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Data Source: https://data.worldbank.org/

Repository Link: https://github.com/junaidhashmi1/Assignment_2.git

Exploring Statistics and Trends in World Bank Data

Abstract - This report provides a comprehensive analysis of key economic and environmental indicators for various countries, including GDP growth, agriculture's contribution to GDP, correlation matrices, and trends in urban population growth, CO2 emissions, electricity production, and agricultural land use.

Analysis of GDP Growth Selected Countries

The Analysis of data presents the annual percentage of GDP growth for ten countries over a decade. On average, Brazil and Nigeria demonstrate the highest mean GDP growth rates at 3.41% and 3.87%, respectively, while France and Japan have lower mean growth rates at 2.04% and 2.75%, respectively.

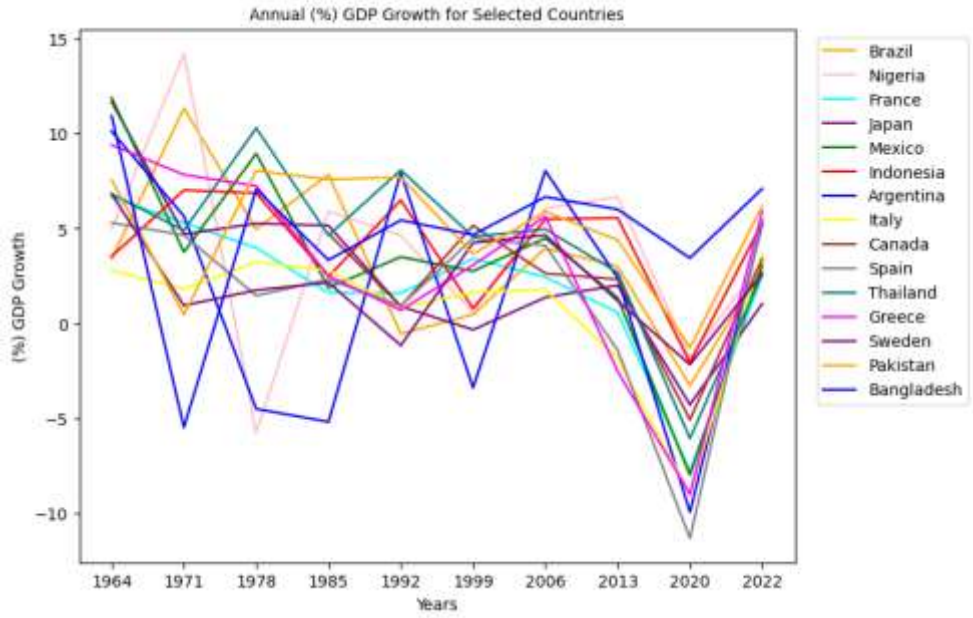

Figure 1: GDP Growth of Selected Economies

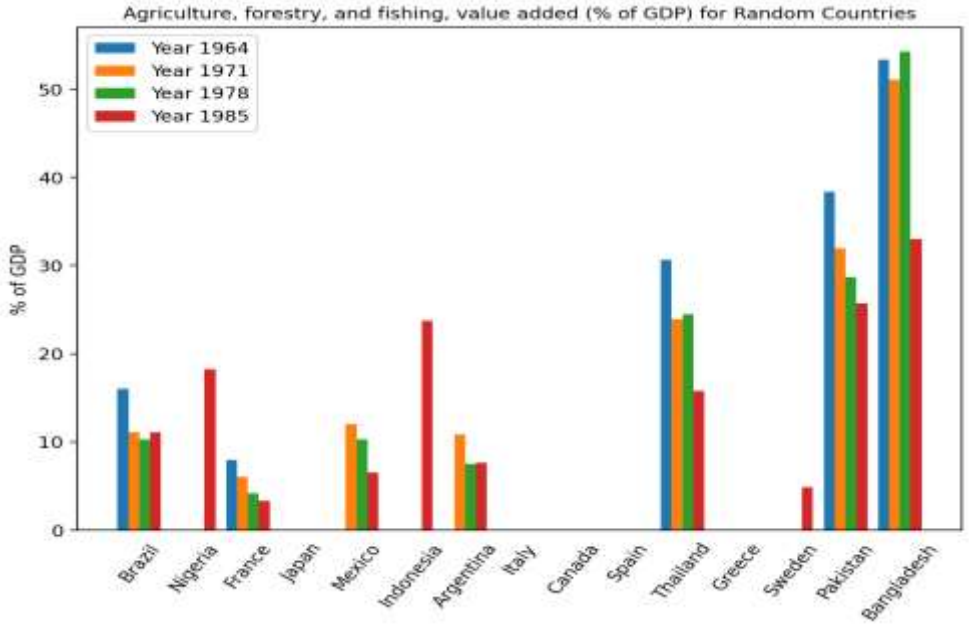

Figure 2: Analysis of Agriculture, Forestry, and Fishing Contribution to GDP (%)

Analysis of Agriculture, Forestry, and Fishing Contribution to GDP (%):

The grouped bar plot analysis illustrates the changing contributions of agriculture, forestry, and fishing to the GDP of select countries over time. For instance, Brazil shows a significant decrease from 16.03% in 1964 to 6.81% in 2022, indicating a notable shift in economic structure. In contrast, Nigeria has maintained a relatively high percentage, reflecting the continued significance of these sectors. These trends provide valuable information about the economic diversification and development patterns of each country.

Urban Population Growth Trends Analysis

The multiple line plot analysis for urban population growth provides insights into the pace of urbanization. Notably, most countries exhibit a gradual increase, with variations. Argentina and Bangladesh experience steady growth, while Japan's urban population growth has stagnated. These trends inform urban planning strategies and help anticipate future challenges associated with urbanization.

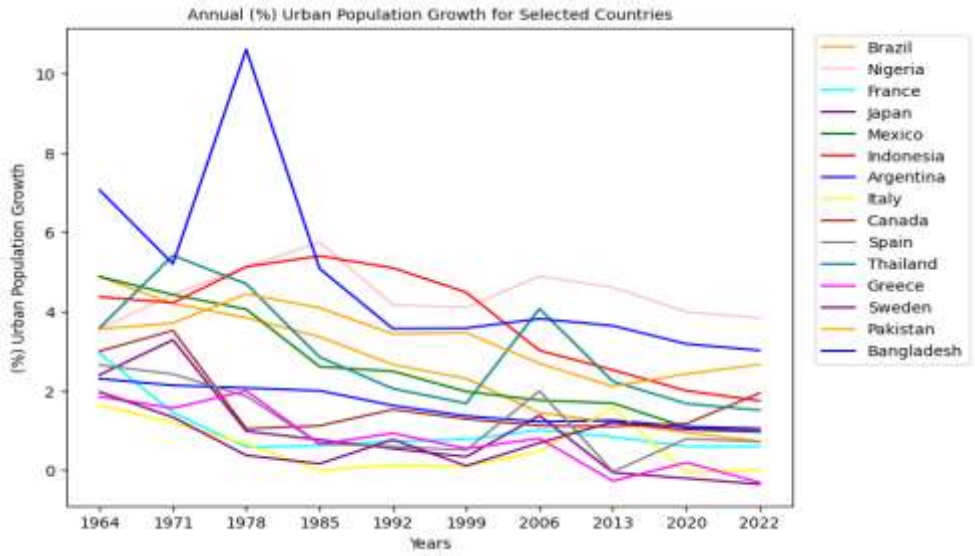

Figure 3: Urban population growth

Correlation of Argentina Analysis

Correlation matrices for Argentina reveal interesting relationships between various factors. For Argentina, urban population growth is negatively correlated with agriculture, forestry, and fishing contribution to GDP, suggesting a shift toward urbanization.

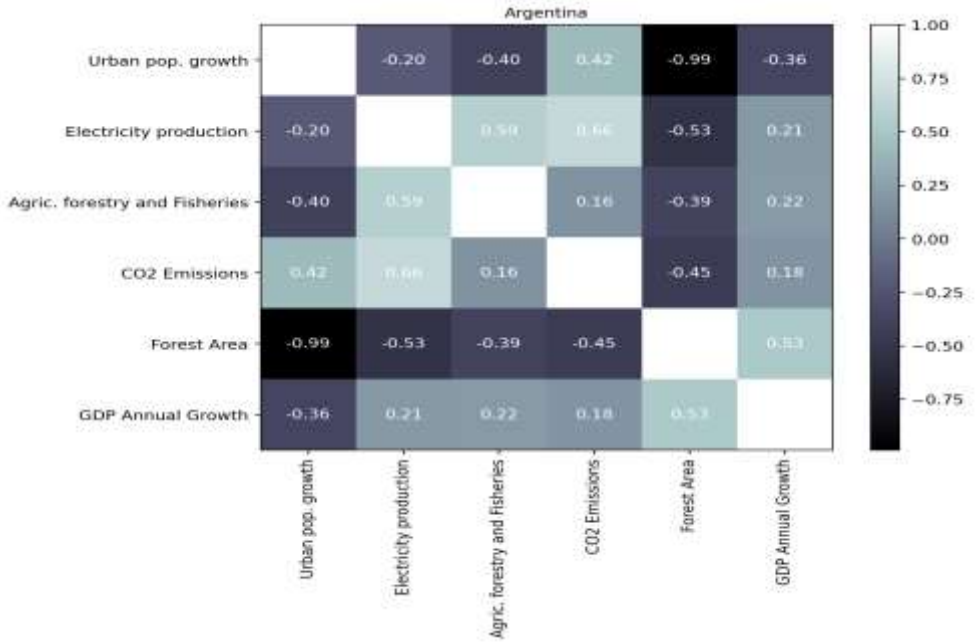

Figure 4: Analysis of Key Indicators for Argentina

Corelation of Canada Analysis

Correlation matrices for Canada reveal interesting relationships between various factors. For Canada exhibits a strong positive correlation between CO2 emissions and GDP growth, emphasizing the country's dependence on carbon-intensive industries.

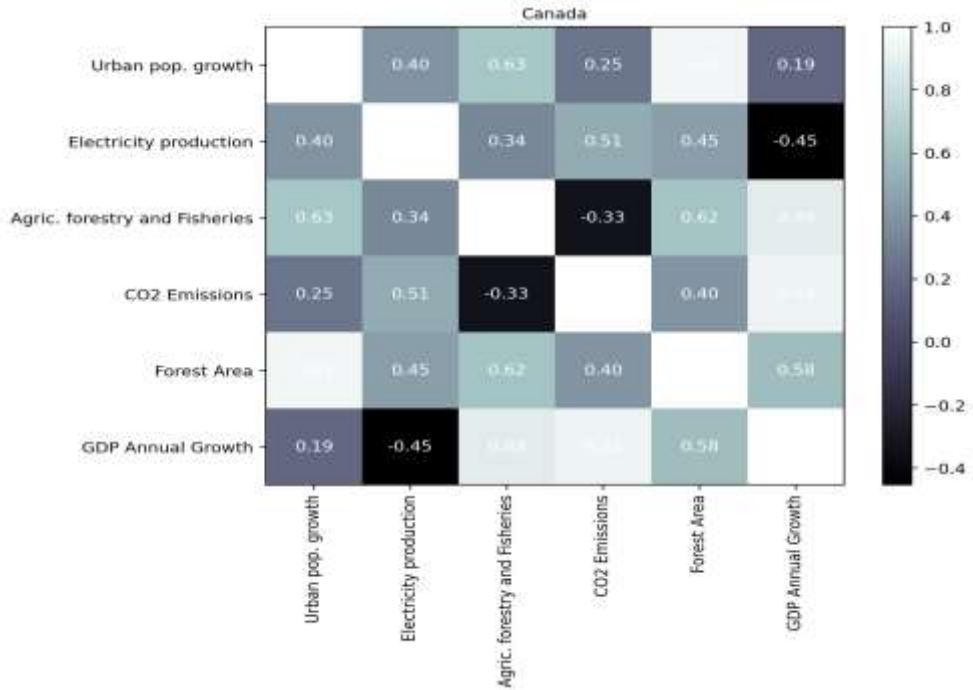

Figure 5: Analysis of Key Indicators for Canada

Electricity Production Trends:

The multiple line plot analysis for electricity production highlights the evolution of energy generation in different countries. Brazil and Indonesia demonstrate substantial growth, reflecting increased energy demands. In contrast, France and Japan showcase relatively stable trends, suggesting established energy infrastructure. Understanding these patterns is crucial for assessing a country's energy needs and potential environmental impacts.

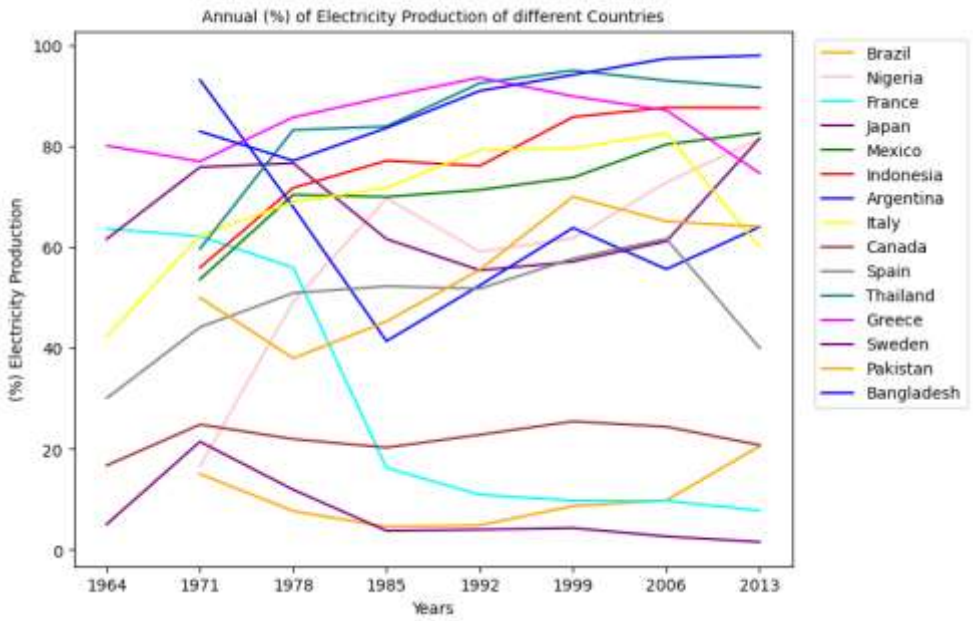

Figure 6: Electricity Production Insights

Greenhouse CO2 Emissions:

The multiple line plot analysis for CO2 emissions highlights the environmental footprint of each country. Brazil and Indonesia show increasing emissions, raising concerns about their environmental sustainability. In contrast, France and Sweden demonstrate efforts to stabilize or reduce emissions, aligning with global environmental goals. Analysing these trends aids in understanding a country's commitment to environmental conservation.

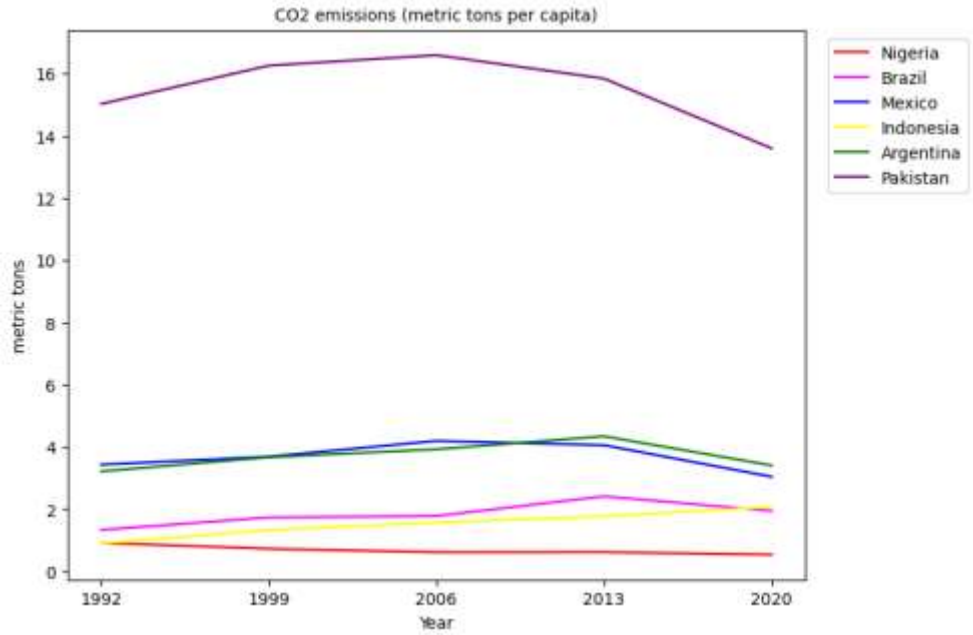

Figure 7: Greenhouse Gas Emissions by Countries

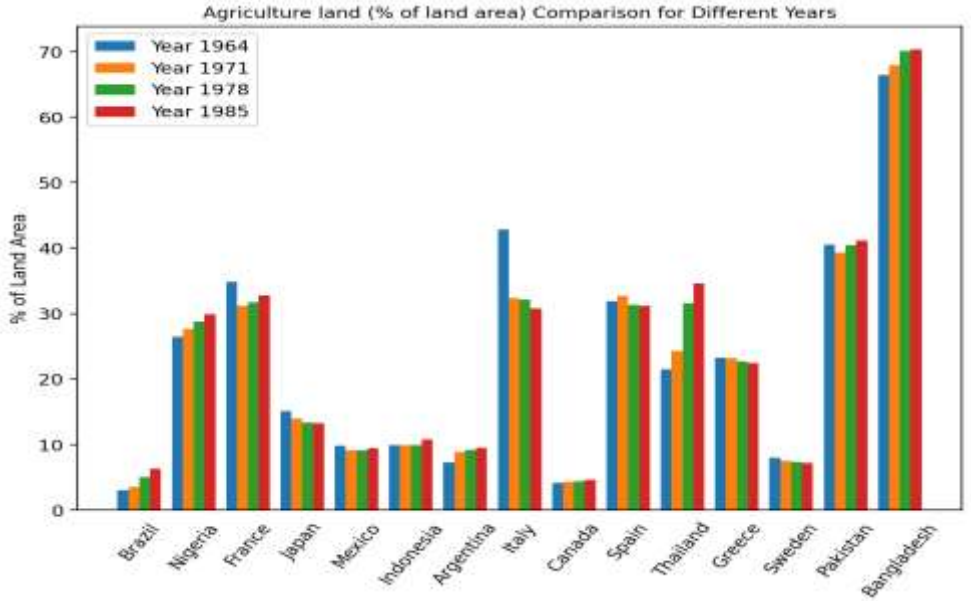

Figure 8: Agriculture Land Analysis

Agriculture Land Analysis:

The grouped bar plot analysis for the percentage of land area used for agriculture shows varying trends among countries. For instance, Brazil and Nigeria consistently allocate a significant portion of their land to agriculture, while Canada and Sweden maintain lower percentages. These patterns offer insights into the land-use policies and priorities of each nation.