Global Economics and Social Insights

Prepared for: Story Telling with Data(STD) Tableau Case Study Evaluation.
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Introduction

In a rapidly globalizing world, understanding the differences and similarities between countries is critical for policymakers, economists, and researchers.

This project focuses on the development of a Tableau dashboard to compare key metrics across different countries. The aim is to provide an interactive platform that allows users to explore and analyze data on various socio-economic indicators, such as GDP, population, education levels, and healthcare access, across multiple nations.

By visualizing these metrics side by side, the dashboard enables users to gain insights into trends, disparities, and correlations between countries, ultimately aiding in data-driven decision-making for policy development, economic forecasting, and international comparisons.

The case study highlights the design process, data sources, and the potential impact of such a tool for stakeholders.

Overview of the Dataset

The dataset used for this project, titled *"Country Comparison Dataset (USA and More)"*, is available on Kaggle and contains a variety of socio-economic, demographic, and health-related indicators for several countries, including the USA. The data is structured to allow for comprehensive comparisons across countries, focusing on key metrics such as population, GDP, inflation rates, life expectancy, literacy rates, and employment.

The dataset provides the following key features:

- **Country Information**: Includes country names and codes for easy identification.
- **Economic Indicators**: Metrics like GDP, inflation rate, and unemployment rate.
- **Population Data**: Total population, population density, and age structure.
- **Health Metrics**: Life expectancy, mortality rates, and healthcare expenditure.
- **Education Statistics**: Literacy rates and school enrollment percentages.
- **Others**: Miscellaneous data points such as urbanization rates and energy consumption.

This dataset offers a valuable resource for comparing and analyzing the performance of various countries on these dimensions, providing insights into their economic health, social development, and overall well-being.

You can access the dataset through the following link: [Country Comparison Dataset (USA and More)](#).

View of the Dashboard

Objective of Building the Dashboard:

The objective of this dashboard is to explore and compare the economic, environmental, social, and political metrics of different countries over time.

By combining key indicators such as GDP, life expectancy, education, renewable energy, and military expenditure, the dashboard aims to highlight the diverse aspects of national performance, helping users to gain insights into global trends and anomalies.

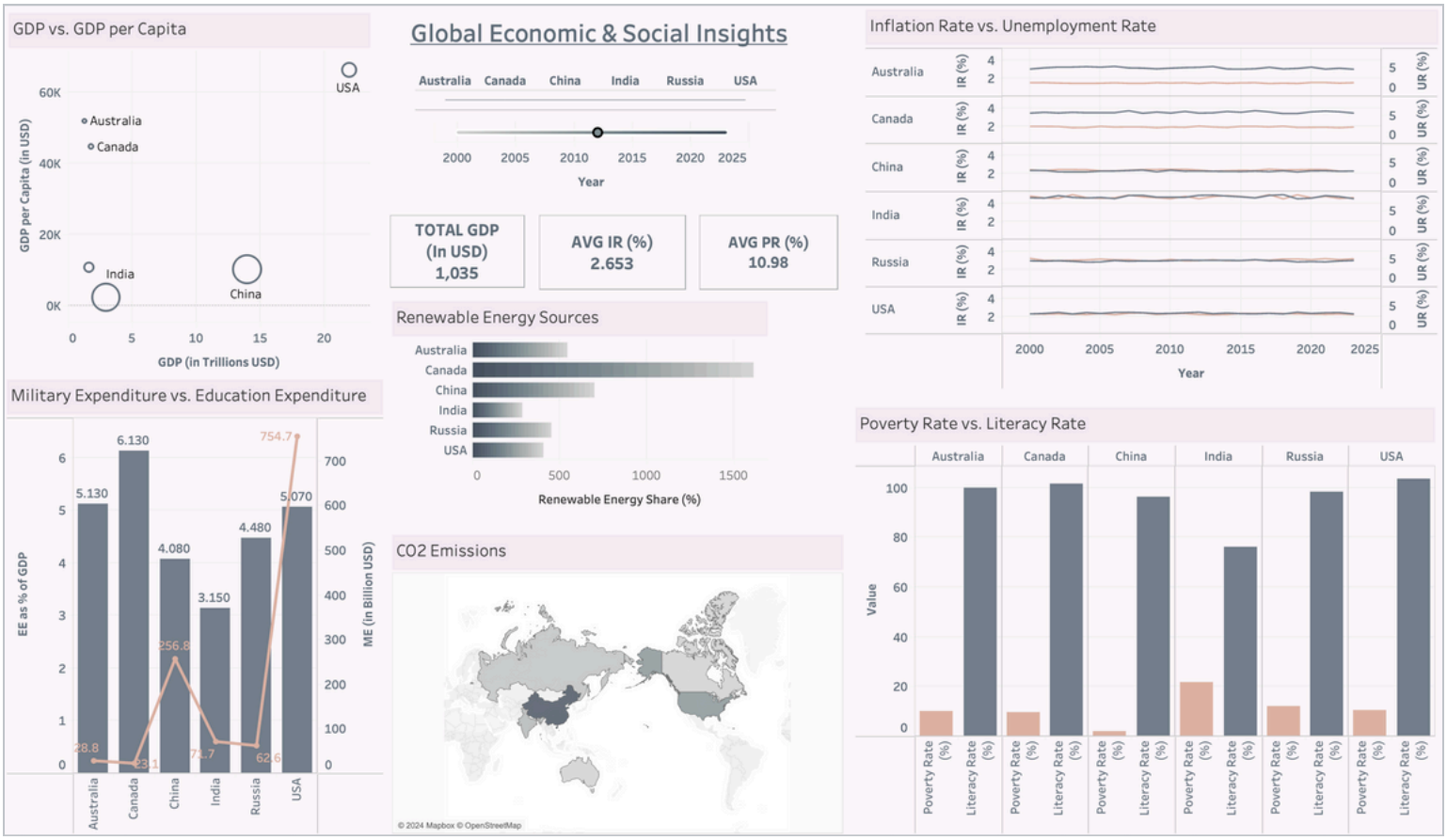
It also explores how different factors like inflation, education, and military spending can shape a country's development and well-being.

Overview of the Columns Used:

- **Country:** The name of the country.
- **GDP (in Trillions USD):** Total gross domestic product in trillions of USD.
- **GDP per Capita (in USD):** GDP per person in USD.
- **Inflation Rate (%):** Percentage change in the general price level of goods and services.
- **Unemployment Rate (%):** The percentage of the total labor force that is unemployed but actively seeking employment.
- **Renewable Energy Share (%):** Percentage of energy generated from renewable sources.

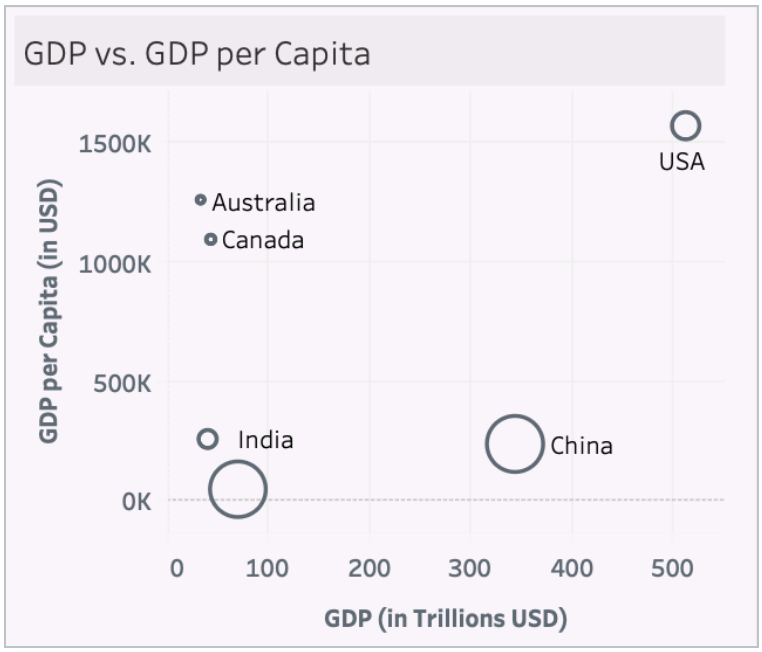
- **CO2 Emissions (in Billion USD):** The total CO2 emissions in billions of USD (carbon cost or economic equivalent).
- **Poverty Rate (%):** Percentage of the population living below the poverty line.
- **Literacy Rate (%):** Percentage of the population aged 15 and above who can read and write.
- **Military Expenditure (as % of GDP):** The percentage of GDP spent on military expenses.
- **Education Expenditure (as % of GDP):** The percentage of GDP allocated to education.
- **Year:** The year of observation.

Dashboard Design for Country Comparison



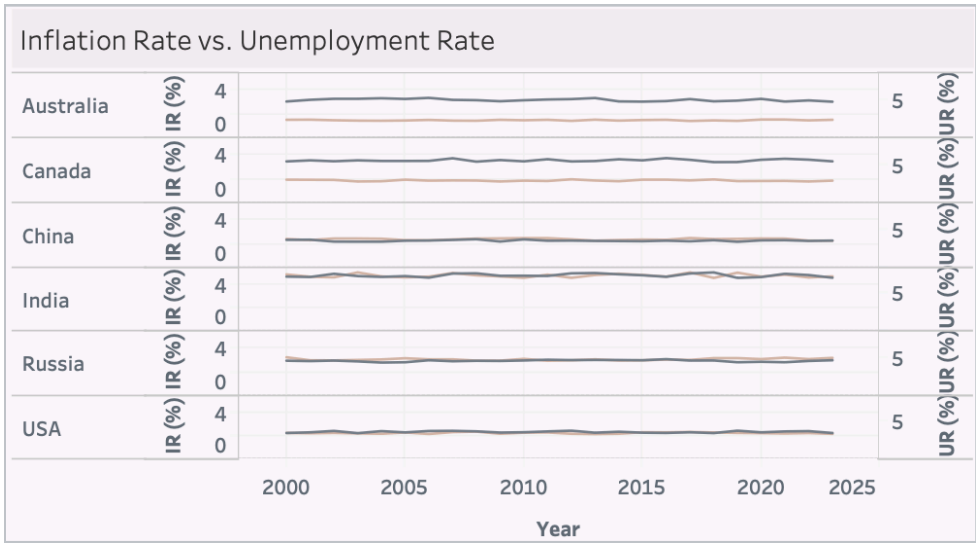
Interpretation of each Visualisation

1. GDP vs. GDP per Capita (Scatter Plot):



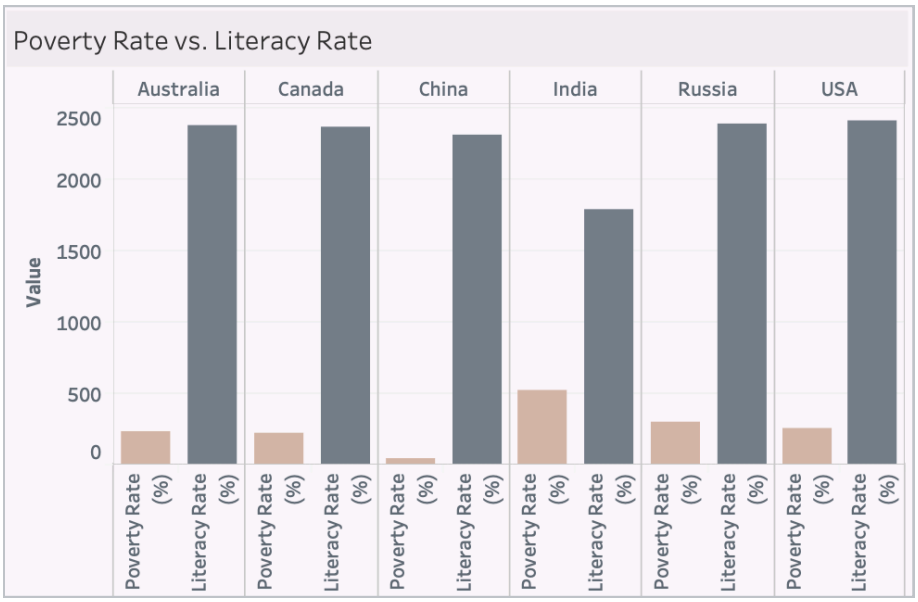
- **Purpose:** To visualize the relationship between total national wealth and the wealth per individual in each country.
- **Key Insights:**
  - Countries like the USA have both a high GDP (22.14) and high GDP per capita (62,205), indicating strong national and individual economic strength.
  - China has a large GDP (14.15) but significantly lower GDP per capita (9,770), suggesting a large population dilutes individual wealth.
  - India, with a similar population to China, shows a smaller bubble due to its lower GDP (2.76) and GDP per capita (2,058).
  - The bubble size reflects population size, highlighting economic powerhouses with large populations.

2. Inflation Rate vs. Unemployment Rate (Dual Line Chart):



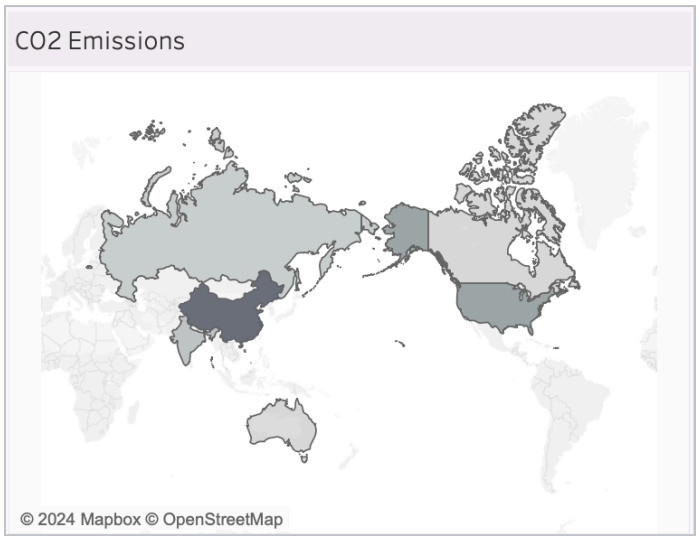
- **Purpose: To show the historical trend between inflation and unemployment for each country.**
- **Key Insights:**
  - Countries like the USA show a relatively stable relationship between inflation(2.200) and unemployment (3.550).
  - Countries experiencing fluctuating inflation and unemployment (e.g., Russia) may have more volatile economies.
  - A long-term view of the trends shows economic stability or instability over the years.
  - The interaction between inflation and unemployment can indicate whether countries are struggling with stagflation or deflation.

3. Poverty Rate vs. Literacy Rate (Side-by-Side Bar Chart):



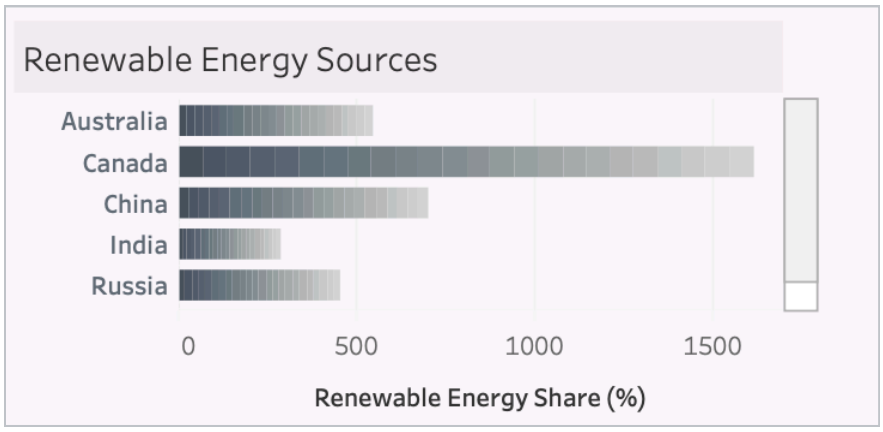
- **Purpose:** To compare the literacy and poverty rates across countries.
- **Key Insights:**
  - Higher literacy rates tend to correspond with lower poverty rates, showing the connection between education and economic well-being.
  - India and China have relatively higher poverty rates for year 2015 (2.0 and 21.0) compared to literacy (97.6 and 72.3) , suggesting gaps in wealth distribution despite large populations.
  - Developed nations like the USA and Canada show high literacy and low poverty, indicating a correlation between education and lower poverty.
  - Regional or global disparities in poverty and literacy rates can help shape policies targeting education and poverty alleviation.

4. CO2 Emissions (Map):



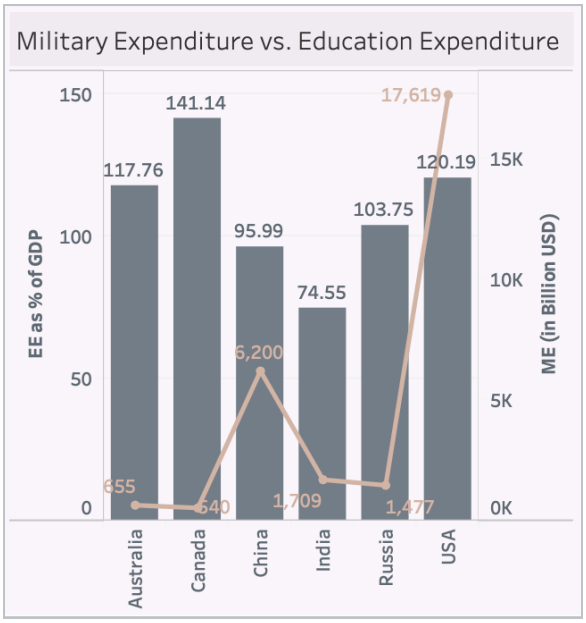
- **Purpose:** To display global CO2 emissions geographically.
- **Key Insights:**
  - China (238,480) and the USA (123,486) are the largest contributors to global CO2 emissions, reflecting their industrialization and economic size.
  - Regions with low emissions, such as parts of Africa and South America, may have less industrial activity.
  - This visualization helps identify the key countries driving climate change and their relative contributions.
  - Geographic distribution of emissions can indicate the environmental impact of different economic activities across regions.

5. Renewable Energy Sources (Gantt Chart):



- **Purpose:** To display each country's share of renewable energy.
- **Key Insights:**
  - Canada has the highest share of renewable energy (68.18), likely due to its vast hydroelectric power resources.
  - China and the USA, while large economies, have a lower percentage of renewable energy (28.94 and 17.31) compared to their total energy usage.
  - Countries with a higher share of renewable energy are likely investing in sustainability and clean energy solutions.
  - Comparing renewable energy use can highlight leaders and laggards in the transition to green energy.

6. Military Expenditure vs. Education Expenditure (Bar and Line Chart):



- **Purpose:** To compare the percentage of GDP spent on military and education in each country.
- **Key Insights:**
  - Countries like the USA and Russia spend a larger percentage of GDP on military (17,619 and 1,477) compared to education (120.9 and 103.75), reflecting their defense priorities.
  - Canada and Australia have a more balanced approach, with higher education expenditure (141.14 and 117.76) relative to military spending (540 and 655) which is also visible in the graph.
  - A large gap between military and education expenditure could suggest potential trade-offs between defense and human capital investment.
  - This chart helps in understanding national priorities and how they balance defense and education spending.

Flow of the Dashboard

- **GDP vs. GDP per Capita (Scatter Chart)** - Provides an overview of economic performance by comparing total wealth and individual prosperity.
- **Inflation Rate vs. Unemployment Rate (Dual Line Chart)** - Follows the economic view by exploring the macroeconomic stability of each country.
- **Poverty Rate vs. Literacy Rate (Side-by-Side Bar Chart)** - Shifts focus to social issues by highlighting the relationship between education and poverty.
- **CO2 Emissions (Map)** - Analyzes the environmental impact by visualizing global CO2 emission patterns.
- **Renewable Energy Sources (Gantt Chart)** - Continues the environmental theme, focusing on the adoption of sustainable energy sources.

- **Military Expenditure vs. Education Expenditure (Bar and Line Chart)** – Concludes with a political-economic comparison of spending on defense versus education.

Conclusion

The dashboard offers a comprehensive analysis of global country comparisons, exploring economic, environmental, and social indicators.

Countries with strong GDPs often have high life expectancies and lower poverty rates, but disparities in literacy, energy use, and military spending reveal differences in national priorities.

Through this dashboard, users can interactively explore how various countries fare on important metrics like education, healthcare, military investment, and environmental responsibility, providing insights for policymaking, economic development, and international comparisons.

This dashboard is not just a collection of statistics; it is a powerful tool that provides meaningful insights into how countries navigate the challenges of development.

By examining these indicators, users are better equipped to understand the diverse factors influencing national performance and can engage in informed discussions about improving global well-being.