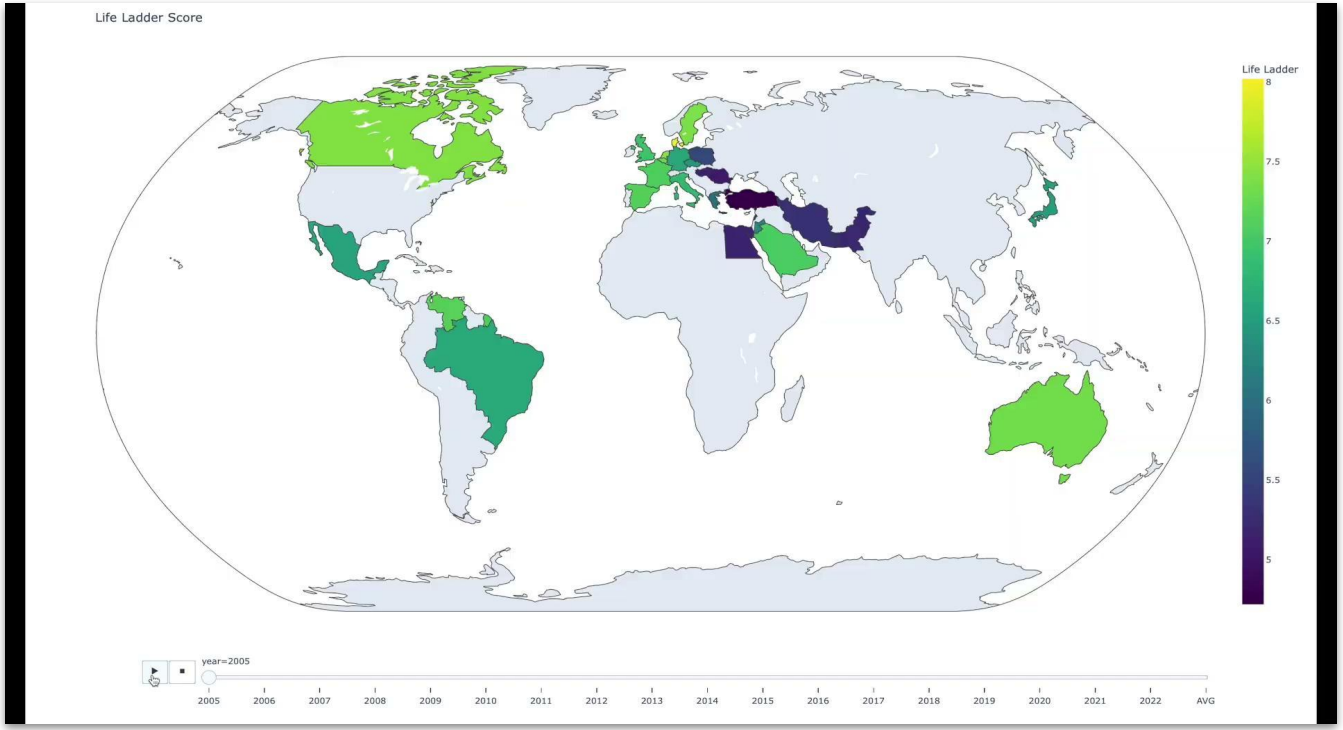
Visualization Results

Mapping Global Happiness

Life Ladder Scores According to World Happiness Report



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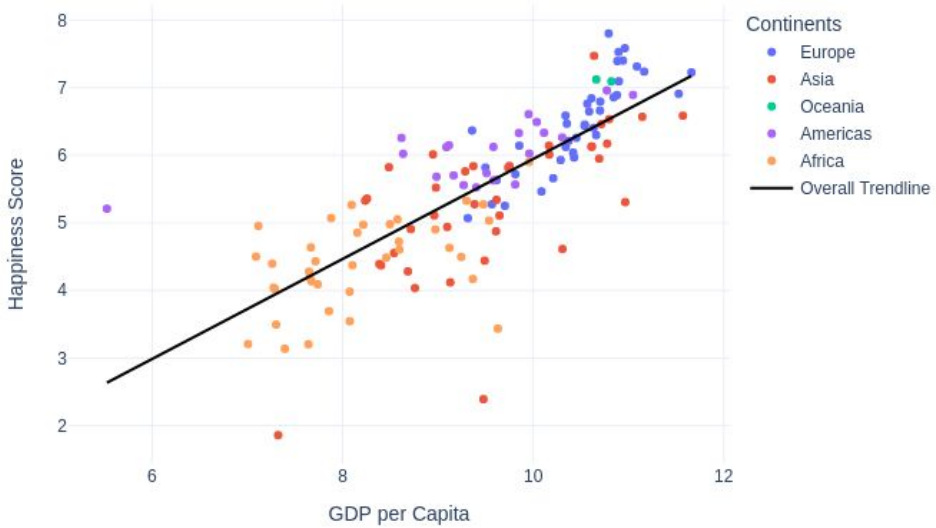
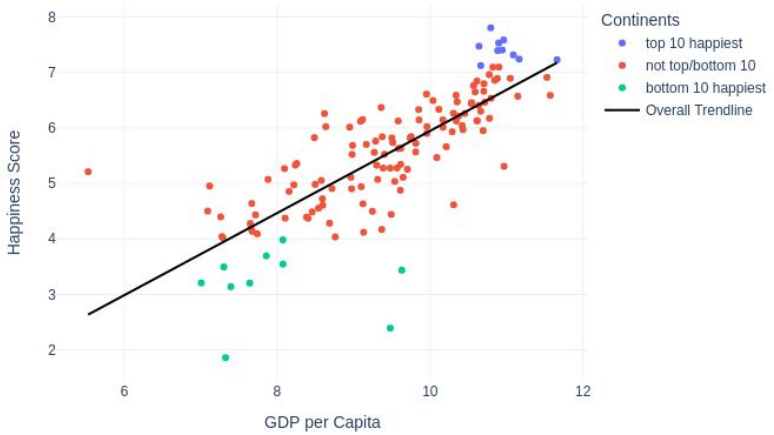
Plot reference : [Happiness Choropleth]

Is Wealth the Currency of Happiness?

GDP per Capita as a function of Happiness Score



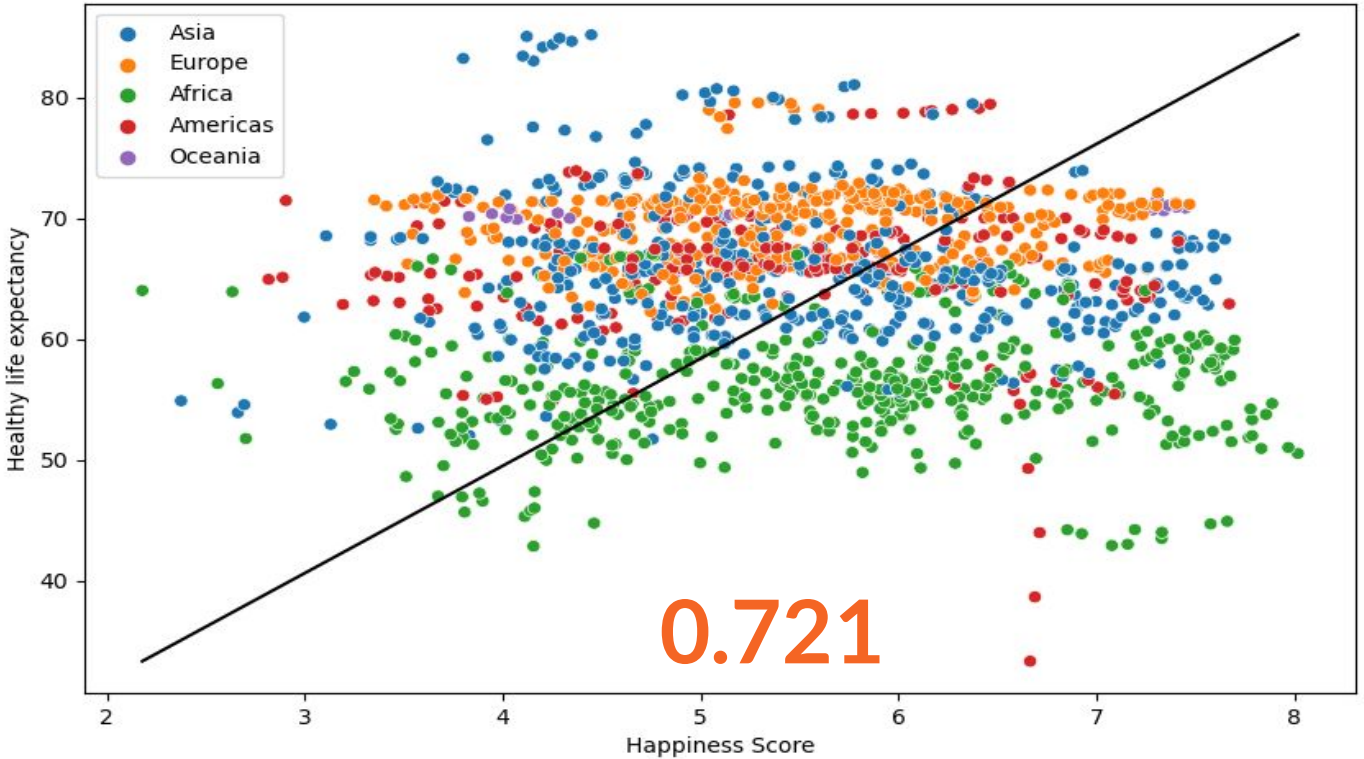


0.784

Plot reference : [GDP Correlation]

Connecting Health & Happiness

Life Expectancy as a function of Happiness Score



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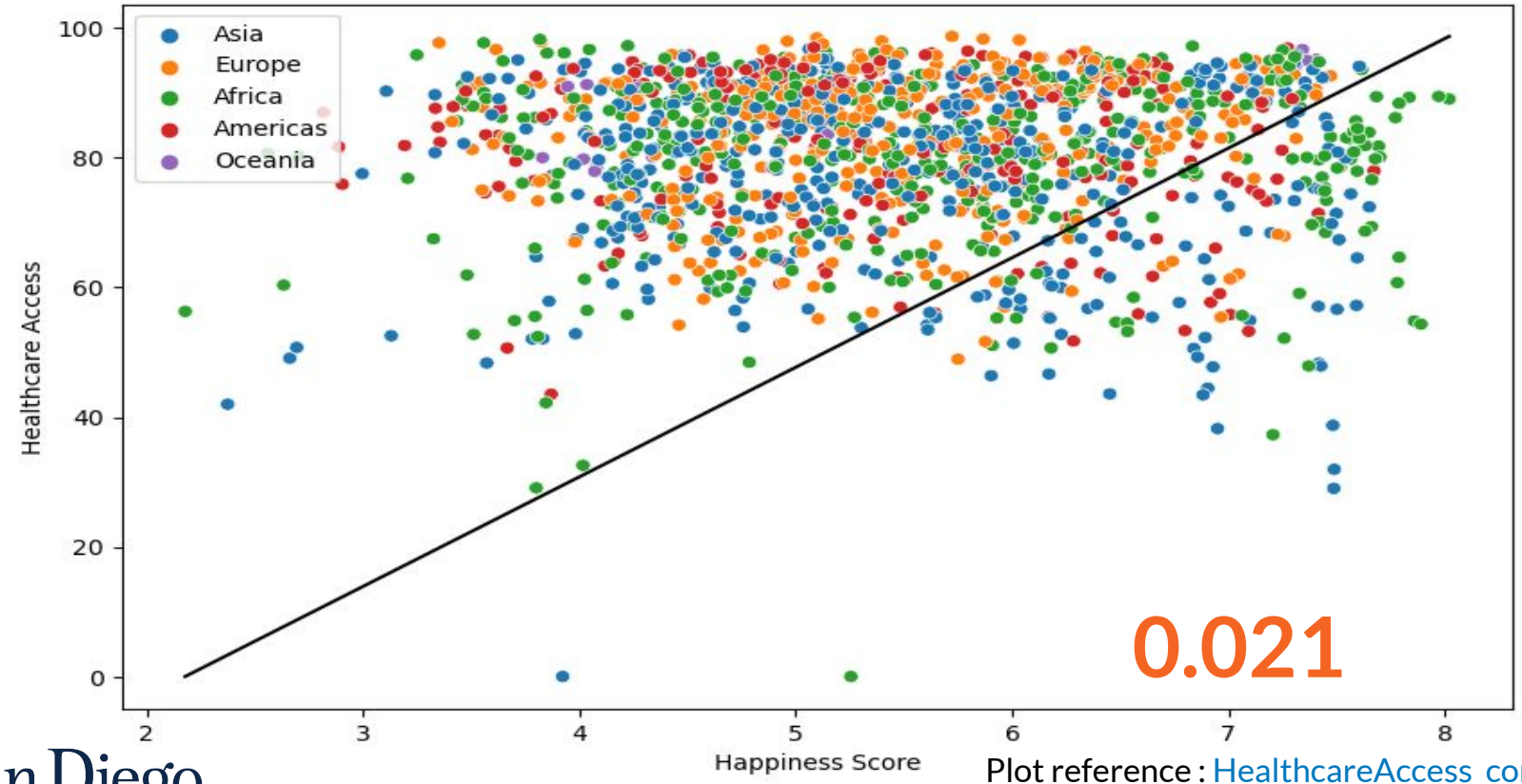
Plot reference : [lifeExpectancy_correlation]

Healthcare Access as a function of Happiness Score



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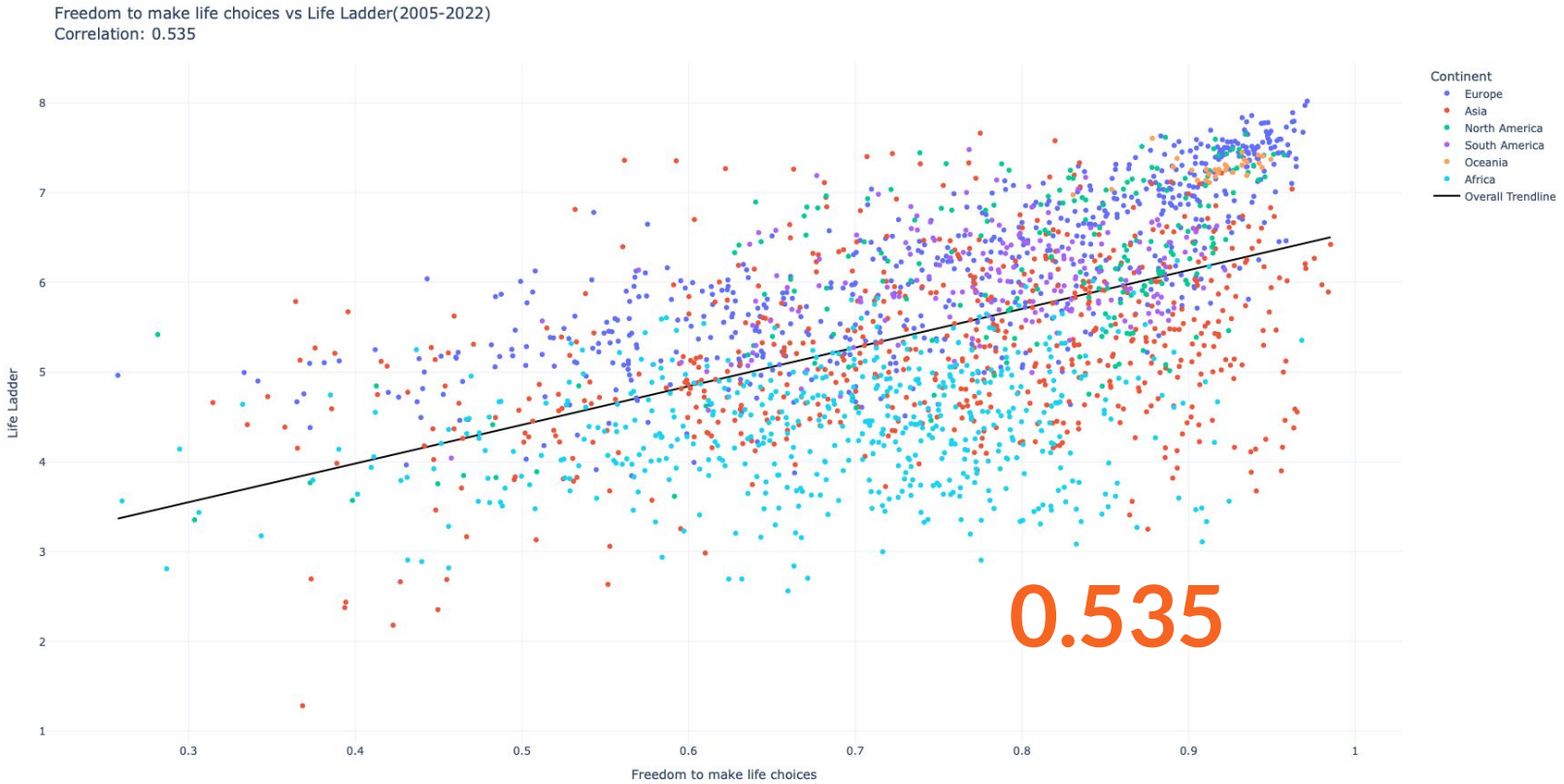
Plot reference : HealthcareAccess_correlation

Happiness Equation: Freedom, Support, Corruption

Freedom Index as a function of Happiness Score



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Plot reference : [Freedom Scatter]

Social Support as a function of Happiness Score

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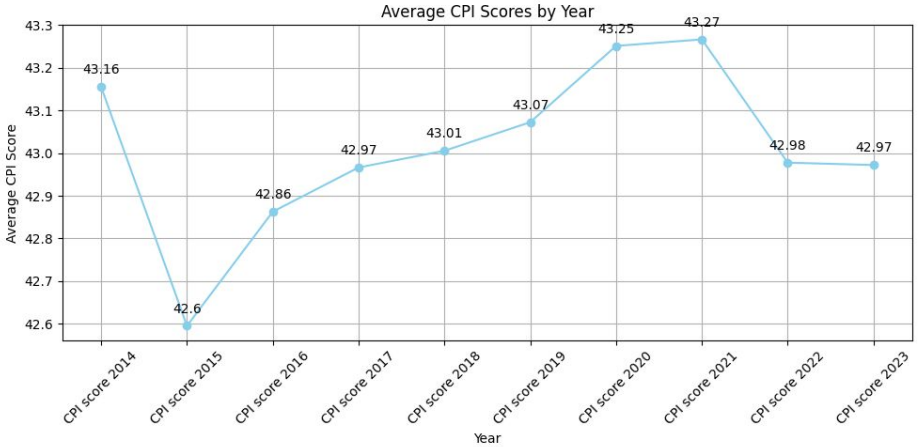
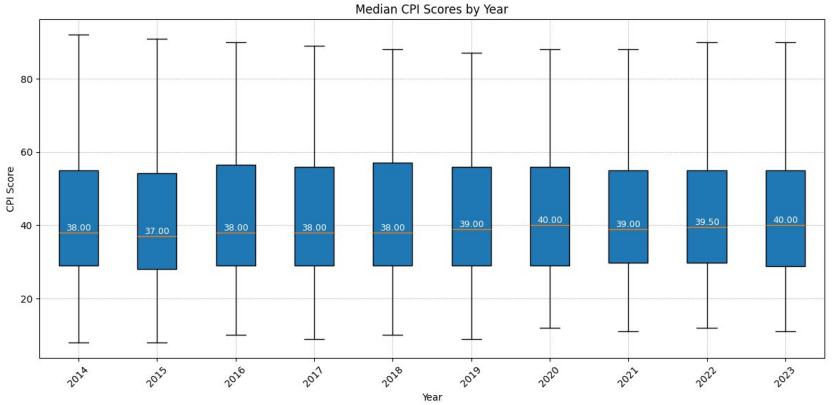
Plot reference : Social Scatter

Median & Average Corruption Perception Index - 2014 to 2023





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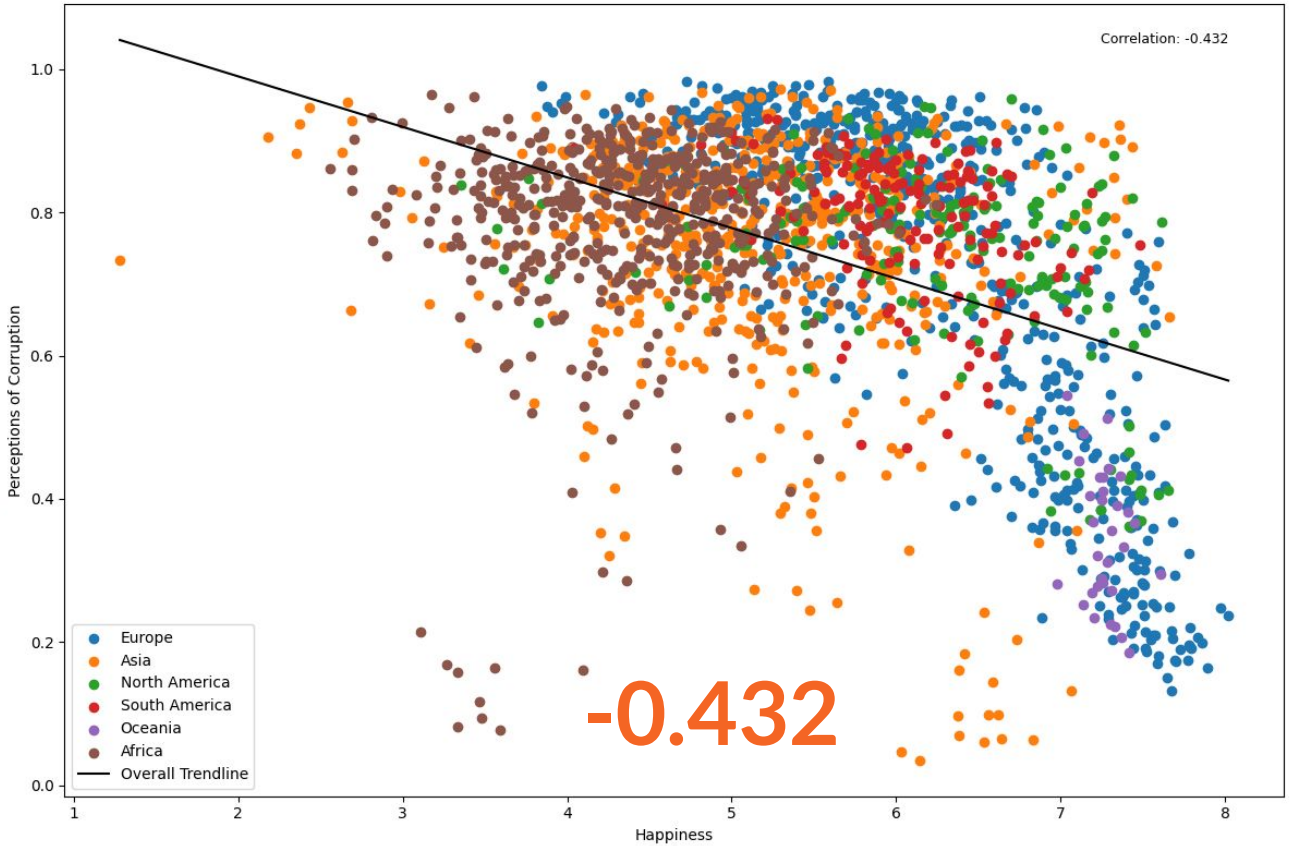
Plot reference : Median CPI, Average CPI

Perceptions of Corruption as a function of Happiness



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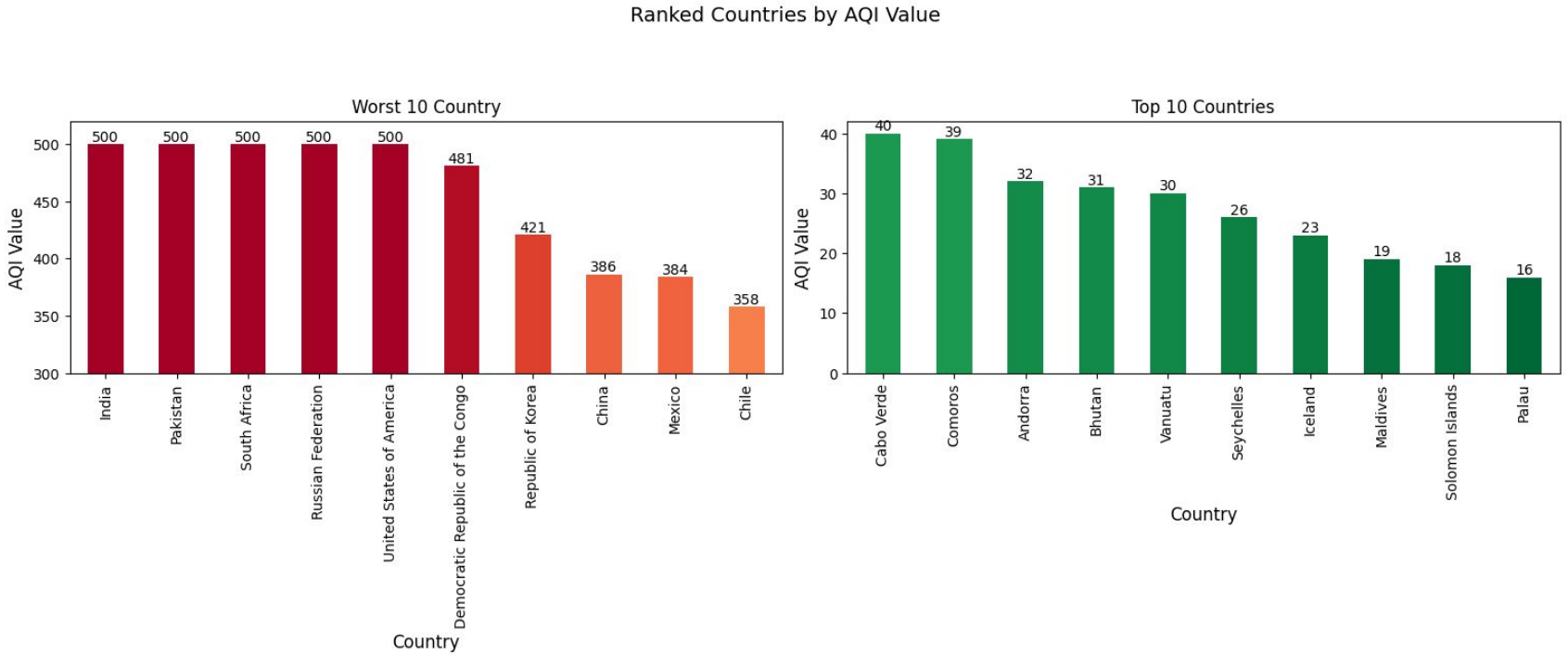
Plot reference : [Corruption Correlation]

Ecological Roots of Happiness

Top and Bottom 10 AQI Values



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Plot reference : [Pollution Visuals]

AQI values as a function of Happiness Score

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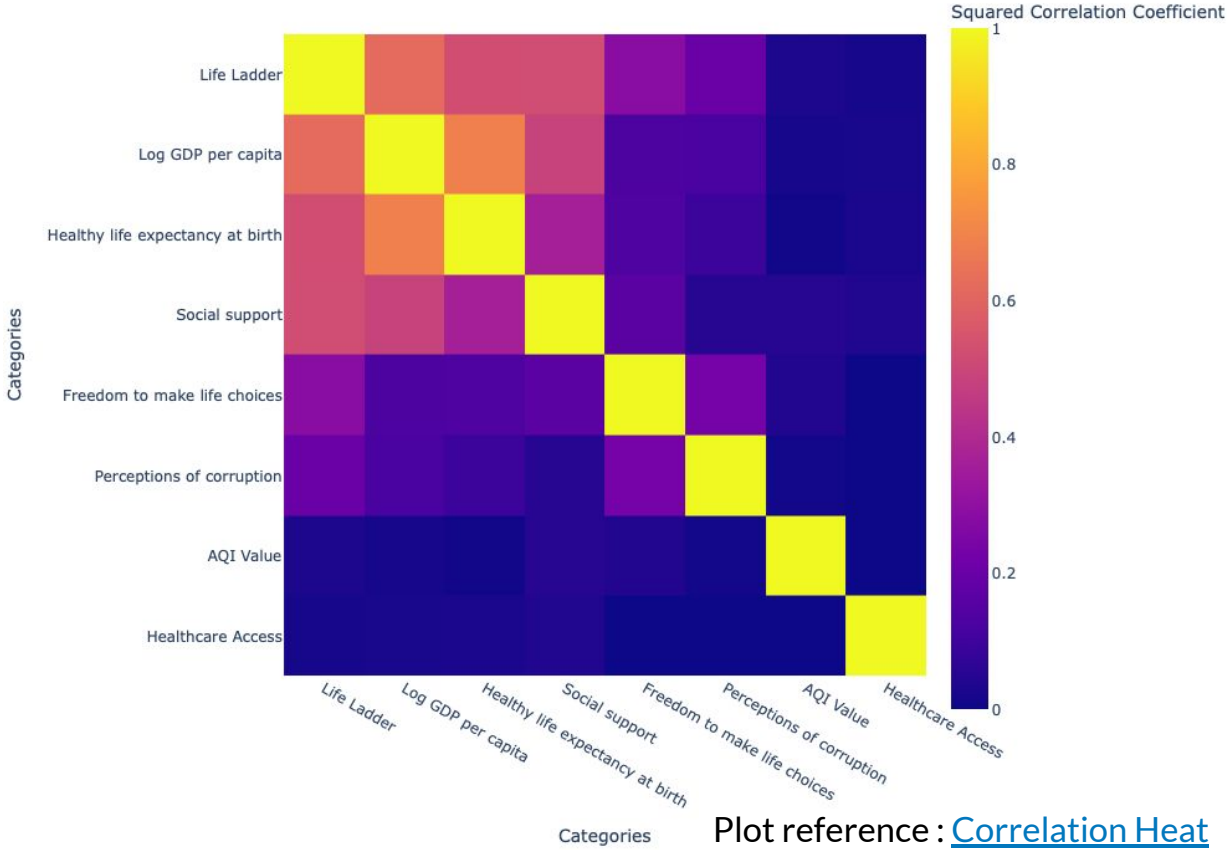
Plot reference : [Pollution Correlation]

An Insightful Study

Correlation with Happiness Categories

1. GDP per capita
2. Life Expectancy
3. Social Support
4. Freedom to make life choices
5. Perception of Corruption
6. Pollution
7. Healthcare Access



Plot reference : [Correlation Heat]

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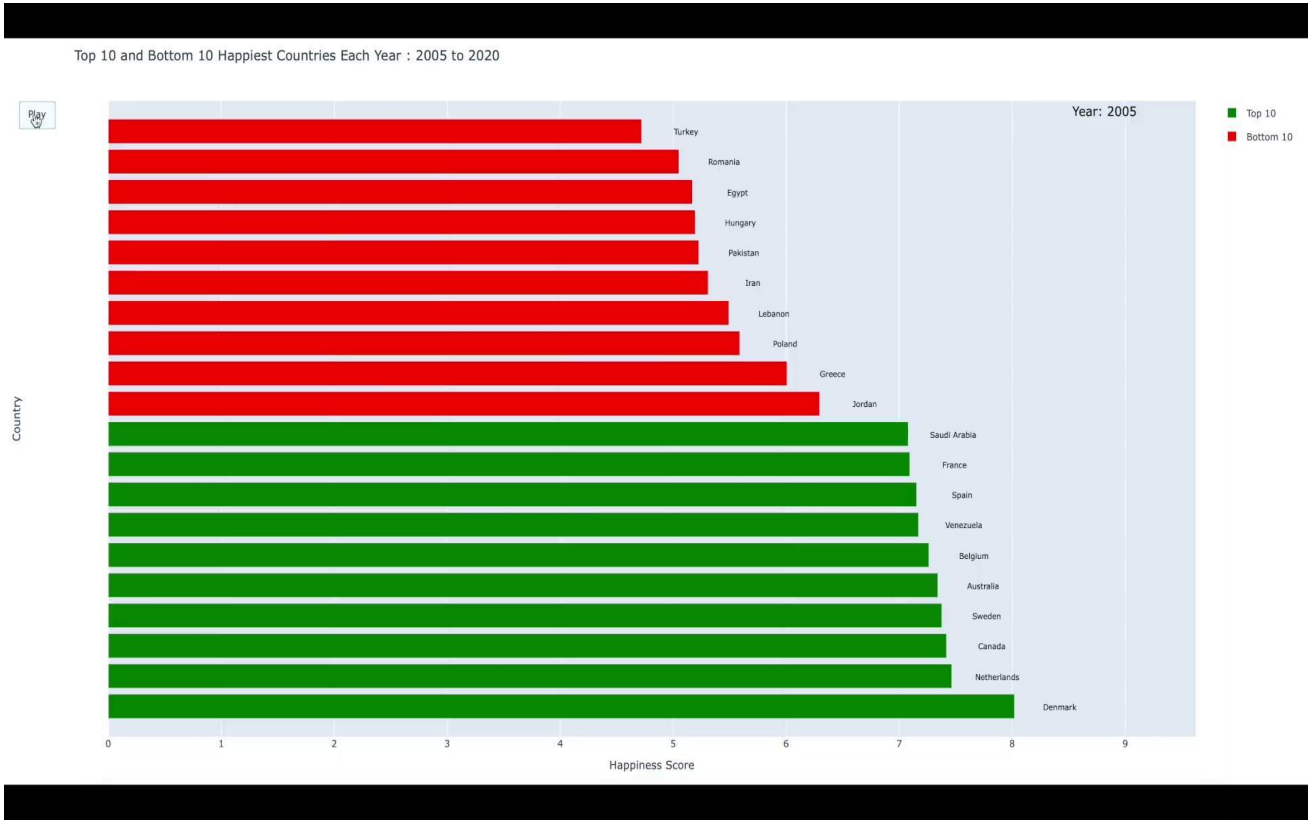
Top 10 and Bottom 10 Countries over the Years



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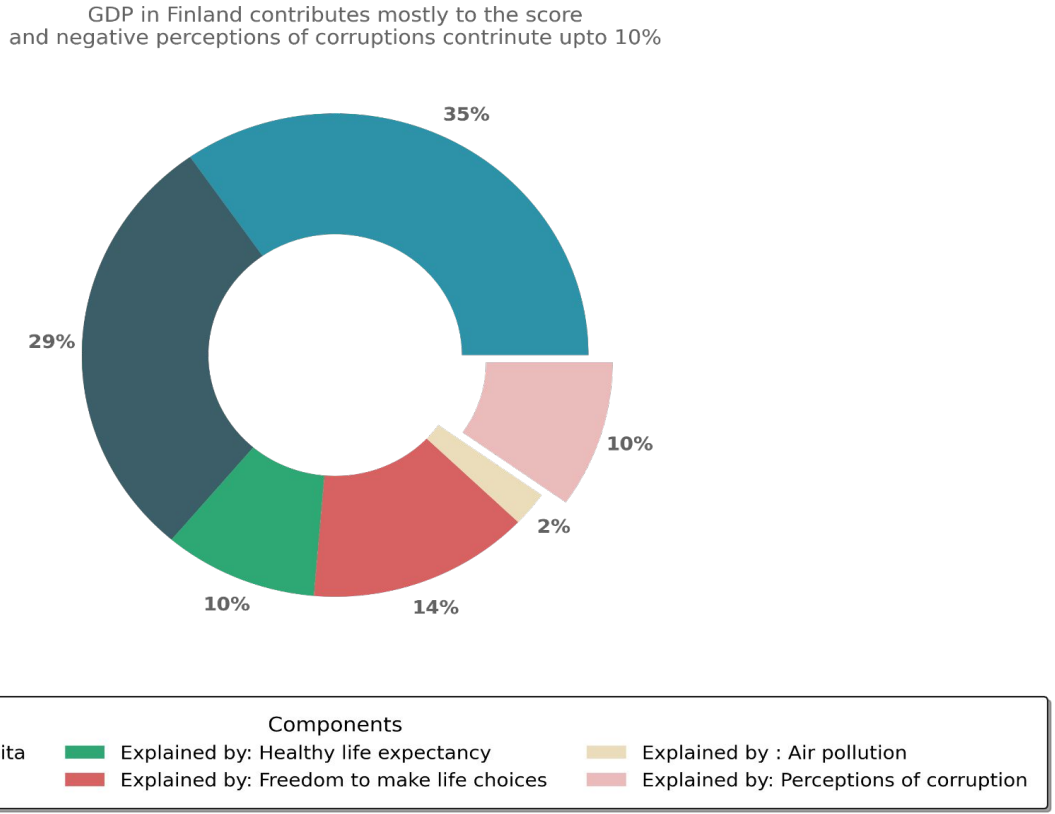
Plot reference : [Animation of Top 10 and Bottom 10]

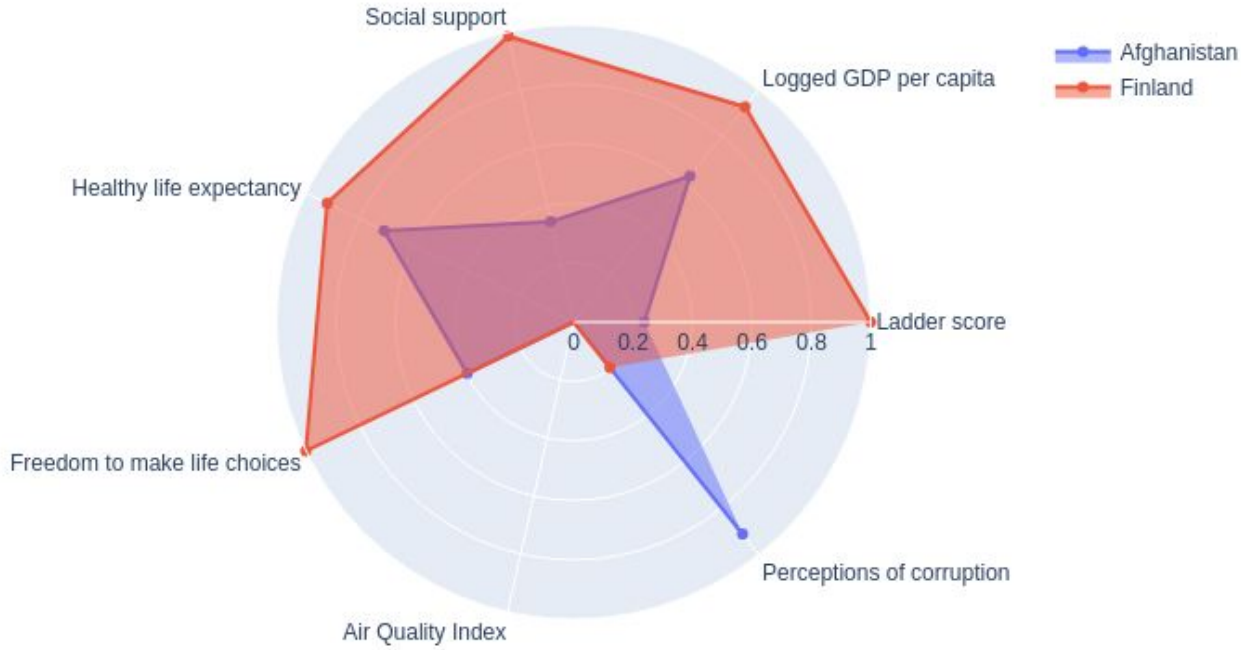
Conclusion

Finland's Score Breakdown



Plot reference : Internal Comparison

Radar Plot Comparing Two Countries



Plot reference : [International Comparison]

Thank you

Any Questions?

Our Analysis can be viewed at: Repository

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