NIGERIAN COVID19 DATA ANALYSIS

FOR

USTACKY DATA SCIENCE MICRODEGREE

SUPERVISED BY:

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INTRODUCTION

- The incidence of COVID-19 grew steadily in Nigeria, with its first incidence being recorded 28th February,2020.
- Since then till date, the outbreak has had social, medical and financial effects on the Nigerian population
- Data curation and analysis has proven to be an important tool in both preparation and response to Covid19 across geopolitical zones in the country

DATA COLLECTION

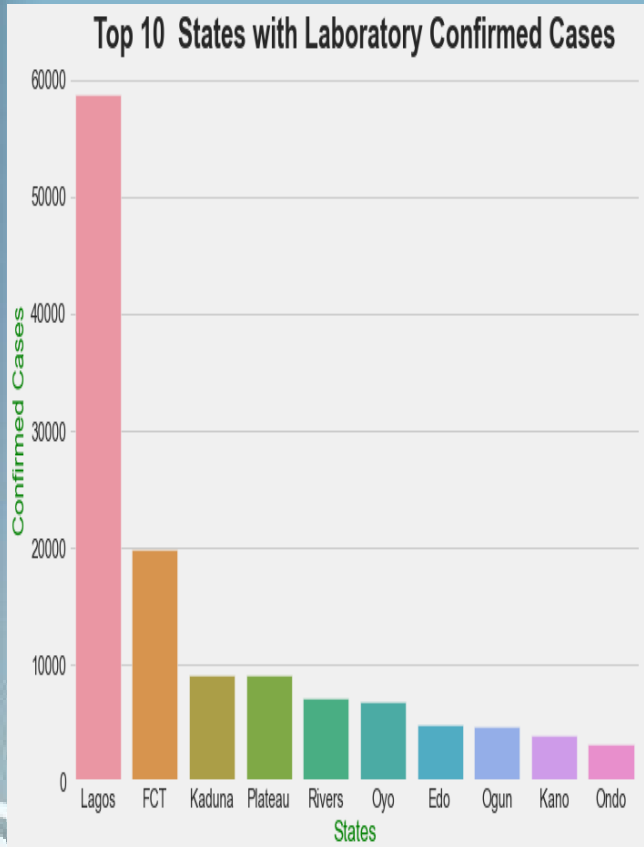
- For this project, data was sourced from:
  - NCDC website by data wrangling
  - John Hopkins University
  - External Data on GDP and Budget analysis pre-Covid and post-Covid

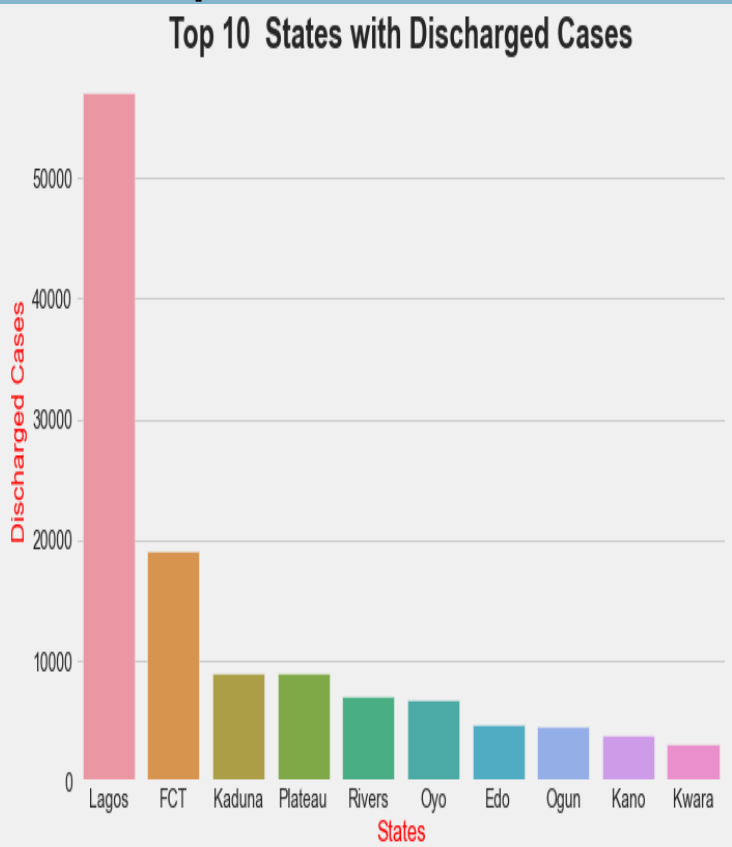
DATA CLEANING AND PREPARATION

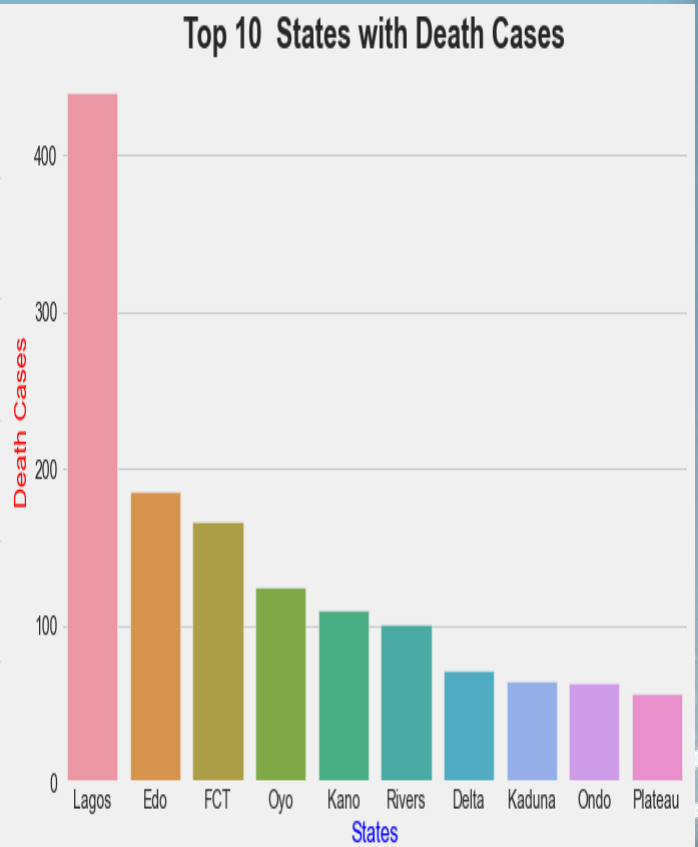
- Collected data was prepared for analysis by:
  - Converting data to appropriate data type
  - Removing special characters from columns
  - Renaming columns
  - Creating dataframe for Nigerian data extracted from John Hopkins daily Covid19 data reports

DATA ANALYSIS

- **Plots generated for top 10 confirmed,discharged and death cases, showed Lagos ranking consistently at the top position, with FCT following Lagos in both categories asides death cases, which had Edo in second place**



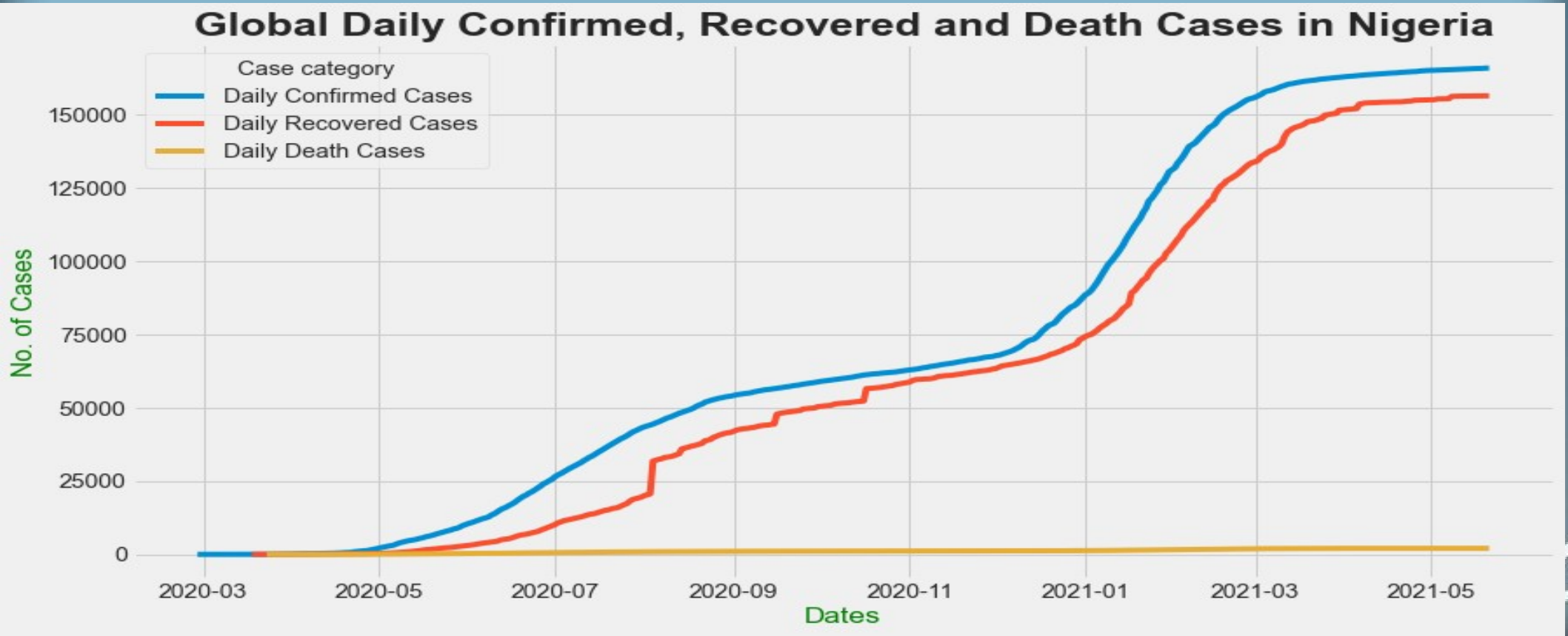




DATA ANALYSIS

A line plot generated for the daily confirmed, recovered and death cases in Nigeria, showed:

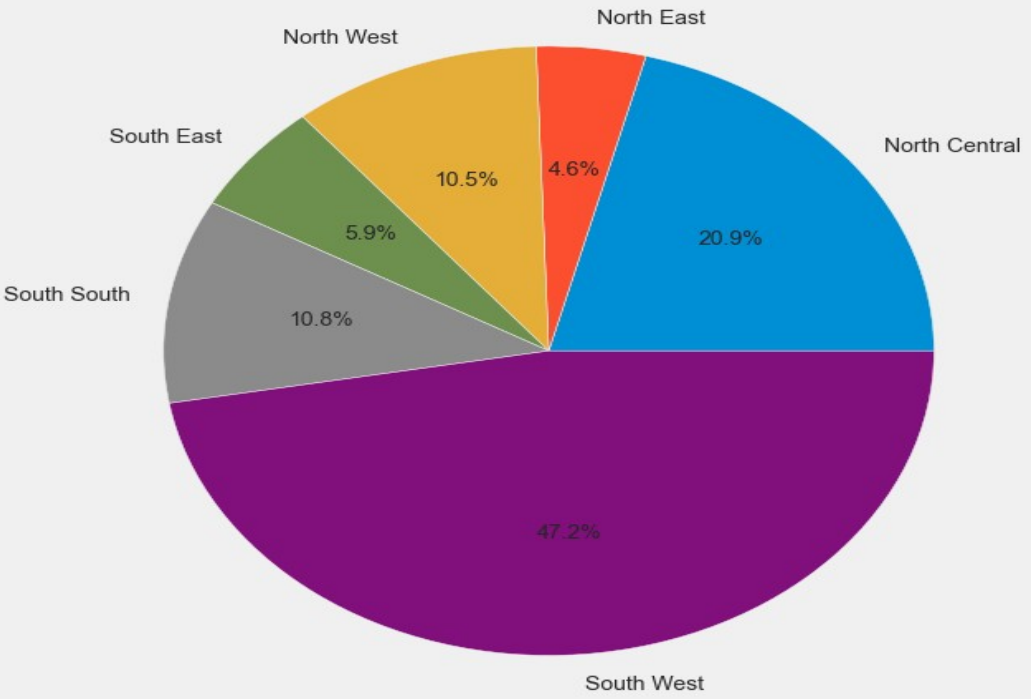
- **A rapid increase in the number of confirmed and recovered cases from May 2020 till date**
- **An increase in the number of death cases from September 2020 till date**



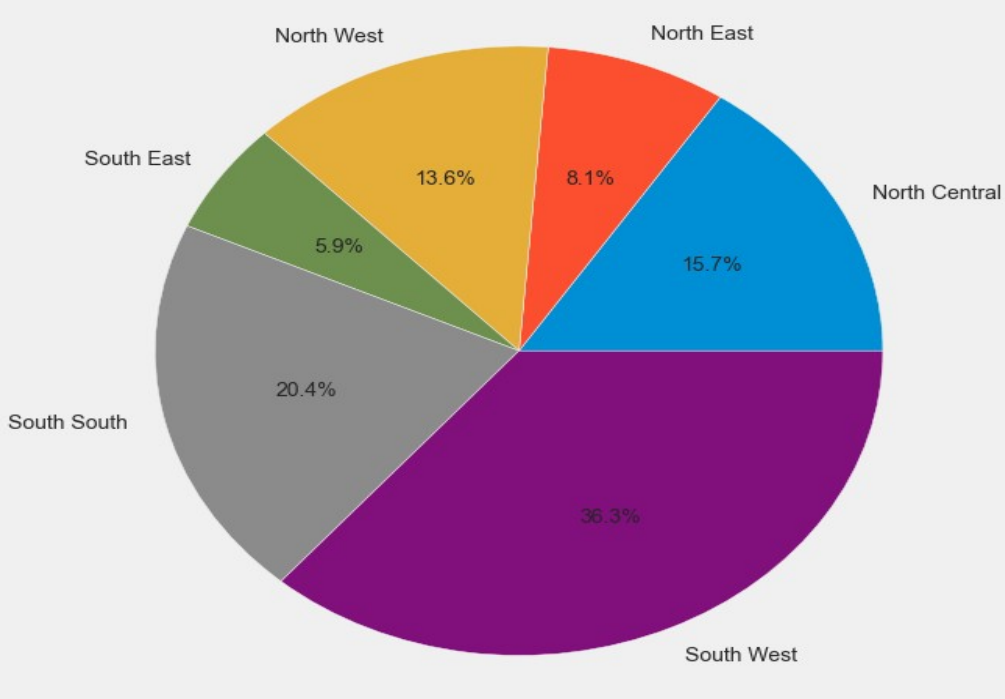
DATA ANALYSIS

- **Region specific pie charts show:**
  - **South West having the highest number of both confirmed cases and death cases**
  - **North Central having the second highest number of confirmed cases**
  - **South South having the second highest number of death cases, regardless of having the third highest proportion of confirmed cases**

Proportion of Laboratory Confirmed Cases per Geographical Region



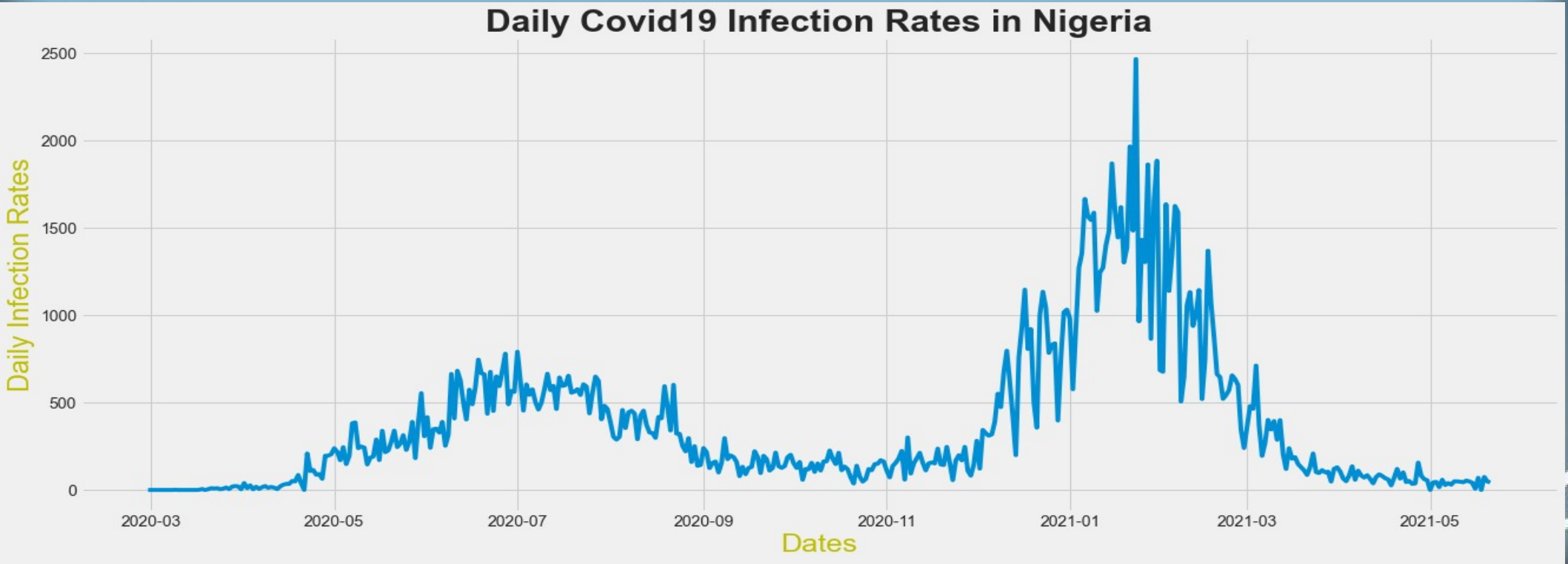
Proportion of Deaths per Geographical Region



DATA ANALYSIS

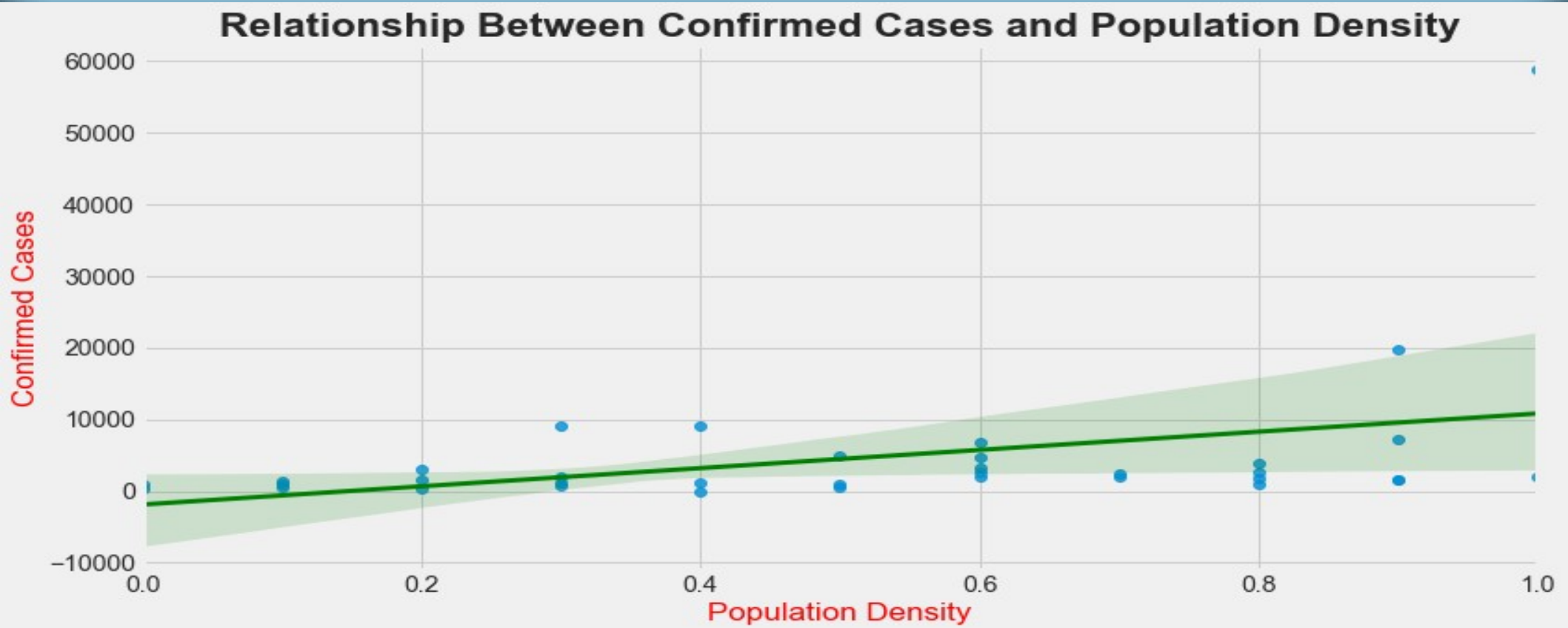
A line plot showing the daily Covid19 infection rates in Nigeria showed:

- **A rapid increase in infection rates between May 2020 and September 2020, before experiencing a decline till December 2020 after which, there was,**
- **A second rapid increase in infection rates from December 2020 to February 2020, before experiencing another decline**
- **The second peak, indicates the occurrence of a second wave of Covid19 infection**



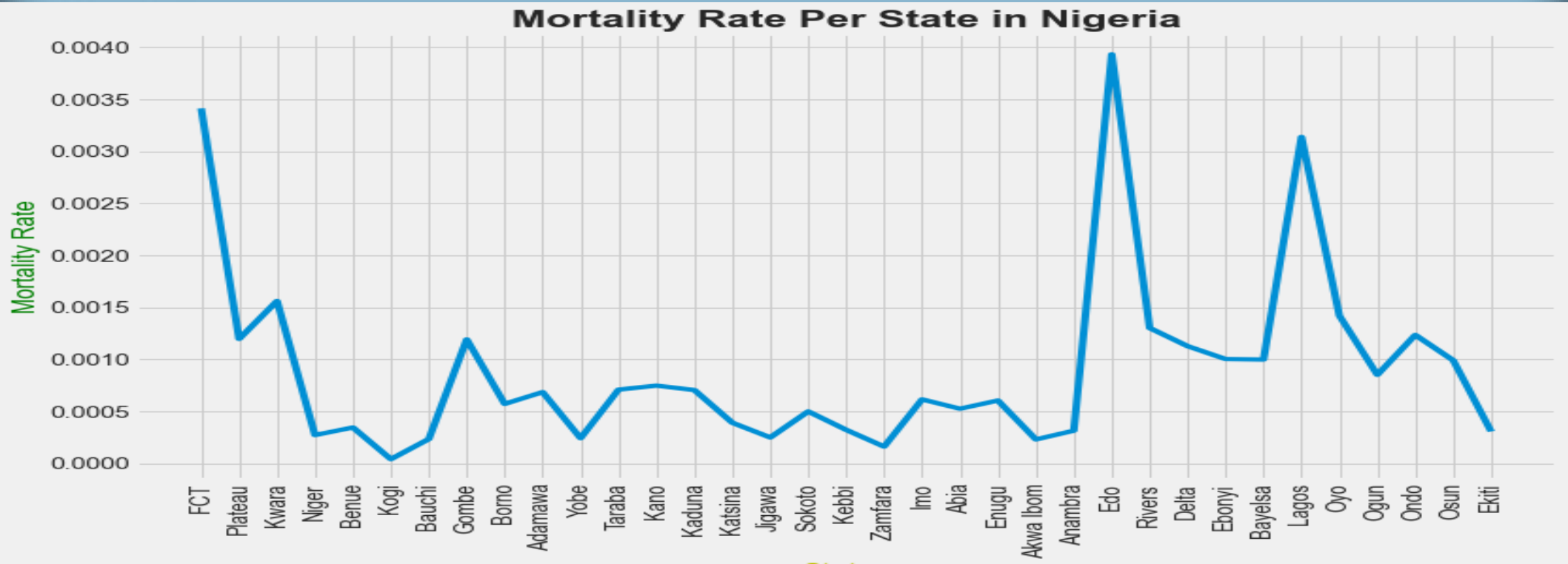
DATA ANALYSIS

- **A regression graph showed a positive correlation between confirmed Covid19 cases and population density indicating that, how populated an area is, is a determinant in the number of cases recorded in that area.**



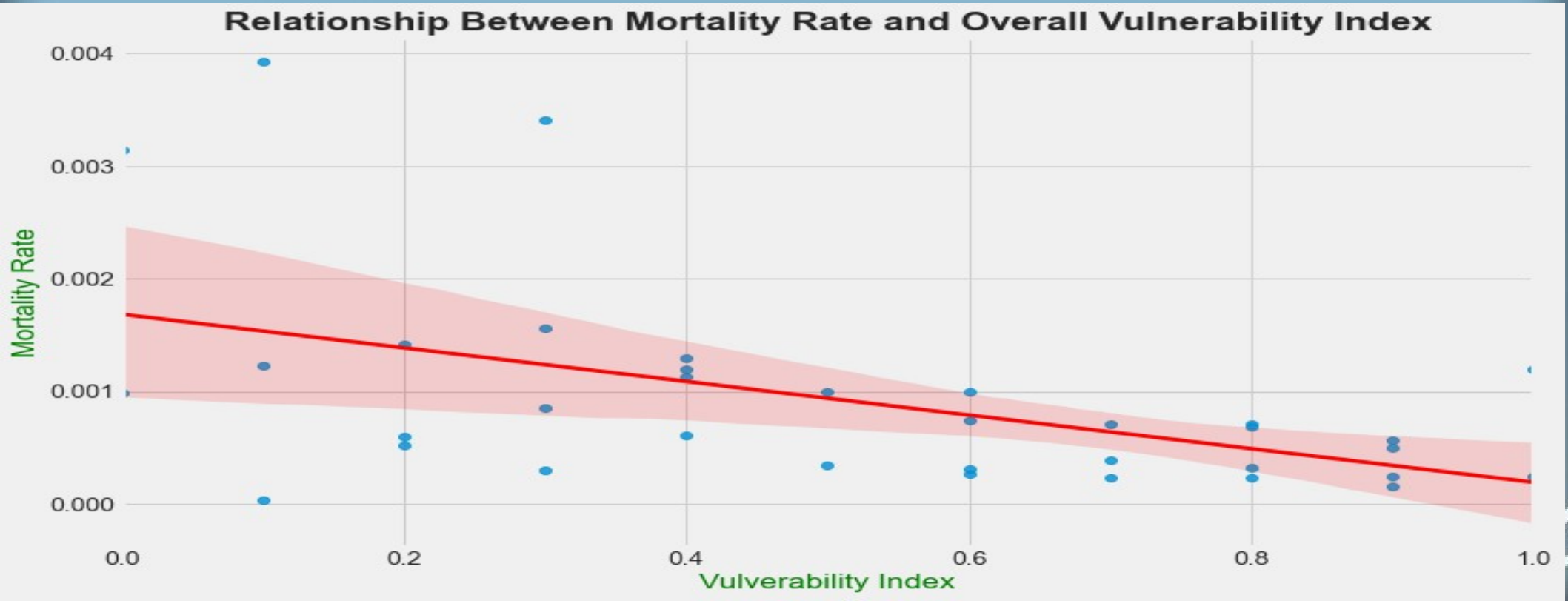
DATA ANALYSIS

- The graph peaks at 3 points, representing the highest mortality rates; Edo, FCT and Lagos respectively
- These statistics, indicate the frequency of death occurrence in relation to the number of inhabitants in each state
- The higher the mortality rate, the higher the decrease in population size caused by Covid19. This implies that Edo had the highest Covid19 hit in relation to population reduction, followed by Lagos then, FCT



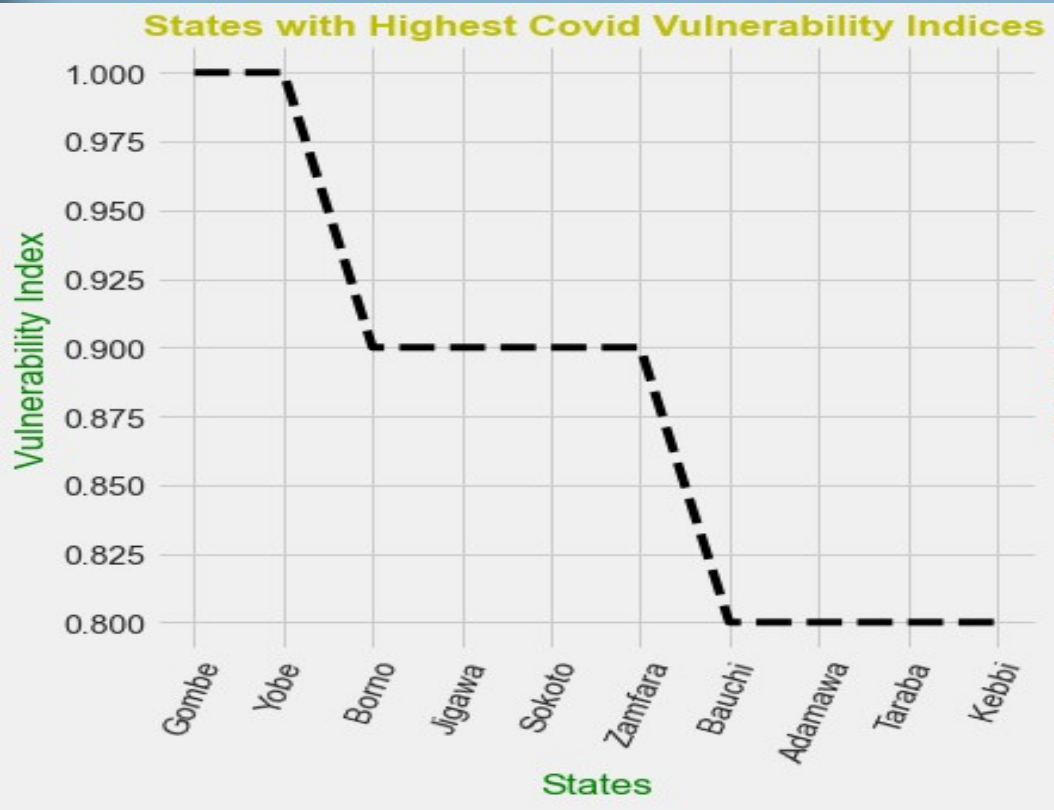
DATA ANALYSIS

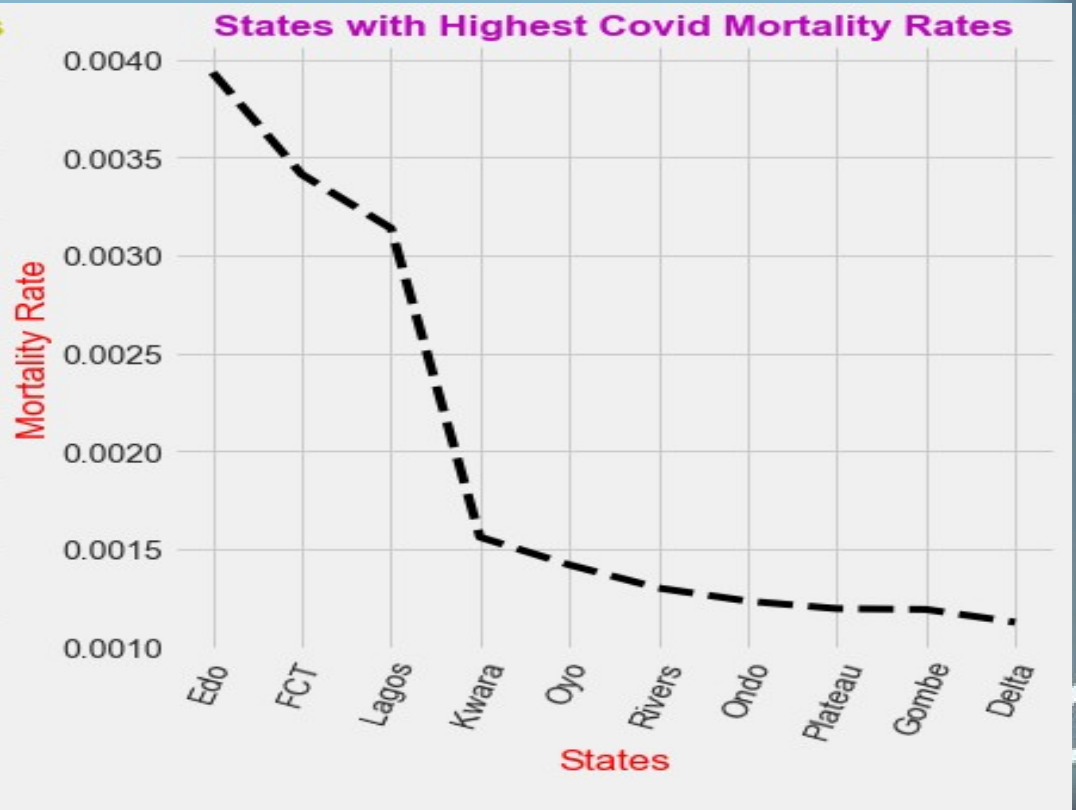
- **Vulnerability Index is important in preparation, management and response to disease outbreaks**
- **This plot shows a negative correlation between mortality rate and vulnerability index of states within Nigeria**
- **The negative correlation indicates that states with lower vulnerability indices, have higher mortality rates**



DATA ANALYSIS

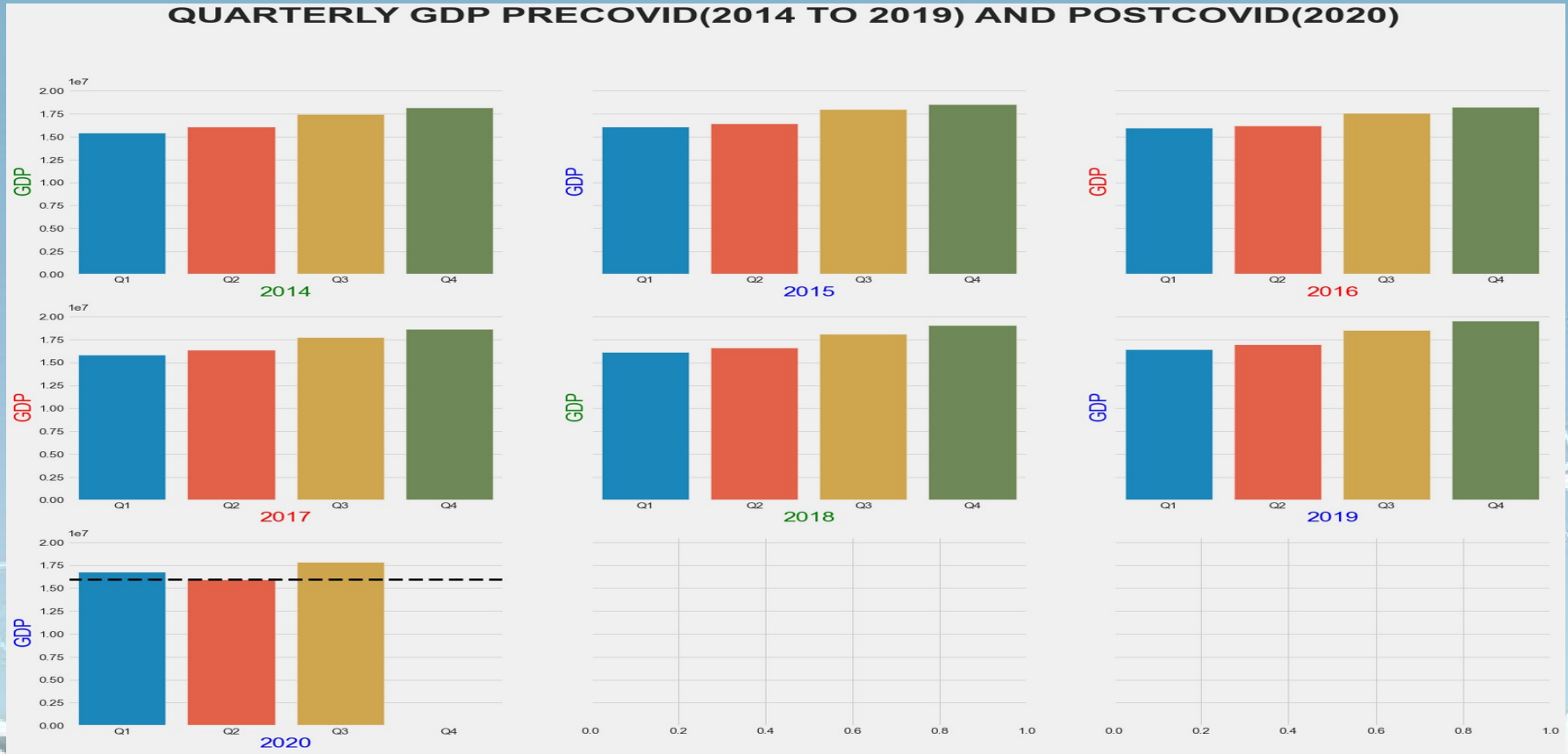
- **These plots support the established relationship between the overall vulnerability index and the mortality rates**
- **States with the highest vulnerability indices, do not feature on the graph with the highest mortality rates vice versa**





DATA ANALYSIS

- **This plot shows Covid19 had a negative effect on the real GDP of Nigeria, particularly in the initial hit period of the disease (Q2)**
- **This pattern negates the patterns observed in previous years (progressive GDP increase as the yearly quarter increases), indicating the reduction in industrial activities consequential of the necessary curfew imposed to curtail the disease spread**



CONCLUSION

- **The analysis of Nigerian Covid19 data has made apparent, the extent of impact the pandemic has had from the time of its onset till date.**

- **It is important to note that better preparedness should be geared towards states with seemingly low vulnerability indices, to avoid consequential unpredicted high mortality.**