

# Influences and Effects of COVID-19 Response



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This analysis set out to answer two main questions: which policies appear to have the largest influence on COVID-19 infection rates, and might the general happiness of countries before the pandemic have influenced their governmental responses to the pandemic? Due to the ongoing nature of the pandemic, no existing tools for investigating these relationships could be found.

## DATA

This analysis utilizes COVID-19 policy data from Oxford University<sup>1</sup>, infection data from Our World In Data<sup>2</sup>, and the World Happiness Report<sup>3</sup>.

The Oxford Government Response Index summarizes governmental actions to generate an overall efficacy score. The overall happiness score goes from 0 to 10 and is built using wellness-related variables.

In order to make the used databases comparable, a shift of 15 days was conducted on the cases data. Thereby, it is possible to visualize the repercussion of the policy actions in terms of the number of cases after one incubation period (Figures 1 and 2).

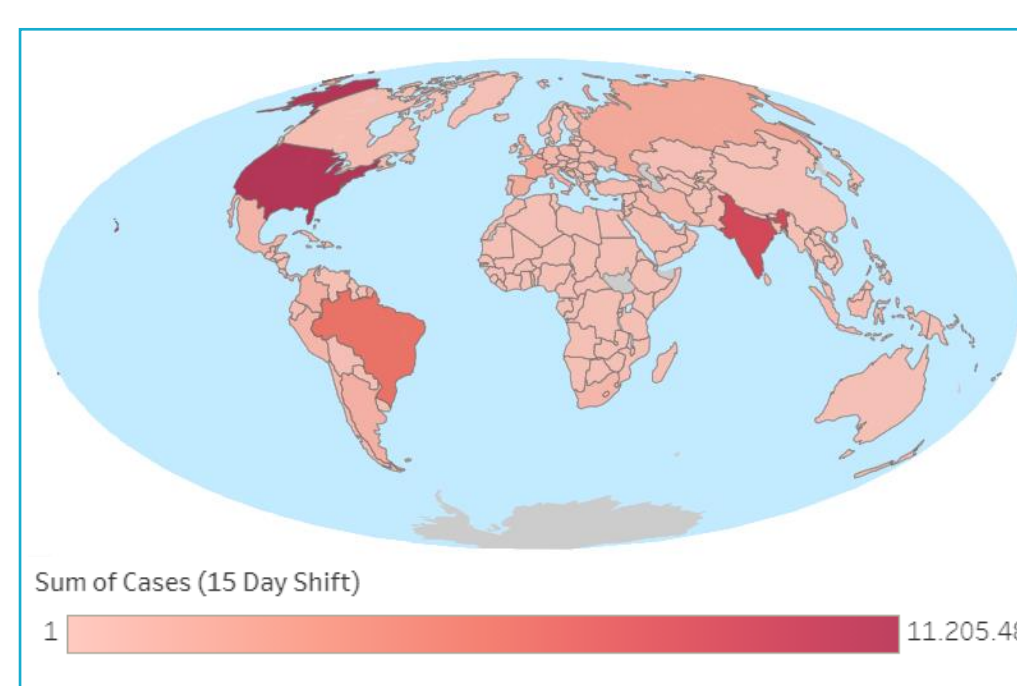


Figure 1: Total cases of COVID-19 at a global scale.

## COVID-19 POLICIES

One output of this analysis is the ability to visually compare various COVID-19 response policies with the new cases per million that occurred 15 days after the policy was enacted. Hence, any relationships between policy and case data can be compared at the same point on the graph (Figure 2).

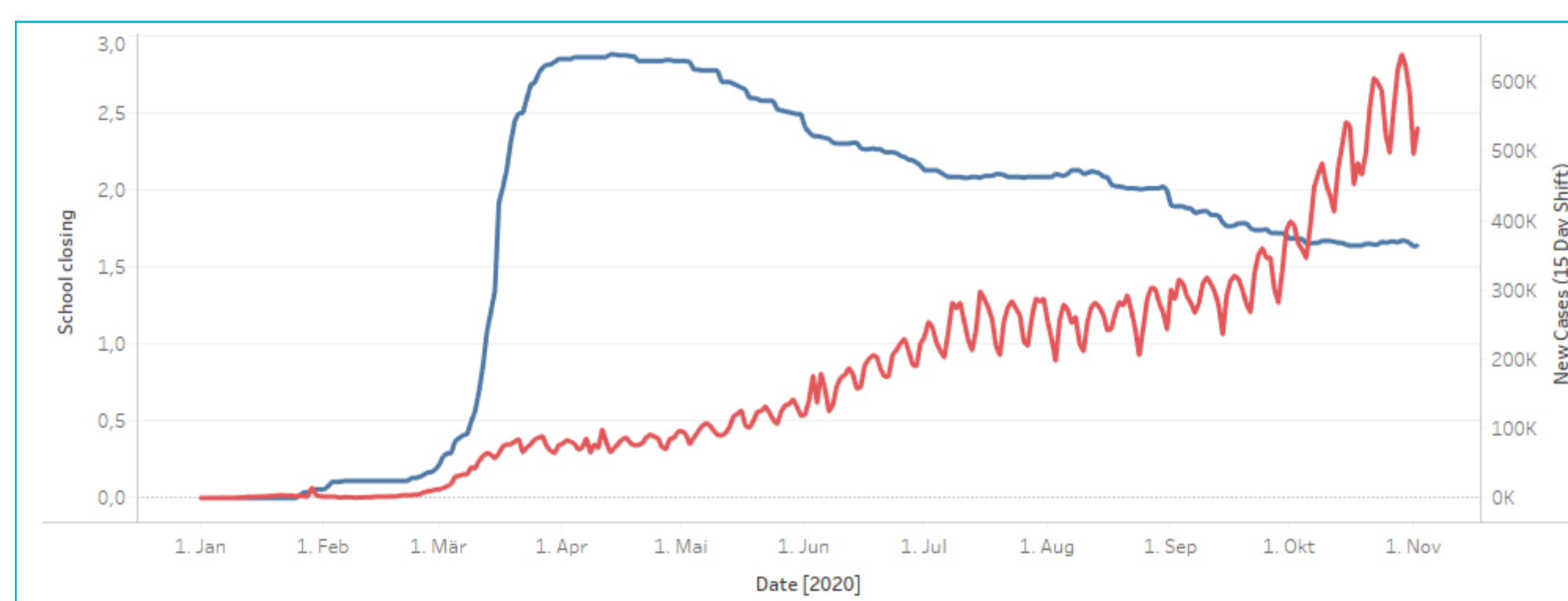


Figure 2: The decision to close schools globally (blue) plotted against new COVID-19 cases per day per million people (red).

## FOCUS COUNTRIES

An initial analysis revealed no global correlation between the Government Response Index and new COVID-19 cases per million. This indicates that the current COVID-19 pandemic presents in different ways depending on locations and should be analyzed at the country level or smaller.

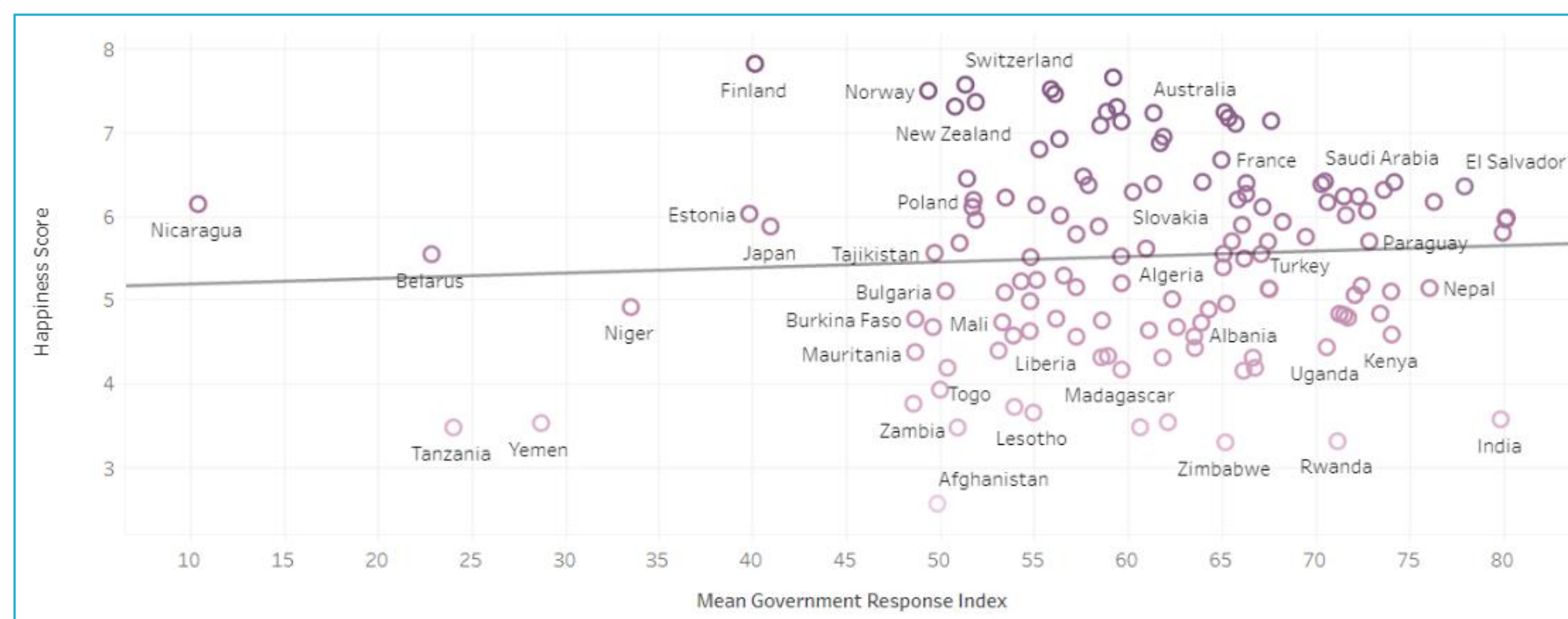


Figure 3 (above): Countries' overall happiness scores plotted against government response.

Correlation matrices (Figure 4) were generated for each country showing the correlation coefficients between the presence of various restriction types and time-shifted infection data for 14 countries of interest.

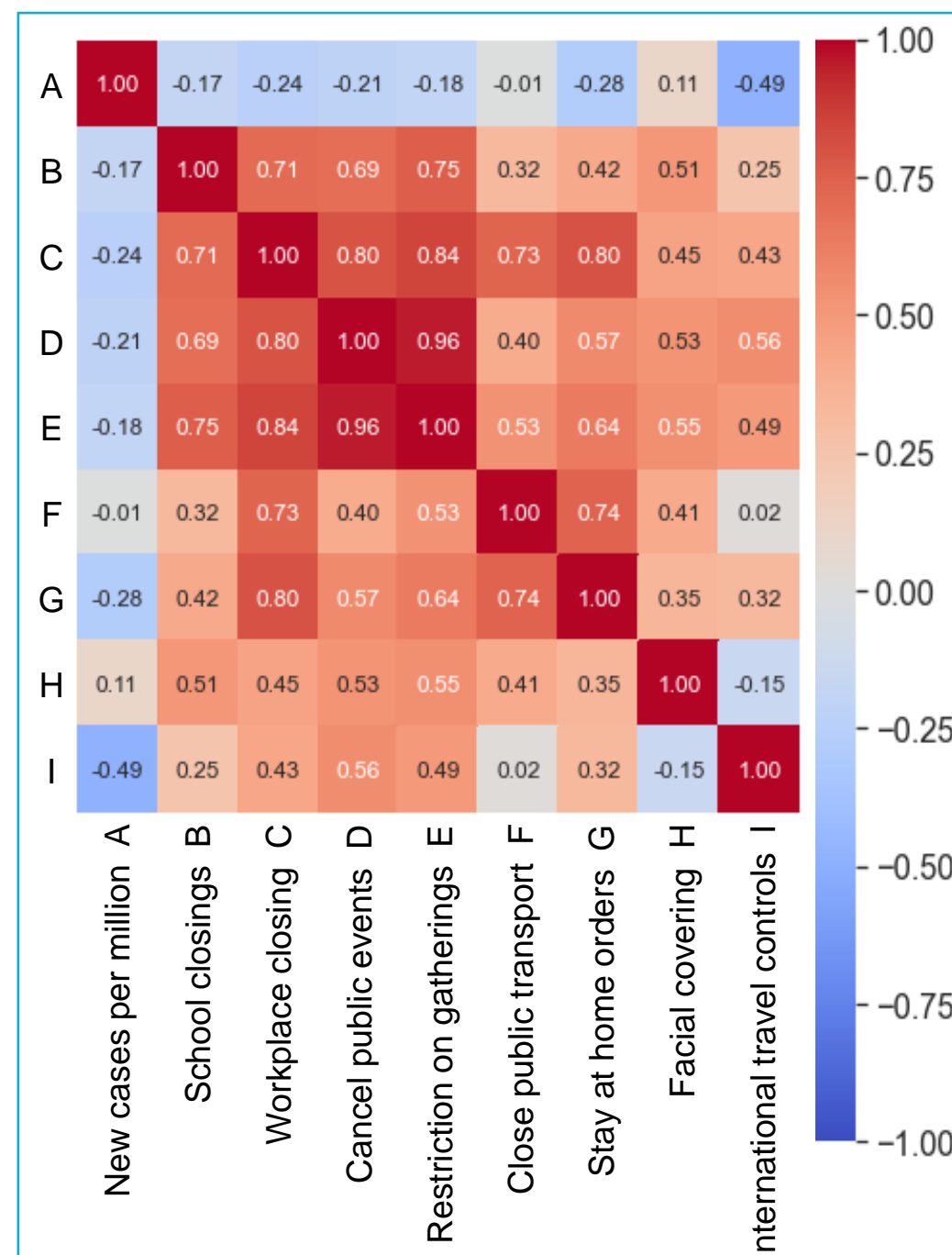


Figure 4 (left): China's correlation matrix showing policies and corresponding fluctuations in case numbers.

## HAPPINESS AND GOVERNMENT RESPONSE

COVID-19 has undoubtedly affected happiness levels around the world. This tool allows the two metrics of happiness (Overall Happiness and Freedom to Make Life Choices) to be compared with Oxford University's Government Response Index (Figure 3).

## CONCLUSIONS

The results of this analysis were visualized in a dashboard which is so far also the first visualization of COVID-19 policies to date. While it should be acknowledged that the COVID-19 pandemic is multifaceted and cannot be explained through any one correlation, this research is a crucial first step to understanding the efficacy of various governmental responses to the virus.

## IMPRINT

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## KEYWORDS

COVID-19, Government Policy, Happiness

## LINK

[tiny.cc/covid-response](https://tiny.cc/covid-response)



## REFERENCES

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