

Pandemic restrictions don't hamper innovation, evidence from the 1918 flu shows

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Researchers are still learning from the last century's worst global health emergency for clues about the outcomes of the most recent one.

As lockdowns descended on regions all over the world to limit the spread of COVID-19 in spring 2020, economist Ruben Gaetani and his co-authors were curious about whether there was any validity to concerns that strict rules on social gathering would put a crimp on local innovation. They used their enforced physical isolation to pull data from the 1918 flu pandemic, comparing patenting records to information about public health restrictions in 50 large U.S. cities.

"We expected to observe that longer restrictions would lead to lower inventions rates," said Prof. Gaetani of the University of Toronto's Rotman School of Management and University of Toronto Mississauga. "After digging in our data, we found evidence that was opposite to that."

Of the 50 cities studied, 17 experienced longer-than-average restrictions—such as bans on public gatherings and [school closures](#)—that totalled more than 90 days over the 1918 flu pandemic's multiple waves. But patenting rates for those cities were generally six to nine percent higher than rates for cities with shorter restrictions. The numbers were even higher looking specifically at what happened once the flu pandemic was over—seven to 12 percent greater in the aftermath.

How did this happen? The researchers reasoned that cities where restrictions were in force longer created certainty, preserving an important ingredient in the innovation process, which requires an investment of time, resources, and knowledge acquisition.

"Uncertainty makes people less willing to carry out this investment because it makes returns less predictable," said Prof. Gaetani. "Longer restrictions favored a coordinated and resolute response to the pandemic which anchored expectations and reduced uncertainty."

There were differences of course between the two public health events. The 1918 flu was shorter and more intense, its main waves running

between the spring of 1918 until April 1919 with the fall's second wave being the most severe and the period when public health restrictions were imposed.

The COVID-19 pandemic, lasting more than three years, had much longer-running and more extensive restrictions. Innovators however would have had the advantage of virtual communication technologies that would have allowed them to continue collaborating with other people.

Those differences make it hard to say how much the findings might predict innovation behavior during COVID-19 or whether longer social restrictions are ultimately better for business in such an emergency than shorter ones.

Still, "our findings suggest that there are other channels beyond the restrictions to local interactions that should be taken into account," when looking at a public [health](#) emergency's impact on the innovation process and the economy, said Prof. Gaetani.

The research was co-authored with Enrico Berkes of the University of Maryland—Baltimore County, Olivier Deschenes of UC Santa Barbara, and Jeffrey Lin and Christopher Severen, both of the Federal Reserve Bank of Philadelphia.

More information: Enrico Berkes et al, Lockdowns and Innovation: Evidence from the 1918 Flu Pandemic, *The Review of Economics and Statistics* (2023). [DOI: 10.1162/rest_a_01289](https://doi.org/10.1162/rest_a_01289)

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