

# Singapore COVID-19 Travel Survey

## Wave 2

22 March 2020

### Informed Consent

Thank you for your interest in participating in our research study! This study is being conducted by the Massachusetts Institute of Technology (MIT) as a follow-up to a survey you took in 2019 that collected information about your travel behavior and preferences among different transportation modes. We are following-up with you to study how your travel behavior changed given large disruptions like the spread of the novel coronavirus (COVID-19). This is part of a study over time and we intend to reach out to you again with a follow-up survey once the outbreak of the novel coronavirus is over.

### Procedure

The study consists of a simple questionnaire survey, which should take about 12 minutes to complete. The survey is best completed on a large-screen device such as a tablet, laptop, or personal computer; some questions may not display properly on mobile phones.

### Risks/Discomforts

Risks are minimal for involvement in this study. However, you may feel emotionally uneasy when asked to pass judgment on certain questions.

### Benefits and Participation

Participation in this research study is completely voluntary. Through your participation, researchers will learn more about how individuals are adapting their activities and travel in response to the ongoing novel coronavirus global epidemic. This knowledge will help inform policymakers in how they might best meet the changing needs of travelers when providing varied transportation services.

At any time during the study, you have the right to withdraw or refuse to participate entirely. If you desire to withdraw, please close your internet browser.

### Confidentiality

This survey does not ask you for any information that can be used to identify you. All data obtained from participants will be kept strictly confidential and will only be reported in an aggregate format (as combined results), never as individual responses. The data collected will be stored in a secure database until it has been deleted by the primary investigator. No one other than the primary investigator listed below and their assistant researchers will have access to the data, unless additional permissions are received.

### Questions about the Research or about your Rights as Research Participants?

If you have questions regarding this study, you may contact Joanna Moody at +1-434-409-5679 / [jcmoody@mit.edu](mailto:jcmoody@mit.edu) or Professor Jinhua Zhao of the Department of Urban Studies and Planning at +1-617-324-7594 / [jinhua@mit.edu](mailto:jinhua@mit.edu). If you have questions you do not feel comfortable asking the researcher listed above, you may contact MIT's Committee on the Use of Humans as Experimental Subjects (COUHES) via email at [couhes@mit.edu](mailto:couhes@mit.edu) or securely through the web at <https://couhes.mit.edu/contact-us>.

I have read and understood the above consent form and desire of my own free will to participate in this study.

- Yes
- No

Are you currently residing in Singapore?

- Yes
- No

[If “No” is selected for either screening question, skip to end of survey]

## Coronavirus Risk Perceptions and Preventative Actions<sup>1</sup>

First, we would like to ask you a few questions about your perceptions of the novel coronavirus (COVID-19) and general actions you are taking to mitigate your risk of infection.

Please indicate your level of agreement with the following statements about the novel coronavirus.

|   | Strongly agree        | Somewhat agree        | Neither agree nor disagree | Somewhat disagree     | Strongly disagree     |
|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| The novel coronavirus presents a serious health risk to me personally   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| The novel coronavirus presents a serious health risk to others.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| I feel that I am personally likely to contract the novel coronavirus  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| I feel that others are likely to contract the novel coronavirus   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| I am confident that appropriate and effective protective actions exist to respond to the novel coronavirus                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| I am confident in my ability to engage in appropriate and effective protective actions in response to the novel coronavirus | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |

<sup>1</sup> Questions modeled after a survey by the SARS Psychosocial Research Consortium.

Brug, Johannes, Arja A. Aro, Anke Oenema, Onno de Zwart, Jan Hendrik Richardus, and George D. Bishop. (2004). SARS risk perception, knowledge, precautions, and information sources, the Netherlands. *Emerging Infectious Diseases*, 10(8): 1486-1489.

Have you taken any of the following actions to limit your risk of being infected by the novel coronavirus?

**Please select all that apply.** [option order randomized; allow multiple responses]

- Made sure to get sufficient sleep
- Wore a mask
- Took an herbal supplement
- Ate a balanced diet
- Avoided large gatherings of people
- Avoided specific types of people
- Washed hands more often
- Used disinfectants
- Was more attentive to cleanliness
- Did not go to work or school
- Avoided shaking hands
- Avoided travel by airplane
- Avoided travel by taxis or ridehailing
- Avoided travel on subways or buses
- Avoided eating in restaurants
- Exercised regularly
- Other (please specify): \_\_\_\_\_

## Current Travel Behavior

Now we would like to ask you a set of questions about your travel behavior in the past month during the outbreak of the novel coronavirus.

**In the past month during the coronavirus outbreak**, how many trips did you take? A trip can include any travel among home, work, school, shopping, food, recreation, healthcare or other social services/facilities, etc.

\_\_\_\_\_ [open entry; numeric]

What percentage of your trips in the past month did you take by each of the following modes? (totals must add up to 100%)

[slider bars 0-100%; constant sum]

- Private/personal car
- Taxi
- Ridehailing: private service (e.g. GrabCar Economy or Premium, Ryde, or GOJEK GOCAR)
- Ridehailing: shared service (e.g. GrabShare or Ryde Carpool)
- Motorcycle or scooter
- MRT/LRT
- Bus
- Bicycle
- Walk

What share of your trips in the past month were made for each of the following purposes? (totals must add up to 100%)

[slider bars 0-100%; constant sum]

- To/from work or school
- Working as a driver (for passengers or package delivery)
- Other work- or school-related business
- Shopping or household errands (including groceries)
- Medical visit
- Accompanying someone (including pick-up or drop-off)
- Dining or refreshment
- Social, recreation, or leisure

**In the past month during the coronavirus outbreak**, how many times have you used order/delivery services for the following items? (If you have not used a service, click on the slider at zero to indicate your answer)

[slider bars 0-20]

- Groceries
- Other household goods
- Medication or prescription
- Food from restaurant

### **Ridehailing/Ridesharing**

Smartphone applications have enabled “ride-hailing” or “mobility-on-demand” services, which allow individuals to input their origin and destination and book a vehicle/driver to serve their trips in real-time. There are many companies that operate these services, which come in two types:

**Private:** where the vehicle is reserved exclusively for yourself (and your guests). Examples of private ridehailing services include GrabCar Economy or Premium, Ryde, or GOJEK GOCAR.

**Shared:** in which you are matched with another rider in the system with an overlapping trip. Examples of shared ridehailing services include GrabShare or Ryde Carpool.

Have you ever worked as a driver for a ridehailing service?

- Yes
- No

Have you ever used these ridehailing services (as a passenger)?

[allow multiple responses]

- No: I have never used a ridehailing service
- Yes: I have used a private (or exclusive) ridehailing service
- Yes: I have used a shared ridehailing service

*If “Yes: I have used a private (or exclusive) ridehailing service” is selected:*

In the past month, how many trips have you made using a private ridehailing service?

[slider bar; 0-30]

If the private ridehailing service had not been available, what percentage of these private ridehailing trips would you have made by the following modes instead?

(responses must add up to 100%) [slider bars 0-100%; constant sum]

- Personal car
- Shared ridehailing service
- Motorcycle
- Taxi
- Public transit (MRT, LRT, and/or bus)
- Nonmotorized transport (walking or biking)
- None; would not have made the trip

What is your overall satisfaction with private ridehailing services? [star rating; 0-5 with half steps]

### Pooled Ridehailing Attitudes

In early February, ridehailing companies stopped providing shared ridehailing services (like GrabShare) as a social distancing measure. Please indicate your level of agreement with the following statements about this action.

|   | Strongly agree        | Somewhat agree        | Neither agree nor disagree | Somewhat disagree     | Strongly disagree     |
|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| Suspending shared ridehailing service was the right thing to do for public health   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| It is a significant inconvenience to me personally that shared ridehailing services are no longer offered.                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| In the past month, I would have used shared ridehailing if the service had been offered   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| Even after the coronavirus outbreak is over, I will be less likely to use shared ridehailing due to concerns about infectious disease | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |

### Public Transit Attitudes

Please indicate your level of agreement with the following statements about public transit service (including MRT/LRT and bus) during the coronavirus outbreak.

|  | Strongly agree        | Somewhat agree        | Neither agree nor disagree | Somewhat disagree     | Strongly disagree     |
|--|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| Maintaining public transit services is important for ensuring access to jobs, healthcare, and other services during the coronavirus outbreak | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| I'm personally concerned about being exposed to the virus while taking public transit due to proximity to others in an enclosed space        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| If I had access to alternative means of transport, I would prefer to use public transit less than I am currently (during the outbreak)       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| I am confident that Singapore's buses and trains are carefully sanitized to reduce public health risks                                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |
| Even after the coronavirus outbreak is over, I will be less likely to use public transit due to concerns about infectious disease            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |

## Change in Travel/Activity

The following set of questions will ask you about how the novel coronavirus (COVID-19) has impacted your travel behavior recently.

Thinking of your travel in the past month during the coronavirus outbreak, how much more or less have you traveled using each of the following modes compared to before the outbreak?

If you did not use a mode before the outbreak and have not used it since, please select “Not applicable”.

|                     | Stopped using completely | Reduced use           | Use about the same    | Increased use         | Not applicable        |
|---------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Private car         | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Motorcycle          | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Bus                 | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| MRT/LRT             | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Walk                | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Bicycle             | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Taxi                | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Private ridehailing | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Shared ridehailing  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Thinking of your travel in the past month during the coronavirus outbreak, how much more or less have you traveled for each of the following purposes compared to before the outbreak?

If you did not travel for a listed trip purpose before or during the outbreak, please select “Not applicable”.

|  | Stopped traveling for this purpose completely | Reduced traveling for this purpose | Travel about the same for this purpose | Increased travel for this purpose | Not applicable        |
|--|---|------------------------------------|--|-----------------------------------|-----------------------|
| To/from work or school                                   | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |
| Working as a driver (for passengers or package delivery) | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |
| Other work- or school-related business                   | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |
| Shopping or household errands (including groceries)      | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |
| Medical visit  | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |
| Accompanying someone (including pick-up or drop-off)     | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |
| Dining or refreshment                                    | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |
| Social, recreation, or leisure                           | <input type="radio"/>                         | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>             | <input type="radio"/> |

In the past month during the coronavirus outbreak, how has your use of delivery services for the following items changed compared to before the outbreak?

If you did not use this type of delivery service either before or during the outbreak, please select “Not applicable”.

|                             | Stopped using completely | Reduced use           | Use about the same    | Increased use         | Not applicable        |
|-----------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Groceries                   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other household goods       | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Medication or prescriptions | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Food from restaurants       | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

## Remote Work/Study

In general (before the coronavirus outbreak), did you have a fixed school and/or workplace?

- Yes: school and/or workplace away from home
- Yes: school and/or work at home
- No fixed school or workplace
- Not currently employed or going to school

*If “Yes: school and/or workplace away from home” or “No fixed school or workplace” is selected:*

Do you have the option/capability for conducting your work/classroom activities remotely?

- Yes
- No

Before the coronavirus outbreak, what percentage of your work/classroom activities did you conduct remotely? Classroom activities do not include homework.

(If your response is 0%, click on the slider to confirm) [slider bar; 0-100%]

In the past month during the coronavirus outbreak, what percentage of your work/classroom activities have you conducted remotely? Classroom activities do not include homework.

(If your response is 0%, click on the slider to confirm) [slider bar; 0-100%]

Once the coronavirus outbreak is resolved, what percentage of your work/classroom activities do you hope to conduct remotely? Classroom activities do not include homework.

(If your response is 0%, click on the slider to confirm) [slider bar; 0-100%]

*If “Yes: school and/or workplace away from home” is selected:*

Have you been required or encouraged to work/study from home by your employer/school?

- Yes, mandatory work/study from home
- Yes, recommended but not mandatory work/study from home
- No

*If “Not currently employed or going to school” is not selected:*

In general, how effectively do you complete your work/school activities remotely compared to when you are in the office/classroom?

- I am much less efficient when conducting activities remotely
- I am less efficient when conducting activities remotely
- I am equally as efficient when conducting activities remotely
- I am more efficient when conducting activities remotely
- I am much more efficient when conducting activities remotely

## Sociodemographics

In this final section of the survey, we ask that you provide us additional information about yourself and your household. For the purposes of this survey, a household refers to a group of two or more persons living together in the same house and sharing common food or other arrangements for essential living. It also includes a person living alone or a person living with others but having his/her own food arrangements. Although persons may be living in the same household, they may not be members of the same household.

As with all other responses, data will be kept completely anonymous and confidential.

How many people are there in your household (including yourself)?

[dropdown menu: 1, 2, 3, 4, 5, 6, 7 or more]

How many working adults are there in your household?

[dropdown menu: 0, 1, 2, 3, 4 or more]

How many kids (ages 10 and younger) are there in your household?

[dropdown menu: 0, 1, 2, 3, 4 or more]

How many individuals over the age of 60 are there in your household?

[dropdown menu: 0, 1, 2, 3, 4 or more]

What is your household monthly income (including employer CPF contributions, if applicable) in Singapore dollars? [dropdown menu]

- |  |                         |
|--|-------------------------|
| • Household currently has no source of earned income | • S\$8,000 - S\$8,999   |
| • Below S\$1,000                                     | • S\$9,000 - S\$9,999   |
| • S\$1,000 - S\$2,499                                | • S\$10,000 - S\$10,999 |
| • S\$2,500 - S\$3,999                                | • S\$11,000 - S\$12,999 |
| • S\$4,000 - S\$4,999                                | • S\$13,000 - S\$14,999 |
| • S\$5,000 - S\$5,999                                | • S\$15,000 - S\$17,499 |
| • S\$6,000 - S\$6,999                                | • S\$17,500 - S\$19,999 |
| • S\$7,000 - S\$7,999                                | • S\$20,000 or more     |



How many of the following vehicles does your household currently lease or own? (If your response is 0 for any of these vehicles, click on the slider to confirm)

[slider bars from 0 to 5]

- Personal car
- Motorcycle or scooter
- Goods vehicle or (mini)bus
- Bicycle

What is the highest level of education you have completed/attained?

- Pre-primary or primary
- Secondary: N & O levels
- Junior college or upper secondary: A level
- Diploma: Polytechnic or other
- University: Bachelor's degree
- University: Master's degree
- University: Doctoral degree or other advanced professional training

Which option best describes your current employment status?

- Employed: full time
- Employed: part time
- Self-employed: full time
- Self-employed: part time
- Contributing family worker (assist in the operation of family business without receiving regular wages)
- Unemployed: looking for work
- Unemployed: unable to work or not looking for work
- Retired
- Student

*If "Employed: full time", "Employed: part time", "Self-employed: full time", or "Self-employed: part time" is selected:*

How are you compensated for your work

- Salaried
- Not salaried (for example, paid hourly or daily wages or by commission)

Which option best describes your area of employment? If you have more than one job, please refer to your main occupation.

- Accommodations and food services (e.g., hotels, restaurants)
- Retail services and sales
- Wholesale retail or trade
- Agriculture and fishery
- Clerical or religious services
- Legislation, senior government office
- Community, social, and personal services (e.g., public administration, civil service, education, social services)

- Professional services (e.g., legal, financial, accounting, engineering, real estate, other)
- Arts, entertainment, or journalistic services (e.g., writer, critic, social media or other content creator)
- Construction
- Manufacturing and production crafts
- Information technology and communication
- Medical or public health practitioner
- Military
- Taxi or ridehail driving
- Package or food delivery
- Transportation and storage (other than professional driver for taxi, ridehail, or delivery)
- Higher education (university) or research
- Other (please specify): \_\_\_\_\_

Thank you very much for taking the time to answer our survey!

After the coronavirus outbreak is over and the Singaporean Ministry of Health DORSCON level has been green for a month or two, we will reach out to you again for a follow-up survey. We hope that you will continue to participate in this panel study, which will help inform policymakers and other stakeholders about how best to respond to the travel and activity needs of residents during and after epidemic outbreaks. We wish you and your families the best of health during these turbulent times.