Group one
Project 3

Investigating the Relationships between COVID-19 and Various Factors

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Objective:
The objective of this project is to distinguish the strongest correlates to COVID-19 infection and significant complications rates by exploring the correlatory relationships between COVID-19 and multiple different factors. By analyzing relevant data and visualizing the findings using graphs and mapping tools, we aim to gain insights into how various factors may impact the spread and outcomes of COVID-19.

Potential Hypothesis':

1. The incidence of COVID-19 cases among vaccinated individuals is lower compared to unvaccinated individuals in the same region. The fatality rate is higher among those who are not vaccinated.
    a. Data Collection: Collect data on COVID-19 cases, hospitalization rates, and vaccination status within a specific region.
    b. Statistical Analysis: Conduct a comparative analysis between vaccinated and unvaccinated individuals to determine significant differences in COVID-19 outcomes.
    c. Visualization: Utilize graphs to visually represent the differences and correlations found in the analysis.

2. Countries with higher tourist traffic experience higher COVID-19 infection rates in 2020.
    a. Data Collection: Gather data on tourism rates and COVID-19 infection rates in various countries.
    b. Correlation Analysis: Analyze the correlation between the number of tourists visiting a country and the spread of COVID-19 within that country.
    c. Visualization: Create a map visualization to identify clusters of COVID-19 cases in countries with varying levels of tourist traffic.

3. Population density and infection rates are correlated.
    a. Data Collection: Collect data on population density and COVID-19 infection rates in different regions.

b. Correlation Analysis: Explore the relationship between population density and the rate of COVID-19 transmission within different areas.
c. Visualization: Enhance the map visualization by adding a layer representing population density to visualize potential correlations.

4. Lockdown measures lead to a decrease in COVID-19 infections.
    a. Data Collection: Gather data on COVID-19 infection rates before and after the implementation of lockdown measures in different regions.
    b. Comparative Analysis: Compare the infection rates pre- and post-lockdown to determine the impact of lockdown measures on reducing COVID-19 cases.
    c. Visualization: Combine the map visualization with additional graphs to showcase the effects of lockdown measures.

Summary:

By conducting this project, we anticipate to gain valuable insights into the correlations between COVID-19 and various regional factors, including vaccination rates, tourism, population density, and lockdown measures. The visualizations will help us present the findings in an intuitive and interactive manner, which will allow us to interpret and demonstrate the relationship and potential effect of these factors on the spread and outcomes of COVID-19.