Project description life expectancy and fertility

This project aims to explore how life expectancy and fertility rates have evolved from 1964 to 2013 across various countries and continents. By utilizing interactive data visualizations, this analysis sheds light on demographic changes and identifies trends.

Research questions:

1. How did life expectancy and fertility change between 1964 - 2013 for different countries and continents?
2. Did differences between countries become smaller or larger between years?
3. Which regions developed most in this time period?
4. Are there countries that experienced a decrease in life expectancy at some point in time? Can you explain why this happened?

Data used

The data for this project comes from the Gapminder dataset, which includes information on average life expectancy, total fertility (number of children per woman), and population size per country from 1964 to 2013. This dataset comprises data from 244 countries, providing a comprehensive global overview that allows for a detailed analysis between different geographical regions and over a substantial timeframe.

Analysis

Tools and Methods

The primary tool used for this analysis is Bokeh, which is designed for creating interactive plots and visualizations. This tool allows users to explore data by adjusting the year, which allows for a visual understanding of trends over time.

Key findings

The visualization in general highlights general improvements in life expectancy globally, with marked progress in regions historically suffering from lower life expectancy. Fertility rates in general have decreased, which reflects changes in societal structures, economic development and access to healthcare.

Differences between countries in terms of life expectancy have decreased in general, particularly as countries with previously low life expectancies have seen significant improvements due to better healthcare, improved nutrition, and international aid. However, disparities still remain, which most certainly reflects inequalities in economic conditions, healthcare access and social stability. Moreover, the difference between countries with the highest life expectancy and countries with the lowest life expectancy has increased.

Regional development is to be observed, particularly in East Asia, in countries such as South Korea and China. These regions have witnessed a large improvement in healthcare and

economic conditions, which has contributed to an increase in life expectancy and controlled fertility rates.

Some countries on the other hand have experienced a decline in life expectancy at certain times during this period. Often due to specific events such as the HIV/AIDS epidemic in Sub-Saharan Africa, wars, or economic crises. For instance, life expectancy in Zimbabwe plummeted during the late 1990s and early 200s due to a combination of economic collapse and the HIV/AIDs crisis.

Conclusion

In general, life expectancy and fertility rate has changed drastically over time. Where previously many countries were situated on the bottom and right axis of the graph, many countries have now moved left and up. This means that life expectancy has increased in all parts of the world, and fertility has gone down. Moreover, specific regional trends can be observed, particularly in Asia. Lastly, specific socio-economic and health crises are clearly visible in certain years.