TITLE

Assignment 2: Statistics and trends

Name: Boopathi Raja Mahalingam

Student Id: 22079746

Abstract

This report presents an analysis of greenhouse gas emissions and the value added by the agriculture, forestry, and fishing sector in selected countries from 1995 to 2005.To get a better understanding of these countries economic and environmental conditions during the given time frame, the data is processed and visualized.

Introduction

The report explores the trends in greenhouse gas emission and the contribution of the agriculture sector to the GDP of the selected countries between 1995 and 2005.Yje analysis main goal is to comprehend these sector's economic importance and the environmental effect during the given timeframe.

Data Source:

[Total greenhouse gas emissions (kt of CO2 equivalent) | Data (worldbank.org)](#)

[Agriculture, forestry, and fishing, value added (% of GDP) | Data (worldbank.org)](#)

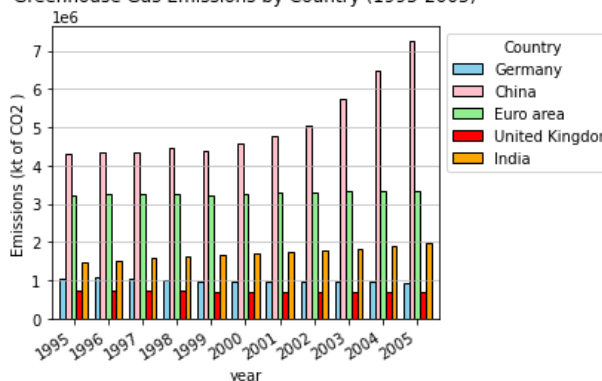[Climate Change | Data (worldbank.org)](#)

Github :

https://github.com/bm23abb/Assignment-2-Statistics-and-trends.git

Bar Chart

The bar chart succinctly illustrates greenhouse gas emissions for Germany, China, the Euro Area, the United Kingdom, and India from 1995 to 2005. Utilizing a transposed data frame, the graph allows for a detailed analysis of cumulative emissions patterns. Particularly noteworthy is the steady rise in CO2 emissions for China and India during this period. This study clarifies the distinctive environmental paths of the selected nations, providing valuable insights into individual emission patterns and potential areas for targeted environmental policy considerations.
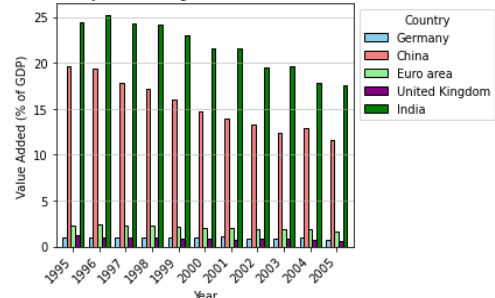

The second bar chart looks at agriculture, forestry, and fishing value added for the same countries as the first chart, including China and India. It shows the percentage of GDP contributed by the agriculture sector for each country. Interestingly, the chart indicates that when CO2 levels increase, there is a visible decrease in environmental resources, especially in China and India during the specified years. This implies a link between decreasing natural resources and increasing CO2 levels. The results emphasize the necessity of regulating the environmental effect of economic operations with great care.

Line Plot
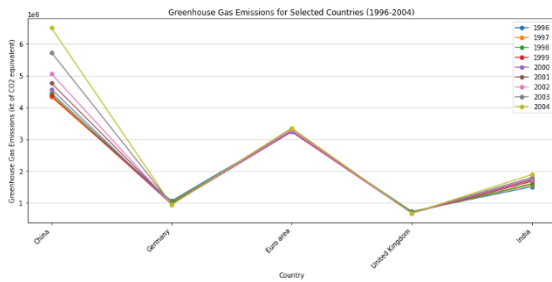
The first line plot delves into the dynamics of the greenhouse gas emission for Germany, China, Euro area, United Kingdom and India over a series of the years from 1995 to 2005.In this line plot the data used are non-transposed were years as rows and countries as columns. The visual depiction of the evolution of emissions throughout time is made possible by the representation of individual years by each line. China's line shows a clear upward trend, indicating a continuous growth in CO2 emissions throughout the given period, where as Germany's line shows a praiseworthy decrease, indicating a significant difference in emission patterns between the two nations. Throughout the examined period, the figure provides as a dynamic picture of the contribution of each nation to greenhouse gas emissions.
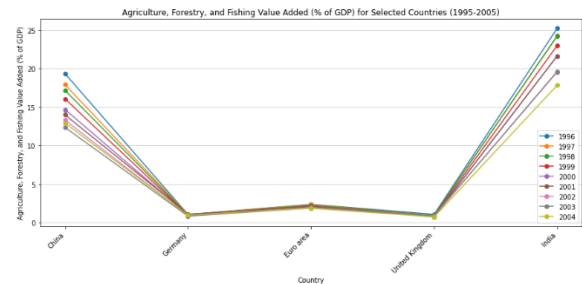
The second line plot represent the Agriculture, forestry and fishing value added in % for the same set of countries. Each line represents a different year, illustrating how the GDP contribution of the agriculture industry has changed over time. The plot sheds light on how important agriculture is to each nation's economy. By examining the lines, one may identify patterns and deviations that provide important insights on the function and financial implications of the agricultural sector in the selected country.

Correlation
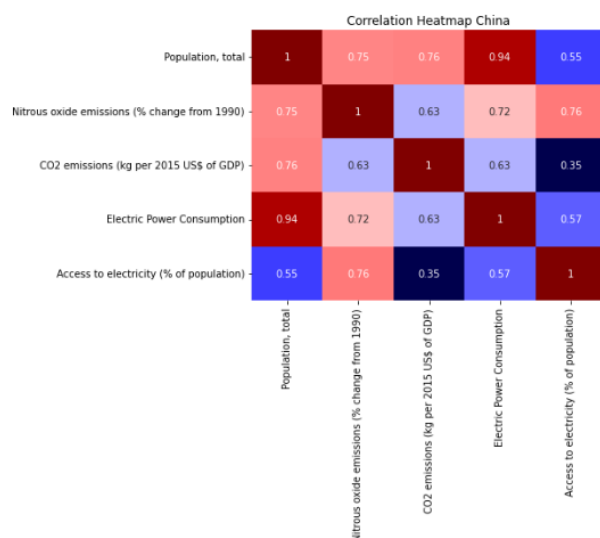
The correlation analysis examines relationships among environmental and economic indicators for selected countries, visualized through a heatmap. This emphasises the complex relationships that exist between economic activity, urbanisation, and environmental effects. The research highlights the necessity for complex interpretations that take into account the distinctive socioeconomic circumstances of every nation. Although correlations provide insightful information, they should be interpreted in a larger context. The heatmap illustrates the intricacy of environmental and economic phenomena and serves as a basis for more in-depth investigations.