Assignment : **ADS assignment 2 : Statistics and Trends**

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Git hub Link: <https://github.com/Ufelicita/ADS-2-STATS-/blob/main/ADS%20STATS%202NDASSIGNMENT.py>

"C:\Users\User\OneDrive - University of Hertfordshire\ads1 new project\worldBDATA1.csv"

**Abstract:** Using Statictics and Visualisations, the correlation of five indicators and their impact on climate change in 10 selected countries from different continents in the world will be comparatively analysed. The indicators considered are Co2 emissions, Population Density, Population Total, Arable lands and GDP.

A graph with different colored lines

Description automatically generated

The Line plot was chosen for this Analysis because it is better at showing trends. It shows CO2 emission data in the select countries from year 1990 to 2015.China and United States recorded the highest emissions at over 1 billion and 0.5 billion kt respectively in 2015. India recorded a slight increase from 2005 while United States decline slightly in 2005. The high rate of CO2 emission as compared to the other countries is related to the

high production rates in these countries. China’s population and its reliance on coal are major reasons for the recorded high emissions.

A graph of growth in countries/regions

Description automatically generated

The trend below shows that United state had the highest GDP at over $1.75 trillion dollars. Comparatively, China’s GDP began to increase steadily from 2005 and was highest in 2015 at over $1 dollars. Japan and Brazil recorded a slight decline from 2010. United States economic activities contributed a lot to climate change as shown in its high CO2 emissions within the years analysed. The Korea Rep, South Africa, Germany, Australia, Brazil’s relatively low GDP in 2015 reflects low economic activity which also is suggestive to have contributed to low CO2 emissions.

A graph of different colored bars

Description automatically generated

The Bar plot was chosen for comparative analysis The chart shows that United States, China , India have the potential to adopt praticises that could reduce emissions if these lands are used for more farming methods and Agricultural practices that reduces carbon release . However , it is notable that in the United States , China and India industrial activities such as manufacturing, or energy production are prevalent and might be the responsible factors for the high carbon emissions in those countries.

A screenshot of a computer screen

Description automatically generated

The correlation map shows moderate correlations among CO2 emissions, population, GDP, and Arable lands as well as GDP. However is observed that no or little correlation seem to exist amongst population density, GDP, CO2 and Arable Land within the investigated period. This relates with the reason there is low emission in the Countries like South Africa, Brazil, Korea Republic and Germany. These Countries have sustainable practices in place to curb climate change. Factors such as population density that would have triggered carbon release through urbanisation becomes ineffective.