

## Ask NUS Economists

# What's behind the resistance to digital contact tracing apps and vaccination?

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For *The Straits Times*

**Q** *Why do some people balk at adopting digital contact tracing apps and vaccination? Can anything be done about it?*

**A** Modern information technology has offered a seemingly ingenious solution to isolating individuals potentially infected with Covid-19: Since nearly everyone carries a smartphone, have people install an app that identifies, via Bluetooth, the phones of other individuals who they were in close proximity to.

Some versions of these digital

contact tracing (DCT) apps do not require central storage of confidential information. However, they allow infected individuals to push a notification to all their unwitting encounters – in case they test positive – for these people to self-isolate.

Other versions, such as the TraceTogether app used in Singapore, allow the public health authorities to contact the potentially exposed individuals directly.

In either case, widespread use of the app has greatly expanded the ability of public health agencies to ring-fence potential clusters of infections. Epidemiologists calculate that around 60 per cent adoption of the app would be necessary to control the pandemic.

Yet, take-up rates in countries

where adoption is voluntary have been much lower. For instance, in Germany, as in much of Europe, take-up hovers around 30 per cent.

Understanding individuals' resistance to adoption offers further clues on behaviours related to Covid-19, such as the willingness to be vaccinated.

Hesitancy over installing a DCT app is to be expected: The benefits from installing the app accrue to society at large, and individuals may consider only their private benefit when installing it.

Many individuals may actually be willing to install a DCT app if the benefits were made obvious to them. Research has shown that making salient the benefits – both to oneself and to others – of a particular behaviour helps.

So we hypothesised that making local infection rates salient to individuals should also help motivate them to install and use the app.

We designed an experiment to test this in Germany by studying two elements of providing information.

In a control condition, we showed individuals the standard advertising video clip for the German DCT app. But with the other group in the experiment, in addition to the clip, we added information about the seven-day incidence rate – the number of reported Covid-19 cases per 100,000 inhabitants in the individual's county.

We also indicated whether the county was above or below the

corresponding state average (Germany, with a population of 80 million in its 16 states, is divided into 400 counties).

We measured the impact in two experiments – one was a Facebook and Instagram ad campaign among more than one million Germans, and the other a survey among 6,000 respondents.

In the Facebook campaign, we randomly assigned individuals either to the control group or the one that had additional information on the local incidence rate and how that matched up against the state average.

We found that highlighting the local incidence rates significantly raises interest in the contact tracing app, measured by both the views of the video and the number of clicks on the link to the website for downloading the DCT app. The effects were quantitatively large. The views of the clip and the clicks on the link increased by 30 per cent each.

In other words, highlighting the local infection rates uniformly leads to higher interest in the DCT app.

We also found that highlighting the county's rates as being above the state average leads to a powerful increase in both measures of interest for the app by 20 per cent to 50 per cent. Thus, behavioural policy tools prove to be a cost-effective way to achieve policy goals.

On a more troubling note, we also found that interest in the app,

and the effectiveness of providing more information, was lowest in counties with the highest predicted incidence rates. These were urban and dense counties with a comparatively young and poorly educated population.

However, those same groups have the most social contacts. DCT apps would be particularly important in these counties as these groups are at greater risk of infections and more likely to come into contact with more people.

### VACCINATION LINK?

These results foreshadow possible problems in the take-up of vaccines. Much like installing a DCT app, getting vaccinated also has an important public good component, as society at large benefits from its members having immunity.

We found that individuals who had little interest in installing a DCT app were also less likely to take up a vaccine once it is

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available and to engage in social distancing measures.

In our data, resistance against vaccination seems to be highest among the groups that contribute most to infections: 37 per cent of those belonging to the younger age groups (up to age 40) say they are unlikely to get vaccinated.

What this suggests is that governments may need to actively intervene so that more people will be willing to install the DCT apps and get vaccinated. This can be done by adjusting the incentives.

For instance, governments may mandate that a person first needs to be vaccinated before he is able to book airline tickets to travel.

Barring such active interventions, take-up rates for the installation of DCT apps and vaccinations may continue to be too low to offer protection to the community.

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Their opinions do not represent those of the Government or any party that supplied the data.

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