**Covid 19 Analysis Report – 11.01.2024**

**Basic Analysis**

1. **Top 30 Countries by Total Deaths – normalized:**  
   I used the cardiovasc\_death\_rate, so the result is normalized and countries with most total deaths base on the population.
2. **Top 10 Countries with Most Recent New Deaths:**

As there were not enough information about new\_deaths in a certain date for about 10 Countries, I used the last dates, that means all new deaths didn’t happen in a certain date but are the last new\_death date.

**Exploratory analysis**

1. **how different countries have managed to flatten their curve - a time-series analysis:**

From the plot, we can see that the number of new cases in the United States increased sharply from March 2020 and peaked in January 2021. The number of new cases in France increased from October 2020, for Spain its January 2021. The number of new cases in Chile, Japan, and Ukraine peaked in June 2020 and has been fluctuating since then. The number of new cases in Ecuador peaked in April 2020 and has been declining since then.

It is important to note that this analysis only considers the number of new cases and does not take into account other factors such as testing rates, vaccination rates, and public health policies. Therefore, it is difficult to draw definitive conclusions about how different countries have managed to flatten their curve based on this analysis alone.

1. **The relationship between testing rates and confirmed cases:**

The plot shows that there is a positive correlation between the number of tests per unit of population density and the number of confirmed cases per unit of population density.

1. **time-lapse scatter plot, showing the evolution of total cases and deaths ????**
2. **analyze the ratio of total deaths to total cases over time:**  
   Based on the plot, it appears that the normalized death-to-case ratio has been decreasing over time. This could indicate that the regions have been successful in controlling the spread of the disease and/or improving the quality of care for those who have contracted the disease. However, it is important to note that this is just a preliminary observation and further analysis would be required to draw any definitive conclusions.
3. **daily new deaths over time:**

we can see that the new\_deaths increased at the end of 2020 and beginning of 2021 and it started to decrease from the beginning of 2022. It can be because of Vaccination and health care solutions.

1. **Correlation heatmap:**

From the plot we can see that there is a strong correlation between total\_tests, total\_deaths and total\_cases.

1. **New cases 7 day Moving average:**

Based on the plot, it appears that the number of new cases has been fluctuating over time. However, the moving average of new cases shows a decreasing trend over time, indicating that the regions have been successful in controlling the spread of the disease and/or improving the quality of care for those who have contracted the disease.