**Assignment 2 - Report**

# **Introduction:**

Chart

Description automatically generatedFor this assignment, I researched country-by-country indicators related to climate change by using data provided by the World Bank[[1]](#footnote-1). This dataset contains different indicators, such as CO2 emissions (kt), population growth (annual %) and energy use (kg of oil equivalent per capita), which I have used to compare countries with different economic statuses like the UK (HIC), Afghanistan (LIC), Bangladesh (LIC) and India (MIC).

# **Analysis of the Data:**

CO2 emissions (kt):

After some basic pre-processing and manipulation, I was able to create the graph in figure 1 which shows the amount of CO2 emissions the UK, Afghanistan and India produced between 1990 and 2019. It shows that only the UK has been slowing down the production of its CO2 emissions since about 2007. Both Afghanistan and India have rising CO2 emissions, which could be due to the countries being LICs and MICs respectively. As both countries are trying to develop, so they are having to burn a lot of CO2 in places like factories to aid their development. As the UK is already developed, they do not need to burn as much CO2 and instead can reduce the amount being burnt.

Figure 1 - CO2 emissions (kt) for United Kingdom (HIC), Afghanistan (LIC) & India (MIC) on a Log Scale

Chart, scatter chart

Description automatically generatedPopulation growth (annual %):

Chart, diagram

Description automatically generatedAfter some basic pre-processing and manipulation, I was able to create the graph in figure 2 which shows the population growth between 1990 and 2019 for the UK, Afghanistan, and India. It shows that both Afghanistan’s and India’s population growths are declining as both countries try to become more developed. However, the UK’s population growth, on the other hand, has increased overall during this period, but since 2010 has become more stable. Afghanistan’s population growth has had quite a lot of variation with the first couple of years having quite a low population growth. Meanwhile, India’s population growth has been very steadily decreasing between 1990 and 2020.

Figure 2 - Population Growth (annual %) for United Kingdom (HIC), Afghanistan (LIC) & India (MIC) on a Log Scale

Energy use (kg of oil equivalent per capita):

After some basic pre-processing and manipulation, I was able to create the graph in figure 3 which shows the energy use for the UK, Bangladesh and India between 1990 and 2014. It shows that both Bangladesh and India use significantly less energy (in 2014 they used roughly 2000kg less) per capita compared to the UK. Bangladesh’s and India’s energy use per capita has increased since 2010, whilst the UK’s energy use per capita has been decreasing steadily since 2000. This could be because the UK is using significantly more energy per capita as it is a HIC which is using more energy to power many different appliances, compared to MICs and LICs which do not have the infrastructure to use the same amount of energy.

Figure 3 - Energy use (kg of oil equivalent per capita) for United Kingdom (HIC), Bangladesh (LIC) & India (MIC)

# **Summary:**

Overall, the country-by-country indicators related to climate change dataset show that MICs (e.g. Afghanistan and Bangladesh) and LICs (e.g. India) emit more CO2 emissions than HICs (e.g. the UK) as they have a higher population growth even though they use significantly less energy per capita. This is backed up by a Spearman’s rank correlation coefficient of -0.0989 for HICs compared to -0.3374 for MICs which shows that there is a stronger relationship in MICs between population growth and energy use.

1. Data source from: <https://data.worldbank.org/topic/climate-change> [↑](#footnote-ref-1)