

## **Final Report - World Consumption and Emission Analysis**

### **Background-**

A Previous study conducted on the relationship between Energy Consumption Per Capita and Development Index planted the idea for our analysis. This showed a Positive relationship between Energy consumption and Human Development Index (quality of life).([https://www.researchgate.net/publication/49599352\\_Human\\_Capital\\_and\\_Sustainability](https://www.researchgate.net/publication/49599352_Human_Capital_and_Sustainability)).

We used 5 data sets in total. 4 from World Data Bank- Co2 emission, Electricity consumption, Population, GDP of countries in the world. We used Web Scraping for the other data set which we got from google datasets (Latitude and Longitude).

### **Cleaning involved-**

- Renaming Country Names to match other datasets
- Shifting columns and removing description
- Omitting missing values

### **Reshaping involved-**

- Converting columns of data into rows.
- Combining multiple columns / Combining Data sets

### **We determined relationships between 5 values:**

- GDP per country
- Population per country
- Carbon Emissions (kilotons) per country
- Electricity Consumption per country
- Geographical location (latitude and longitude)

### **R Libraries used include-**

- ggplot2
- tidyr
- tidyverse
- rvest
- reshape2

### **From our analysis we found that-**

CO2 emissions, electricity usage, population, and GDP are all interconnected. This is clearly visible in our Data Visualizations.

### **Conclusion-**

In completing these analyzations, we were able to successfully document the idea that as a country modernizes many factors are subsequently affected.

For example, GDP and Carbon emissions are related. As the GDP of a country increases, in almost every case the amount of Carbon emissions also increases.