Analysis of Global Health Indicators

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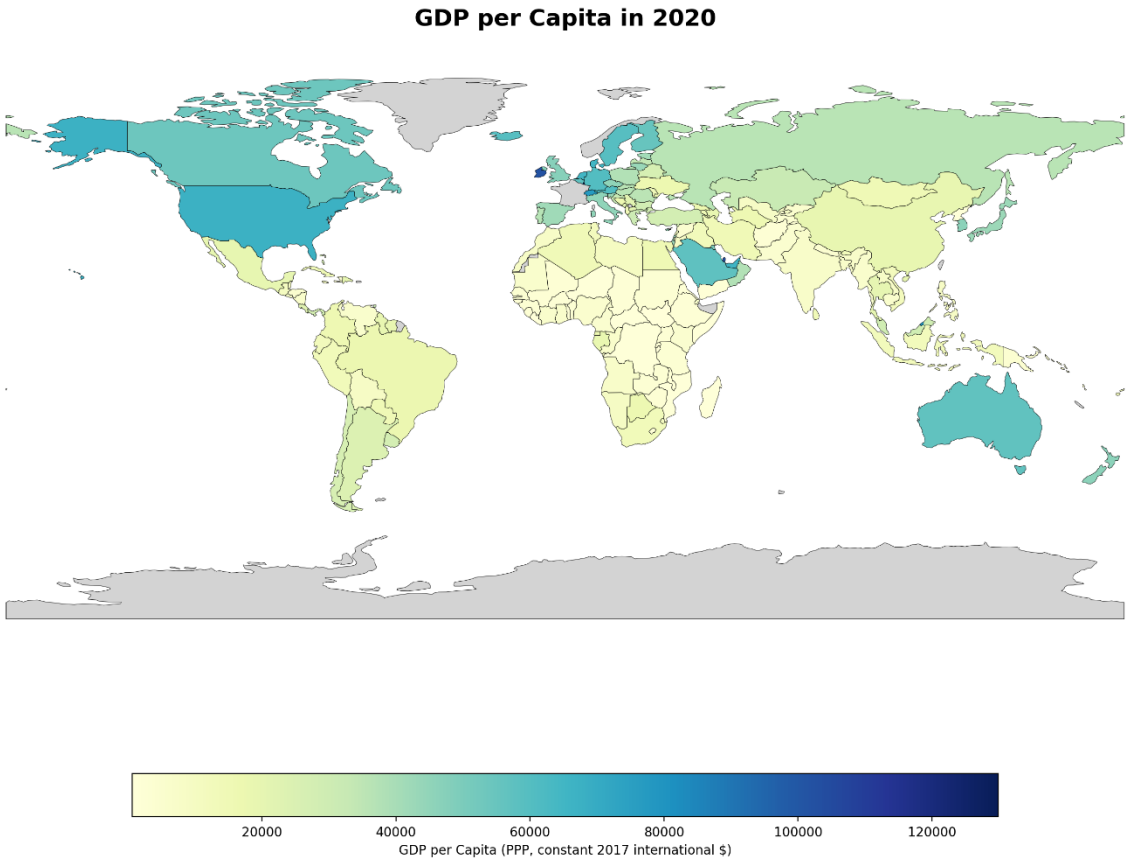
Overview: This report analyzes two datasets containing historical data from 1800-2100 for countries worldwide:

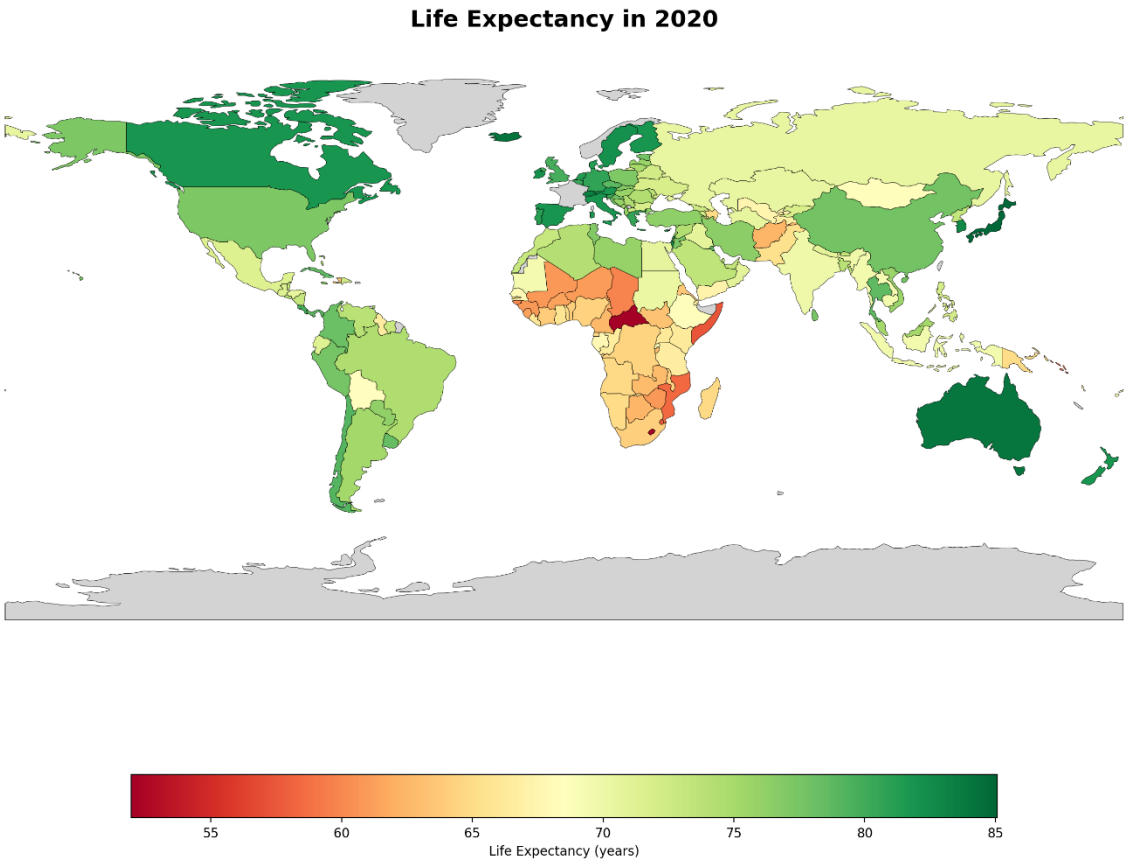
- GDP per capita: 193 countries with GDP data in PPP (constant 2017 international dollars)
- Life expectancy: 194 countries with life expectancy data in years

World Map: GDP per Capita in 2020



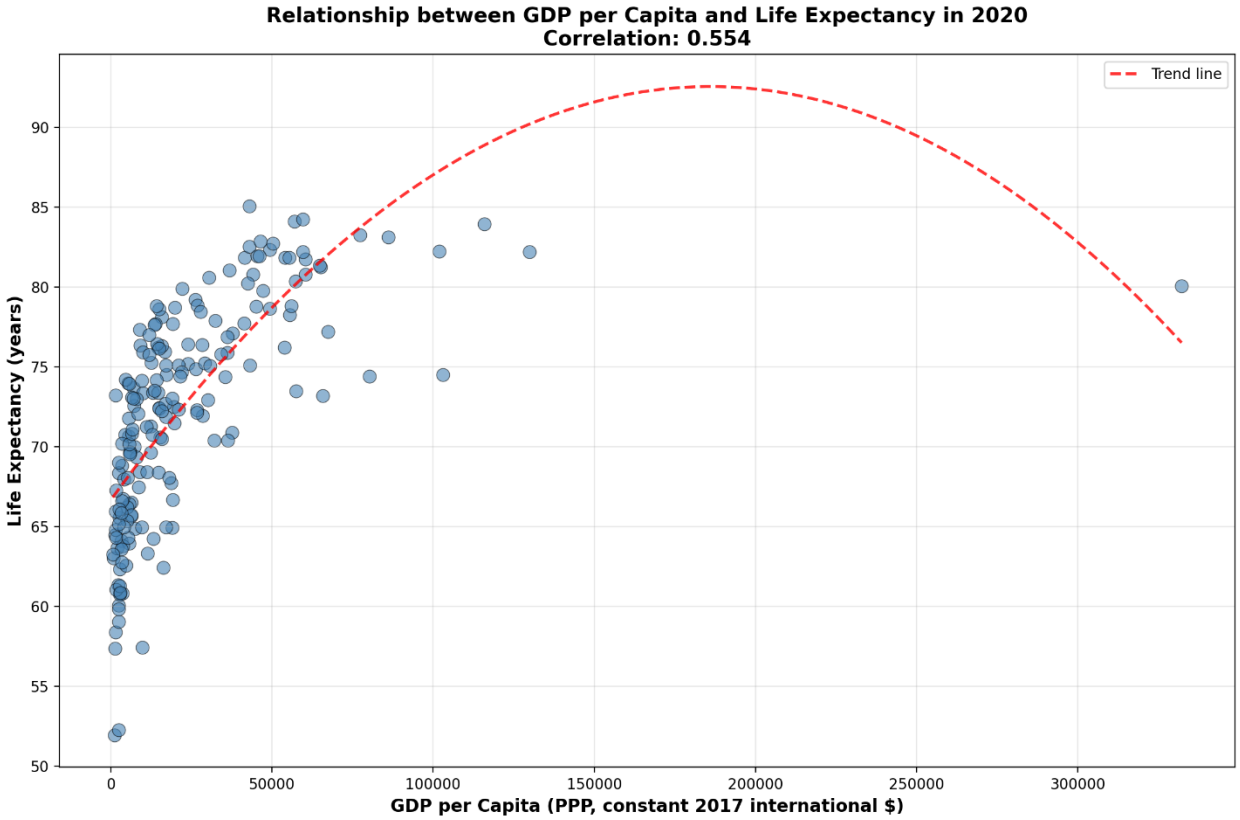
The map shows significant variation in GDP per capita across countries, with wealthier nations (shown in darker blue) concentrated in North America, Western Europe, Australia, and parts of the Middle East.

World Map: Life Expectancy in 2020



Life expectancy varies globally, with higher values (shown in green) in developed countries across Europe, North America, East Asia, and Australia. Lower life expectancy (shown in red/yellow) is more common in parts of Africa and some developing nations.

Scatterplot: Relationship Between GDP per Capita and Life Expectancy



Interpretation

The analysis reveals a moderate positive relationship between GDP per capita and life expectancy in 2020, with a correlation coefficient of 0.554.

Key findings:

1. Positive Association: Countries with higher GDP per capita tend to have higher life expectancy, suggesting that economic prosperity is associated with better health outcomes.
2. Non-Linear Relationship: The trend line shows a curved pattern, indicating diminishing returns - the gains in life expectancy from additional wealth are larger at lower income levels and smaller at higher income levels.
3. Variation: There's considerable variation around the trend line, meaning GDP per capita alone doesn't fully explain life expectancy. Other factors like healthcare systems, education, lifestyle, and public health policies also play important roles.
4. Threshold Effect: Once countries reach a certain level of economic development (around $20,000-30,000 GDP per capita), further increases in wealth produce smaller improvements in life expectancy, as most countries have already achieved high life expectancy levels.

Personal Reflection

As I explored these AI tools, I found Julius especially easy to navigate as a new user. Its interface felt intuitive, the responses were noticeably faster than I expected (especially compared to what I observed in class) and I naturally adapted my communication style to match its structured way of interacting.