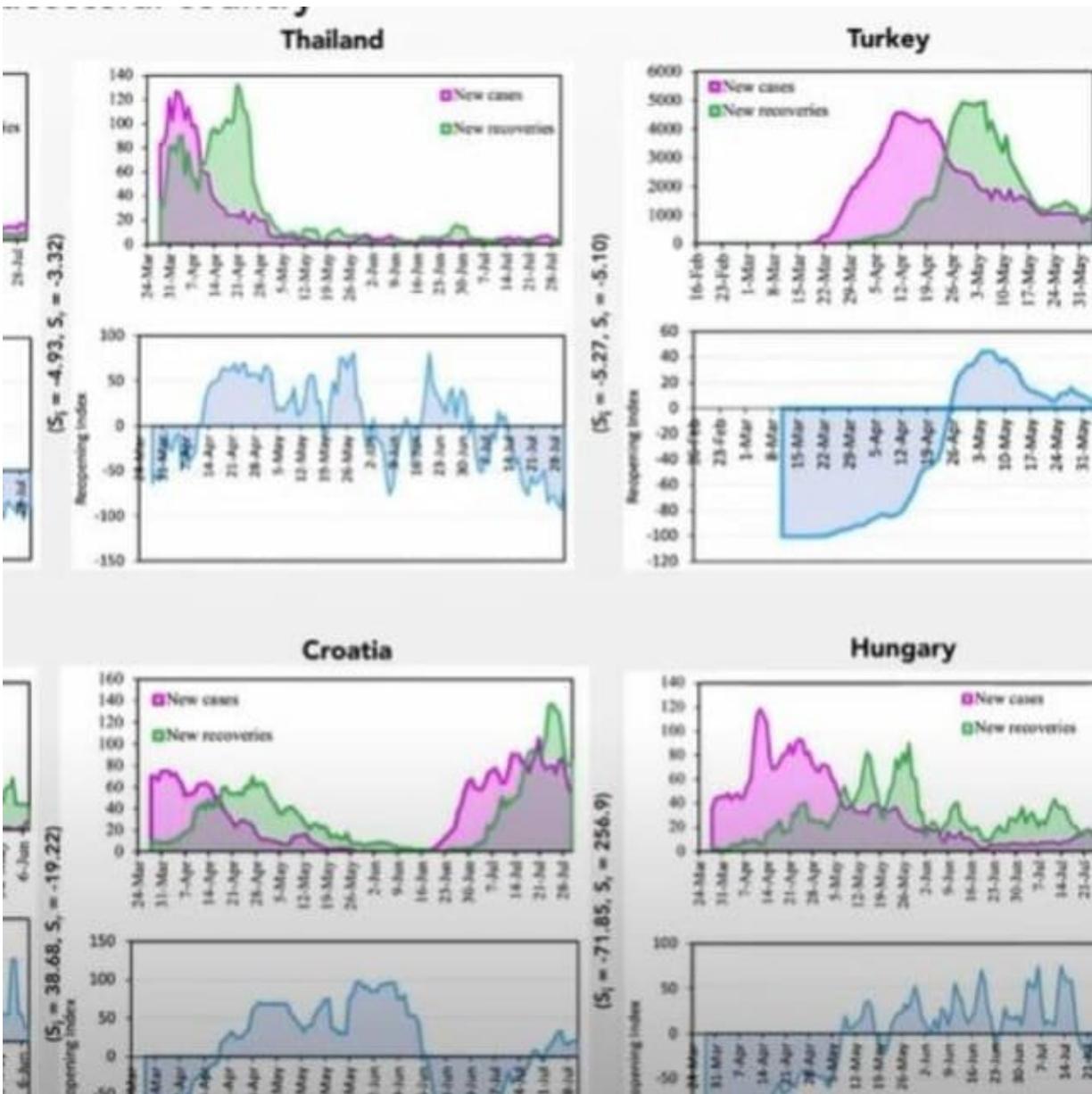


New data-driven index could help countries reopen successfully during the pandemic

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The team's Large Scale Reopening index graph for low and middle income countries that they found reopened successfully. Credit: Florida International University

When is it safe to reopen countries amidst pandemic lockdowns? It's a big question in the age of coronavirus—and one looming large on many minds across the globe. People need an open economy—and jobs—to put food on the table. But they also need safety and health to survive.

For months, countries have been grappling with this question. To make matters more complicated, public health recommendations are not easily available on this topic, says Nasar Ahmed, professor and founding chair of the Department of Epidemiology and Biostatistics, part of the Robert Stempel College of Public Health & Social Work.

While recommendations are available about how to reopen, there isn't much information on when to reopen.

"There are no published models or directives to inform policy about when to reopen schools, tourism, entertainment and other sectors," Ahmed explains.

To help fill this need, a group of experts and researchers—made up primarily of FIU professors, students and alumni—developed a data-driven tool to assist countries in making decisions about when to reopen.

The project began on a Zoom group meeting with Abu Shonchoy, an assistant professor of economics in the Steven J. Green School of International & Public Affairs. When the pandemic hit, Shonchoy was looking for a way to help scientists and colleagues on the frontlines of the pandemic.

Then, he heard about countries going on lockdowns or enforcing closures as part of safety precautions.

"I was thinking in the back of my mind as an economist If you're shutting down the economy, when are you going to open it? In some countries, many people are living hand-to-mouth, so many people could die of hunger. It's a balancing act between saving lives and livelihoods," he says.

The project was born. Shonchoy began recruiting a team of colleagues to share their expertise.

The interdisciplinary team includes Ahmed, one of the senior researchers working on the project; Shonchoy; FIU alumnus Sajedul Talukder, currently an assistant professor of computer science at Edinboro University; FIU Ph.D. candidate in epidemiology Abir Rahman; FIU computer science student Farzana Yusuf; and Khandker S. Ishtiaq, a research faculty member of environmental engineering at FIU.

The team also established a cross-Atlantic collaboration with Cambridge-Oxford group leader Dr. Rajiv Chowdhury, associate professor of global health at Cambridge, who led a separate study and helped develop a model that addressed occasional reopening and closing based on detailed hospital information and other intensive health resource data.

The group studied trends in countries worldwide that seemed to reopen successfully, collected and analyzed data and created a model incorporating public health and economic considerations that resulted in the Large Scale Reopening (LSR) index.

LSR index

The LSR index provides guidance for the reopening of any country or

area—and is particularly valuable for low resource countries.

Countries with strong economies, Ahmed explains, often have centralized health care systems and can usually access information about hospital beds available, ICU statistics and other such data to help determine if the country can handle reopening.

But, he adds, low resource countries often do not have centralized systems or ways to access those data points. That's where the LSR index comes in.

Countries only need to know a few data points to utilize it. That means poverty-stricken regions, developing countries and other low resource countries can find support through this index.

Two crucial data points are necessary: daily COVID-19 infection rate and daily recovery rate. According to the team, when the daily infection rate and the daily recovery rate intersect (when they are both equal), that is a crucial point in the process.

If the infection rate continues to fall, then countries may be able to safely reopen in about three weeks or at least 20 days.

"The LSR index is simple and feasible," Ahmed explains. "It's a flexible tool kit that can be easily adapted for low-middle income countries."

Shonchoy adds that while the index is still a work in progress and subject to change as experts learn more about the coronavirus, it is a first step in the right direction.

"This tool kit will be extremely useful," he says. "Even at the localized level, if someone is looking at locking down a street or zip code area, or for state-level decision-makers, they can use it. It is a data-driven

decision-making process."

The team has already met with enthusiasm from potential index users. Ahmed and Shonchoy recently discussed the index at FIU's virtual Global Health Consortium's conference, and participants from various countries expressed interest in the tool.

To help increase access to the index, the team plans to release a tool kit available online in the coming weeks that would allow public [health](#) officials across the world to plug in their data for free and receive the [index](#)'s response on the spot.

Provided by Florida International University

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