

# STATISTICS AND TRENDS ASSIGNMENT REPORT

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## INTRODUCTION

This report interprets the relationship between environmental and demographic factors across countries during the covid 19 pandemic. The goal is to understand how variables such as average temperature, humidity, and population characteristics relate to the incidence and environmental conditions of COVID-19 cases.

## FIRST PLOT — RELATIONAL PLOT (LINE GRAPH)

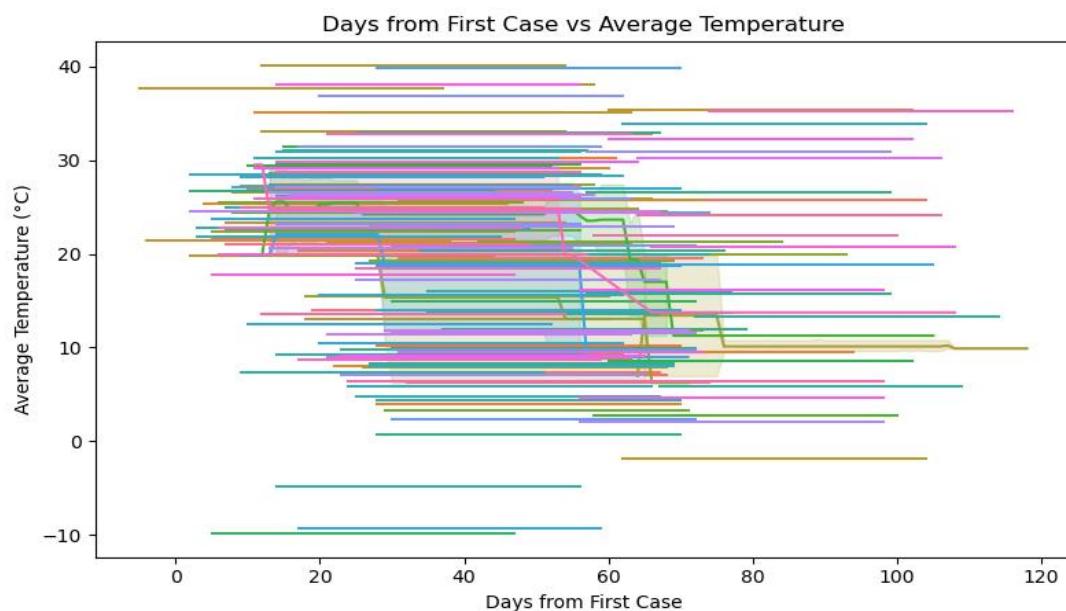


Figure 1

The relational plot shows a line graph of average temperature ( $^{\circ}\text{C}$ ) against days since the first recorded covid19 case, color-marked by country. The plot displays that average temperature remained quite stable over time. Though some countries experienced high instability, no strong linear relationship is observed, suggesting that temperature alone does not explain sequential trends in the data.

## SECOND PLOT — CATEGORICAL PLOT (BAR CHART)

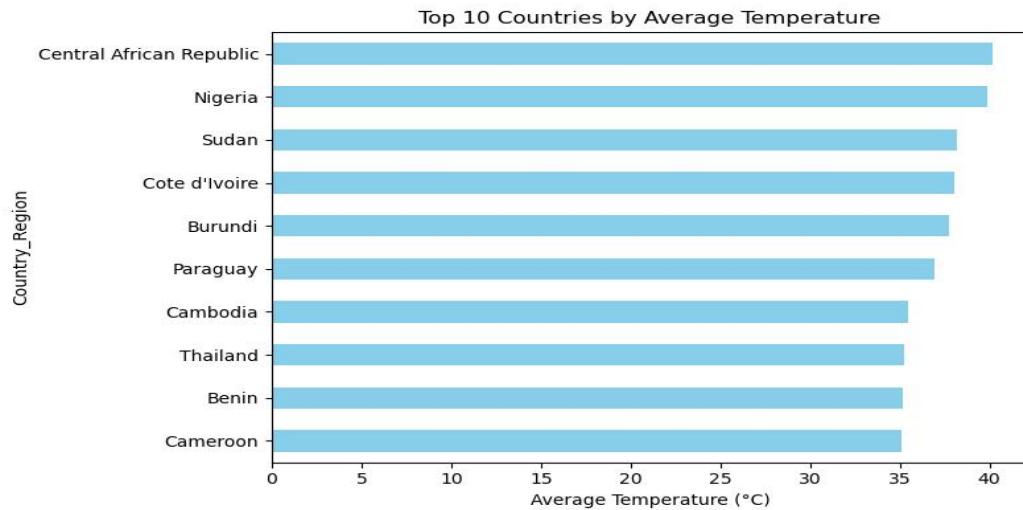


Figure 2

The categorical plot explains the top 10 countries ranked by average temperature. I noticed that countries on the African continent, such as the Central African Republic, Nigeria, Sudan, and others, showed higher average temperatures ( above 30°C ). The distribution is approximately symmetric and mesokurtic (normal like tail). The mean temperature across the dataset was 16.9°C with a standard deviation of 9.55°C.

## THIRD PLOT- STATISTICAL PLOT(HEAT MAP)

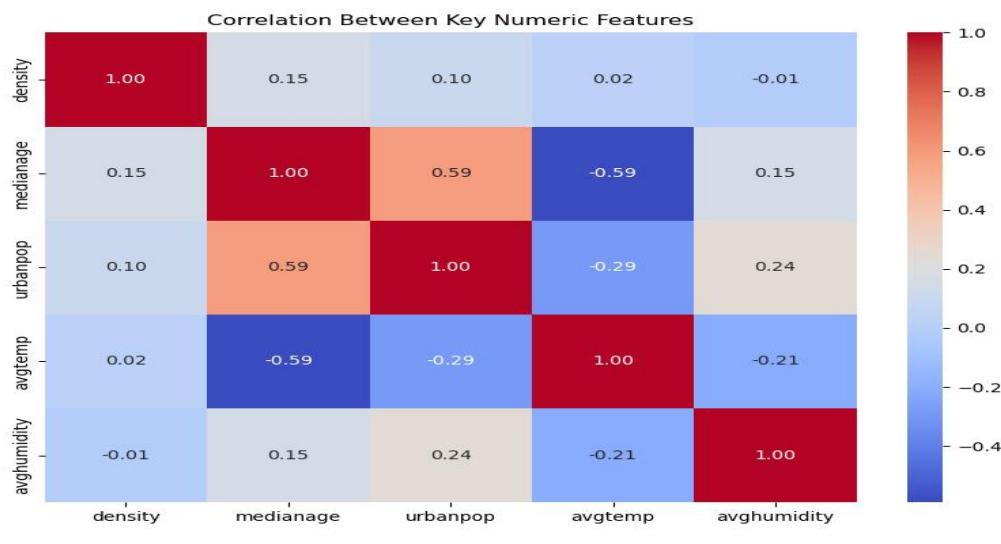


Figure 3

The statistical plot shows that the median age and urban population are strongly correlated ( $r = 0.59$ ), indicating that older populations are typically found in more urbanized countries. Both variables are moderately negatively correlated with average temperature ( $r = -0.59$  and  $r = -0.29$ ), suggesting that younger and more urbanized nations tend to have warmer climates.