

Project presentation

Research on COVID-19 Vaccination

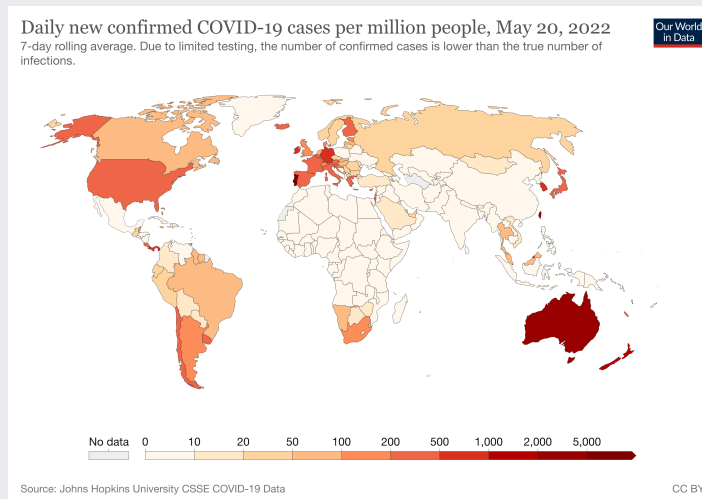
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Statistics



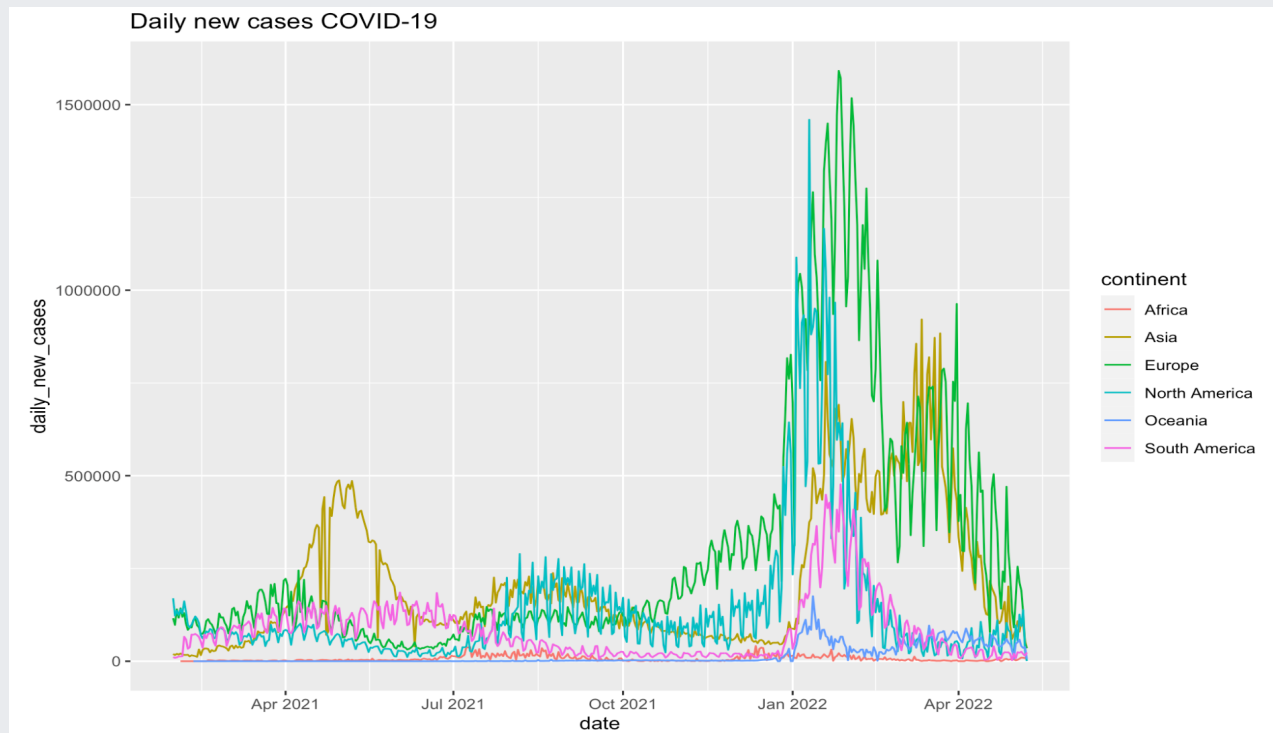
Background Introduction

- To bring this pandemic to an end, a large share of the world needs to be immune to the virus
- The safest way to achieve this is with a vaccine
- Vaccines are a technology that humanity has often relied on in the past to bring down the death toll of infectious diseases

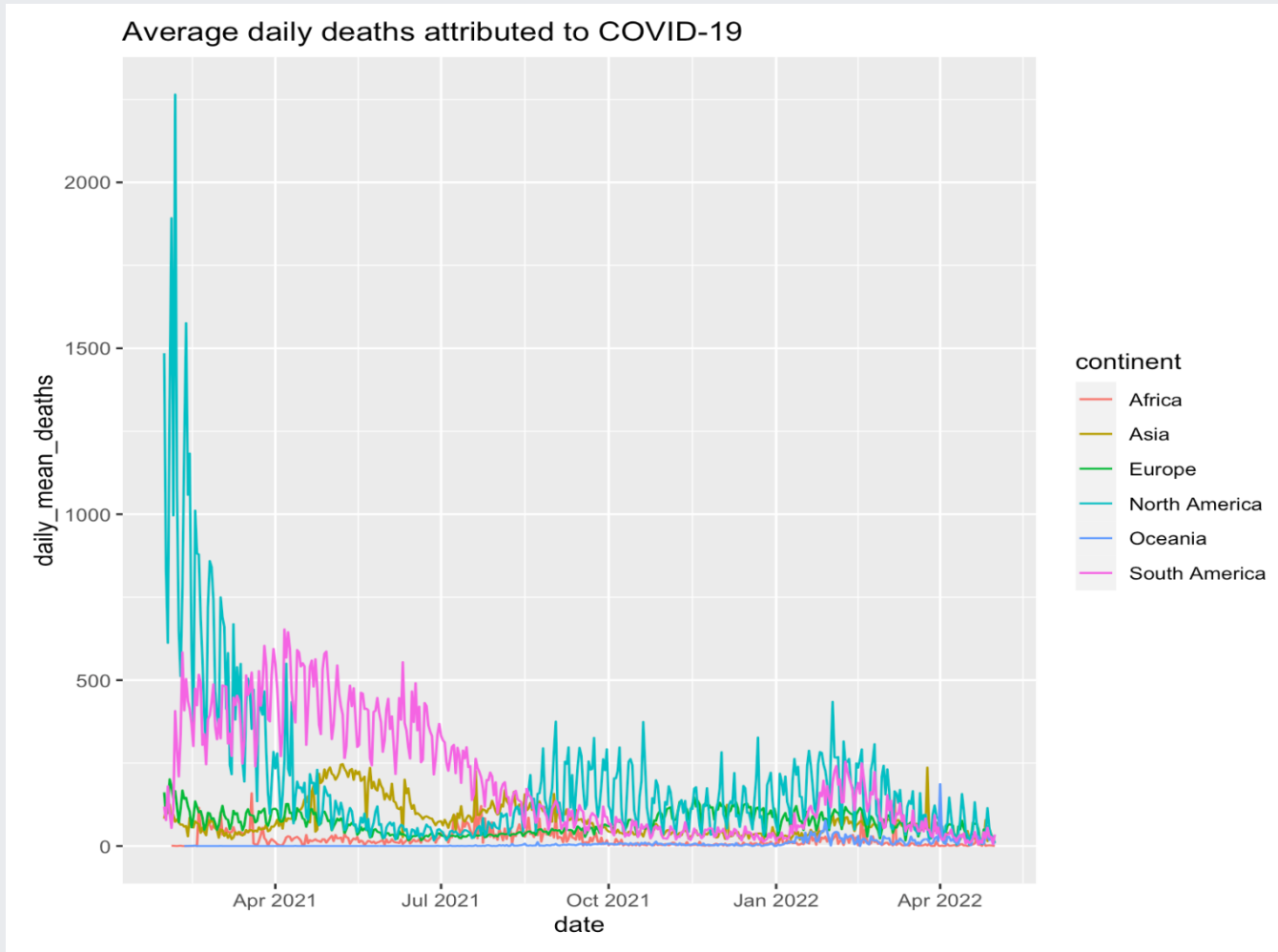


Daily new cases COVID-19

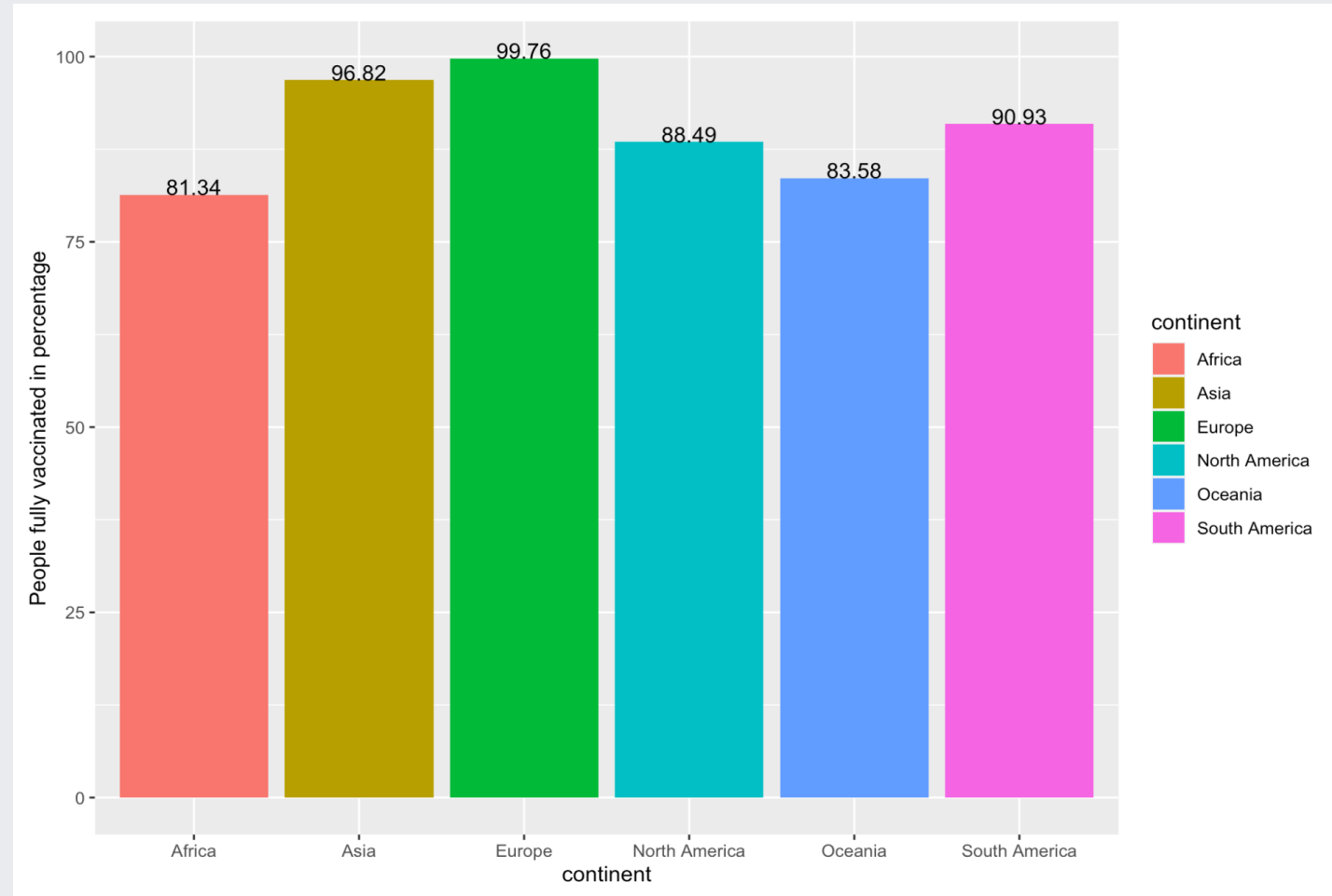
- Three times breakout over the period
- Europe always has the highest daily cases



COVID-19 Daily deaths



COVID-19 Vaccination rate



Research Questions:

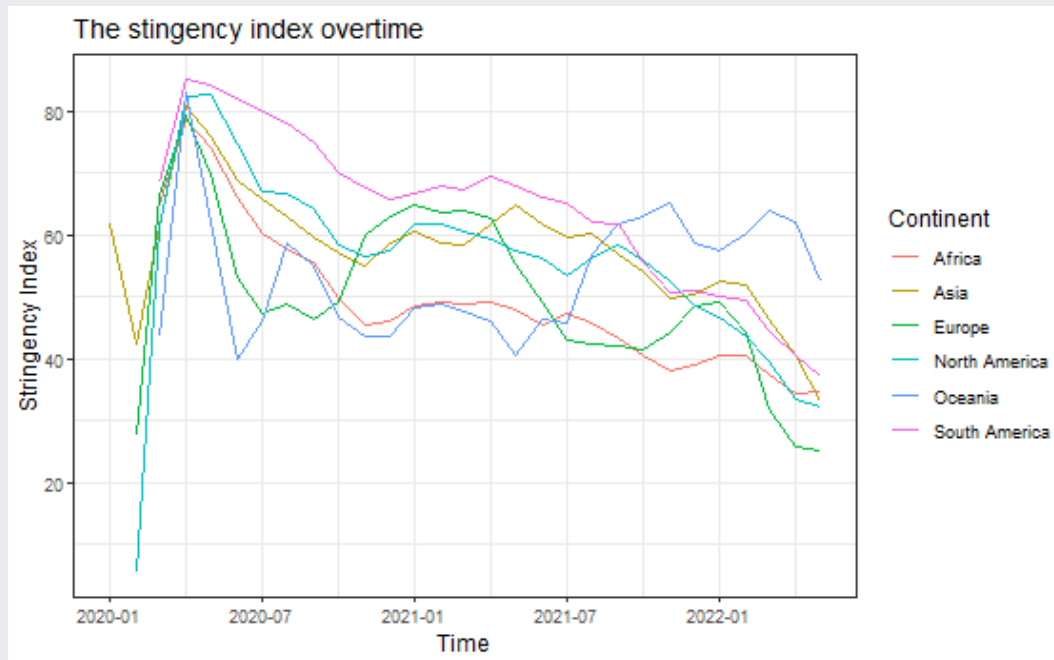
- Effects of government policies on the spread of COVID-19 worldwide
- How do positive cases change relate to vaccination?
- How do death rates from COVID-19 differ between people who are vaccinated and those who are not?

Stringency Index

- Before the availability of the vaccination, the most common measures against COVID-19 is the use of restriction
- The higher score indicates a stricter response (i.e. 100 = strictest response)
- Average of school closures; workplace closures; cancellation of public events; restrictions on public gatherings; closures of public transport; stay-at-home requirements; public information campaigns; restrictions on internal movements; and international travel controls.

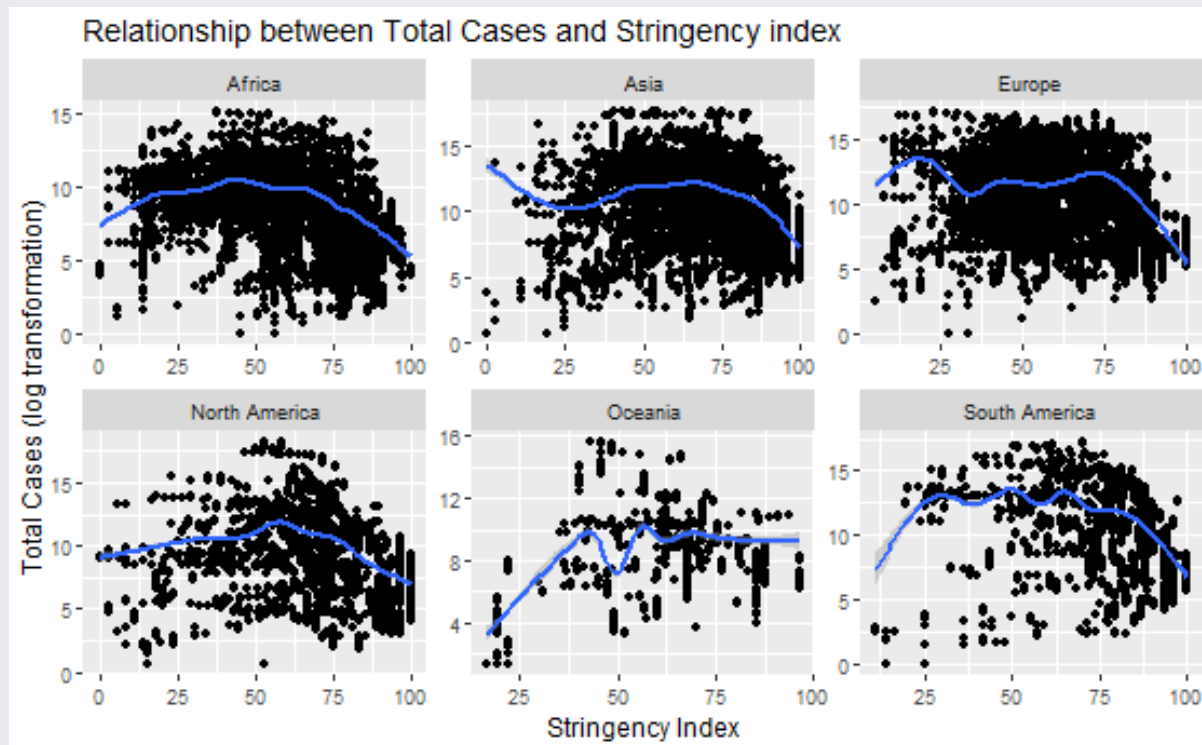
Stringency Index

- Each continent has a response to COVID-19 at a different time (first identified in China, WHO declared an outbreak)
- A spike in 2020-04 (WHO declared COVID-19 as a pandemic on 11 March)



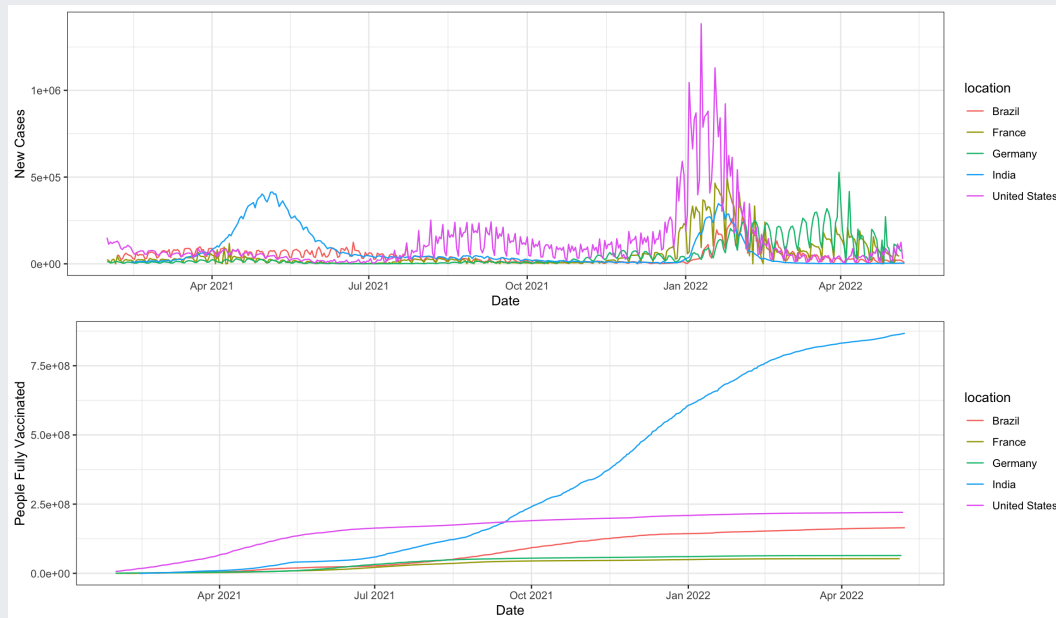
Government policies

- Non-linear relationship (it takes time for the response to have an effect)



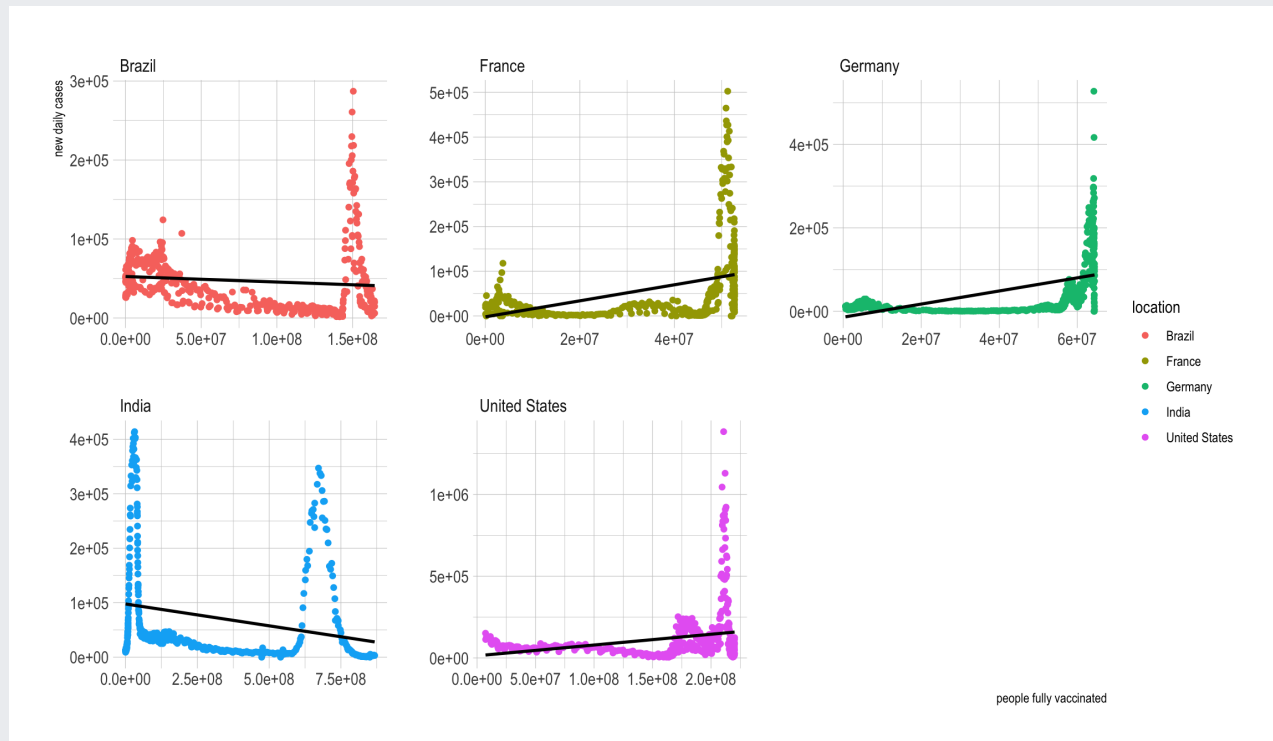
The trend of new cases and Fully vaccinated person

- New cases in the United States boosted in Jan 2022 but were not as boosted as their vaccination
- India did the best in vaccination and other countries stayed regular



How new cases correlated with the number of people fully vaccinated

- No significant linear relationship between vaccination and cases.



Mean value of new cases and daily new fully vaccinated people

- India has the highest daily new fully vaccinated
- The United States has the highest daily new cases

mean of new fully vaccinated people and new cases

location	mean of new fully vaccinated people	mean of new cases
Brazil	372420	46850
France	114808	56720
Germany	138851	50179
India	2008029	70864
United States	460807	120419

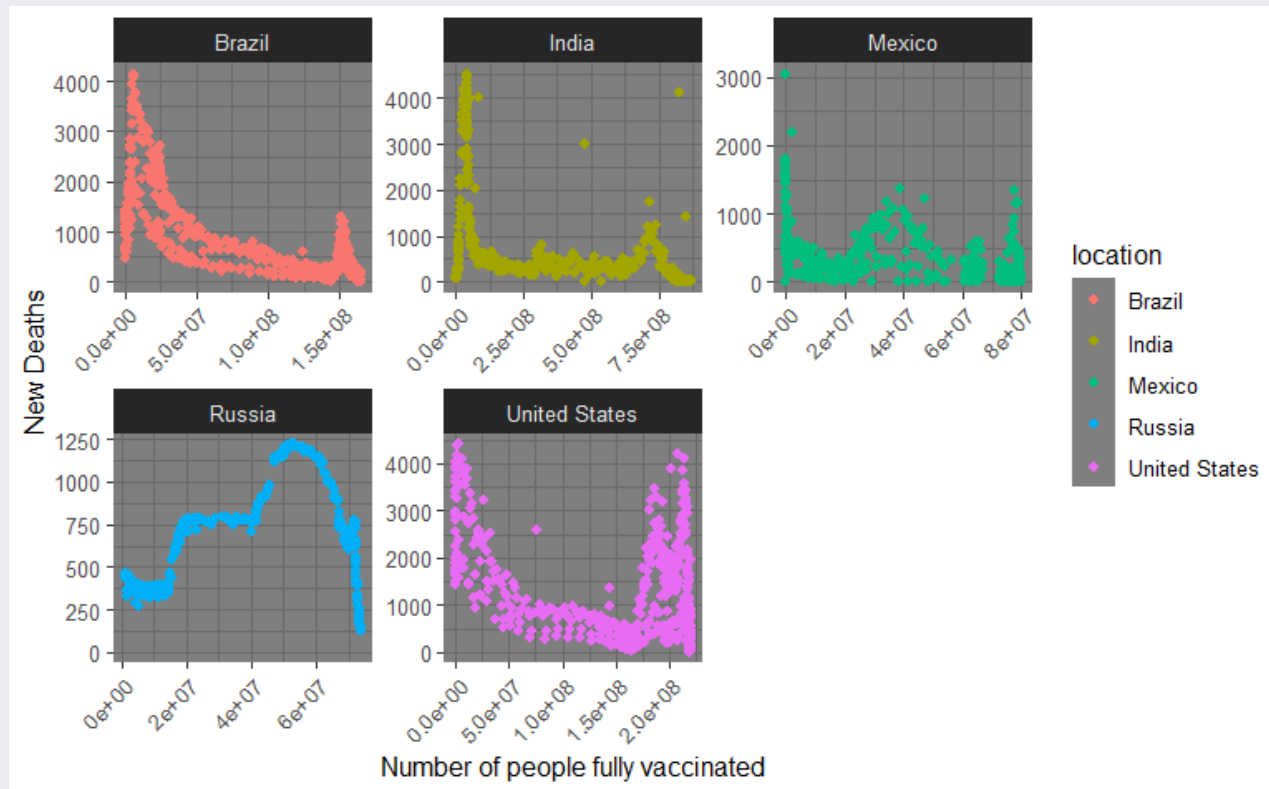
Average daily vaccinations and deaths for the countries with highest death rates.

Average daily vaccinations and deaths for the countries with highest death rates.

location	average_vaccinations_per_day	average_deaths_per_day
United States	1135290	1246
Brazil	934008	847
India	4057187	657
Russia	434410	472
Mexico	444551	407

Relationship between new deaths and vaccination status

- We can see from the figures that vaccinations have a clear effect on the death rate.



Conclusion

- The restriction policies can mitigate the spread of the virus. However, it does not protect us against it
- The vaccination seems to not affect the spread of the virus due to mutation
- The vaccination is still a preferable method, as it reduces the death rates

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