

Analysis of Population Growth (%Annual)

BY

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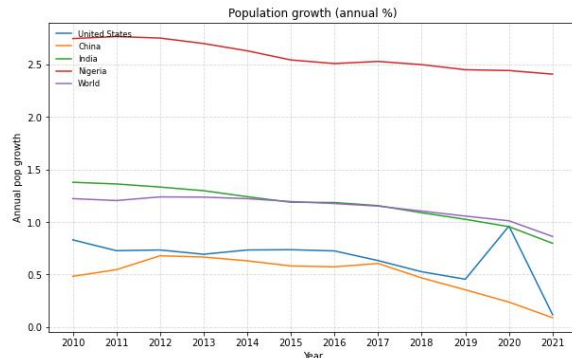
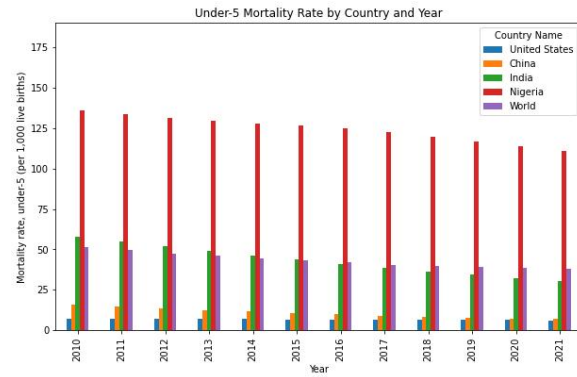
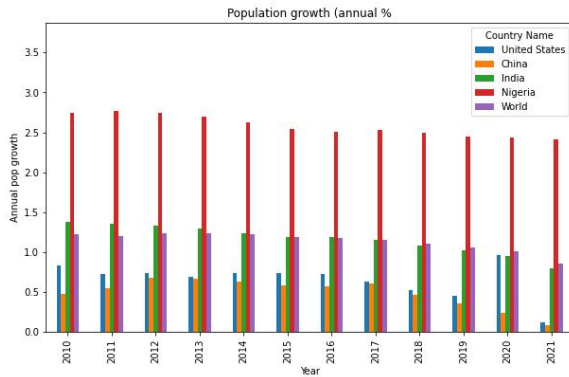
This analysis aims to investigate factors affecting % Annual population growth across four countries and the world. Namely: United States, China, India and Nigeria.

The data used for the analysis was obtained from world bank covering the years 2010 to 2021

Link to Gthub repository: [GitHub - DAEZE-22/ADS1](https://github.com/DAEZE-22/ADS1)

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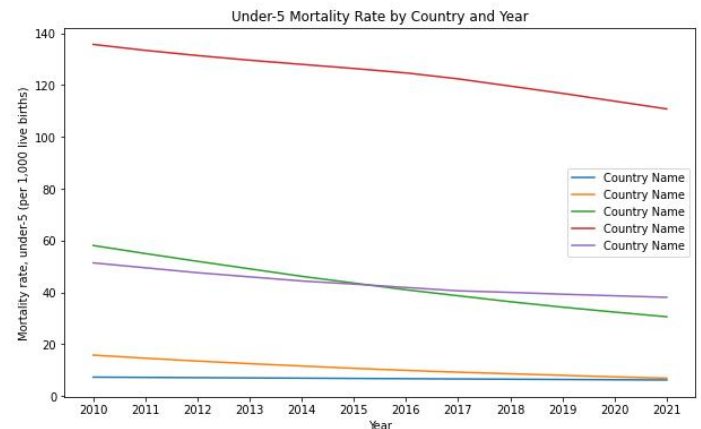
In this analysis, four countries and the World were selected and the relationship between the % Annual Population growth, Total population and Infant mortality rate were investigated. From this analysis, it can be inferred that there is relationship between population growth and infant mortality rate.



The bar plot above shows Infant mortality rate for the selected country. Even as other countries have minimal infant mortality and population growth, Nigeria have maintained high mortality rate and population growth. This simply implies that in Nigeria, there is high birth rate. infant mortality rate as shown has little effect on her population growth.

This can be attributed to other factors that affect Nigeria population growth rate owing to their difference is birth and death rate of over 23 per 1000 individuals. Other factors could be migration pattern of the country.

we can also visualize it using a line over the years to see the point where the mortality rates of the countries start declining.

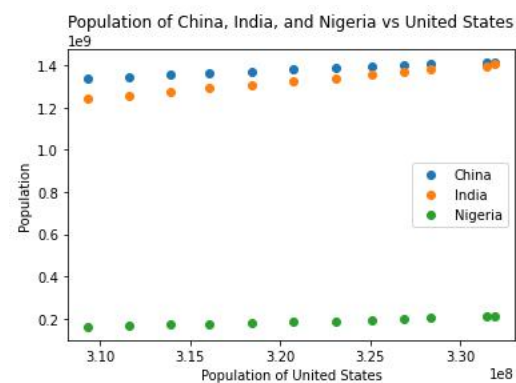


From the above bar and line graphs of population growth(%annual) between 2010 to 2021, it can be seen that China's growth rate is actually negative in recent years, which means its population is decreasing. While Nigeria has over 2% annual population increase over the years.

The population growth rate of US has been gradually decreasing since 2010 while China growth rate has remained relatively stable despite being the most populous country in the world. this is due in part to the country's one-child policy, which was implemented in 1979 to address concerns about overpopulation. The policy was officially ended in 2015, but its impact on the country's population growth rate is still being felt up to 2021 as shown.

The following visualizations will how other factors affect countries' population growth.

Looking at the inter-relationship between the population growth and the total population the countries, the visualization below is helpful.

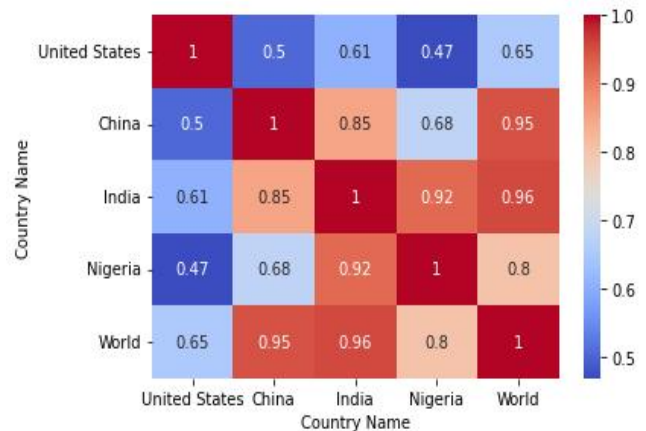


The scatter plot provides valuable insights into population growth among the four countries. One can notice that China, India, and Nigeria have consistently shown a higher population growth rate than that of the United States over the years.

China has the largest population in the world and, despite the government's one-child policy from 1979 to 2015, has shown steady population growth over the years. India, with a population projected to overtake China's in the coming years, has also shown steady population growth. Nigeria has a comparatively smaller population than China and India, but its population growth rate has been higher, which is reflected in the upward slope of its data points.

On the other hand, the United States has shown a relatively stable population growth rate over the years, with a smaller population compared to China, India, and Nigeria. The data points representing the United States' population fall in a tight range, indicating a relatively constant rate of population growth.

Overall, the scatter plot demonstrates how population growth varies across countries, with some countries experiencing rapid growth and others with more stable rates. Such data can be useful in forecasting future population growth and for policymakers in planning development strategies, healthcare, education, and other social services.



From the heat map, there is strong positive correlation between population growths in China and India with moderate correlation between United States and India. While there is negative correlation between Nigeria and the rest of the countries.

The heat map revealed that Nigeria had the highest population growth rate among the selected countries, while China had the lowest population growth rate. Additionally, we observed that India's population growth rate has been consistently high throughout the period under review.

The analysis indicates that population growth is a critical issue that needs to be addressed in all the selected countries. Nigeria, in particular, needs to develop policies to manage its population growth rate to avoid negative economic and social consequences. China's negative population growth rate is also a concern, and policymakers need to find ways to encourage population growth. India's consistently high population growth rate presents opportunities and challenges that policymakers must address to achieve sustainable economic and social development.

In conclusion, Total population of a given country depends on their annual population growth, infant mortality rate and some other factors (as listed above).