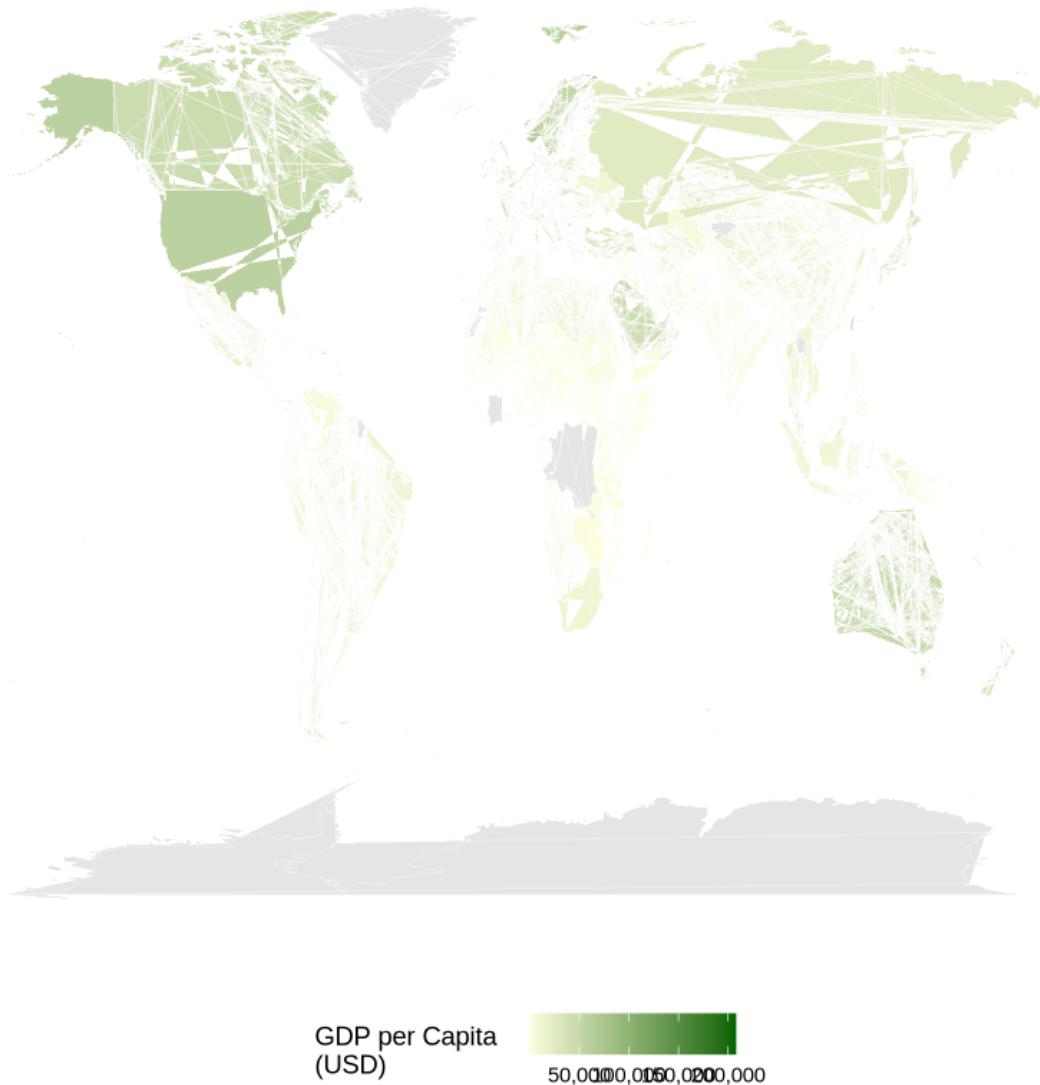


## Julius Output Report – GRAPH Workshop 2

The GDP per capita data contains 193 countries, and the life expectancy data has 194 countries, both spanning from 1800 to recent years.

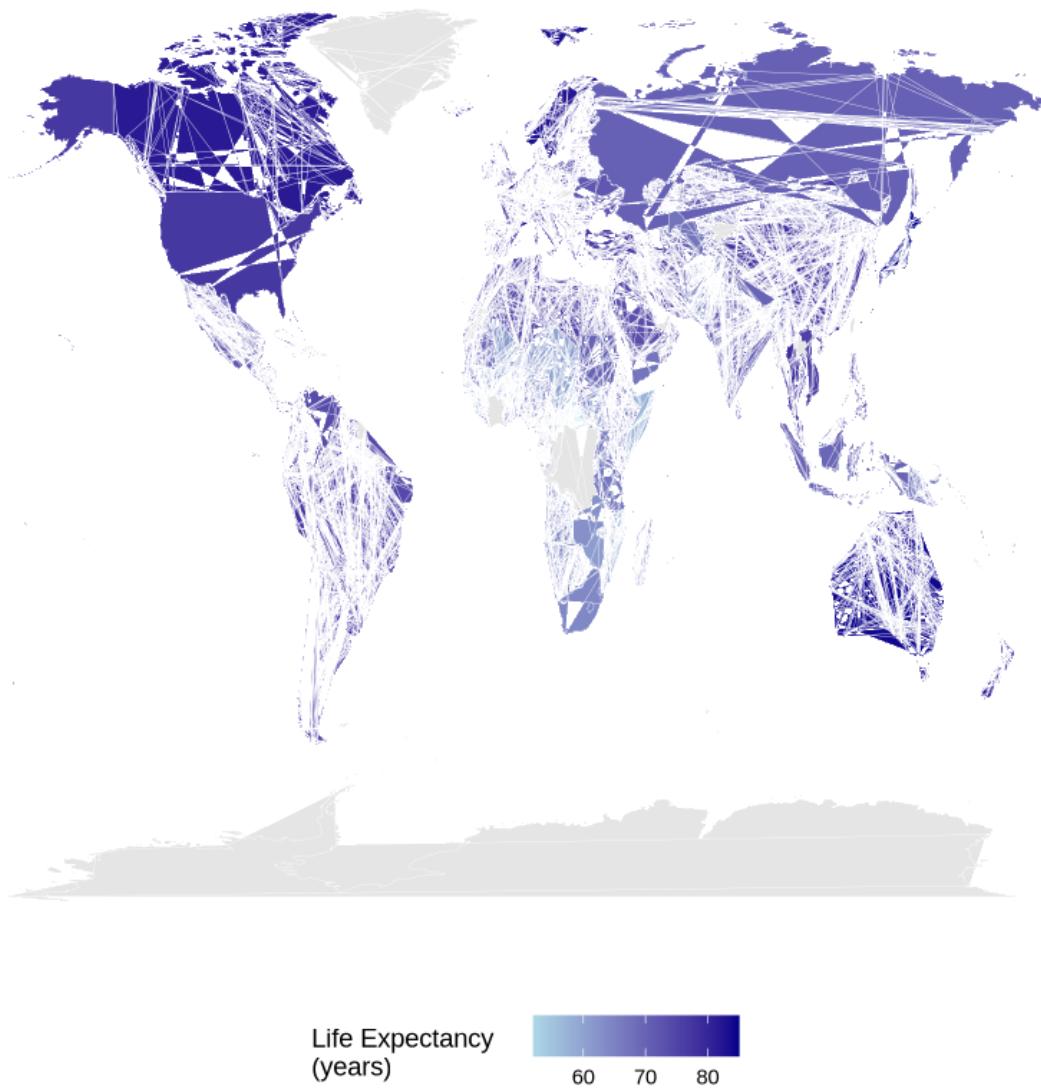
### World Maps for 2020

GDP per Capita by Country (2020)



The GDP per capita map shows significant variation globally, with higher GDP concentrated in North America, Western Europe, and parts of the Middle East and Oceania.

### Life Expectancy by Country (2020)



The life expectancy map reveals that most developed nations have higher life expectancy (darker blue), particularly in Europe, North America, East Asia, and Oceania.

## Relationship Analysis

### Relationship between GDP per Capita and Life Expectancy (2020)



The scatterplot reveals a strong positive relationship between GDP per capita and life expectancy in 2020. Key observations:

- Logarithmic pattern: The relationship follows a logarithmic curve, meaning that increases in GDP have diminishing returns on life expectancy at higher income levels
- Steep initial gains: Countries moving from low to middle-income levels see substantial improvements in life expectancy
- Plateau effect: Beyond approximately \$20,000-30,000 GDP per capita, additional wealth produces smaller gains in life expectancy
- Strong correlation: With 193 countries analyzed, the trend is clear and consistent, though some variation exists at all income levels
- This relationship suggests that economic development is strongly associated with better health outcomes, likely through improved healthcare access, nutrition, sanitation, and living conditions. However, the diminishing returns at

higher income levels indicate that other factors (healthcare system efficiency, lifestyle, social policies) become increasingly important for longevity.

## Reflections

The tool is easy enough to use. Where it becomes challenging is with no programming experience to finetune any output, such as the images above. I wouldn't know where to start fine tuning any of the generated R code created by Julius.