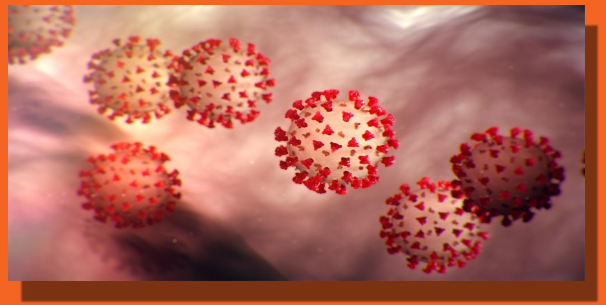
Team 3: Data Challenge 2021

By: Kaveh Vakili, Jagan Velraj, and Feke Kinfu

What Is happening?

The Covid-19 Pandemic has disrupted many different aspects of society across the world. With the world dealing with a global health crisis, Team 3 decided to dive deep and understand what is causing the rise in Covid-19 cases.

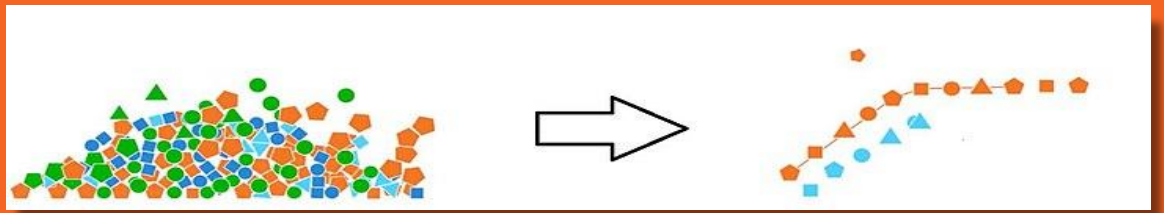


What did we ask?

When analyzing the data provided to us, we asked whether any changing attitudes towards the Covid-19 pandemic affected the number of Covid-19 cases. In addition, we also asked if there were any particular locations at an increased risk of becoming a hotspot with the data provided.

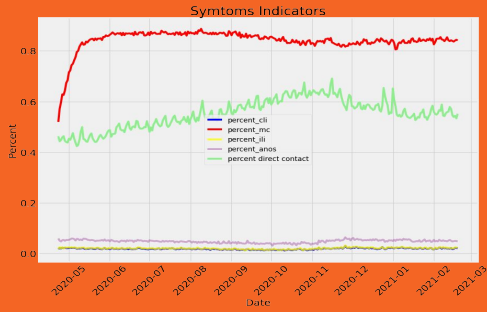
What did we do?

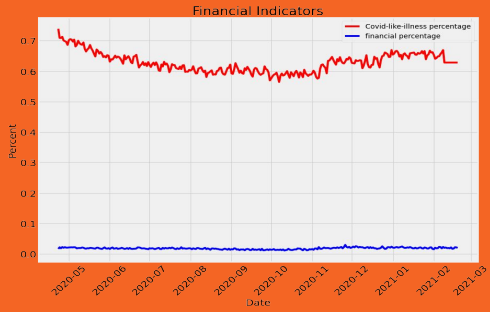
Team 3 initiated a data wrangling process in which we retrieved our data from the API provided to us by the Data Challenge members. We then we cleaned the data using Python. Through cleaning the data, our team was able to enhance our findings by grouping countries together from different continents .

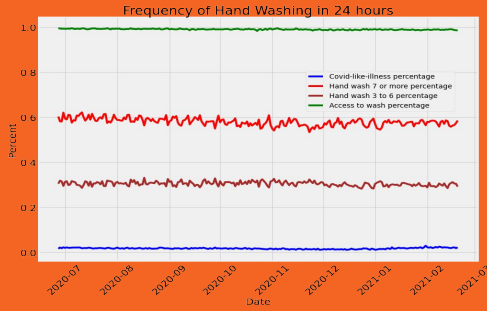


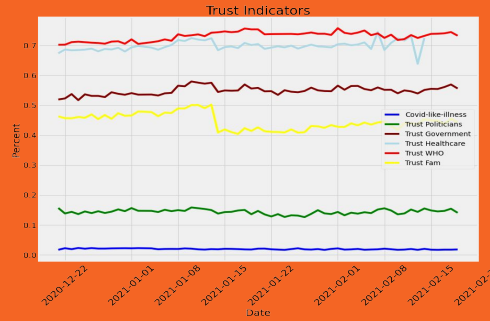
What did we see?

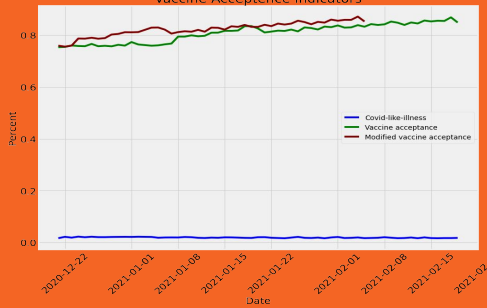
Brazil

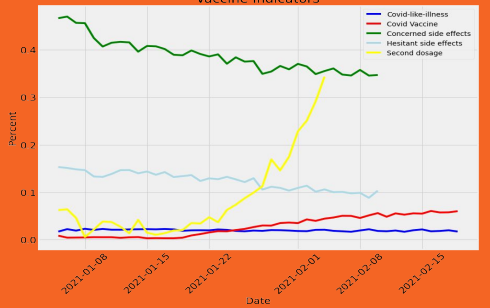

Symtoms Indicators
percent_cli
percent_mc
percent_ili
percent_anos
percent direct contact
Percent
Date


Financial Indicators
Covid-like-illness percentage
financial percentage
Percent
Date

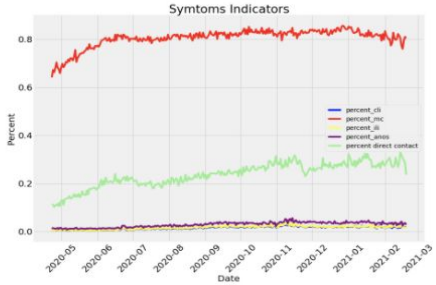

Frequency of Hand Washing in 24 hours
Covid-like-illness percentage
Hand wash 7 or more percentage
Hand wash 3 to 6 percentage
Access to wash percentage
Percent
Date

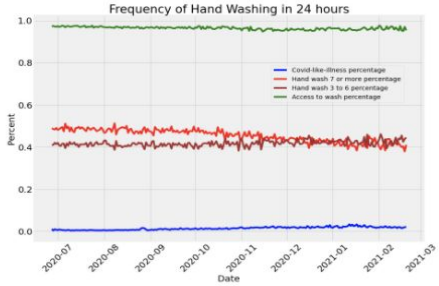

Trust Indicators
Covid-like-illness
Trust Politicians
Trust Government
Trust Healthcare
Trust WHO
Trust Fam
Percent
Date

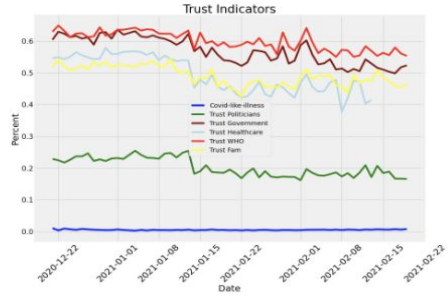

Vaccine Acceptence Indicators
Covid-like-illness
Vaccine acceptance
Modified vaccine acceptance
Percent
Date

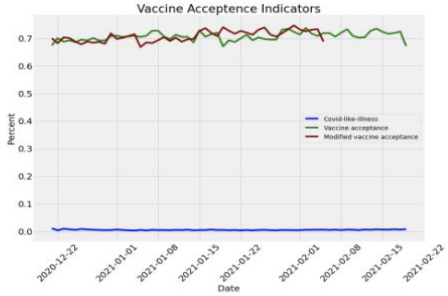

Vaccine Indicators
Covid-like-illness
Covid Vaccine
Concerned side effects
Hesitant side effects
Second dosage
Percent
Date

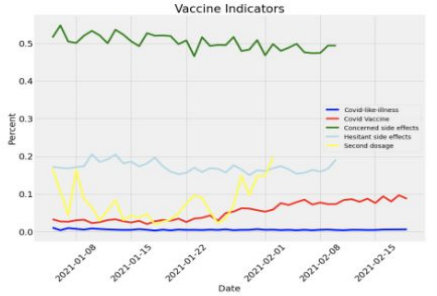
India Indicators



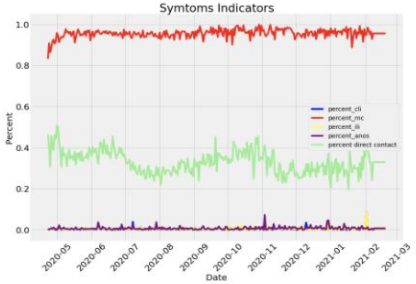


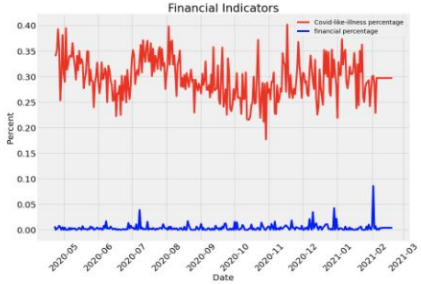


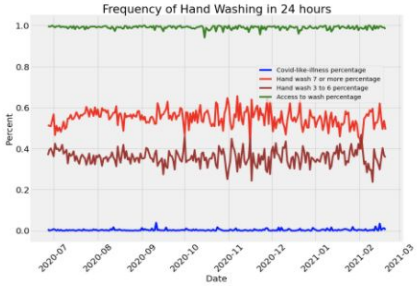


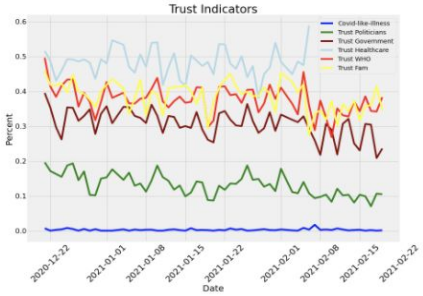


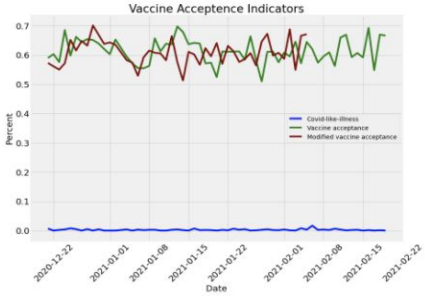
Hong Kong Indicators

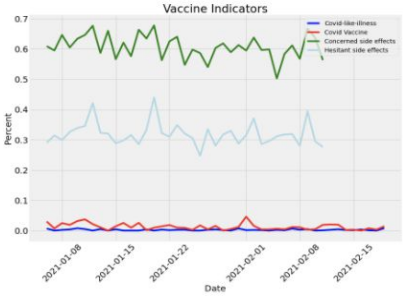




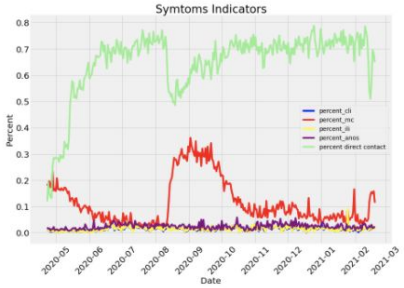


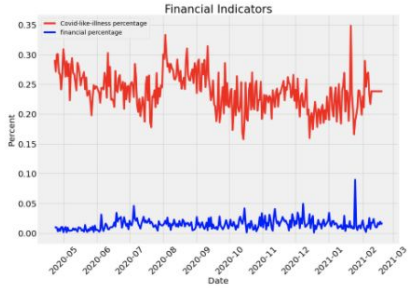


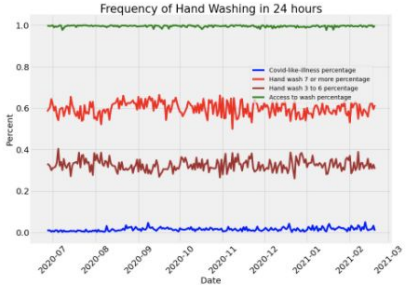


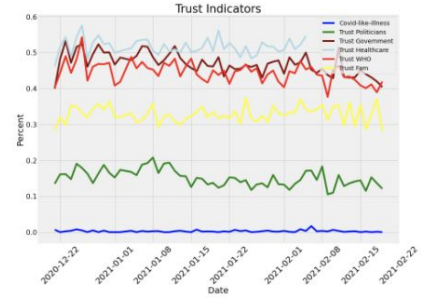


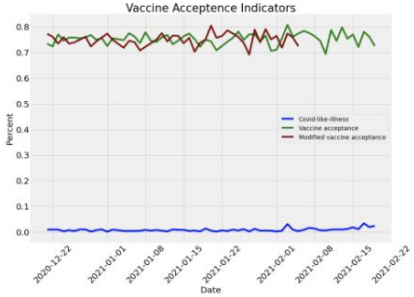
New Zealand

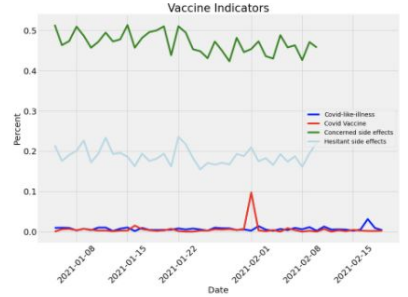

Symtoms Indicators
Percent
Date
percent_cli
percent_mc
percent_ili
percent_anos
percent direct contact


Financial Indicators
Covid-like-illness percentage
financial percentage
Percent
Date

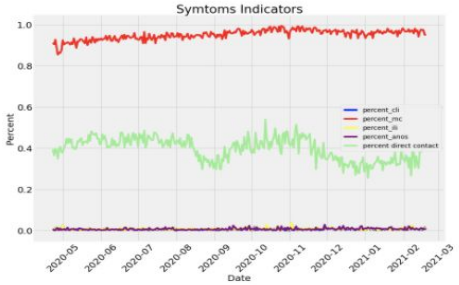

Frequency of Hand Washing in 24 hours
Covid-like-illness percentage
Hand wash 7 or more percentage
Hand wash 3 to 6 percentage
Access to wash percentage
Percent
Date


Trust Indicators
Covid-like-illness
Trust Politicians
Trust Government
Trust Healthcare
Trust WHO
Trust Fam
Percent
Date


Vaccine Acceptence Indicators
Covid-like-illness
Vaccine acceptance
Modified vaccine acceptance
Percent
Date

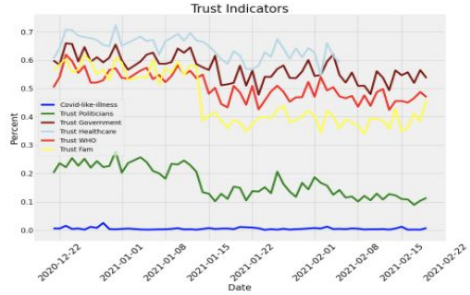

Vaccine Indicators
Covid-like-illness
Covid Vaccine
Concerned side effects
Hesitant side effects
Percent
Date

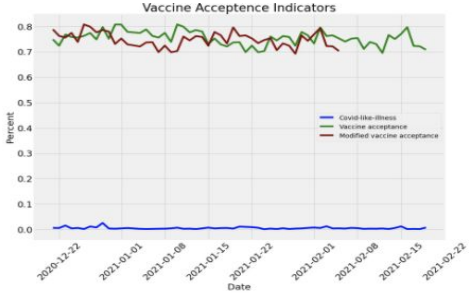
Korea

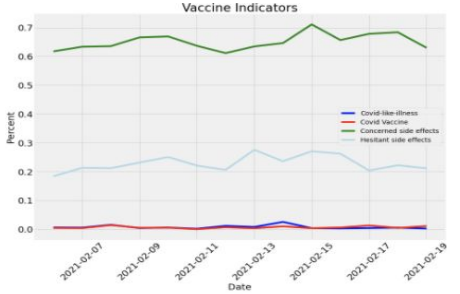

Symtoms Indicators
Percent
Date
percent_cli
percent_mc
percent_ili
percent_anos
percent direct contact


Financial Indicators
Percent
Date
Covid-like-illness percentage
financial percentage

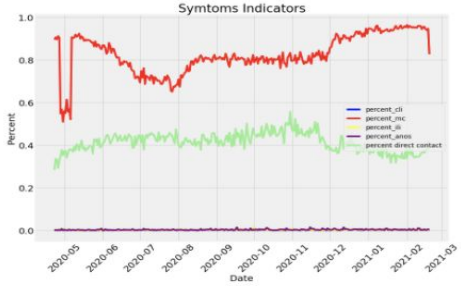

Frequency of Hand Washing in 24 hours
Percent
Date
Covid-like-illness percentage
Hand wash 7 or more percentage
Hand wash 3 to 6 percentage
Access to wash percentage

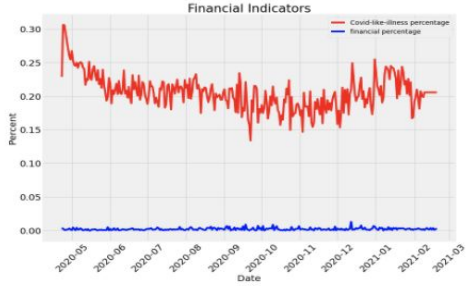

Trust Indicators
Percent
Date
Covid-like-illness
Trust Politicians
Trust Government
Trust Healthcare
Trust WHO
Trust Fam

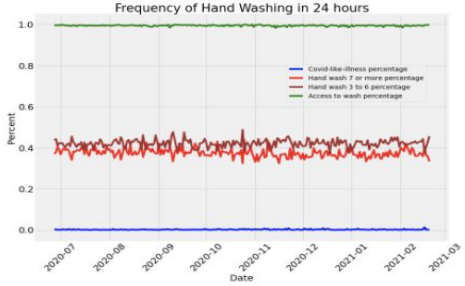

Vaccine Acceptence Indicators
Percent
Date
Covid-like-illness
Vaccine acceptance
Modified vaccine acceptance

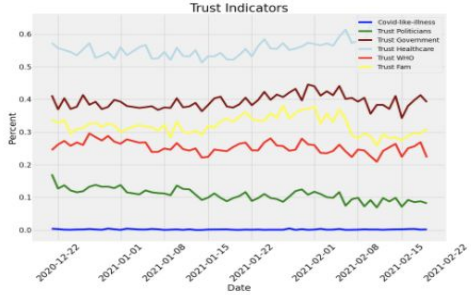

Vaccine Indicators
Percent
Date
Covid-like-illness
Covid Vaccine
Concerned side effects
Hesitant side effects

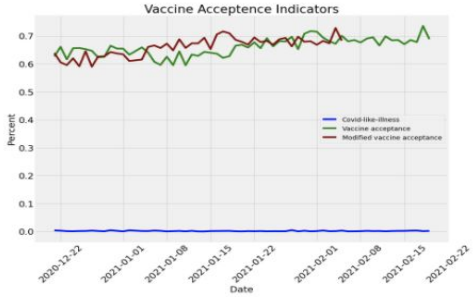
Taiwan

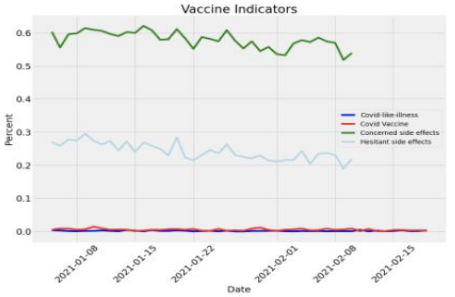

Symtoms Indicators
Percent
Date
percent_cli
percent_rnc
percent_ili
percent_anos
percent direct contact


Financial Indicators
Percent
Date
Covid-like-illness percentage
financial percentage

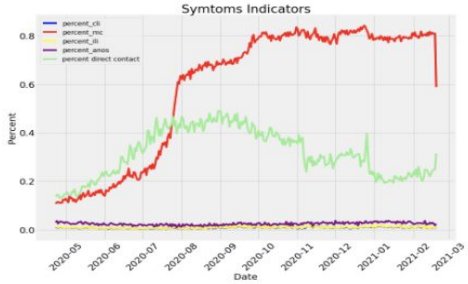

Frequency of Hand Washing in 24 hours
Percent
Date
Covid-like-illness percentage
Hand wash 7 or more percentage
Hand wash 3 to 6 percentage
Access to wash percentage

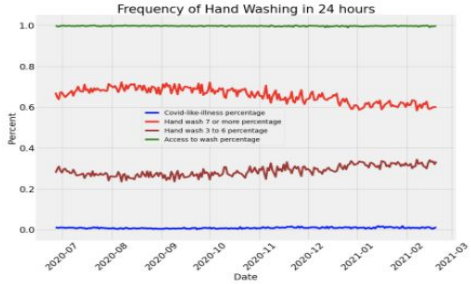

Trust Indicators
Percent
Date
Covid-like-illness
Trust Politicians
Trust Government
Trust Healthcare
Trust WHO
Trust Fam

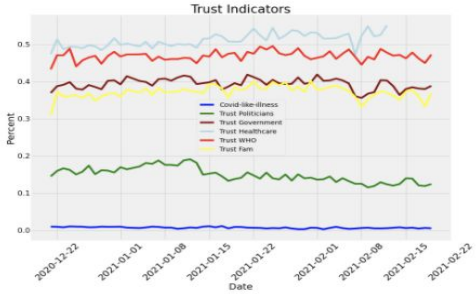

Vaccine Acceptence Indicators
Percent
Date
Covid-like-illness
Vaccine acceptance
Modified vaccine acceptance

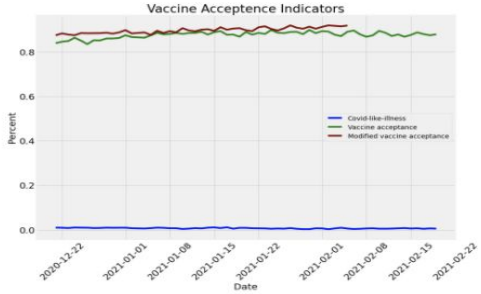

Vaccine Indicators
Percent
Date
Covid-like-illness
Covid Vaccine
Concerned side effects
Hesitant side effects

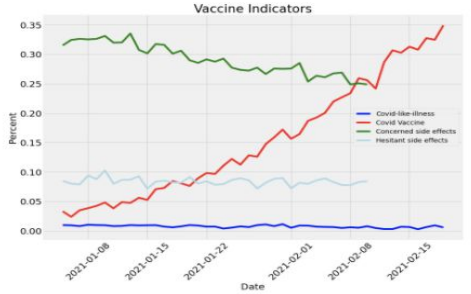
United Kingdom

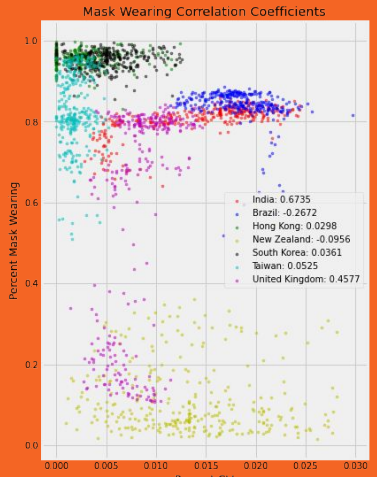


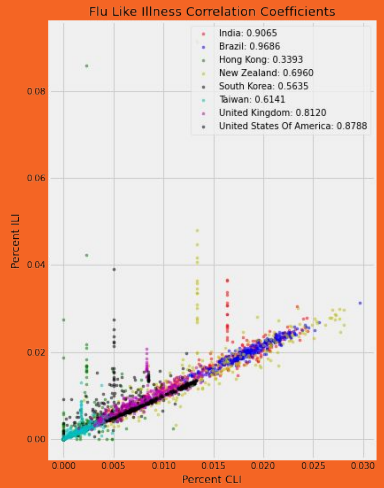




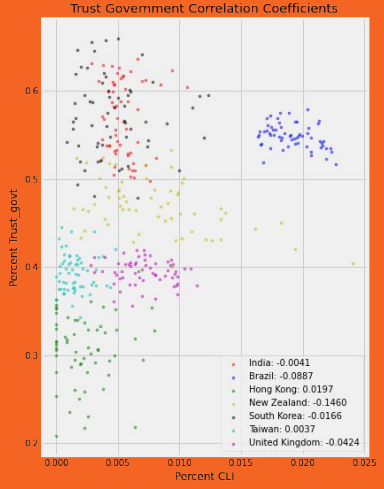


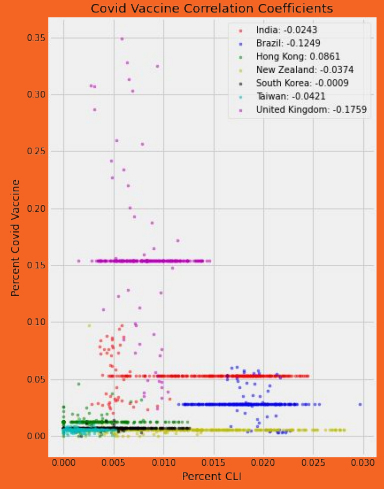


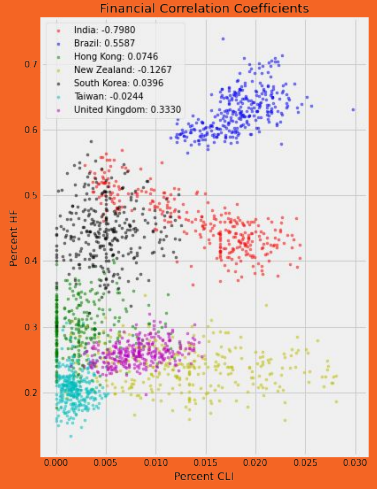

Mask Wearing Correlation Coefficients
Percent Mask Wearing
Percent CLI
India: 0.6735
Brazil: -0.2672
Hong Kong: 0.0298
New Zealand: -0.0956
South Korea: 0.0361
Taiwan: 0.0525
United Kingdom: 0.4577


Flu Like Illness Correlation Coefficients
Percent ILI
Percent CLI
India: 0.9065
Brazil: 0.9686
Hong Kong: 0.3393
New Zealand: 0.6960
South Korea: 0.5635
Taiwan: 0.6141
United Kingdom: 0.8120
United States Of America: 0.8788


Direct contact Correlation Coefficients
Percent DC
Percent CLI
India: 0.8046
Brazil: -0.2604
Hong Kong: 0.0947
New Zealand: 0.3250
South Korea: -0.0692
Taiwan: -0.1063
United Kingdom: -0.1378


Trust Government Correlation Coefficients
Percent Trust_govt
Percent CLI
India: -0.0041
Brazil: -0.0887
Hong Kong: 0.0197
New Zealand: -0.1460
South Korea: -0.0166
Taiwan: 0.0037
United Kingdom: -0.0424


Covid Vaccine Correlation Coefficients
Percent Covid Vaccine
Percent CLI
India: -0.0243
Brazil: -0.1249
Hong Kong: 0.0861
New Zealand: -0.0374
South Korea: -0.0009
Taiwan: -0.0421
United Kingdom: -0.1759


Financial Correlation Coefficients
Percent HF
Percent CLI
India: -0.7980
Brazil: 0.5587
Hong Kong: 0.0746
New Zealand: -0.1267
South Korea: 0.0396
Taiwan: -0.0244
United Kingdom: 0.3330

What did we find?

From the correlation Coefficient graph we found:

- People started to wear mask more frequently as they develop covid like illness symptoms
  - There is a weak positive correlation between CLI (Covid Like Illness) and Mask Wearing since the average coefficient of the Mask Wearing Correlation Coefficient is 0.1164
- People intend to misjudge the symptoms of Covid and Flu
  - There is a strong positive correlation between CLI and ILI (Flu Like Illness since the average coefficient of the Flu Like Illness Correlation Coefficient is 0.70
- People tend to have covid like illness symptoms if there is a direct contact between people who aren't living together
  - There is weak positive correlation between CLI and Direct Contact since the average coefficient of the Direct Contact Correlation Coefficient is 0.0930

What did we find? (cont.)

- People loses their trust on government as the covid like illness raises
  - There is weak negative correlation between CLI and Trust Government in the Trust Government Correlation Coefficient since the average coefficient is -0.0392
- CLI reduces when people starts to get vaccinated
  - There is a weak negative correlation between CLI and Covid Vaccine in the Covid Vaccine Correlation Coefficient since the average coefficient is -0.0456
- People may worry more about their financial wellbeing as the CLI raises
  - There is weak positive to no correlation between CLI and HF in the Financial Correlation Coefficient since the average coefficient is 0.0081

What could be Improved?

Certain indicators of the dataset in the API has less data because they started surveying later. If more data is provided from those indicators then we could have a better understanding of determining the correlation coefficient of those datasets.

Struggles

- Limitation on how much data we could retrieve from the API
- Filtering out the countries and indicators
- Some indicators had more data than others
- Achieving consistency in the survey date

Conclusion

- The number of cases within all the countries that we analyzed significantly dropped after citizens began wearing masks.
- Vaccination helped reduce covid like illnesses.
- Social distance practices help prevent the spread of Covid-19
- Smaller countries tend to manage Covid-19 more efficiently then the highly populated nations