## Introduction

Nine nations from various continents were chosen for this analysis, and the interactions between the following variables were examined: total greenhouse gas emissions, total population, total CO2 emissions, urban population, foreign direct investment, net inflows (as a percentage of GDP), and cereal yield (kg per hectare). The investigation into the causes revealed several correlations between the variables after the study.
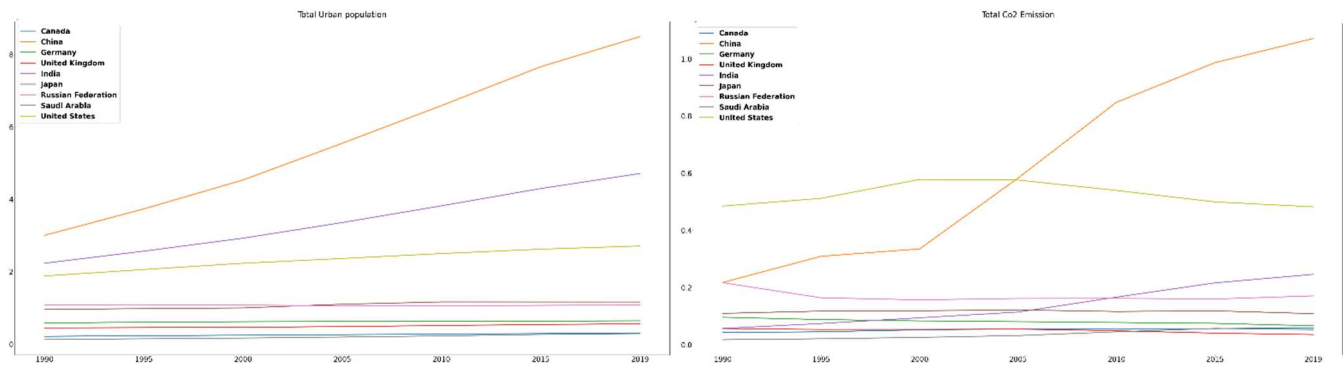
Visualizations
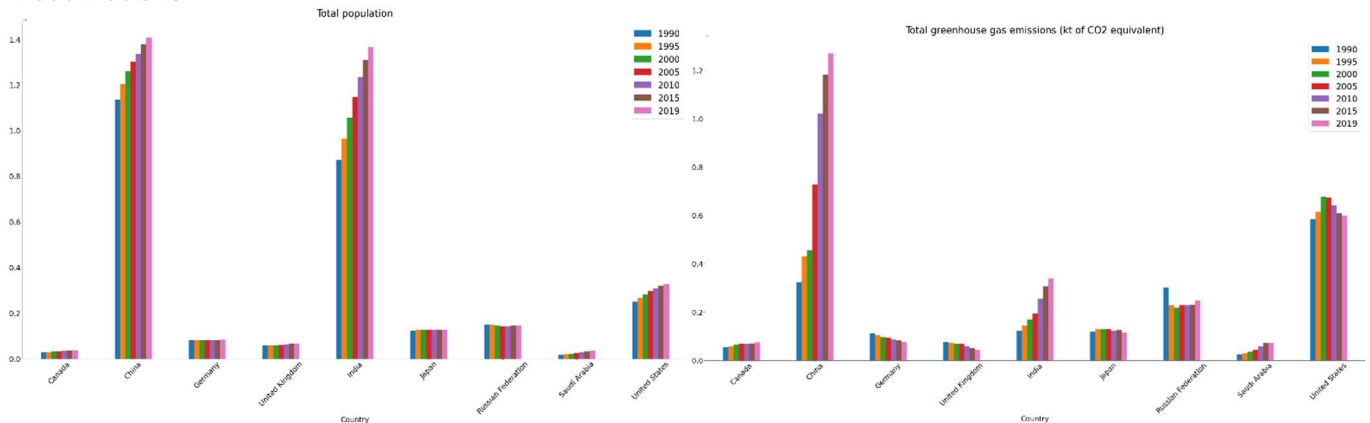
The graph above, which depicts the population of 9 countries during a 5-year period from 1990 to 2019, can be seen. With the exception of Japan and Germany, whose populations have changed very little overall, China and India have the greatest populations. As we can see from the image, the majority of these countries are experiencing significant population growth As is customary, as the population grows, there is a corresponding requirement to raise greenhouse gas emissions due to high fuel use.

From the above graph you can identify that Developed nations like the United States and the United Kingdom are concentrating on their own greenhouse gas emissions as a result of developing countries like China, India, and Saudi Arabia constantly increasing their greenhouse gas emissions to support their economy. The green gas emissions bar chart shows that each country's emissions are influenced by its population and how well-informed that population is about climate change.

Please see the chart below for data on total population and greenhouse gas emissions, but due to constraints, we have chosen three variables: 1990 as the beginning, 2005 as the middle, and 2019 as the end of the total data frame.

Total Population			
Country	1990	2005	2019
Canada	27691138	32571174	37601230
China	1135185000	1311020000	1407745000
Germany	79433029	82376451	83092962
United Kingdom	57247586	60846820	66836327
India	873277799	1165486291	1366417756
Japan	123478000	127854000	126633000
Saudi Arabia	16233786	24498313	34268529
United States	249623000	298379912	328329953

Total Green Gas Emission			
Country	1990	2005	2019
Canada	27691138	32571174	37601230
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The following line graph from 1990 to 2019 with a 5-year break between each year shows the urban population of various nations. In China and India, the urban population has significantly increased due to the youth migrating there in pursuit of greater possibilities, but not in Japan or Germany, where there are fewer people and more opportunities everywhere. The population in urban areas is directly impacted by each nation's GDP. The Urban population will increase as the opportunities in the major cities are increased. As the developed countries like United Kingdom and USA the manufacturing facility will be moved to developing countries which will be result in higher co2 emission in developing countries.

As cities become more populous due to industrialisation, CO2 emissions will rise. According to the graph above, CO2 emissions are rising along with urban population growth. For comparison, the CO2 emission line graph from 1995 shows a modest increase in CO2 emissions. In 2000, China's CO2 emissions began to rapidly increase, and we can see that there has been a higher rate of urban population growth. We can expect CO2 emissions to continue to rise through 2019. India's CO2 emissions have also increased since 2000 because most of the industry manufacturing has been started in India and opportunities has been increased for youth in countries major cities.
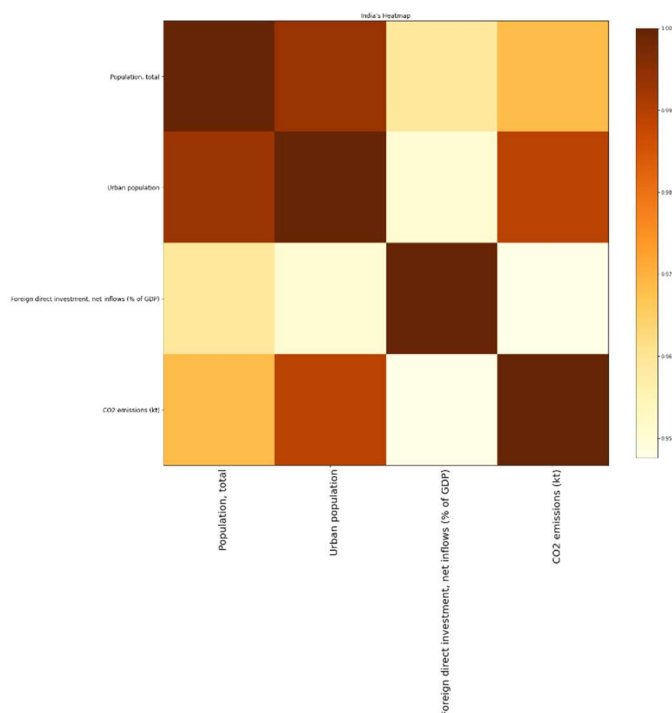
As you can see on the left heat map with the indicator, there is a strong correlation between population and urban population, which is close to 0.99, CO2 emission, which is close to 0.97, and GDP, which is close to 0.96. The lowest connection between the country's GDP and CO2 emissions is found because there is no direct association between the two; instead, the use of green energy can improve GDP without increasing CO2.

Data Set

https://data.worldbank.org/topic/climate-change

Code

https://github.com/puneethegde72/Statistics-and-trends