Relationship between two indicators, life expectancy and Gini Coefficient.

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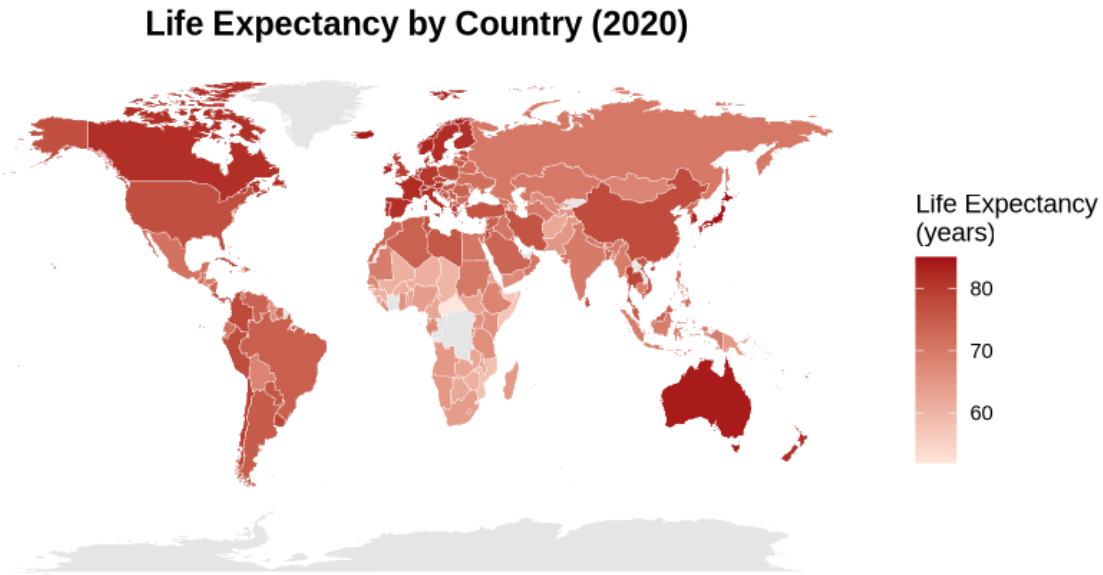
Data Overview

Life Expectancy Data: 194 countries with data spanning from 1800 to 2100. In 2020, 193 countries had life expectancy data.

Gini Coefficient Data: 195 countries with data spanning from 1800 to 2050. In 2020, all 195 countries had Gini coefficient data.

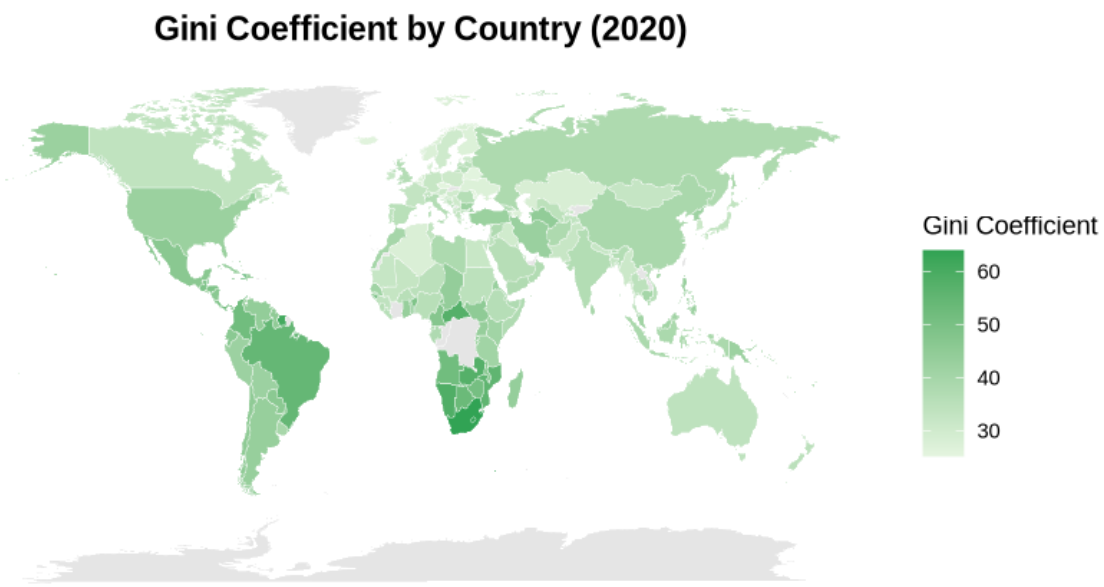
World Maps (2020)

Life Expectancy Map:



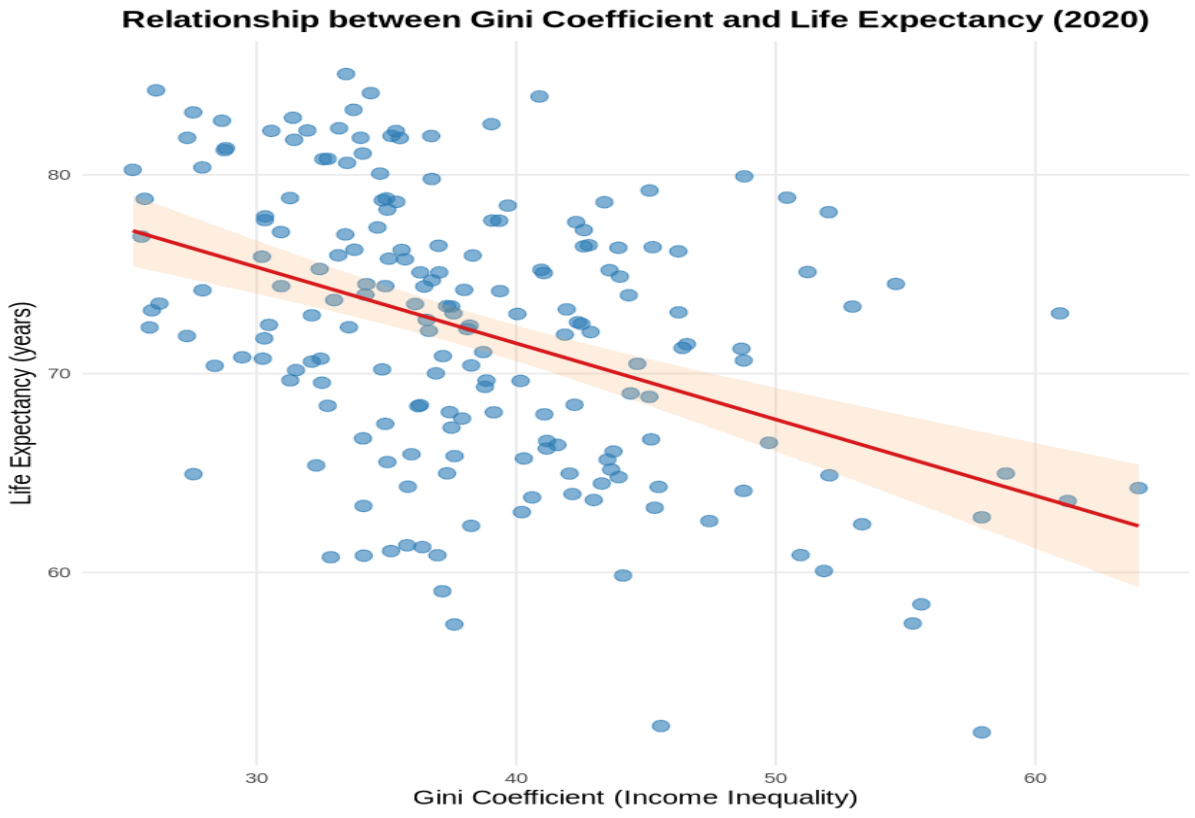
The map shows life expectancy varies considerably across the world, with higher values (darker red) in developed nations and lower values in parts of Africa and South Asia.

Gini Coefficient Map:



The Gini coefficient map reveals income inequality patterns, with darker green indicating higher inequality. Notable inequality appears in parts of Africa and Latin America.

Relationship analysis



Interpretation

The analysis reveals a **moderate negative relationship** between the Gini coefficient and life expectancy in 2020:

- **Correlation coefficient:** -0.425 - This indicates a moderate inverse relationship
- **R-squared: 0.18 -** About 18% of the variation in life expectancy can be explained by income inequality
- **P-value: 7.41e-10** - This relationship is highly statistically significant

Key findings:

1. **Countries with higher income inequality (higher Gini coefficients) tend to have lower life expectancy**. For every 1-point increase in the Gini coefficient, life expectancy decreases by approximately 0.38 years on average.
2. The relationship is statistically significant but not deterministic - income inequality explains only part of the variation in life expectancy. Other factors like healthcare systems, education, sanitation, and economic development also play important roles.
3. The scatterplot shows considerable variation, suggesting that while inequality matters, some countries with similar inequality levels have very different life expectancies, indicating the importance of other social and economic factors.

My reflections

This is my first time doing serious work like data analysis using LLMs. I have been LLMs more for refining my CV, but this is another level where I can do interesting things with this tool.

I think it was easy when you follow the instructions step by step.

Seeing the tutorial presentation seemed like it was going to be difficult but as soon as you read the instructions, it is alright to do the exercise.

I am learning a great deal of skills, and especially today, in data analysis, a very important skill to have at work.