



ASSIGNMENT-1

STATISTICS AND TRENDS

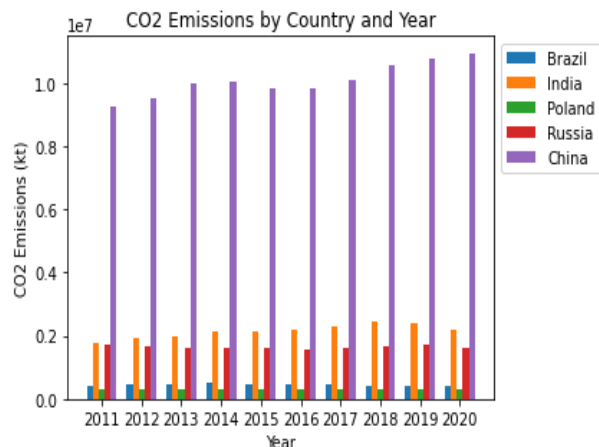


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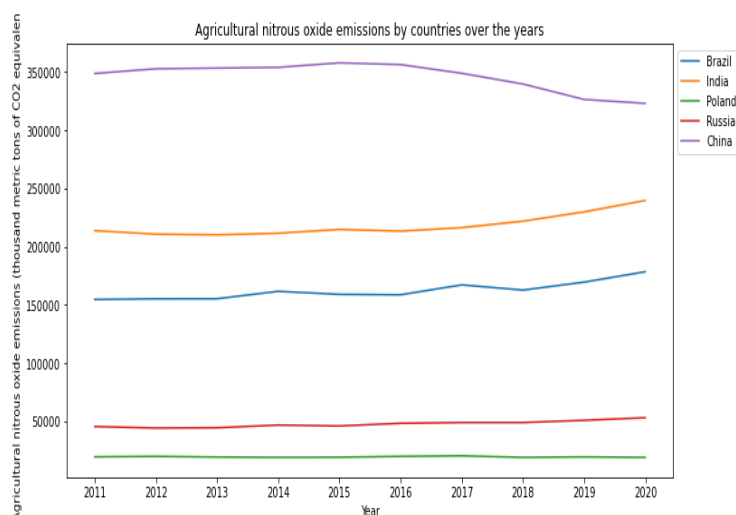
DATASET: [World Development Indicators | DataBank \(worldbank.org\)](https://data.worldbank.org/)

INTRODUCTION: This document conducts an exploratory information evaluation (EDA) on key monetary and environmental indicators for the international locations of Brazil, China, India, Poland, and Russia. Leveraging statistics from the "Data.csv" file, we awareness of four wonderful indicators: CO2 emissions (kt), Population growth (annual %), Agricultural land (% of land area), and Agricultural nitrous oxide emissions (thousand metric tons of CO2 equivalent). Our analysis covers the years 2008 to 2020.



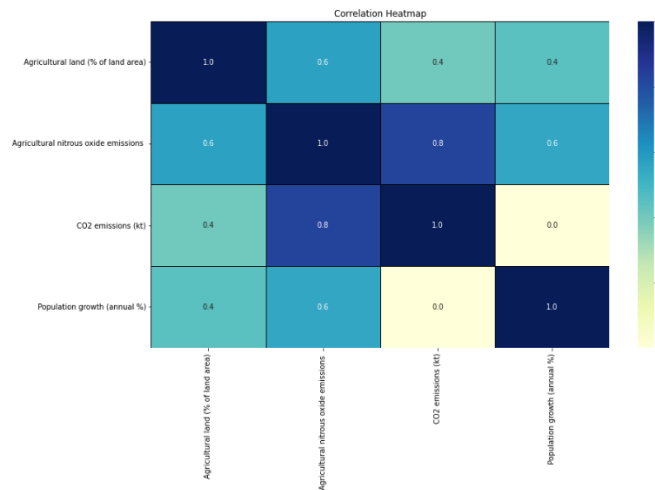
The Grouped Bar Chart analyses and visualizes the variations in “CO2 Emissions by Country and Year” between the years 2011 to 2020 across different countries like Brazil, China, India, Poland, and Russia. We can identify the CO2 Emissions of different counties corresponding to different color bars. The rising bars clearly indicate the rise in CO2

Emissions over the years concerning population. The grouped bar chart effectively communicates to represent CO2 emissions by countries in some years and helps to understand environmental impacts.



The line Graph visualizes the “Agricultural nitrous oxide emissions (thousand metric tons of CO2 equivalent)” by the different countries over the years between 2011 to 2020. An increase in “Agricultural nitrous oxide emissions” can be observed by the upward trends in the lines. We can see that in

some countries Agricultural nitrous oxide emissions have been increasing over the years. In some countries, we can observe the slight changes over the years.



The Heatmap represents the correlation between CO2 emissions (kt), Population growth (annual %), Agricultural land (% of land area), and Agricultural nitrous oxide emissions (thousand metric tons of CO2 equivalent) for each country. Colors in the heatmaps indicate strong positive correlation,

Strong negative correlation, and Weak Correlations. Dark Shade represent the strong positive correlation, lighter shades represent the strong negative correlation, and neutral shades represent the weak correlations.

CONCLUSION: Exploratory Data Analysis (EDA) performed on Key mandatory and environmental barometers for Brazil, China, India, Poland, and Russia offers significant bits of knowledge into trends across years from 2011 to 2020. Electricity and Heat Productivity are the largest contributors to global CO2 emissions. This is followed by transport, manufacturing, construction (largely cement and similar materials), and agriculture usage. These parameters increased in a result of Population Growth in the mentioned countries over the years. Heatmap also indicates the strong positive, negative, and weak correlations between the mentioned indicators. It stresses the requirement for economical practices, particularly with regards to expanding CO2 discharges and rural nitrous oxide emanations.