APPLIED DATA SCIENCE-1

ASSIGNMENT-2:

STATISTICAL AND TRENDS

Analysis of World Bank Data

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ABSTRACT:

The following analysis shows the records of World Bank Data from many countries in the world. We Used the following Indicators: renewable energy consumption, total greenhouse gas emission, agriculture area, oil rents, and forest area to find their effects on the development of the world. I Analysed the following using Python libraries such as Pandas, NumPy, SciPy, Matplotlib, and Seaborn.

Data Set Link: https://data.worldbank.org/topic/climate-change

GitHub Link: https://github.com/Gayatribalivada/ADS1_Assignment_2.git

Analysis of World Bank Data

The analysis shows the World Bank Data Records of different countries across the world. Used different analyses to display the following indicators and their effects on the world.

VISUAL ANALYSIS 1

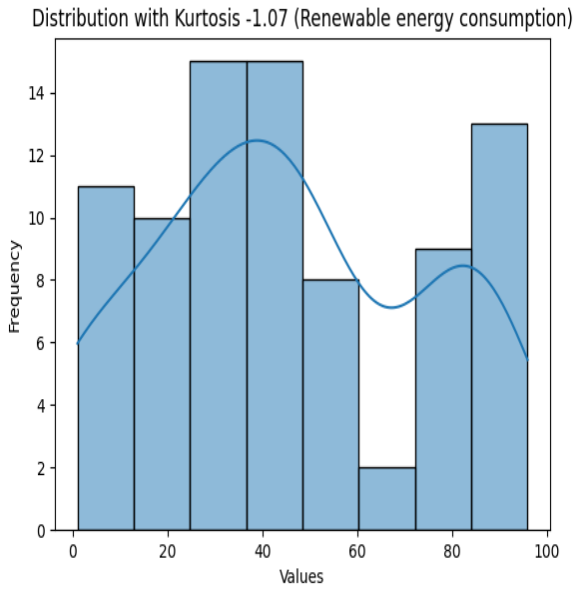

Fig.1: Histogram of Renewable Energy

From the analysis, it shows the renewable energy consumption across the world. The kurtosis value is 1.07, which implies more countries are using renewable energy. This kurtosis value shows that the distribution of data is moderately peaked and has tails that are moderately heavy compared to a normal distribution.

VISUAL ANALYSIS 2

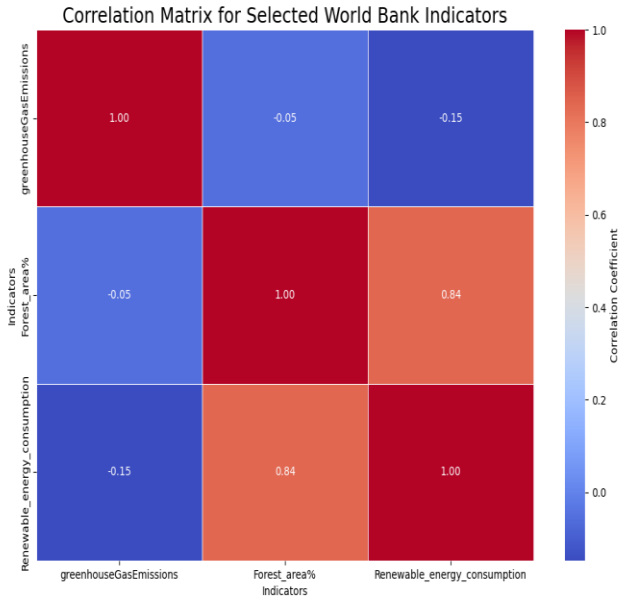

Fig.2: Correlation between greenhouse gas emissions, forest area, and Renewable Energy Consumption

The analysis shows that when forest area increases, renewable energy resources increase, which is directly proportional; when forest area decreases, greenhouse gas increases, which has a negative correlation, and this affects the environment.

Visual Analysis 3:

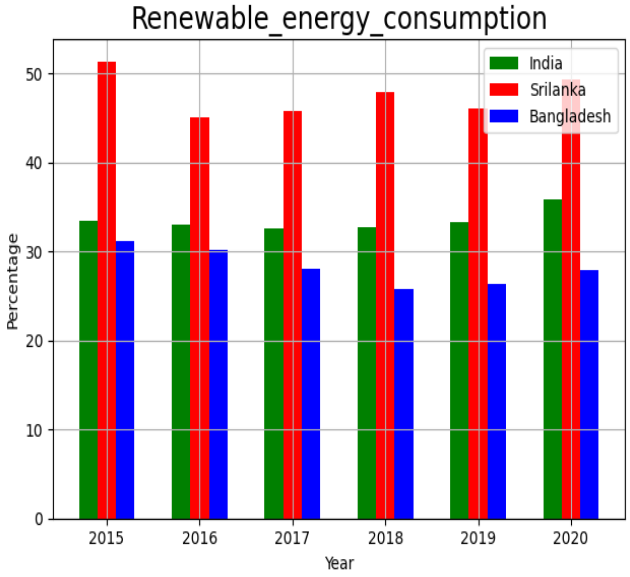

Fig.3: Renewable Energy Consumption

The analysis of the bar plot shows the percentage of renewable energy consumption in India, Sri Lanka, and Bangladesh. We can see that Sri Lanka has the highest percentage of renewable energy consumption compared to India and Bangladesh, has the lowest.

Visual Analysis 4:

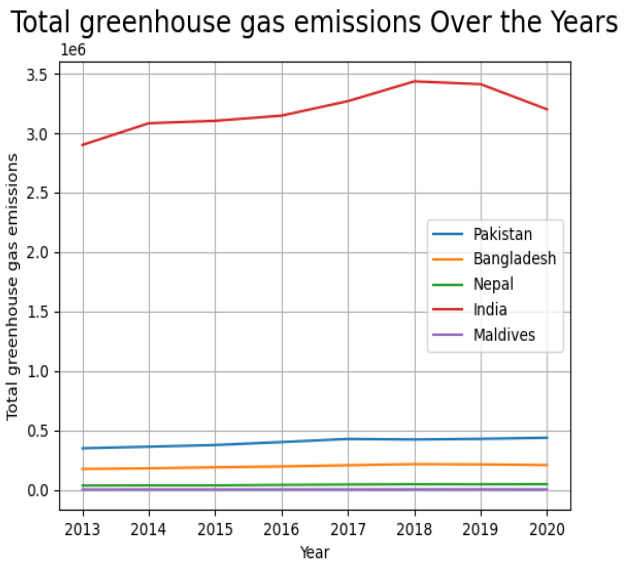

Fig.4: Total Greenhouse gas emissions for 2013-2020

The analysis of the line graph shows the total greenhouse gas emissions from year 2013 to 2020 of the countries Pakistan, Bangladesh, Nepal, India, and the Maldives. For Pakistan, the percentage increased from 2012 to 2020 by around 0.5%. We can see that India has made gradual changes. Nepal, the Maldives, and Nepal. Bangladesh is almost stable.

Visual Analysis 5:

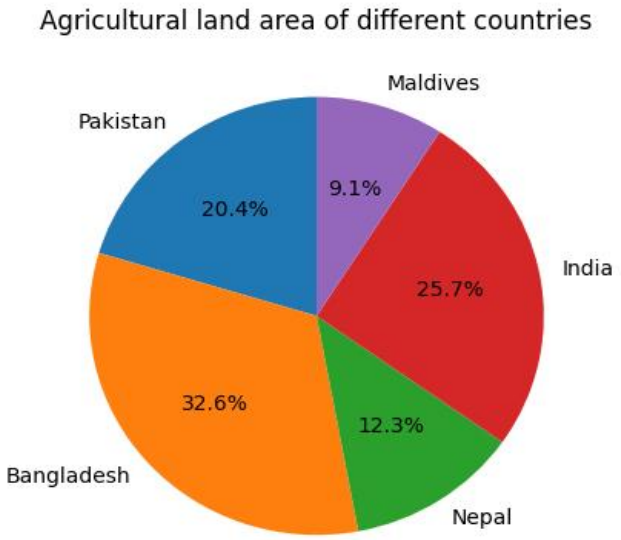

Fig.5: Agricultural Land Area

The analysis of the pie chart shows the agricultural land area of India, the Maldives, Pakistan, Bangladesh, and Nepal. Bangladesh has the highest percentage, whereas the Maldives has the lowest.

Visual Analysis 6:

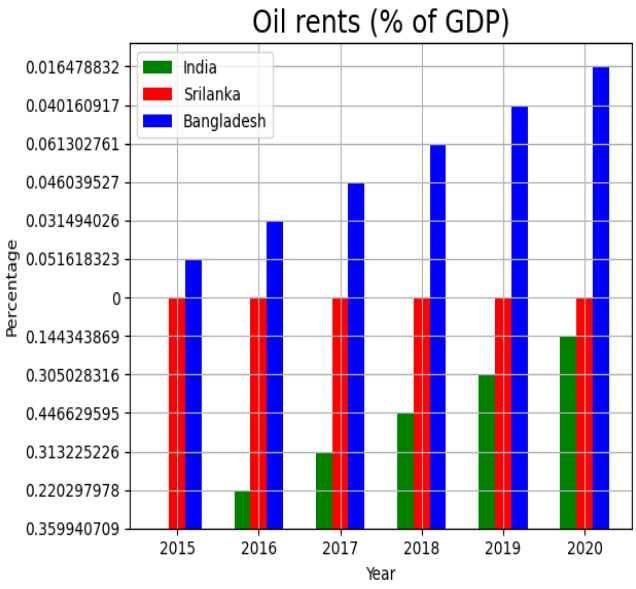

Fig.6: Oil Rents in India, Sri Lanka,and Bangladesh

The analysis of the bar plot shows the oil rents (% of GDP) of India, Sri Lanka, and Bangladesh. It shows that India has the lowest percentage and Bangladesh has the highest. Oil rents mean that the renewals are generated from oil-related works. Higher oil rents indicate an increase in the GDP percentage.

Conclusion:

Finally, major new understandings of the global environmental and economic scene are provided by the examination of World Bank data using Python modules. The analysis of the use of renewable energy shows a globally encouraging trend backed by a distribution that is somewhat peaked. Environmental considerations are crucial, as demonstrated by the interaction between forest area and renewable energy and the divergent effects on greenhouse gas emissions. Moreover, there are clear regional differences in the usage of renewable energy, with Sri Lanka leading the way in terms of percentage consumption. Additionally, crucial economic and land-use patterns among India, Bangladesh, and Sri Lanka are highlighted by the investigation of oil rents and agricultural land area. Taken together, the results provide a more sophisticated comprehension of the interplay between economic dynamics and environmental sustainability in various countries.