**Analysis of Life Expectancy and Contributing Factors Using Power BI**

**Introduction and Problem Statement:**

The primary objective of this analysis is to explore the factors influencing life expectancy across countries categorized as developing and developed. Understanding how variables like **GDP**, **immunization rates**, **mortality rates**, and **health-related factors** affect life expectancy is critical for policy-making and improving public health outcomes.

Through the Power BI report, I posed several key questions:

1. How does **life expectancy** differ between **developing** and **developed** countries?
2. What role does **GDP** play in influencing life expectancy across these categories?
3. Are there any notable relationships between **economic, immunization, mortality, and health factors** and life expectancy?
4. Which countries have the highest and lowest life expectancy, and how do they differ in terms of development status?

**Findings and Insights:**

1. **Life Expectancy in Developing vs. Developed Countries:**
   * The comparison revealed a **clear disparity** in life expectancy between developing and developed countries. On average, **developed countries** consistently had **higher life expectancy** compared to developing nations. This observation aligns with the expectation that better healthcare infrastructure, economic stability, and living conditions contribute to longer lives in more developed regions.
2. **The Role of GDP in Life Expectancy:**
   * To investigate the relationship between economic status and life expectancy, I analyzed the **average GDP** for both developing and developed countries. The data showed a **positive correlation** between **GDP and life expectancy**. Higher GDP was associated with longer life expectancy, particularly in developed countries where access to healthcare, education, and better living conditions are prevalent.
   * This suggests that economic prosperity plays a key role in improving overall health outcomes and longevity.
3. **Comparison of Economic Factors with Life Expectancy:**
   * A **scatter plot** of various **economic factors** against life expectancy further supported the positive relationship. Higher **income levels**, **employment rates**, and **investment in healthcare** were all linked to higher life expectancy. The **positive trend** in the scatter plot indicates that economic development is a crucial driver of longer life expectancy.
4. **Immunization Rates Over the Years and Life Expectancy:**
   * An analysis of changes in **average immunization rates** over time revealed an interesting trend: some **developing countries** had **higher immunization averages**, which correlated with a **good life expectancy rate**. These countries had focused on improving their immunization coverage over the years, which resulted in better overall health outcomes and longer life expectancy.
   * In contrast, countries with **below-average immunization rates** had a **lower life expectancy**. This highlights that even in developing regions, prioritizing public health and immunization efforts can lead to significant improvements in life expectancy, despite other challenges.
5. **Mortality and Health Factors:**
   * **Mortality factors** (such as child and adult mortality) showed a **negative correlation** with life expectancy. Countries with higher mortality rates, especially in early childhood, had significantly lower life expectancy, reinforcing the impact of public health initiatives on population health.
   * **Health factors**, including access to healthcare services, were positively associated with life expectancy. Countries that invested more in healthcare infrastructure had better health outcomes and longer life expectancy.
6. **Life Expectancy by Country and Development Status:**
   * A breakdown of life expectancy by country revealed that **developed nations** like **Japan, Switzerland, and Norway** led in life expectancy, while **developing nations** in regions like **Sub-Saharan Africa** had the lowest life expectancy rates.
   * **Categorizing countries** by their development status helped to further highlight the gap in healthcare access, economic resources, and other critical factors that contribute to the disparities in life expectancy.

**Conclusion:**

The Power BI analysis effectively demonstrated that life expectancy is influenced by a combination of **economic, health, and social factors**. The clear difference in life expectancy between developed and developing countries emphasizes the need for targeted interventions in regions with lower economic development, particularly by improving healthcare access, increasing immunization coverage, and reducing mortality rates.

This analysis highlights the complex interplay between **economic prosperity** and **public health**, providing key insights for policymakers and health organizations aiming to increase life expectancy globally.