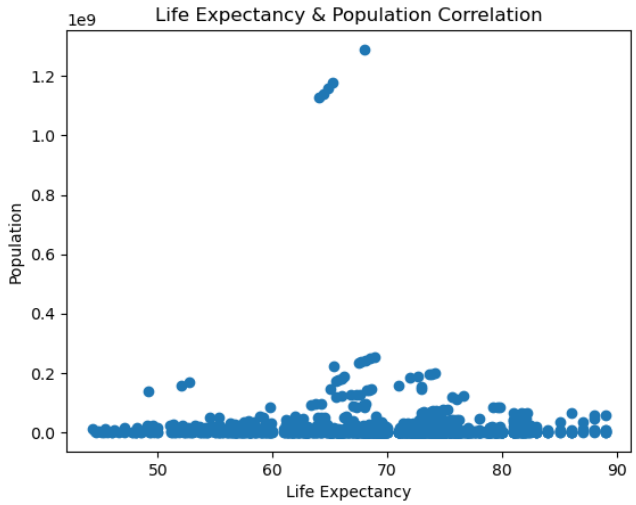
Written Analysis

Introduction

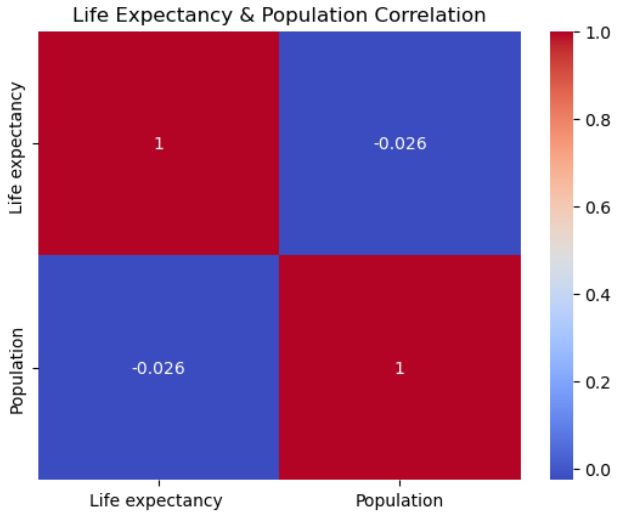
We have chosen to comprehend the relationship between life expectancy and socioeconomic development elements as part of the project looking at life expectancy based on health and development indicators. I have decided to concentrate on population and GDP since they are two crucial indicators that indicate the general well-being of a society in order to adequately study this relationship. The original csv dataset was cleaned and condensed to just cover the years 2004–2014 in order to facilitate this research.

Summary of Code

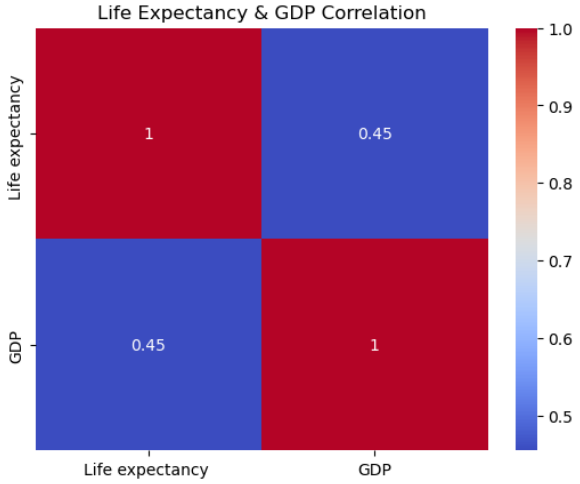
To start the analysis, a scatter plot was created to visualise the correlation between life expectancy (on the x-axis) and population (on the y-axis) using Matplotlib.

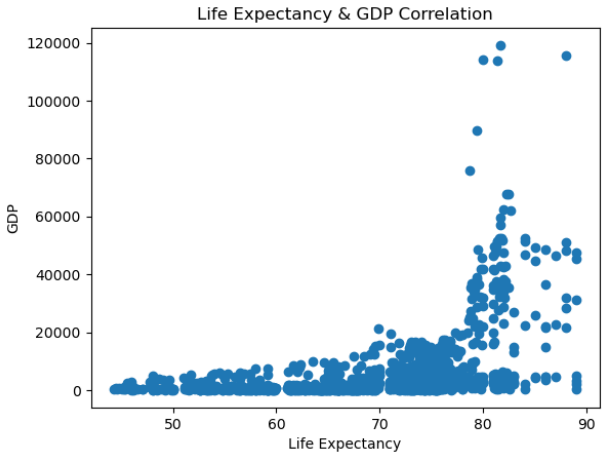


Next, we calculate and display the correlation matrix between life expectancy and population using Seaborn's heatmap.



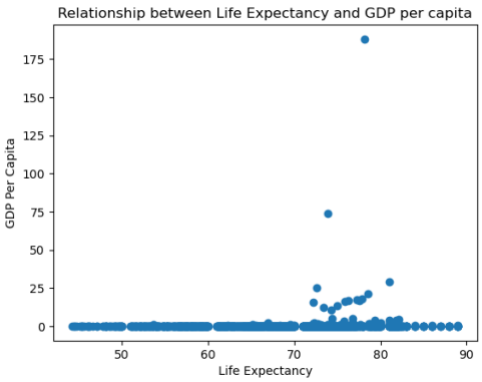
These steps are repeated for another set of data: life expectancy vs. GDP, producing a scatter plot and a correlation matrix for this.



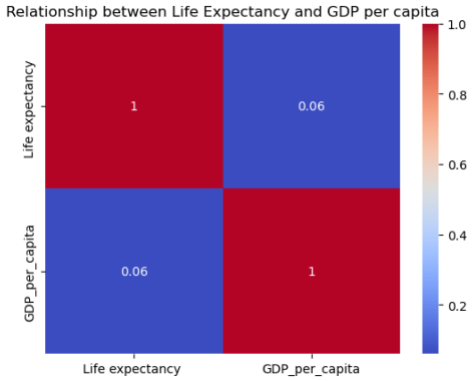


In an effort to consider the relationship between these socioeconomic development indicators and life expectancy simultaneously, I went ahead to calculate the GDP per capita for the countries in the dataset between 2004-2014. The code does this by dividing the "GDP" column by the "Population" column and adds it as a new column named "GDP per capita" to the Data Frame.

A scatter plot is then created to visualise the correlation between life expectancy (on the x-axis) and GDP per capita (on the y-axis) using Matplotlib.



Next, we calculate and display the correlation matrix between life expectancy and GDP per capita using Seaborn's heatmap.



Main Findings

The analysis reveals that there is a weak positive correlation between life expectancy and GDP per capita in the dataset. This means that, on average, as GDP per capita increases, life expectancy tends to increase as well, but the relationship is not very strong.

In practical terms, this suggests that countries with higher GDP per capita tend to have slightly longer life expectancies, indicating that economic prosperity may contribute to better healthcare, improved living conditions, and overall well-being. However, it's important to note that this correlation is not strong enough to imply a direct causation between GDP per capita and life expectancy. Other factors, such as healthcare systems, social policies, and lifestyle choices, also play significant roles in determining life expectancy.

Therefore, while GDP per capita can be a contributing factor to higher life expectancy, it is just one piece of a complex puzzle that shapes the health and longevity of a population. Further in-depth analysis and consideration of various factors would be necessary to draw more definitive conclusions about the relationship between economic prosperity and life expectancy.

Conclusion

In summary, the analysis of the relationship between life expectancy and various socioeconomic development indicators, such as GDP per capita, population, and GDP, suggests a complex interplay of factors influencing a population's longevity. While there is a noticeable weak positive correlation between life expectancy and GDP per capita, indicating that economic prosperity may contribute to longer life spans, it is essential to recognize that this is just one facet of a multifaceted picture. Factors like healthcare infrastructure, education, social policies, and lifestyle choices all play crucial roles in determining life expectancy. Thus, achieving higher life expectancy requires a holistic approach that addresses not only economic development but also broader societal well-being. Furthermore, this analysis underscores the need for continued research and nuanced understanding of the intricate relationships that impact human longevity in our ever-evolving global landscape.