

A 'TRUST-VACCINE' TO FIGHT THE VIRUS?

Bram Verschuere, Francesco Nicoli, Ellen Wayenberg & Bishoy Zaki¹

To lock down or not to lock down?

At the beginning of the COVID-19-pandemic, by necessity, the prime focus of policymakers was on suppressing or containing the viral spread, and in doing so: keeping virus-related mortality low and preserving the healthcare system's capacity from being overwhelmed. In many cases, this was done through containment measures such as lockdowns, school closures, cancellation of events, etcetera. However, those measures come at a price, namely a tremendous toll on the economy, social life, the individual and collective well-being of the population. Subsequently and with the passing of time such strict measures are gradually becoming more criticized for their perceived (assumed or real) detrimental effects on an array of socio-economic domains.

If we look at different European countries, we see a variation of policy responses to the virus: some countries have been quick to implement very stringent containment measures, whereas others reacted relatively slower, or less strict. Figure 1 below views the differences in containment measures, as measured by the Oxford Stringency Index (for six countries)². The blue line shows the stringency of policy responses on a weekly basis over the course of 27 weeks since the beginning of the pandemic. In the upper left corner there is Sweden, a country that reacted relatively later than others with low stringency scores. Other countries, like e.g. France (bottom middle), have reacted relatively sooner with more stringent policies.

The observation that different countries react differently with different policy measures, and the increasing societal demand for a more balanced policy response accounting for not only public health, but also the economy or social life into account, raises an interesting question: *to what extent are stringent containment measures, really effective in achieving their ultimate goal: avoiding COVID-19-mortality?* Or formulated a bit more straightforward: *is it all worth it?*

Variation in excess mortality ...

An important indicator on which countries have different scores, is COVID-19 mortality. There is a debate on how to reliably compare countries on COVID-19-mortality. We think that looking at excess mortality – this is, contrasting the number of people deceased in a given week to a historical trend line – is the most reliable indicator to compare between countries to date. This indicator is provided, on a weekly basis, by EuroMOMO³. In figure 1 below, the red line represents mortality in 6 countries, over the same 27 weeks since the beginning of the pandemic.

¹ Department of Public Governance and Management, Ghent University.

² <https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker>

³ <https://www.euromomo.eu/graphs-and-maps>

TRUST IN GOVT HIGHER

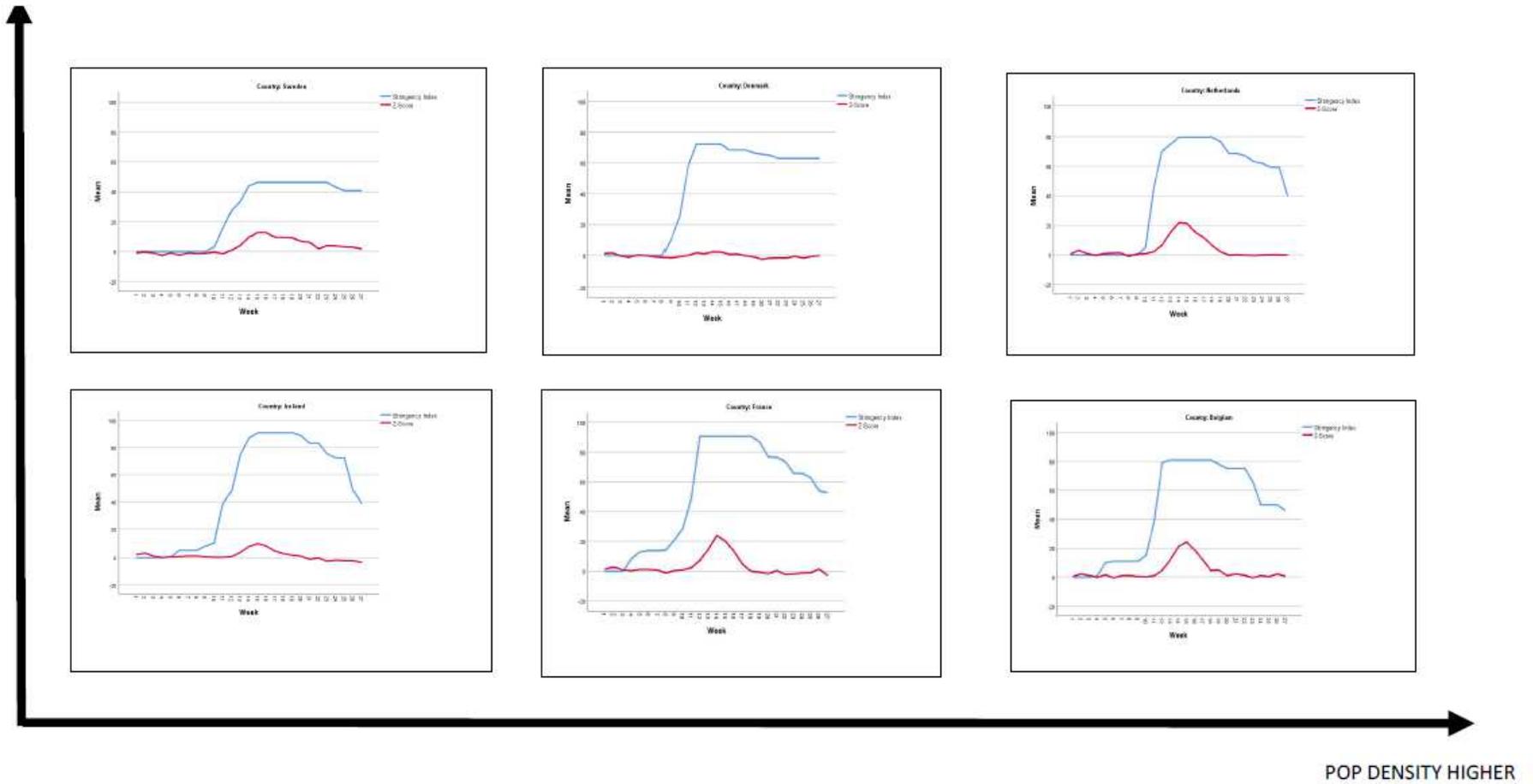


Figure 1

The differences are clear: countries like Belgium, France and the Netherlands have clear spikes in mortality at certain periods within the time range, suggesting that COVID-19 might be the culprit (given the absence of other notable confounding influences during this period). Other countries have relatively smaller spikes (e.g. Ireland) implying that COVID-19 did not lead to significant excess mortality, while a country like Denmark for example does not show notable spikes.

Population density matters ...

It is in the nature of viruses like COVID-19 that when populations are more densely packed, the likeliness of viral spread is higher. Therefore, attempts to explain why some countries or regions are hit more than others must take population density into account. The plausibility of a relationship also becomes clear from figure 1: countries on the left side with lower population density (Ireland, Sweden) have smaller spikes compared to countries that are densely populated (on the right side of the figure: Belgium and Netherlands). This is an observation that is confirmed when we look within countries as well: more densely populated regions seem to be hit (much) harder than less populated regions (e.g. New York City in the USA, or Antwerp and Brussels in Belgium, or London in the UK, ...).

But what about the relation between policy and mortality?

Coming back to our question: are containment measures effective to decrease the virus-related mortality? The answer to this question cannot be extracted from the above figure but requires a more in-depth analysis. Hence, we performed a more sophisticated analysis to try and reach an answer⁴. We collected data for 18 European countries/regions over the time frame of 27 weeks since the beginning of the pandemic: a weekly score for the stringency of the containment measures in that country/region, and a weekly score of the so-called 'excess mortality' in that country/region. We also collected data on population density, the capacity of the health care system and the levels of trust people have in their government or public administration. These are important so-called 'control variables', because the extent to which a virus spreads and leads to mortality can of course be also dependent on such factors. Next to that, if we are to discover to what extent governmental policies (such as imposing containment measures) do really affect the mortality levels, we also need to consider the extent to which people 'accept' such stringent measures. Therefore, we also include 'trust' in our analysis.

Stringent containment measures do help decreasing the COVID-19-related fatalities ...

All other things being equal, stringent measures help in reducing the number of COVID-19-related fatalities. The effect of the measures becomes visible, not surprisingly, after a certain period of time, more precisely 4 weeks. In other words: when stringent containment measures are implemented, their effect on the mortality becomes visible after 4 weeks. Also, not surprisingly as well, stringent containment measures are more effective in densely populated countries/regions. This suggests that

⁴ For more and detailed information on this research and the methodology, please contact one of the authors (<https://www.ugent.be/eb/publiek-management/en>)

countries or regions with low levels of population density will reap fewer benefits from very stringent and strict containment measures as illustrated in figure 2 below.

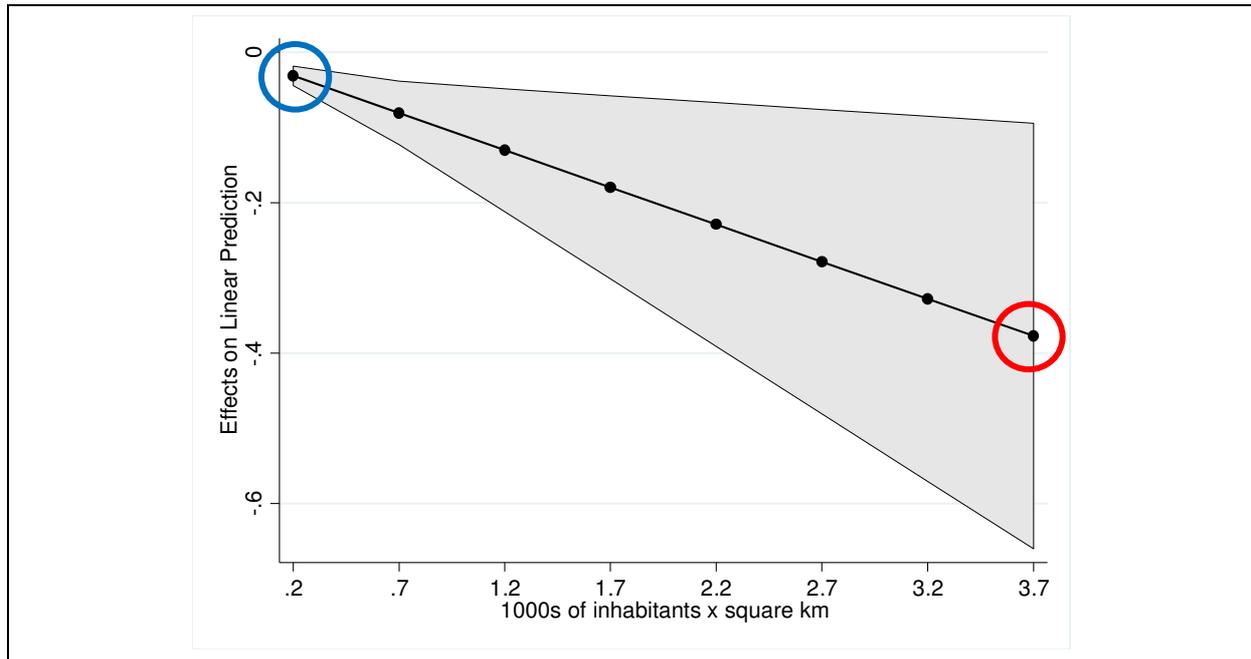


Figure 2

On the Y-axis is the effect of containment measures on mortality. A negative score suggests that the more stringent the containment measures are, the lower the excess mortality is. The X-axis presents the population density. The main message here relates to the downward slope in the figure, suggesting that the larger the population density is, the larger the effect of containment measures. Take the position with a blue circle: very low population density (200 inhabitants/km²), effect of containment measures on mortality becomes close to zero. Then take the position with the red circle: very dense population (3700 inhabitants/km²), effect of containment measures on mortality becomes negative (-.4).

In a society where people trust their government, stringent measures are perhaps less necessary

An interesting finding that comes from our analyses is that there might be a substitution effect between stringent containment measures and societal trust. In countries/regions with high societal trust, COVID-mortality is lower. An explanation may be that citizens in high trust societies are more likely to respect non-compulsory guidance from their governments. Conversely, low-trust societies may need lockdowns. In other words, there is a degree of replacement rate between trust and stringent containment measures. Soft containment measures seem to work relatively better in societies where trust in government / public administration is higher. Conversely, very strict containment measures are effective (perhaps necessary?) in societies with lower trust levels. So 'locking down' as well as 'not locking down' both turn out to be feasible containment strategies for the COVID-19 pandemic, although this depends on the trust that citizens have in their government/public administration as figure 3 below illustrates.

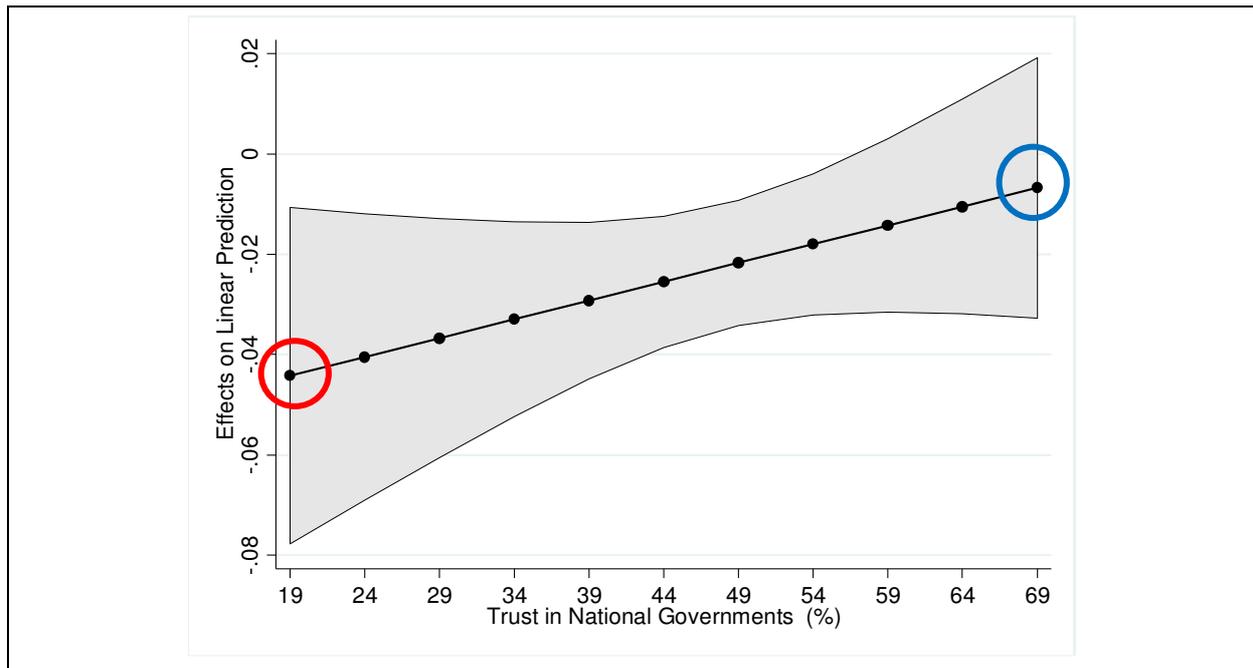


Figure 3

The Y-axis is the same as in figure 2. The X-axis represents the trust levels in the national government. The main message here relates to the upward slope in the figure, suggesting that the larger the trust in government is, the smaller the effect of containment measures. Take the position with a blue circle: large trust in government, effect of containment measures on mortality close to zero. Then take the position with the red circle: small trust in government, effect of containment measures on mortality becomes negative.

A trade-off between 'health' and 'economy'?

Are containment measures helpful in reducing the number of COVID-19-related fatalities? The answer is yes. Are very stringent measures necessary in all cases? No. We found that the effect of stringent measures on mortality is lower in societies with (a) low population density and (b) high levels of trust in government and public administration. Hence, the side effects of a pandemic on many socio-economic domains - because stringent containment measures are installed to preserve public health - may be less severe when societal trust in government and public administration is high. This is a surprising finding that invites policymakers to make societal trust in the public sector a prime concern. As our research shows, 'trust' is not only an abstract and perhaps normative concept that needs to be achieved for reasons of democratic quality. But it is also a concept with very practical implications that may determine the life of every single one of us: in high-trust societies, policies that severely complicate our life in many ways (by necessity in case of crises like these) may be less necessary or softer, compared to what is needed in low-trust societies. In sum: a 'trust-vaccine' is worth investing in for governments.