Countries' Happiness Score and Their Life Expectancy

By: Uyen Dang, Roshan Mettupalli, Mo Young, Joshua Williams

Project Overview:

- What we're doing:
  a. Analyzing the association between happiness score and life expectancy across different countries in the world for the year 2015.
  b. Other factors to analyze:
     i. Happiness Rank and Life Expectancy
     ii. GDP's potential role in Happiness Score and LE
     iii. Population's potential role in Happiness Score and LE
     iv. Country's status on their LE and Happiness Score

Target Audience:

- Policy makers/ Government officials
  a. Informed decision-making
- Public health researchers
  a. Gain insights into determinants and factors that impact a country's LE/Happiness Score
  b. Gain evidence for policy advocacy to improve overall population health
- Global Organizations and NGOs
  a. Strategic planning for global health and development initiatives
  b. Advocacy
- Social scientists
  a. Holistic understanding and perspective on the connections economic factors, societal well-being, and health outcomes, contributing to a more comprehensive understanding of human development.

Data Set 1:

Life Expectancy Data:

- Source: Kaggle
  - Original:
    - Health data: World Health Organization
    - Economic data: United Nations
- Data Quality/Reliability:
  - Data comes from pretty reliable sources
  - Data is available for most countries except a few
    - Exceptions: Vanuatu, Tongo, Tofo, Cabo Verde
- Ethical Issues:
  - There are no major ethical issues
    - Data values comes from public health databases from organizations and surveys
    - No experiments used to gather data

Data Set 2:

Happiness Data:

- Source: Kaggle
  - Original: Gallup World Poll
- Data Quality/Reliability:
  - Data quality and reliability is solid
    - Collab with universities to prepare and research data
      - Columbia University, University of Oxford, London School of Economics, University of British Columbia, and Simon Fraser University
    - Also collab with organizations
      - World Health Organization, World Development Indicators, Sustainable Development Solutions Network (United Nations)
  - Sample size: 2000+ people per country
  - Confidence Interval: 95%
  - Missing up-to-date data?
    - Mixed other related up-to-date data with mathematical calculations to infer values
- Ethical Issues:
  - There are no major ethical issues
    - Data values comes from public health databases from organizations and surveys
    - No experiments used to gather data

Merged (final) Data Set:

Merged Data:

- Source: Mentioned in previous slides
- Data Quality/Reliability:
  - Most countries lined up w each other between the 2 datasets
    - 183 counties in Life Expectancy dataset
    - 158 counties in Happiness dataset
  - Had multiple NA values in dataset → remove multiple countries
    - Result: 135 TOTAL countries in merged dataset
- Ethical Issues:
  - Mentioned in previous slides

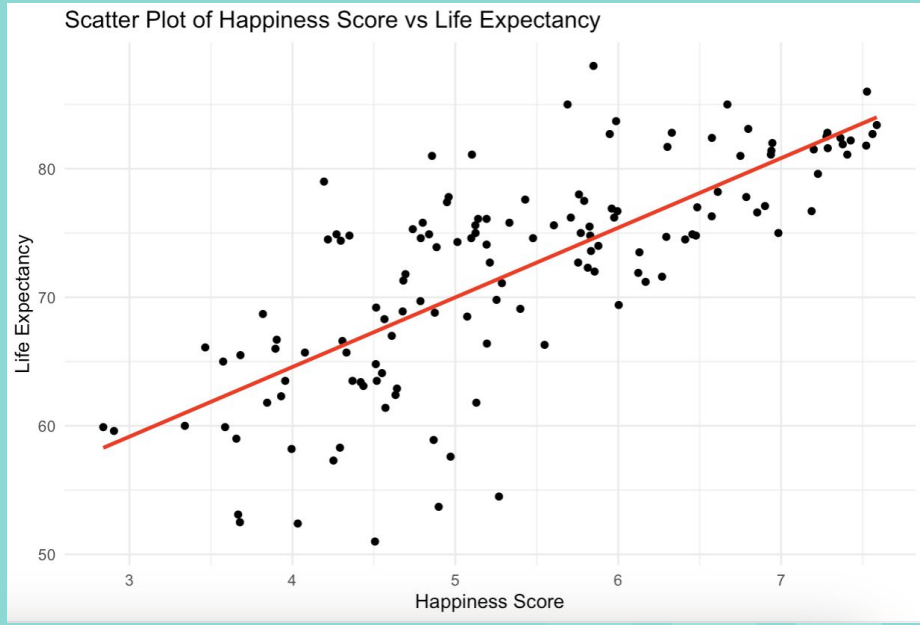
Findings

Research Question 1:

How does the happiness rank of a country correlate with its life expectancy, and are there notable variations among countries with similar happiness scores but different life expectancies?

Findings:

- A clear positive linear correlation between happiness score and life expectancy
- There aren't necessarily any distinct patterns of variation from this trend, as for the most part countries with higher life expectancies tend to have higher happiness scores, and the opposite for countries with lower life expectancies
- Hence, it can be said that the happiness of a country positively correlates with the country's life expectancy



Research Question 2:

To what extent do socio-economic factors, such as GDP and population, influence the connection between happiness scores and life expectancy across diverse countries?

Findings:

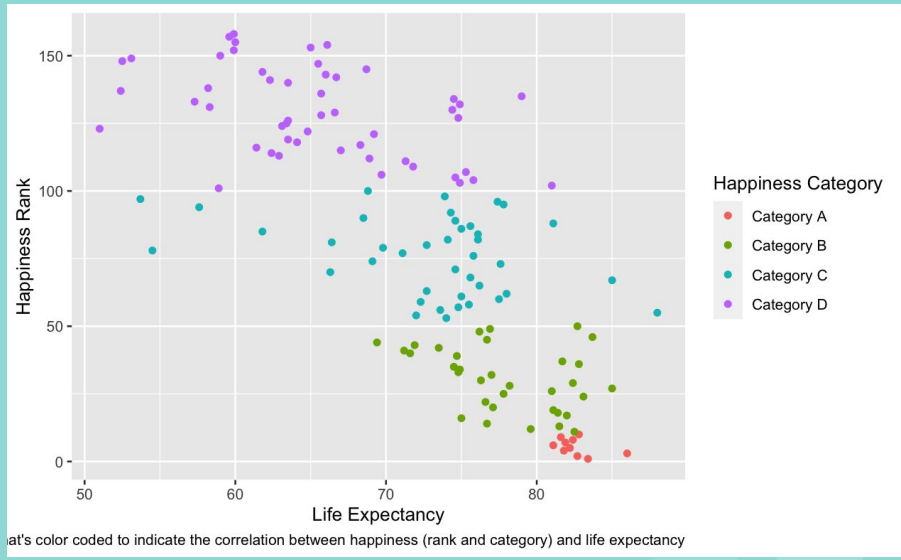
- GDP
  - Not a very distinct trend, but it is observed that generally countries with higher GDPs tend to have higher life expectancies and higher happiness scores, and the opposite for countries with lower GDPs
  - Rough positive association in comparing GDP to life expectancy and happiness score
- Population
  - No visible trend, as there isn't a clear correlation between population versus life expectancy and happiness score, as there is a lot of variation in this data
  - No association in comparing population to life expectancy and happiness score

Research Question 3:

How does the happiness rank of a country correlate with its life expectancy, and are there notable variations among countries with similar happiness scores but different life expectancies?

Findings:

- Category A: tightly clustered
- ↑ Category (A to D) → ↑ spread of data
- What does this mean?
    - Good happiness rank (closer to 0) definitely correlates to a high life expectancy
    - HOWEVER a high life expectancy does NOT correlate to a good happiness rank



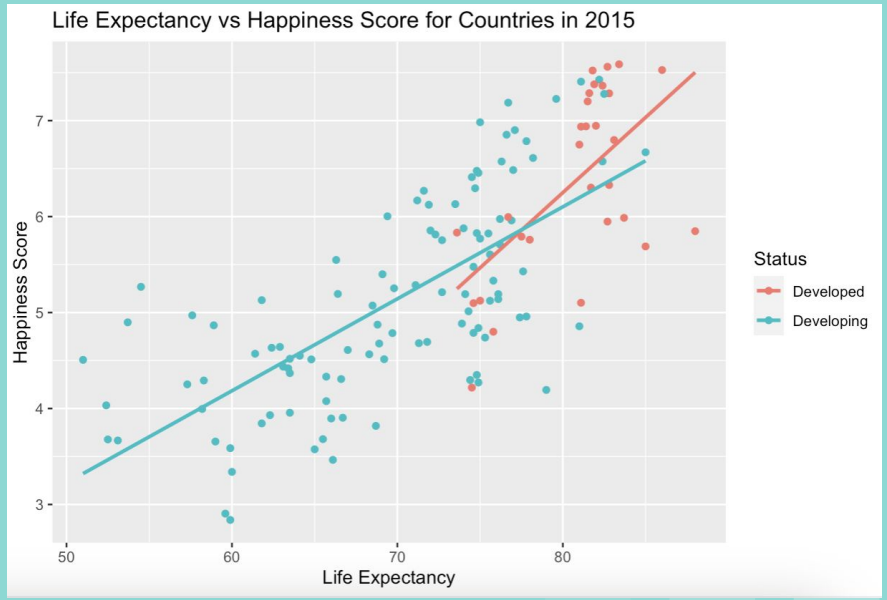
at's color coded to indicate the correlation between happiness (rank and category) and life expectancy

Research Question 4:

Can the status of a country (e.g., developed or developing) act as a moderating factor in the relationship between happiness scores and life expectancy?

Findings:

- Positive correlation for both developed and developing countries
- A stronger correlation for developed countries in comparison to developing countries
- Developed countries tend to have higher life expectancies and higher happiness scores
- It can be said that status can be a moderating factor in the relationship between life expectancy and happiness score due to the observed stronger relationship for developed countries



Summary/Conclusion:

Positive Correlation:

- Happiness score correlates positively with life expectancy
- Shown in scatter plot of Happiness Scores and Life expectancy (positive correlation)

Economic Impact:

- GDP links to higher life expectancy, especially in developed nations.

Considerations for Public Health:

- Insights for public health interventions, acknowledging the need for future exploration.

Challenges in Social Science:

- Social science questions on happiness and life expectancy face challenges due to their subjective nature.

Intricate Nature:

- Happiness is nuanced and varies; life expectancy influenced by diverse factors.`