

# World Happiness Index: Exploring Key Determinants of National Happiness

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## Introduction

This report analyzes and examines the 2024 World Happiness Report data to understand how key factors, specifically life evaluation, economic prosperity (GDP) and governance (corruption perception), influence a country's happiness rankings. Our research questions are:

1. **Life Evaluation vs Rank:** How does the citizens' overall life satisfaction correlate with their country's happiness ranking?
2. **Economic Influence:** What is the relationship between GDP per capita and national happiness ranking?
3. **Governance Impact:** How does corruption perception affect happiness ranking?

This analysis employs Exploratory Data Analysis techniques to find different relationships in data and provide insights into what contribute to a nation's happiness index.

## Data Provenance and Ethical Considerations

### FAIR Principles

- **Findable:** The data is publicly available through the World Happiness Report website.
- **Accessible:** Data is available in a Excel with clear documentation.
- **Inter-operable:** Uses standard variables and scales that are compatible with a social science research
- **Reusable:** Comes with a detailed methodology (a planning document) report

### CARE Principles

- **Collective Benefit:** The data helps with the understanding of well-being for policy implementation.
- **Authority to Control:** The original data collected by Gallup World Poll, an ongoing global survey that tracks worldwide ongoing issues.
- **Responsibility:** Published with transparency that includes a methodology and limitations.
- **Ethics:** Using ethical research standards to uphold privacy protection.

## Summary Statistics

This dataset includes 147 countries.

Table 1: Summary Statistics: World Happiness Report 2024 Dataset

Dataset Overview	Value
Total countries analyzed	147
Life evaluation score range	1.36 to 7.74
Average life evaluation score	5.58
Average GDP contribution	1.32
Average corruption perception	0.15

## Visualization

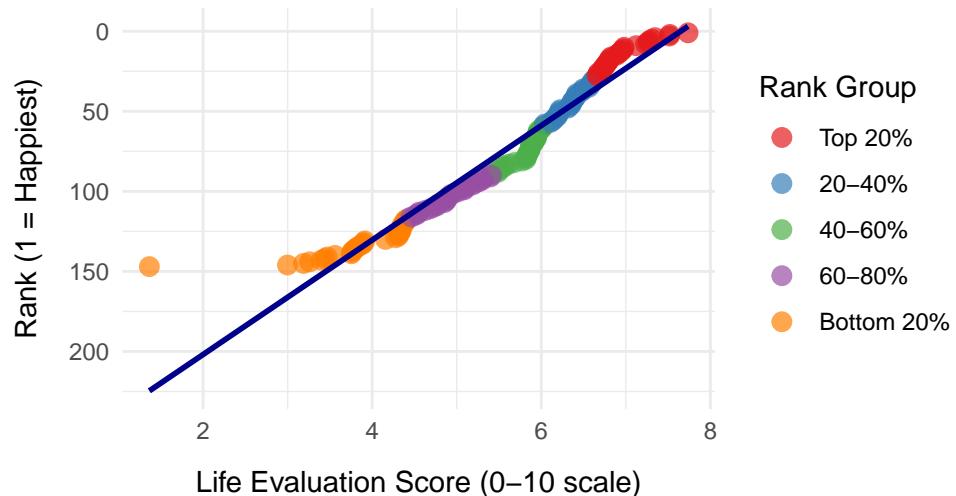
### 1. Life Evaluation vs Country Rank

Table 2: Life Evaluation Statistics by Rank Group

Rank Group	Number of Countries	Avg. Life Evaluation	Min	Max	STDEV
Top 20%	30	6.96	6.63	7.74	0.30
20-40%	29	6.34	6.03	6.61	0.17
40-60%	29	5.82	5.49	6.01	0.16
60-80%	29	4.94	4.42	5.41	0.30
Bottom 20%	30	3.85	1.36	4.39	0.63

Figure 1: Life Evaluation vs Country Rank

### Life Evaluation vs Country Rank (2024)



**Interpretation:**

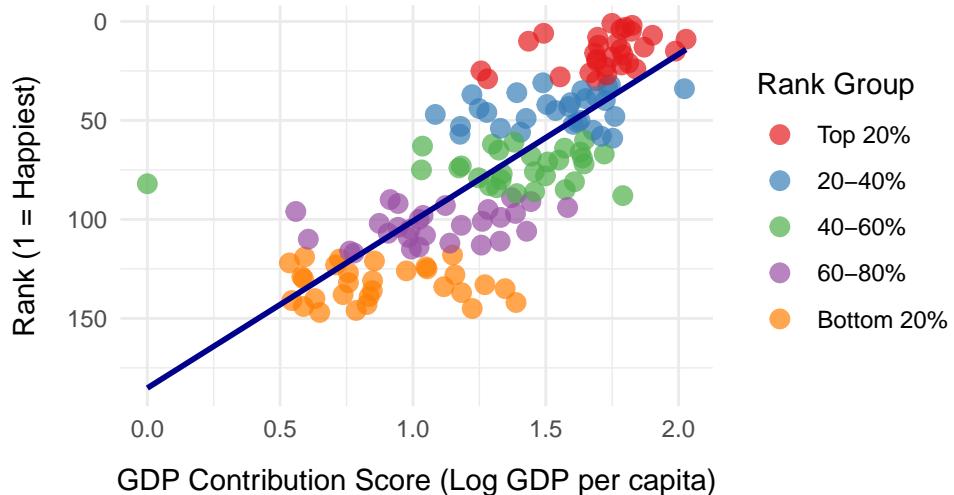
## 2. GDP Contribution vs Country Rank

Table 3: GDP Contribution Statistics by Rank Group

Rank Group	Number of Countries	Avg. GDP Contribution	Min	Max	STDEV
Top 20%	30	1.72	1.26	2.03	0.17
20-40%	29	1.53	1.08	2.02	0.22
40-60%	29	1.38	0.00	1.79	0.33
60-80%	29	1.09	0.56	1.58	0.25
Bottom 20%	30	0.88	0.54	1.39	0.26

Figure 2: GDP Contribution vs Country Rank

## GDP Contribution vs Country Rank (2024)



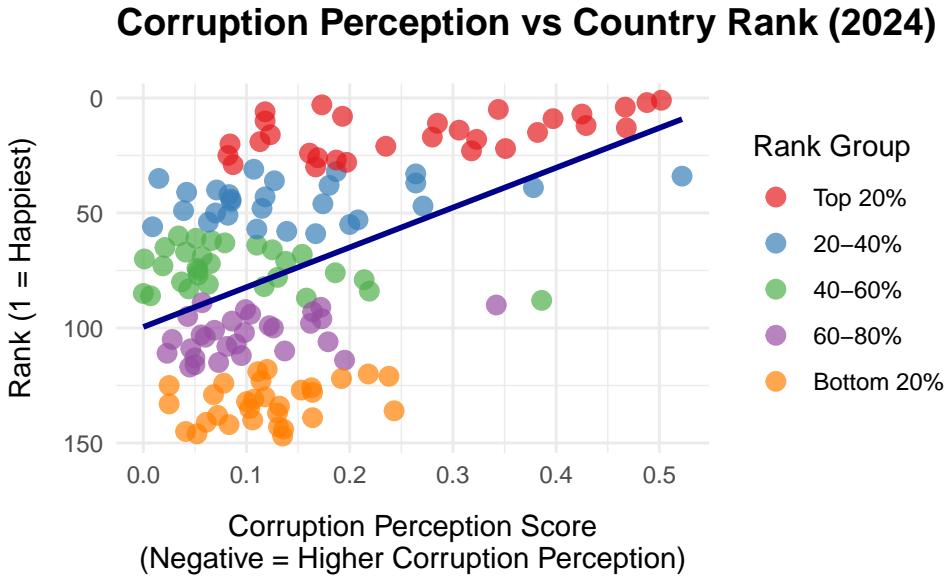
**Interpretation:** The table and graph show that as GDP and rank have a relatively strong, positive, linear relationship. This means that as GDP increases then so will rank. This means that countries that have higher GDP are more likely to have a higher rank and be more well off. If a country is struggling to create world wide markets, new goods, and build capital, than their government and people are going to struggle. This means the output of the country will be lower and thus rank will reflect this. You want your country to have a high GDP!

## 3. Corruption Perception vs Country Rank

Table 4: Corruption Perception Statistics by Rank Group

Rank Group	Number of Countries	Avg. Corruption	Min	Max	STDEV
Top 20%	30	0.27	0.08	0.50	0.14
20-40%	29	0.15	0.01	0.52	0.11
40-60%	29	0.09	0.00	0.39	0.08
60-80%	29	0.10	0.02	0.34	0.07
Bottom 20%	30	0.12	0.03	0.24	0.06

Figure 3: Corruption Perception vs Country Rank



**Interpretation:** Overall, both the table and the graph for corruption perception vs country rank in the world happiness report indicates a positive relationship, as in, the higher score of corruption perception will correlate to a higher rank in the world happiness report. Specifically, it is visually apparent that countries with a lower happiness, those in the bottom 50%, almost all of them would have a lower corruption perception score, although it does seem like within these countries, a lower happiness would skew the corruption perception score higher. Among those in the top 25% of world happiness report, countries are fairly spread out in terms of their corruption perception score, however, similar to the lower 50% of the ranks, those with a higher tank are more likely to have a higher corruption perception score.

## Discussion and Conclusions

### Key Findings

1. Life Evaluation:
2. Economic Foundation
3. Governance Importance

**Limitations and Future Research**

**Author Contributions**

**References**

**Code Appendix**