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IronHack

DAFT 07/20

COVID-19

Analysis on the Efficiency of the
Different Political Responses
around the Globe.



Covid-19

Data Explanations

Correlations

Fact or Fake ?

Time Evolution of Covid-19 cases - 1 January 2020



The Covid-19 Pandemic

- Covid-19 caused by newly discovered coronavirus
- Highly infectious
- Air transmission
- Various symptoms
- Global Crisis
- **26 016 839** Confirmed cases
- **863 020** Confirmed deaths

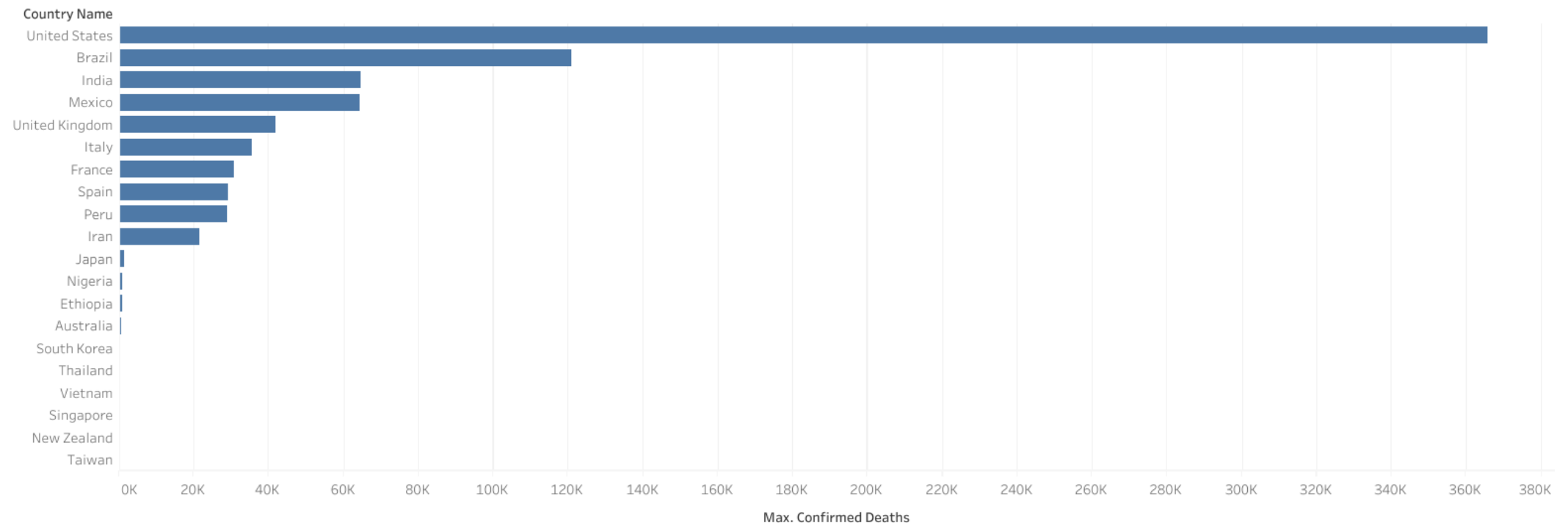
Data Collection & Definitions

- 2 databases : Oxford Uni + OWID
- Ranking Indexes :
 - Governmental Response
 - Stringency Index
 - Containment + Health
 - Economic Support

Crisis Handling per Country

- Arbitrary variable : Number of Deaths caused by Covid-19

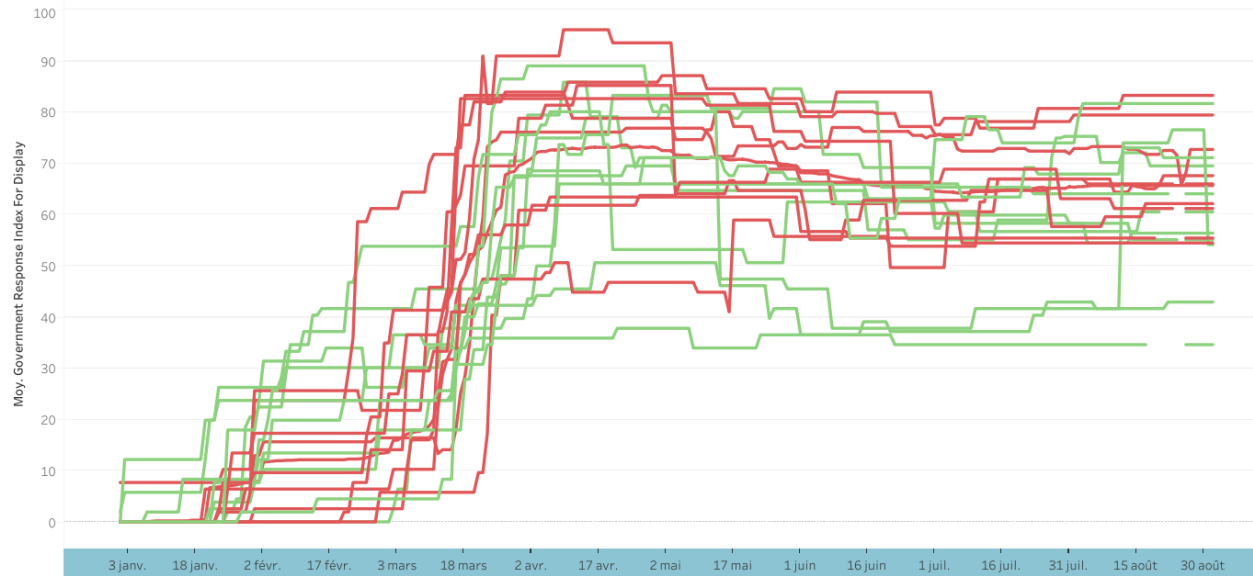
Ranking per Deaths



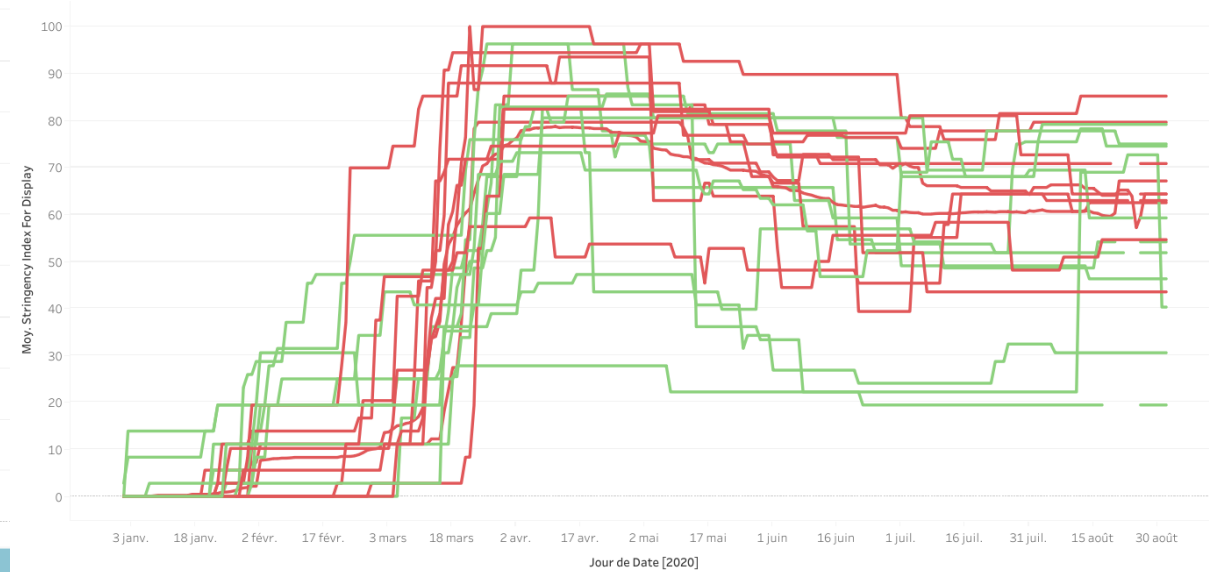
Correlations

Time-lapse of governmental response and stringency

Gov Response per Country



Stringency Index per Country

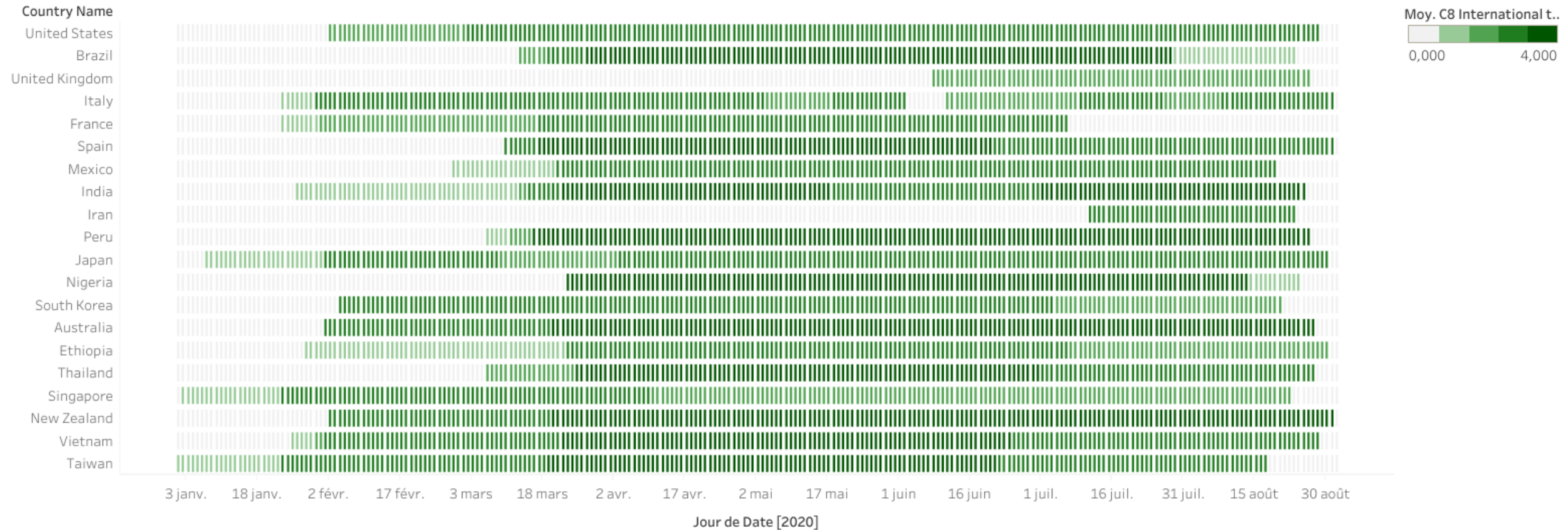


Statistically proven that the countries who had a higher death rate had to show a more severe response.

Correlations

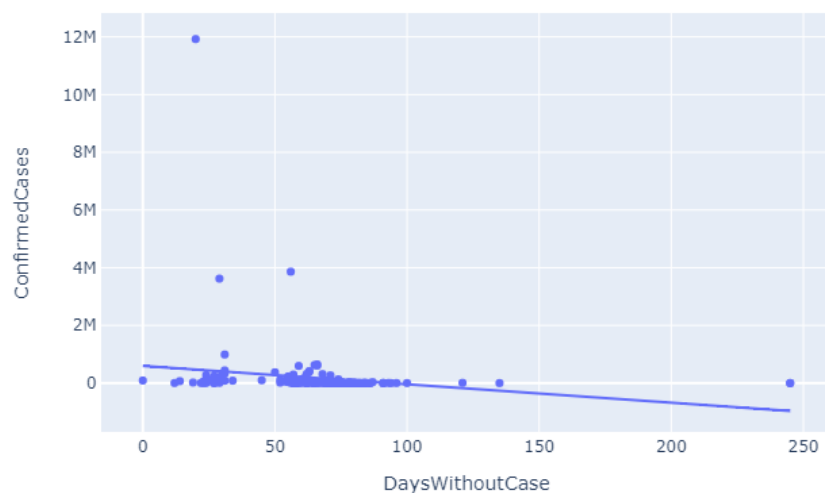
Travel Restrictions per Country

Travel Ban per Country



Correlations

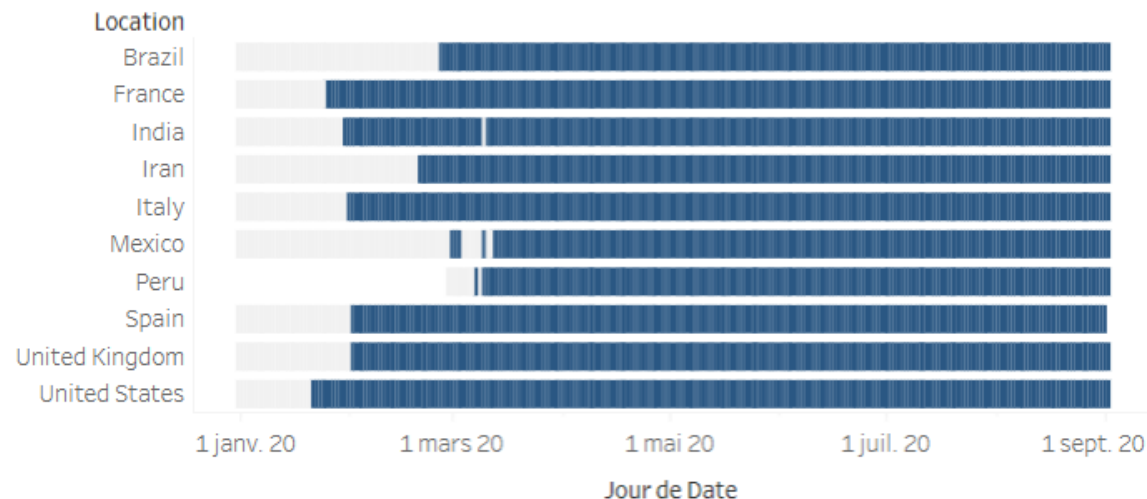
Time-lapse before first case



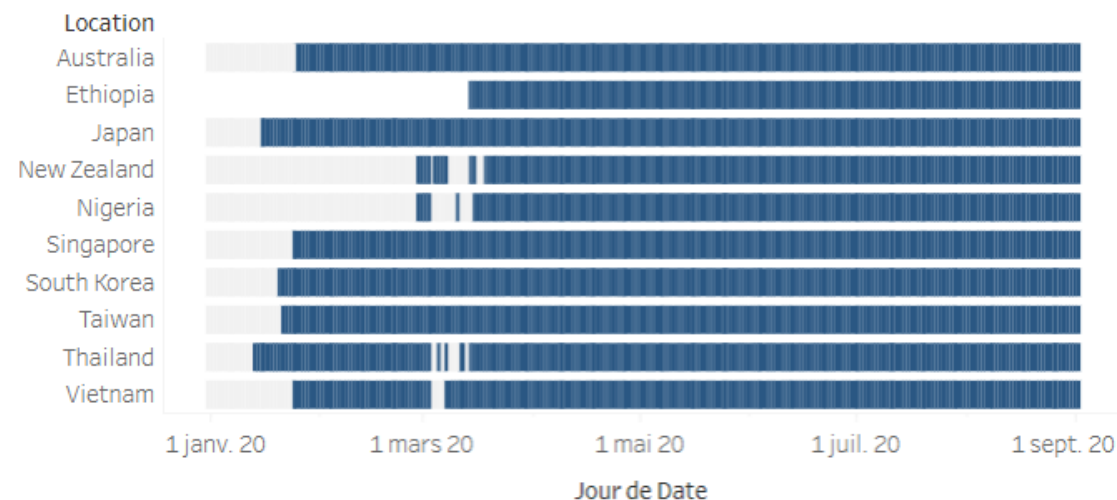
$$R^2 = 0.03$$

Day of first case is not correlated to the spread of the virus in a country.

Day of First Case (High)



Day of First Case (Low)



The background of the slide is a blurred financial chart. It features a dark blue background with several data series. There are orange bars, likely representing a bar chart, and white lines with circular markers representing a line chart. Some data points are labeled with numbers: '183.102' and '245.57'.

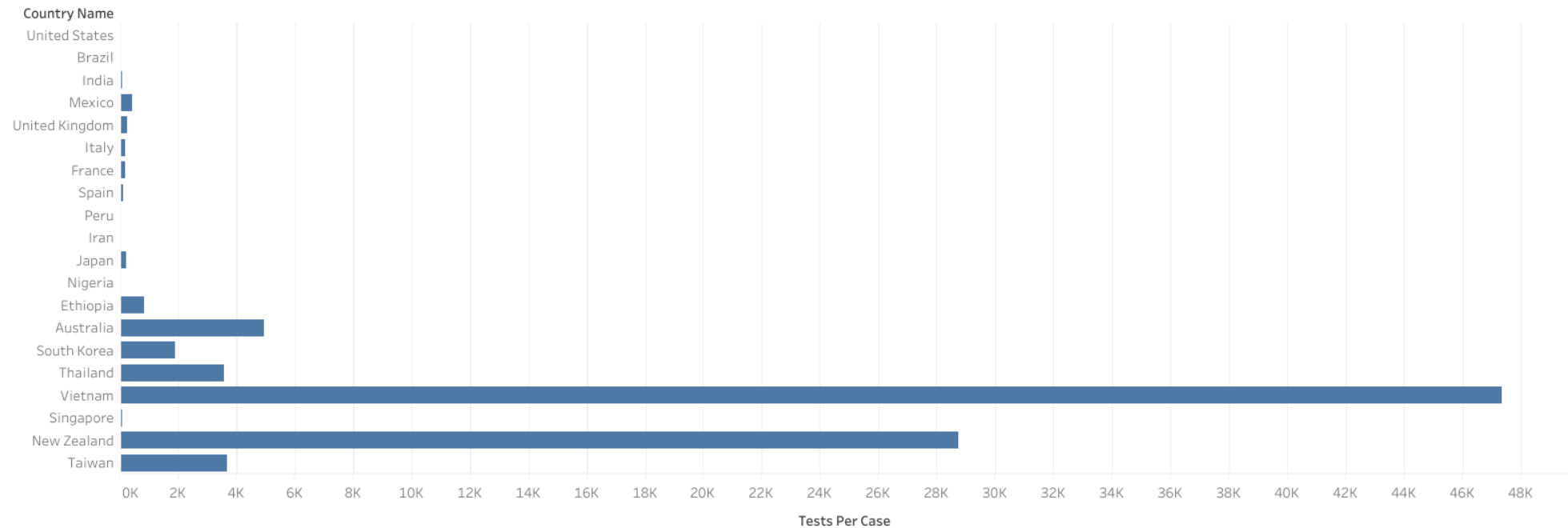
Fact or Fake ?

A strong policy on testing is efficient

Testing Efficiency

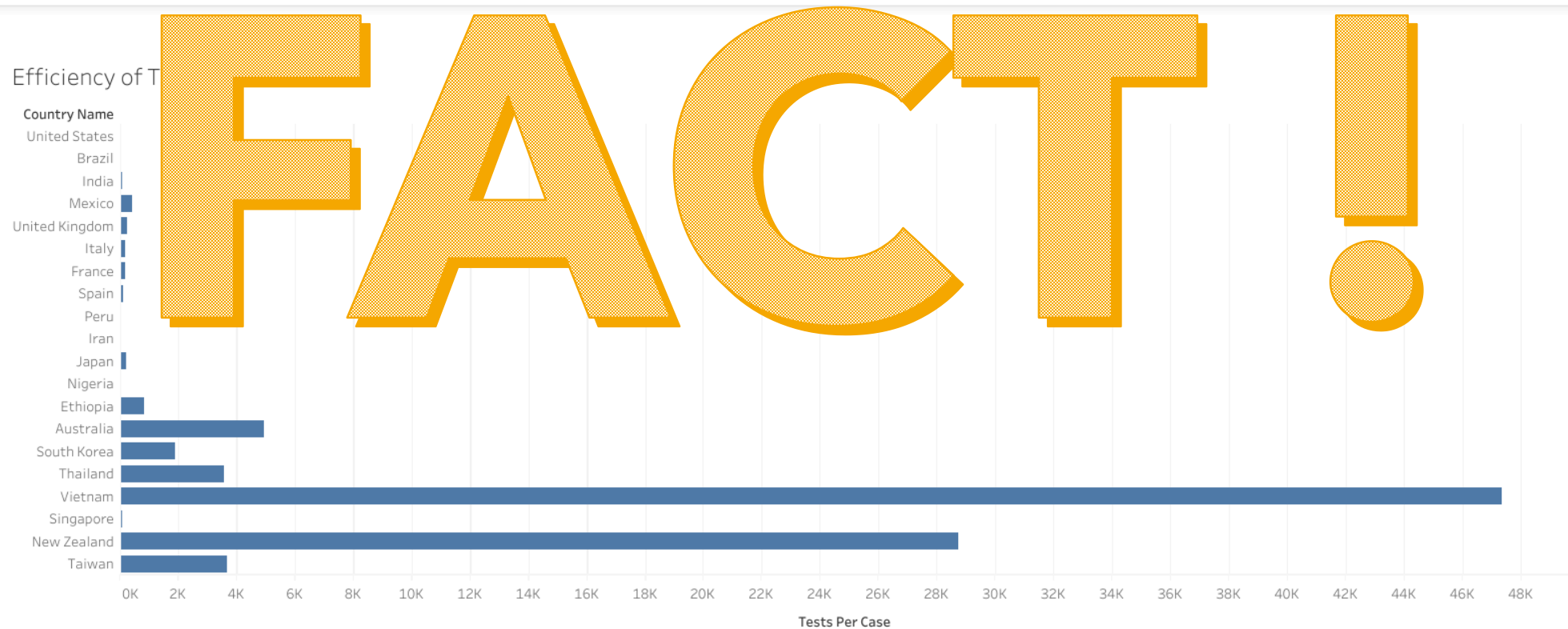
- P-value = 0.03
- Tests per case < or > 500
- $\mu(\text{High tests}) = 819$ deaths
- $\mu(\text{Low tests}) = 6989$ deaths

Efficiency of Testing



Testing Efficiency

- P-value = 0.03
- Tests per case < or > 500
- $\mu(\text{High tests}) = 819$ deaths
- $\mu(\text{Low tests}) = 6989$ deaths



A blurred background image of a financial chart. It features a line graph with several data points connected by lines, and a bar chart with vertical bars of varying heights. The colors are primarily orange, yellow, and dark blue. Some numbers are visible on the chart, such as '183.102' and '245.5'.

Fact or Fake ?

A wealthy country is more likely to handle the crisis better

Wealth vs Covid

- GDP is correlated to the number of hospital beds per thousands : 0.34
- Wealth = Better Healthcare ?
- Results of the statistical test :
 - $\mu(\text{GDP} > \text{mean}) = 10256$ deaths
 - $\mu(\text{GDP} < \text{mean}) = 3423$ deaths
 - P-value = 0.26
- Other causations ? (Movements, travel...)

Wealth vs Covid

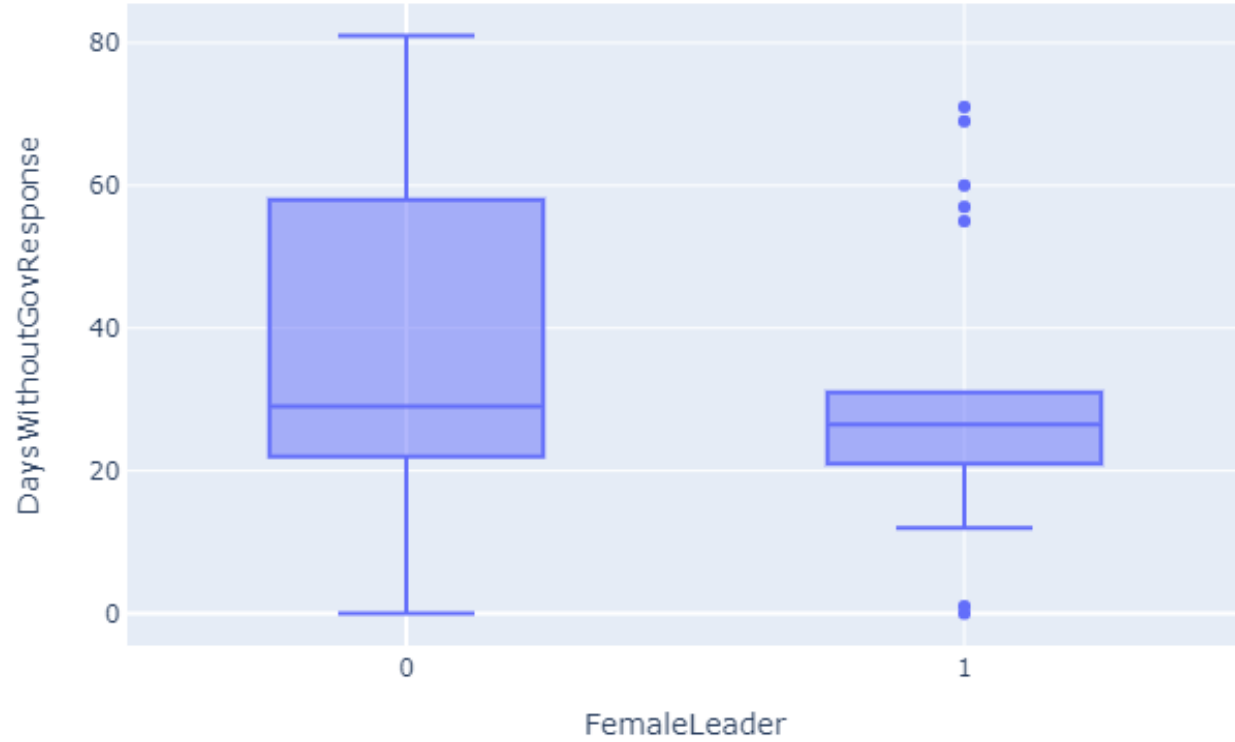
- GDP is related to the number of deaths per 100,000 : 0.34
- Wealthier countries have fewer deaths
- Result of the statistical test
 - $\mu(\text{GDP} > \text{mean}) = 10256$ deaths
 - $\mu(\text{GDP} < \text{mean}) = 3423$ deaths
 - P-value = 0.26
- Other causations ? (Movements, travel...)

FAKE!

The background is a dark, blurred image featuring various financial data visualizations. There are several line graphs with white and orange markers, and some bar charts with orange bars. Faint numbers like '183.102' and '245.5' are visible on the charts. The overall aesthetic is modern and professional, suggesting a business or financial context.

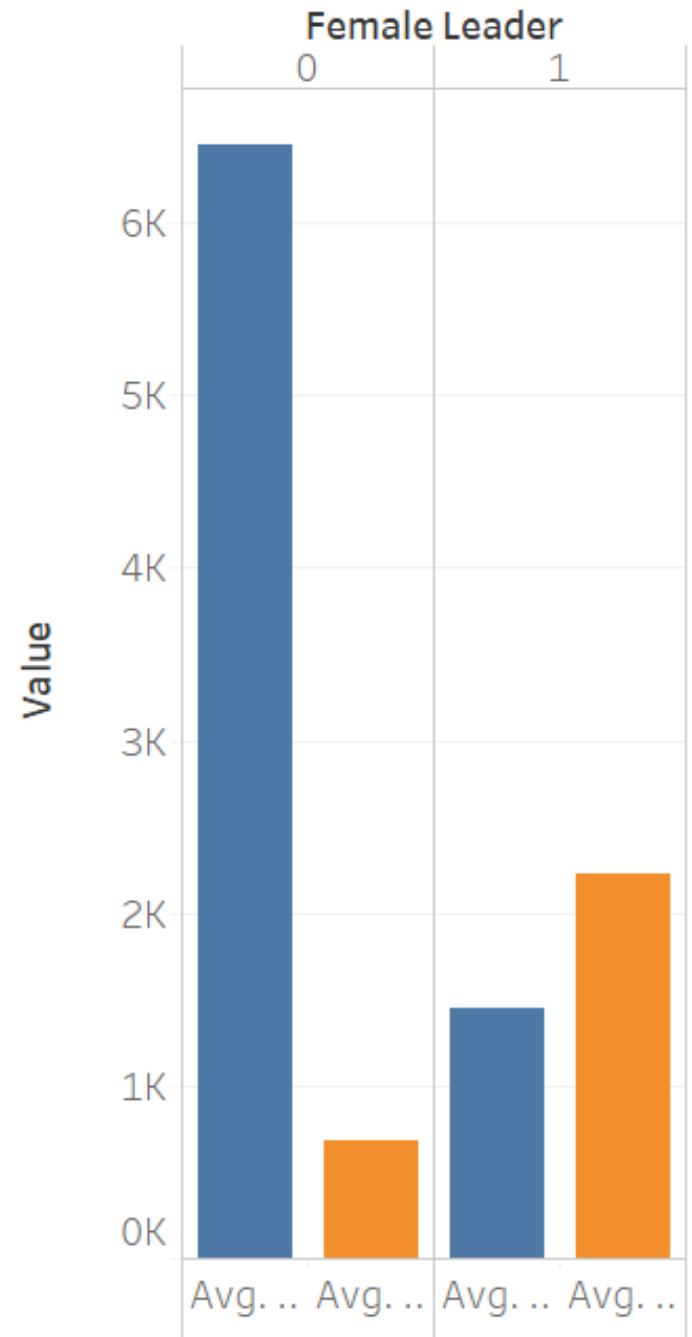
Fact or Fake ?

Female Leaders handle better the crisis

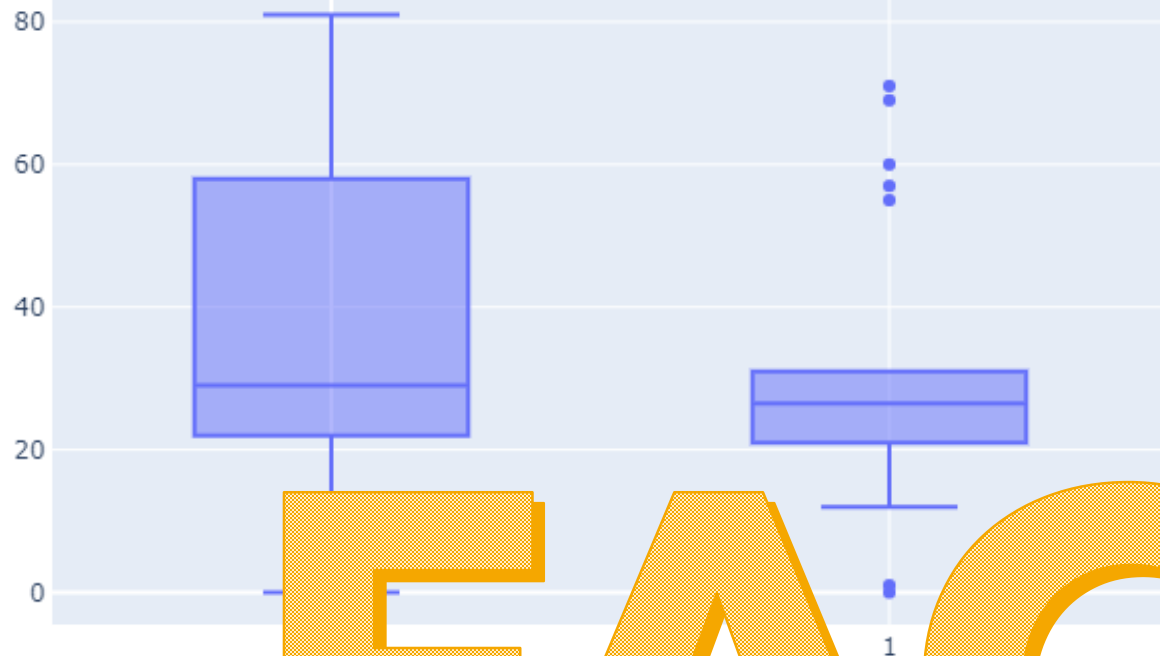


Better
response by
women
leaders

- 22 country have a woman as HOG
- Same size t-test : p-value = 0.02
- $\mu(W) = 1450$ deaths
- $\mu(M) = 6450$ deaths
- Quicker response
- More testing



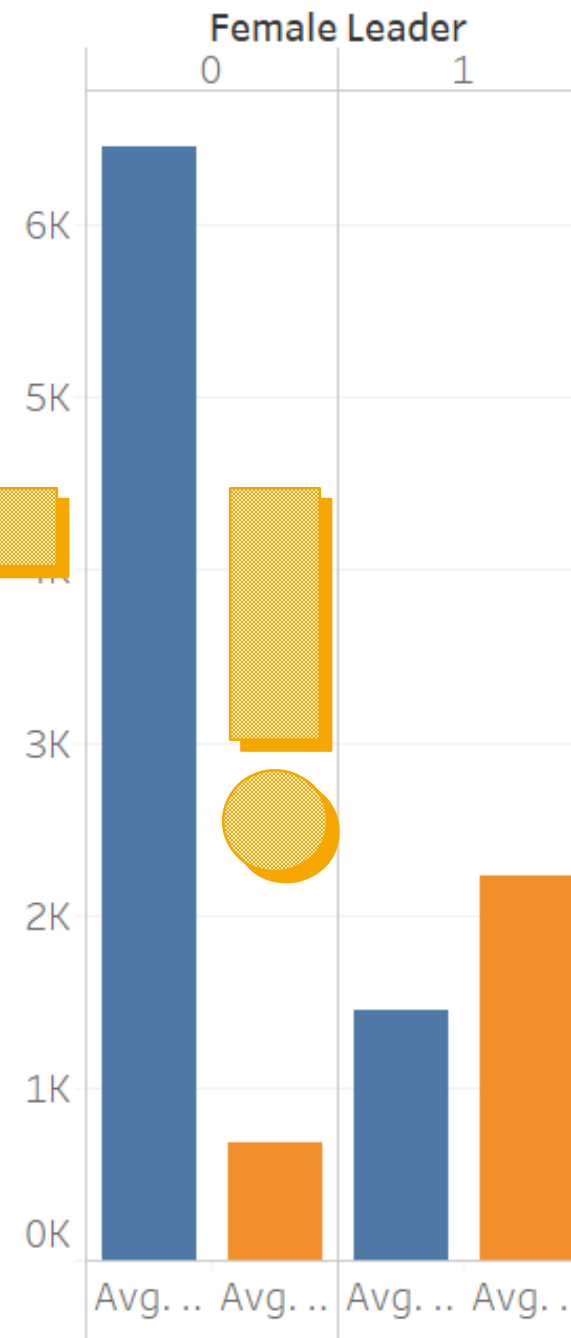
DaysWithoutGovResponse



FACT

Better
response by
women
leaders

- Country have female leader
- Same size t-test : p-value = 0.02
- $\mu(W) = 1450$ deaths
- $\mu(M) = 6450$ deaths
- Quicker response
- More testing





Conclusion

- Factors for a better political response :
 - Fast
 - Long term rather than stringent
 - Restrict International Movements
 - High number of tests performed

Thank you !

Q/A ?

