



Bharatiya Vidya Bhavan's

Sardar Patel Institute of Technology

(Autonomous Institute Affiliated to University of Mumbai)

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India

Name: Sarthak Gharat

UID: 2021700025

Branch: CSE DS

AIM:

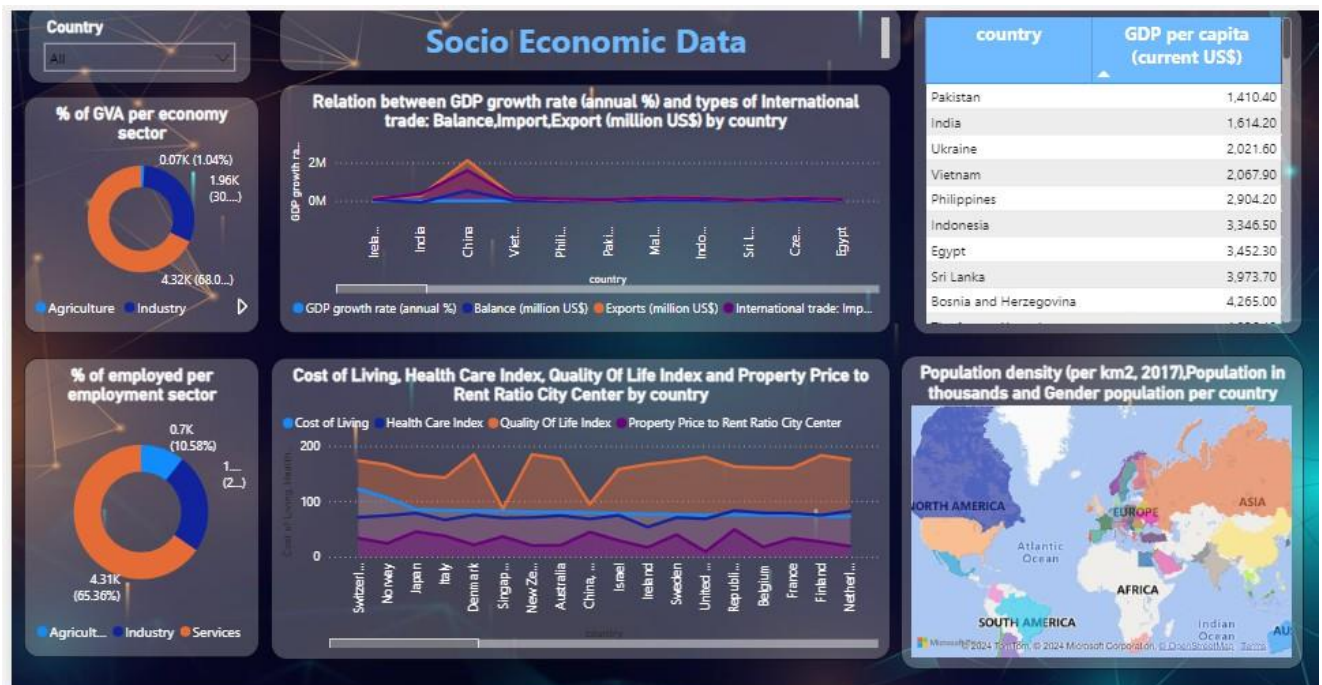
Create advanced charts using Tableau / Power BI / R / Python / Plotly or Chart or D3.js to be performed on the dataset - Socio economic data

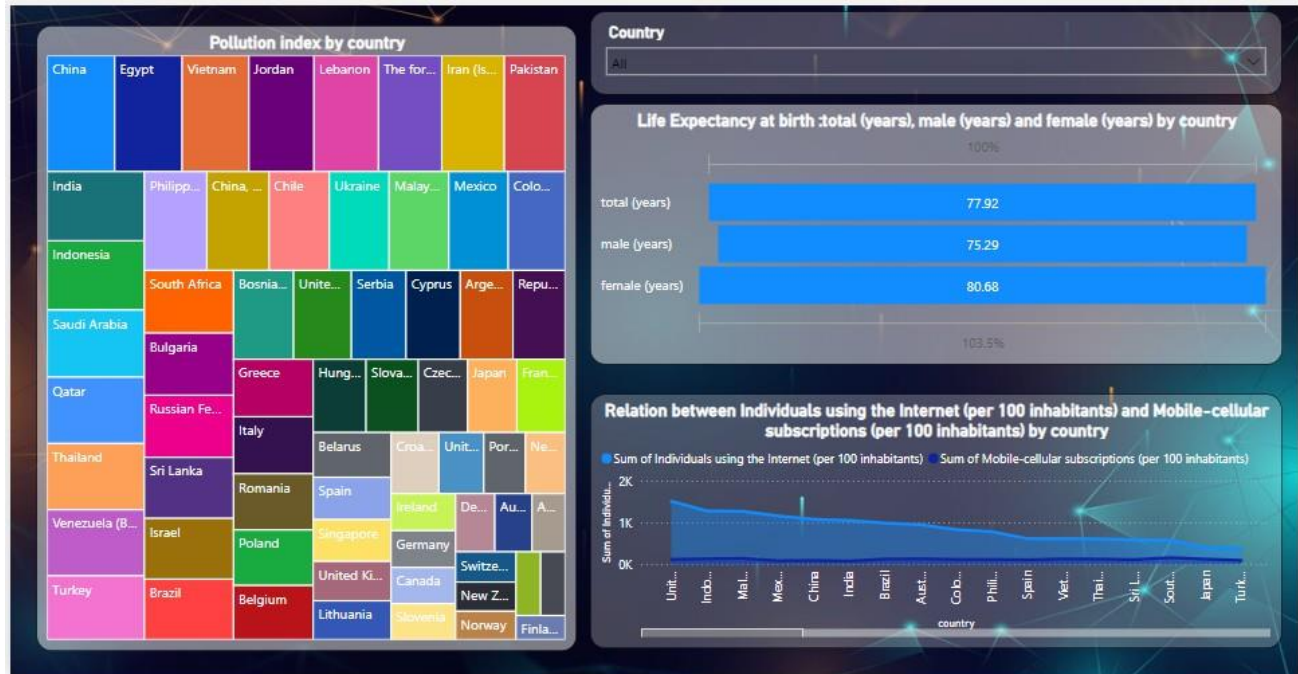
- Advanced - Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, Jitter, Line, Area, Waterfall, Donut, Treemap, Funnel
- Write observations from each chart

Practice dataset:

World Socio Economic dataset and Power BI file

<https://www.kaggle.com/datasets/nishanthshalian/socioeconomic-country-profiles?resource=download>





The slicer allows users to filter data for a specific country, making it easier to drill down and view socio-economic data and trends for selected nations.

1. Percentage contribution of each sector (Agriculture, Industry, Services) to Gross Value Added (GVA) in each country

- **Visualization type: Donut chart**
- **Observation:** This chart breaks down the contribution of each economic sector (Agriculture, Industry, Services) to the total Gross Value Added (GVA) of a country. For example, in industrialized countries, the Industry sector might have a significant share, while in developing countries, Agriculture may contribute more.
- **Relation and Insight:** This helps understand the economic structure of a country and its reliance on specific sectors. It provides insight into potential areas of strength or vulnerability within the economy based on sector performance.

2. Relation between GDP growth rate and international trade (imports, exports) by country

- **Visualization type: Area chart**
- **Observation:** The area chart shows how GDP growth is related to the balance of trade, imports, and exports in different countries. Countries like China with strong export figures tend to have higher GDP growth rates, whereas countries with negative trade balances show slower growth.
- **Relation and Insight:** Understanding the link between GDP growth and international trade provides insight into how trade policies, export capabilities, and import dependencies influence the overall economic health of a country. Countries with strong export-driven economies tend to experience higher growth.

3. Employment distribution across agriculture, industry, and services sectors in each country

- **Visualization type: Donut chart**
- **Observation:** This chart displays the distribution of employment across Agriculture, Industry, and Services sectors. Countries with a service-based economy, like the U.S., show a higher proportion of their workforce in Services, while countries with large agricultural economies, like India, have more people employed in Agriculture.
- **Relation and Insight:** This chart provides a clear view of the workforce distribution and economic reliance on specific sectors, which can reflect development levels and labor market dynamics. It's helpful in identifying sectors where job growth or transitions may be necessary to achieve sustainable development.

4. Comparison of socio-economic factors (Cost of Living, Healthcare, Quality of Life Index, Property Price) between countries

- **Visualization type: Area chart**
- **Observation:** The area chart compares several socio-economic factors like the Cost of Living Index, Healthcare Index, Quality of Life Index, and Property Price to Rent Ratio across countries. Countries like Switzerland or Japan, which have higher living costs, often also score highly in healthcare and quality of life but may face housing affordability issues.
- **Relation and Insight:** By comparing these indicators, the chart provides insights into how different countries balance their living costs with the quality of life and healthcare services. It highlights trade-offs between affordability and living standards, helping policymakers address economic challenges and inequalities.

5. Population density, gender distribution, and total population per continent or country

- **Visualization type: Map chart**
- **Observation:** The map displays population density (people per km²), gender distribution (male and female), and total population by country or continent. Densely populated regions like Asia are highlighted, whereas sparsely populated areas in Africa or South America stand out as lower-density regions.
- **Relation and Insight:** This geographical breakdown allows for easy visualization of population pressures and demographics across the world. It can help policymakers assess resource allocation, urban planning needs, and potential demographic challenges in high-density areas.

6. Pollution levels in different countries

- **Visualization type: Treemap**
- **Observation:** The treemap visualizes pollution levels across countries. Countries like China and India exhibit high pollution indices, indicating significant environmental challenges, while countries with lower pollution indices, such as Finland or Switzerland, are depicted with smaller blocks.
- **Relation and Insight:** This visualization helps quickly assess the environmental health of various countries and regions. High pollution levels can affect public health, environmental policies, and economic sustainability. It's useful for environmentalists and policymakers working on climate change mitigation.

7. Life expectancy at birth (total, male, female) by country

- **Visualization type: Funnel chart**
- **Observation:** The funnel chart breaks down life expectancy at birth by total population, male, and female, for each country. Women generally have higher life expectancy than men across most countries. Countries like Japan have a higher overall life expectancy compared to others.
- **Relation and Insight:** The disparity between male and female life expectancy offers insights into health outcomes, lifestyle factors, and access to healthcare services. Countries with longer life expectancies may also have better healthcare systems and living conditions, which is crucial for long-term public health strategies.

8. Internet usage and mobile-cellular subscription penetration in each country

- **Visualization type: Line chart**
- **Observation:** The line chart compares the sum of individuals using the internet and mobile-cellular subscriptions per 100 inhabitants across countries. Developed nations such as Japan, Finland, and Germany have high internet and mobile penetration rates, while some developing countries lag behind.
- **Relation and Insight:** This provides insights into the digital divide between developed and developing countries. It highlights the role of infrastructure in driving digital access and connectivity, essential for economic development, communication, and education in the modern world.

9. GDP per capita (current US\$) for selected countries

- **Visualization type: Table**
- **Observation:** The table lists countries along with their GDP per capita in current US dollars, offering a direct comparison of economic output per person. Wealthier countries, such as Switzerland and Norway, have significantly higher GDP per capita compared to countries like Pakistan or Ukraine.
- **Relation and Insight:** GDP per capita is a key indicator of economic performance and standard of living in each country. It helps to identify wealth distribution and economic disparities, guiding decisions related to foreign aid, investments, and economic reforms.

