Economic Impact

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1. INTRODUCTION

A potent tool that enables you to investigate the broad impacts of many factors on economies all over the world and dig into the complex web of economic impacts. The "Economic Impact" dashboard is intended to fundamentally alter how we see, comprehend, and analyze the economic environment and its relationship with the other aspects of life. This dashboard offers a thorough overview of the economic repercussions across life indicators, and geographies through interactive and aesthetically arresting data visualizations. Discover the connections between employment, productivity, investment, trade, and consumer behavior to obtain a thorough understanding of the dynamics that drive economic development and progress. You have the freedom to modify your visualizations based on certain factors and periods thanks to our user-friendly interface. Explore the details, contrast various metrics, and uncover hidden trends.

2. DATA SUMMARY

Our visualization dashboard offers a thorough and succinct data overview that simplifies complicated data into actionable insights. Users may immediately understand the most relevant findings thanks to this section's snapshot of the most significant data trends and patterns.

Our data summary illustrates the major indicators and their linkages using aesthetically appealing charts, graphs, and statistics. We give the key data points that throw light on the status of the globe and its different fields, ranging from GDP growth rates to population dynamics, from CO2 emissions to child mortality figures.

Table 1. Data Summarization

Variables	Comments
GDP Per Capita	The average economic production per person
Population	Total number of people residing in a given region
Child Mortality	Loss of life of children aged below five
Annual CO2 Emissions	Total quantity of carbon dioxide that population emits in the given region
Life Expectancy	Typical death age for a population in a given region
Year	Ranging from 1950 to 2018
Country Code	Code for a given country encoded in “ISO A3” format
Country Name	Name of the country

The dataset contains 11111 rows/entries, consisting of 8 columns as presented in table 1. It consist of data from 162 different countries ranging from year 1950 to 2018. The data is collected from World Bank [1].

3. KEY FEATURES

Our visualization dashboard delivers dynamic and interactive data visualizations that let users see the information from many perspectives. To find insights and patterns that are most pertinent to their requirements, users may zoom in, filter, and interact with the visualizations. Users of our dashboard have the freedom to modify their charts in accordance with their own needs. To see patterns over time, they may alter the timeframes, specify the variables for the x and y axes, and choose from a variety of chart styles, including bar graphs, scatter plots, and line charts.

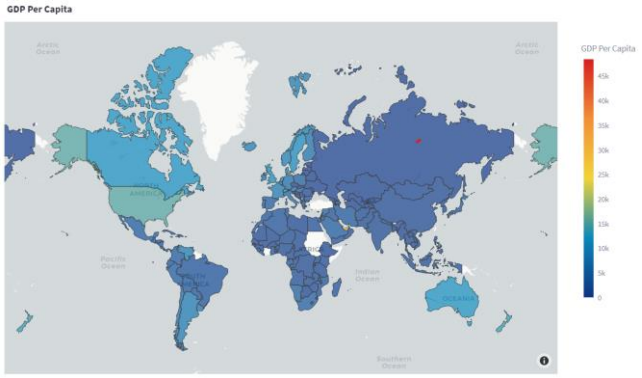

Figure 1. Data on Geospatial Maps

Interactive maps on our dashboard provide the data a geographical context. Users may choose particular nations to compare various places and visualize data patterns. The maps provide a dynamic and interesting approach to investigate data and comprehend geographical differences. We recognize the value of concentrating on particular data subsets. Users of our dashboard may apply data filters based on relevant criteria like demographic group. Users may utilize this tool to focus their investigation and get more in-depth information about particular segments.

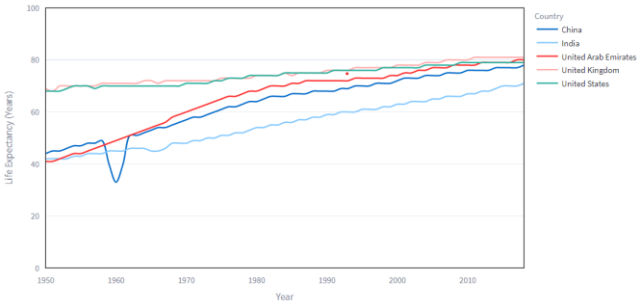

Figure 2. Filtering Options

By allowing users to compare several nations or areas, our dashboard makes comparative analysis easier. This function aids in locating similarities, variances, and trends across several places, offering insightful data for global comparisons or local benchmarking.

4. INSIGHTS

The dashboard may be used by researchers in a variety of sectors to perform in-depth study and obtain insights. The dashboard offers a thorough platform for research, whether it be investigating environmental implications, demographic changes, or economic patterns. The dashboard, for instance, may be used by a climate scientist to visualize and analyze CO2 emissions across various locations and sectors to comprehend their role in climate change. One such example can be visualized in the figure 3 on the Gulf War event and how it caused the spike in Kuwait's CO2 Emission [2] between 1990 to 1992.

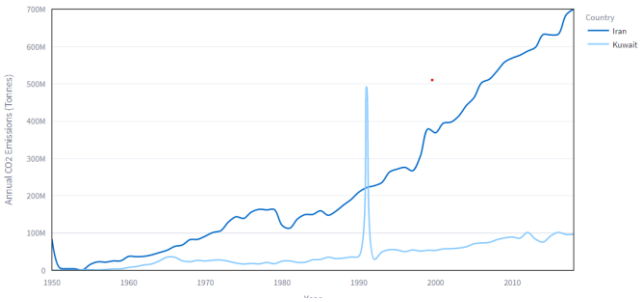

Figure 3. Kuwait CO2 Emission Spike

Another example is the drop in Life Expectancy of China during an event called "The Great Chinese Famine" [3] from 1958 to 1963 can be seen in figure 4.

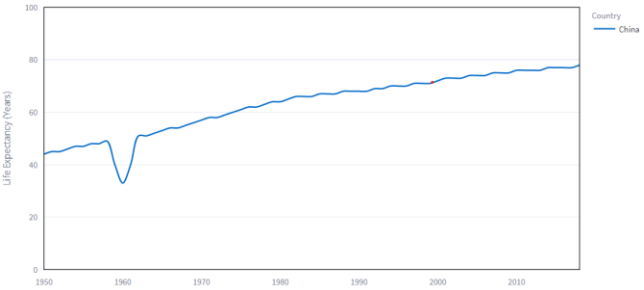

Figure 4. The Great Chinese Famine consequences

This visualization dashboard serves as an educational tool for students, educators, and researchers. By presenting facts in an approachable way, it enables people to investigate and comprehend complicated subjects. The dashboard may be used by students to compare various datasets, analyze historical trends, and get a deeper knowledge of social or economic events.

5. TECH STACK

In order to provide a smooth and effective visualization dashboard experience, our project makes use of a strong and cutting-edge tech stack. For processing massive datasets and delivering interactive visualizations, the combination of these technologies provides dependability, scalability, and top performance. The main elements of our tech stack are listed below:

1. Python v3.11 [4]
2. Streamlit Framework [5]
3. Plotly Express [6]
4. Pandas [7]
5. Numpy [8]
6. JSON [9]

6. REFERENCES

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