

# **7PAM2000-0105-2022 - Applied Data Science 1**

## **Assignment 2: Statistics and trends**

### **Climate Change Data Analysis**

**Name:** Mudadla yeshwanth

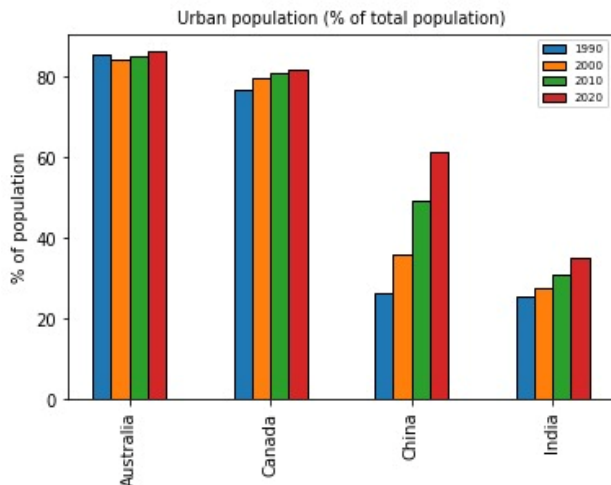
**Student ID:** 22031916

**Abstract:** these data is extracted from a world data bank of the total population and urban population

**Data link:** [https://drive.google.com/file/d/19fgxILJyy6Ria9qIUvfstMFfEZe3DyaA/view?usp=share\\_link](https://drive.google.com/file/d/19fgxILJyy6Ria9qIUvfstMFfEZe3DyaA/view?usp=share_link)

**Github link :**

This data was extracted from the world bank data. As we can see from the above chart, the urban population in Australia has been

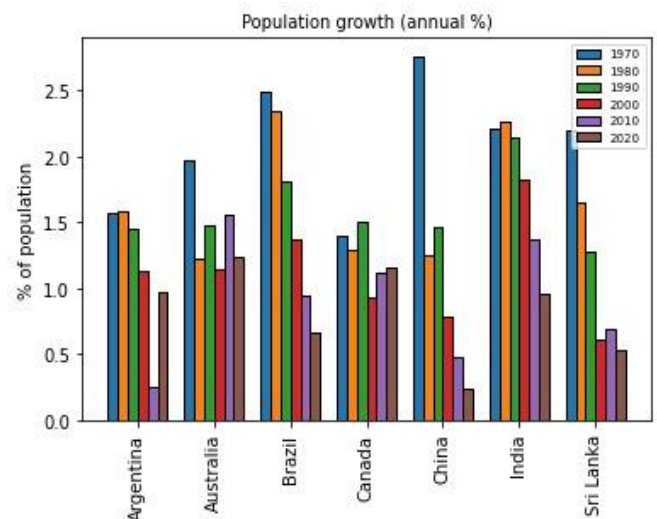


drastically increasing in the past four decades, from around 80percentage in 1990 to over 80% in 2020. It is due to several factors, including rural-to-urban migrations, natural population growth, and the concentration of economic

In Canada, from 1990 to 2020 there is a slight increase in the population. the urban population growth is increased in these two countries when it is compared with India and China. whereas in China there was no high rate of urban population from earlier.

The bar graph shows the population growth (annual%)for seven different countries for six decades from 1960 to 2020.

activities and infrastructure in urban areas. while population growth has also been trending upward in Australia, with some up and downs over the years due to circumstances such as changes in immigration policies and economic conditions. In recent years, population growth has decreased somewhat but remains positive overall. However, high urbanization can be a negative impact on the environment and contribute to climate change through increased energy consumption, transportation emissions, and the urban heat island effect. population growth can make pressure on natural resources and ecosystems, particularly in urban areas where land use is more intense. To address these issues, sustainable urban planning and development strategies that make energy efficient, public transportation, green space, and other sustainability measures are required.

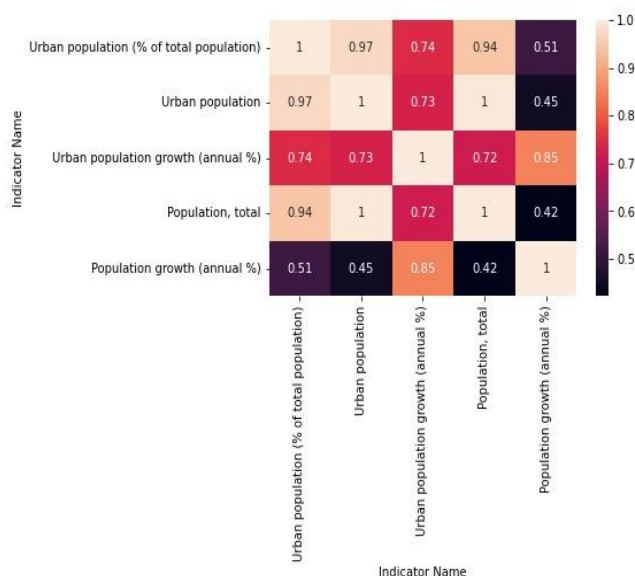


The population growth in China and Brazil drastically decreased from 1960 to 2020When it comes to Australia and India there is a normal fall down in population growth compared to other countries.

This population growth from both graphs shows the growth in the human population which may affect the climate in a different way,

for example, transportation emissions will increase due to more people driving cars and increased demand for public transport. Buildings in urban areas also occupy large amounts of energy for heating and cooling, which can lead to greenhouse gas emissions. urbanization can lead to an increase in deforestation and land use, which can also lead to climate change.

The urban heat island effect is also the impact of urbanization on climate change. This effect occurs usually in the surrounding areas because of the emissions of heat from buildings, pavement, and other infrastructure. This can lead to increased energy use for cooling. this leads to a negative impact on public health and breathing air quality.



Based on the above heatmap we can observe some relationships between the urban population (% of the total population) and the population growth we can see the urban population (% of the total population) is more electricity production from fossil fuels, such as coal-fired power plants, is the largest source of greenhouse gases all over the world. When these fuels are burnt they generate electricity, they release CO2 and other greenhouse gases

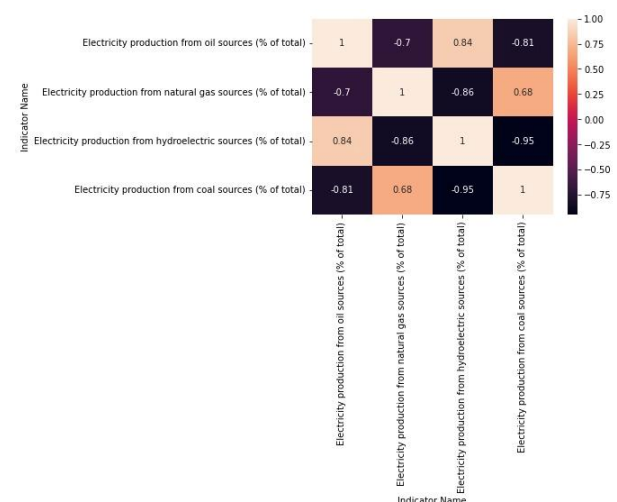
into the climate, which leads to the warming of the planet.

The construction of hydroelectric dams can lead to environmental impacts such as the flow of rivers in different routes which affects wildlife. then the population growth total in seven countries. the population growth is increased a lot in urban countries compared to the total population of all countries and the population growth in countries like India, china, brazil, Afghanistan, Canada, Sri Lanka, and Australia is decreased in the span of 6 decades.

However, the effects of the urban population(% of the total population and total population on climate change are complicated and multifaceted. However, the reduction of greenhouse gas emissions through a combination of measures such as can help mitigate the impacts of population growth and urbanization on climate change like energy efficiency, public transport, waste reduction, and recycling.

As shown below figure electricity production from all sources like natural gas, hydroelectric power, and coal has a different percentage.

as we can see electricity production from oil sources and natural are high then the other energy sources like hydroelectric and coal.



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However, these energy sources lead to climate change in the world.