# Abstract

This poster aims to provide a detailed analysis of key economic and environmental indicators based on data from the World Bank. The focus is on GDP per capita, CO2 production per capita, CO2 per $ of GDP, and the fraction of emissions attributed to specific sectors.

# GDP PER CAPITA, CO2 EMISSIONS PER HEAD, CO2 EMISSIONS PER UNIT OF GDP, OR PROPORTION OF A SECTOR
## ADS-1 CLUSTERING & FITTING



```
Original DataFrame:
  Country  GDP_per_Capita  CO2_per_Capita  CO2_per_GDP  Energy_Sector
0    USA            60000              15          0.3             70
1  China            10000               8          0.8             20
2  India             2000               2          0.5             10

   Transportation_Sector  Industrial_Sector
0                     20                 10
1                     30                 50
2                     40                 50
```



## GDP PER CAPITA

**Definition:**
Gross Domestic Product (GDP) per capita is the average economic output per person in a country, serving as a measure of the standard of living.

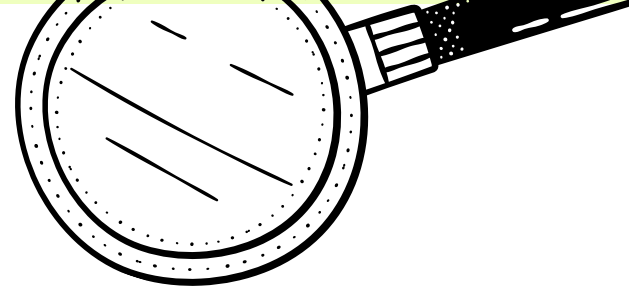**Assumption Data (2019, in USD):**
United States: $60,000
China: $10,000
India: $2,000

**Findings:**
The USA has the highest GDP per capita, indicating a higher standard of living.
China and India exhibit lower GDP per capita, reflecting diverse economic conditions.

## CO2 PRODUCTION PER CAPITA

**Definition:**
CO2 production per capita measures the carbon dioxide emissions generated per individual, offering insights into a nation's environmental impact.
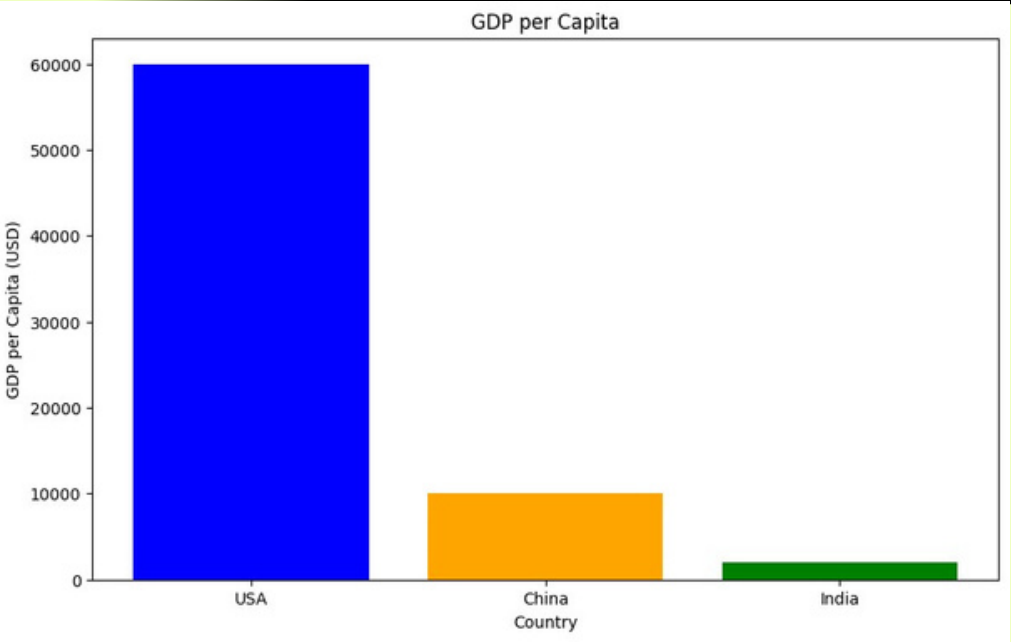
**Assumption Data (2019, in tons):**
United States: 15 tons
China: 8 tons
India: 2 tons

**Findings:**
The USA records the highest CO2 production per capita, signifying greater carbon emissions per person.
China exhibits moderate emissions per capita, while India's emissions are comparatively lower.

## FRACTION OF A SECTOR

**Definition:**
This section explores the contribution of specific sectors to overall carbon emissions within a country.

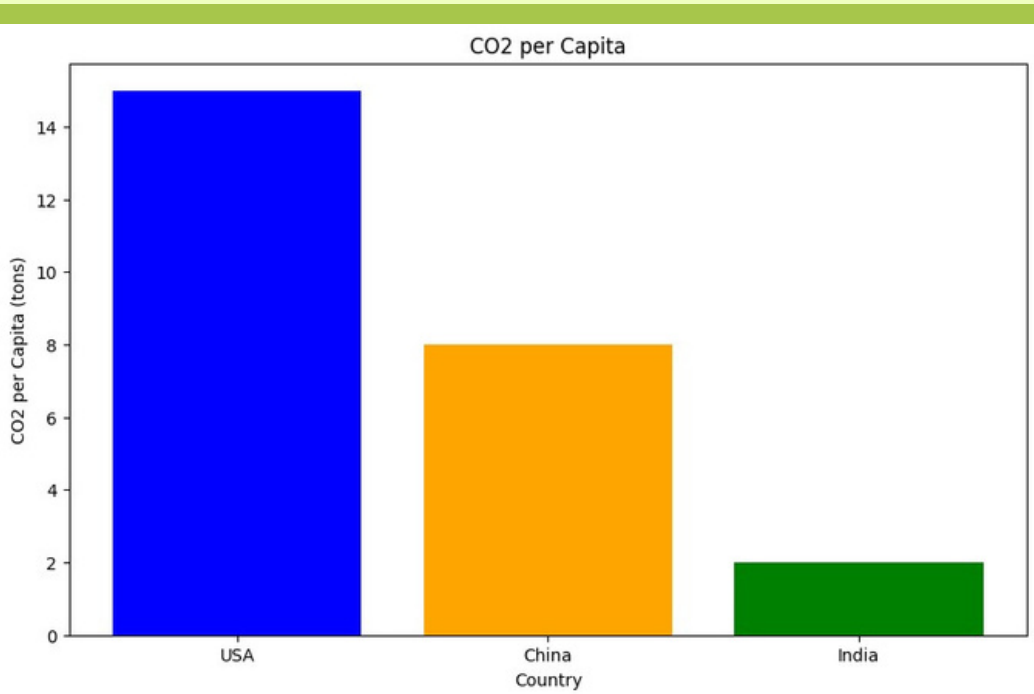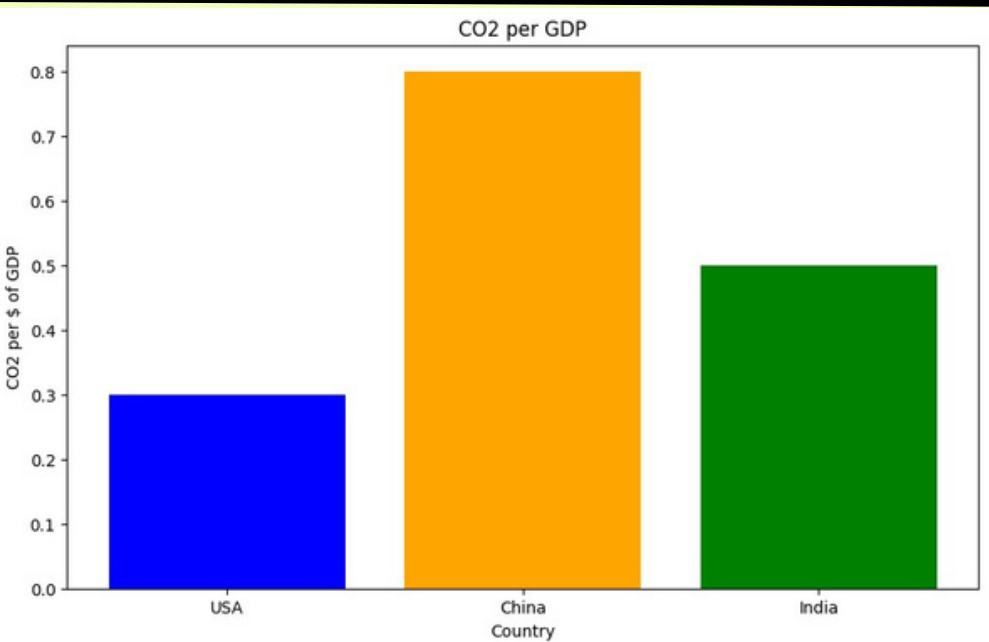**Assumption Data (2019, percentage of total emissions):**
Energy Sector: 70%
Transportation Sector: 20%
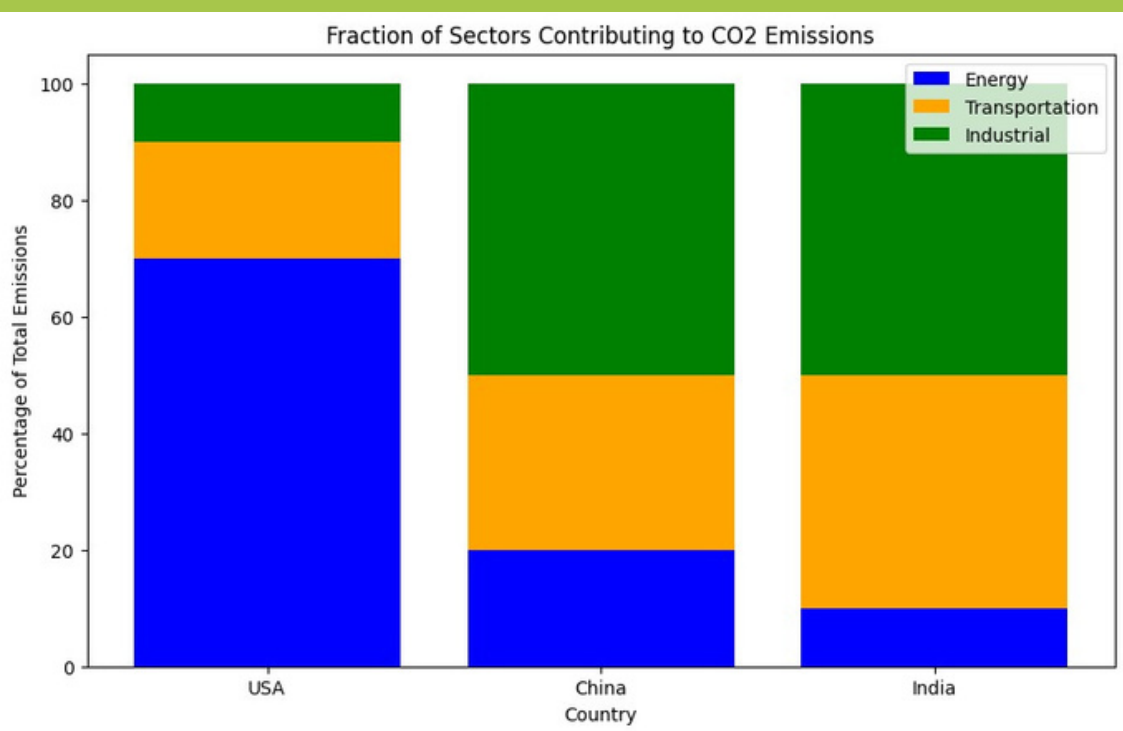Industrial Sector: 10%

**Findings:**
The energy sector dominates carbon emissions, highlighting its significance for environmental initiatives.
Transportation and industrial sectors contribute significantly to the overall carbon footprint.

## CONCLUSION

The analysis of GDP per capita, CO2 production per capita, CO2 per $ of GDP, and the fraction of sectors provides comprehensive insights into the economic and environmental dynamics of nations. Policymakers should leverage this information to formulate strategies for achieving sustainable growth and reducing carbon footprints. It is imperative to utilize up-to-date and accurate data from reputable sources, such as the World Bank, to inform decision-making processes and drive positive change.