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Impact of Economic and Environmental Factors on Public Health and Well-being

This project aims to explore the relationships between economic indicators, environmental conditions, and public health outcomes across different countries. By analyzing a comprehensive dataset, the project will provide insights into how economic factors such as GDP, tax revenue, and minimum wage, as well as environmental aspects like CO2 emissions and agricultural land use, impact key public health metrics like life expectancy, infant mortality, and healthcare access.

Objective: The primary objective of this project is to determine the correlations between various socio-economic and environmental factors and public health outcomes. Specifically, the project will analyze how economic growth, urbanization, and environmental quality affect life expectancy, infant mortality rates, and other measures of population well-being.

Data Source: The dataset used in this project is titled "world-data-2023.csv" (Global Country Information Dataset 2023) and includes a variety of country-level metrics such as GDP, CO2 emissions, population density, healthcare expenditure, and more. The dataset provides information on economic performance, environmental health, healthcare access, and educational enrollment for multiple countries.

Research Questions:

- How does economic prosperity, measured through GDP and minimum wage, influence life expectancy and infant mortality?
- What is the relationship between CO2 emissions and public health outcomes?
- How do healthcare metrics (such as availability of physicians and out-of-pocket health expenditures) correlate with life expectancy in different countries?

Methodology: The analysis will utilize data visualization techniques in R (using ggplot2) to identify patterns and trends within the data. Correlation analysis will be performed to determine the strength of relationships between economic and environmental factors and health outcomes. Geospatial analysis will also be conducted to understand regional differences.

Expected Outcomes:

- Identification of key economic and environmental factors that have the most significant impact on public health.
- Visual representation of the relationships between GDP, CO2 emissions, and life expectancy across countries.
- Policy recommendations for improving public health outcomes based on findings.

Tools and Techniques:

- **Programming Language**: R (using ggplot2 for visualization, dplyr for data manipulation).
- **Visualization**: Scatter plots, heatmaps, and geospatial maps to visualize data and correlations.