Introduction:

Comprehending the socio-economic and demographic context of countries is crucial for policymakers, scholars, and institutions striving to successfully tackle global issues. In order to investigate several aspects of global development, such as population dynamics, economic indicators, healthcare outcomes, and environmental factors, we use three datasets in this work. Our goal is to obtain a deeper understanding of the intricate interactions between environmental, economic, and demographic factors in various parts of the world by examining these datasets as a whole.

Abstract:

This dataset offers a thorough analysis of death rates and global development indices for a number of different nations and areas. The information, which was compiled from credible sources including academic institutions, international organizations, and national statistical agencies, covers a broad range of health measurements and socioeconomic characteristics over several years.

The dataset contains variables related to GDP per capita, healthcare infrastructure, education spending, disease prevalence, and death rates from non-communicable and communicable diseases as well as from external events like accidents and conflicts.

To guarantee the accuracy and dependability of the data provided, strict procedures for data collection and validation have been used. To find patterns, trends, and relationships in data, statistical analysis approaches have been used, such as time-series modeling, correlation analysis, and descriptive statistics.

Important discoveries from the dataset illustrate both areas of progress and ongoing concerns, shedding light on differences in development and health outcomes across different parts of the world. This dataset provides insights that can help academics, practitioners, and policymakers address global health inequities, create efficient development plans, and reduce global mortality risk factors.

Problem Statement:

Disparities across countries continue, both within and between regions, despite notable advancements in a number of development-related sectors. These discrepancies show themselves as variations in population dynamics, healthcare results, environmental sustainability, and rates of economic growth. A thorough grasp of the underlying causes of these inequities is necessary in order to address them. Nonetheless, policymakers and researchers looking for practical approaches for equitable growth and sustainable development face difficulties due to the complexity and interconnectivity of these elements.

Data Dictionary and Data Cleaning:

Data cleaning was given a lot of attention in this work in order to combine three different datasets. Each dataset was carefully examined as part of the cleaning process to find and fix outliers, missing values, and inconsistencies. Prioritizing format and unit standardization helped to guarantee correctness and uniformity across variables. In order to address missing data points and improve the datasets' completeness, imputation techniques were used. Thorough data cleaning created a solid basis for further research, which allowed valuable insights to be extracted from the cleaned datasets.

Datasets - The World Bank. World Development Indicators



Datasets - The World Bank. World Development Indicators



**Dataset - Kaggle. (n.d.). Road Traffic Deaths 1990 to 2019.**



Research Questions:

1.How do demographic trends, such as population growth rates, vary across different countries and regions?

2.What are the key economic indicators, such as GDP per capita, labor force participation rates, and minimum wages, and how do they correlate with demographic and social variables?

3.What is the relationship between environmental factors, such as CO2 emissions, forested area percentages, and water withdrawal rates, and socio-economic development indicators?

4.How do healthcare outcomes, including infant mortality rates, life expectancy, and maternal mortality ratios, differ among countries with varying levels of economic development and healthcare infrastructure?

5.Are there significant disparities in access to education, as indicated by gross primary and tertiary education enrollment rates, across different regions, and how do these disparities impact socio-economic development?

Dashboard:

A screenshot of a computer

Description automatically generated

The information on offer focuses on global unemployment rates and income categories. Below is a summary of the data that can be seen in the image:

Unemployment Rate: Users can view the global unemployment rate in this area. A globe map exists, however it does not show any data at the moment. Additionally, a drop-down box allows you to see the data by "Sheets" or "Automatic." The unemployment rate is currently set at "0.0000 0.261" with the setting set to "Automatic."

Income Group: Users can access data according to their income group in this section. A globe map exists, however it does not show any data at the moment. Two income categories, "Upper middle income" and "Lower middle income," are also depicted in a legend.

Insight Analysis:

1.Top 30 countries with high Forest land

A screenshot of a computer

Description automatically generated

This is the analysis on ranked the top 30 countries with the highest forested area. The Federated States of Micronesia has the highest forested area at 98.3% followed by Palau at 91.9% and Solomon Islands at 83.9%. Interestingly, many of the countries with the most forested land are islands. This is likely because these areas have not been subject to large-scale deforestation for agriculture or development.

2. Top 30 countries with high Agriculture land

A screenshot of a computer

Description automatically generated

3. Highest Armed forces across world

A screenshot of a computer

Description automatically generated

4. Top 10 countries with death count

A screenshot of a computer

Description automatically generated

5. Comparison between birth rate and Life expectancy

A screenshot of a computer

Description automatically generated

6. Road Accidents in each country across years

A screenshot of a computer

Description automatically generated

7. Population of world with Income levels

A screenshot of a computer

Description automatically generated

8. County with Tax and GDP comparison

A screenshot of a computer

Description automatically generated

9. Top N city with Gasoline Prices

A screenshot of a graph

Description automatically generated

10. Unemployment rate across world with the system of trade

A map of the world

Description automatically generated

Comparisons and Findings:

* Road Traffic Deaths Dataset: There has been a discernible trend in road traffic deaths between 1990 and 2019, with variations seen in various nations and areas.
* The nation code "ZAF" denotes South Africa, which has the highest unemployment rate of all the nations under consideration. This research highlights the ongoing difficulties South Africa faces in reducing unemployment and providing economic opportunity for its people.
* The United States, identified by the country code "USA," stands out with the highest GDP and tax valuation among all countries in the dataset. This finding highlights the economic dominance of the United States on the global stage, reflecting its robust financial infrastructure and substantial economic output. The combination of a high GDP and tax valuation underscores the significant fiscal capacity of the United States, providing ample resources for public investment, social programs, and economic development initiatives.

Reference

Road Traffic Deaths Dataset:

Kaggle. (n.d.). Road Traffic Deaths 1990 to 2019. <https://www.kaggle.com/datasets/shivkumarganesh/road-traffic-deaths-1990-to-2019/data?select=output.csv>

World Development Indicators Dataset:

The World Bank. World Development Indicators. <https://data.world/worldbank/world-development-indicators>

Countries of the World Dataset:

Kaggle. (n.d.). Countries of the World 2023. <https://www.kaggle.com/datasets/nelgiriyewithana/countries-of-the-world-2023>

How does population density correlate with indicators such as GDP per capita, unemployment rate, and healthcare access?

What is the relationship between the percentage of agricultural land and economic indicators such as GDP, income inequality, and poverty rates?

What is the impact of birth rate, fertility rate, and infant mortality on overall life expectancy and healthcare outcomes?

In this study, we have thoroughly examined several key research questions pertaining to the demographic factors and socioeconomic indicators of a country. We have learned a great deal about the intricate linkages that exist between population dynamics, economic performance, and healthcare outcomes via thorough investigation and analysis.

First, we looked into the relationship between population density and a number of socioeconomic variables, such as GDP per person, unemployment rate. According to our research, there are complex correlations between economic development and population density. While densely populated locations frequently have higher GDP per capita, they also face other difficulties like higher unemployment rates and overburdened healthcare systems.

Second, we looked at the connection between economic metrics like GDP, income inequality, and poverty rates and the proportion of land used for agriculture. According to our data, nations that rely significantly on agriculture typically have lower GDP per capita, higher levels of income inequality, and poverty. This highlights the essential role that agricultural land use plays in determining economic development and social outcomes.

Finally, we looked at how total life expectancy and healthcare outcomes are affected by demographic characteristics such infant mortality, fertility, and birth rate. Upon conducting a comprehensive analysis, we discovered that elevated birth and fertility rates were linked to reduced life expectancy and subpar healthcare results. This underscores the need of tackling maternal and child health concerns in order to enhance population health and overall well-being.