RSiS S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES
Nanyang Technological University, Singapore

NTS INSIGHT

NTS Insight, no. IN21-04, August 2021

This insight is part of the centre's COVID-19 series, looking at current developments in the global pandemic and its future implications for the social, political and economic spheres in the region.

Perceptions of COVID-19 Mitigation Measures by Singaporean Citizens and Permanent Residents

By **Patrick Daly, Jamie McCaughey, Caroline Brassard, Reuben Ng, Laavanya Kathiravelu, and Benjamin Horton**

During the COVID-19 pandemic the Singapore government instituted a series of mitigation measures to limit local COVID-19 transmission. These mitigation measures, especially during the peak of the official 'Circuit Breaker' period between April and June 2020, helped contain the pandemic but also caused significant social and economic disruptions. Singapore experienced high levels of compliance with these mandatory measures. However, more insight is needed into how residents within Singapore perceived the efficacy and value of these mitigation measures and how they weighted the potential cost-benefits of the burdens of the mitigation measures versus the potential personal and communal health benefits. This NTS Insight presents data from a representative survey on the perceptions of Singaporean citizens and permanent residents on COVID-19 mitigation measures conducted between May and July 2020. Our results show consistently high levels of agreement that the Singapore government was handling the COVID-19 crisis well or very well. We found consistently high levels of support for some mitigation measures and more guarded support for others. These levels of support are in some cases influenced by demographic variables. Our data shows that people believe the government should prioritize public health over economic and other considerations when formulating COVID-19 policy. Our data also shows a high level of willingness to continue some of the main mitigation measures (social distancing, wearing masks, health screening, etc.) for longer as needed, but with some fatigue with home-based learning. Furthermore, we found that respondents put more emphasis on their psychological well-being than their privacy.

Photo credit: Freepik.com

Contents

Recommended citation: Patrick Daly, Caroline Brassard, Jamie McCaughey, Reuben Ng, Laavanya Kathiravelu, and Benjamin Horton, 'Perceptions of COVID-19 Mitigation Measures by Singaporean Citizens and Permanent Residents', NTS Insight, No. IN21-04 (Singapore: RSIS Centre for Non-TraditionalSecurity Studies (NTS Centre), Nanyang Technological University Singapore, 2021).

Introduction

The Singapore government instituted a Circuit Breaker period between April and June 2020 to limit the transmission of COVID-19. This included restricting international travel; closing non-essential businesses; telecommuting; home-based-learning; wearing faces masks in public spaces; temperature screening; rigorous contract tracing; and isolating infected and exposed persons. As discussed in a companion paper, these mitigation measures disrupted everyday life for most of Singapore's residents but were seemingly effective at limiting COVID-19 infections and mortality.

Since the start of the pandemic, there has been extensive global debate about the efficacy of mitigation measures and the factors that influence wide-scale compliance. Epidemiological research has made clear that mitigation measures, such as those used during Singapore's Circuit Breaker, can be effective at reducing COVID-19 outbreaks. Here we use data from a bi-monthly survey of Singaporean citizens and permanent residents during the peak of the Circuit Breaker period between May and July 2020 to evaluate how citizens and permanent residents perceived the government's handling of the pandemic, levels of support for different mitigation measures, and how people viewed the trade-offs between the burdens of the mitigation measures and the perceived value of the mitigation measures. We further assess whether perceptions of the mitigation measures were influenced by demographic variables such as gender, age, income, education, and employment status.

Methods

Researchers from the Earth Observatory of Singapore, Nanyang Technological University, the Lee Kuan Yew School of Public Policy, National University of Singapore and ETH Zurich conducted a survey to monitor the impacts of the Singapore government's COVID-19 mitigation measures during the Circuit Breaker from April through the end of June 2020. The survey was conducted by YouGov every two weeks between 7 May and 16 July 2020. Each wave of the survey consisted of a statistically representative pool of over 1,000 Singapore citizens and permanent residents[1]. All respondents were selected from a voluntary pool of adults by YouGov. This research was approved by the NTU IRB [IRB-2020-05-013]. The data provide an in-depth look at the social and economic impacts of the COVID-19 Circuit Breaker period. All data were analyzed in aggregate, asa time series, and disaggregated by respondent demographic categories such as age, education, income, race, gender, and employment.

1 It is important to note that this survey only included citizens and permanent residents – and did not include guest workers. Therefore, our findings presented here do not reflect the full range of hardships in Singapore, especially amongst the lower-wage migrant worker communities. We are conducted related research to better understand how the circuit breaker have impacted migrant workers and will report on that at a later time.

Perspectives on the COVID-19 Pandemic in Singapore

We asked respondents whether they felt the pandemic in Singapore was getting worse, getting better, completely over, or did not know. The data show that belief that the situation was getting better plateaued out at between 75% and 81% during the middle of the survey period, but then began to drop down over the final two waves of the survey (**Table 1**). During this same period, on average 78% of respondents graded the Singapore government's management of the pandemic as either 'Very Well'or 'Fairly Well', with only 5% on average grading the government's performance as 'Very Badly' (**Table 2**).

We assessed levels of concern that respondents had about themselves and their family/friends becoming unwell because of COVID-19. We found that on average between 50% - 55% of respondents reported being worried about their personal health; between 64% - 70% were worried that their friends or family might get sick; and between 79% - 82% were worried that the pandemic would cause lasting impacts to society (**Tables 3-5**). These levels of concern contrast with the relatively low rates of community infection and COVID-19 death in Singapore during our survey period[2]. The data show limited differences based upon demographic categories, with the most pronounced correlation between race and being concerned about both self and family/friends becoming unwell because of COVID-19. Malay respondents were more likely to report these concerns than respondents of Chinese or Indian ethnicity. (**Table 6 & 7**).

Aggregate Perspectives on Agreement with Circuit Breaker Measures

We asked respondents to state their level of agreement with elderly vulnerable persons staying at home; social distancing; wearing masks; remote work and education; COVID-19 testing; and restrictions on personal mobility (**Figure 1, Table 8**). Our data show that over 80% of respondents agreed that people should practice social distancing and wear face masks while in public. These numbers stayed remarkably consistent across the duration of our survey period. Between 70% and 80% agreed that elderly and vulnerable persons should stay at home as much as possible. At the beginning of the survey period 66% agreed that non-essential workers should work from home, with this number dropping to around 50% by the end of the survey period. At the start of the survey period only 8% agreed that students should be in school, with this number increasing to over 20% by the end of the survey period. Interestingly we found that only about 35% of respondents supported widescale COVID-19 testing. There was generally very strong support for maintaining the Circuit Breaker measures across the entire country. Only between 20% and 25% of respondents agreed that some restrictions should be relaxed within specific geographic areas, whereas only between 10% and 12% agreed that restrictions should be lifted everywhere across the country.

2 We did not ask about personal experiences with COVID-19 as it was not in our mandate to collect data on individual health. However, we reviewed the daily statistics of case totals provided by the Singapore government for the duration of our survey. We found that at the start of our survey on 7 May 2020, there had been a total of 20,918 confirmed COVID-19 cases in Singapore. However, 579 of these cases were imported and caught during the quarantine period upon arrival, and 18,802 of these cases were confined within the dormitories for foreign workers, which were all isolated for containment and treatment by the government. There were 1,536 reported cases of community infection which could have included a combination of citizens, permanent residents, and employment pass holders. By the end of our survey on 16 July there had been a total of 47,098 confirmed cases, with 44,398 confined to the foreign worker dorms, 627 imported, and 2,073 community infections. This represent an infection rate of 0.04% of the population residing outside of the dorms. At the start of our survey a total of 20 people had died from COVID-19 in Singapore, with an additional 7 reported deaths during the survey period.

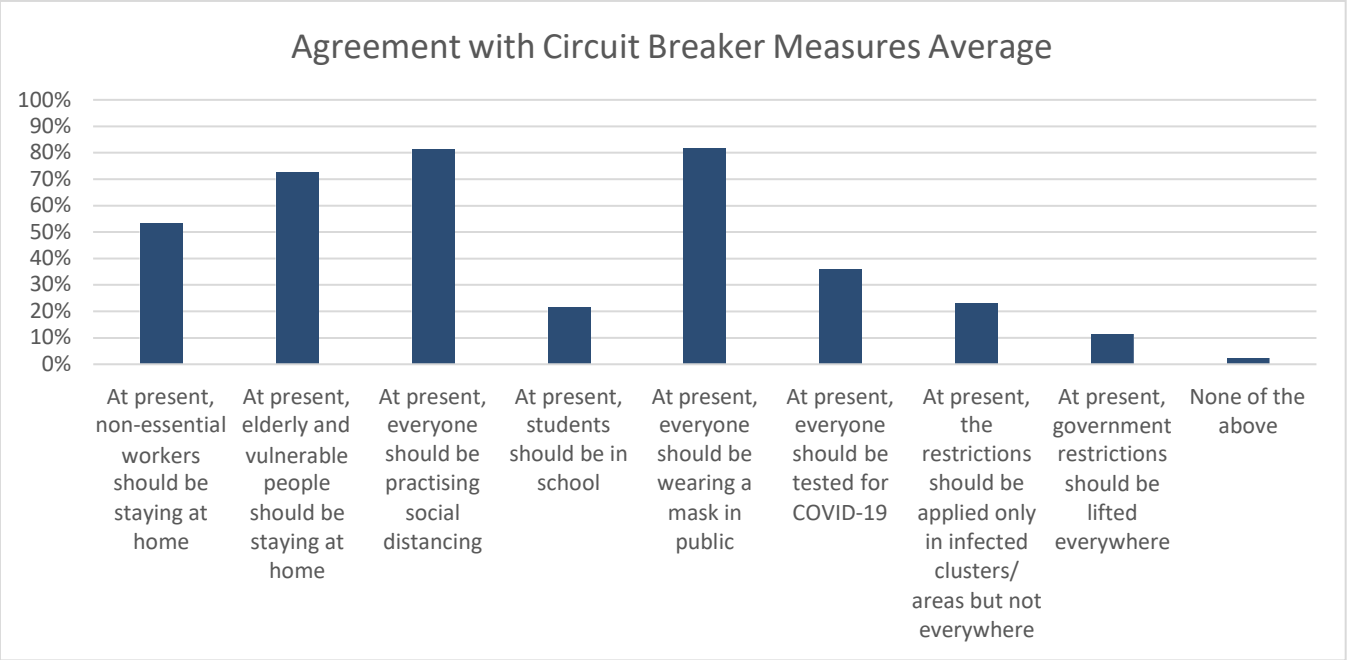

Figure 1. Average totals of agreement with COVID-19 mitigation measures during the Circuit Breaker period.

Our data show surprisingly high levels of willingness to continue some of the main mitigation measures in the future as needed (**Figure 2, Table 9**). There was a very high level of willingness to at least partially continue with mitigation measures such as wearing masks, social distancing, and mandatory health checks. There were also high levels of reported willingness to continue to engage with some of the changes to employment and education through partial home-based learning and at least partial working from home. However, the data suggest that there was some lingering hesitation to fully resume some pre-COVID behaviors, especially spending time in crowded indoor spaces. Respondent responses were largely consistent across the duration of the survey period, suggesting that fatigue with the respective measures was not a major factor in considering future compliance, except with home-based learning.

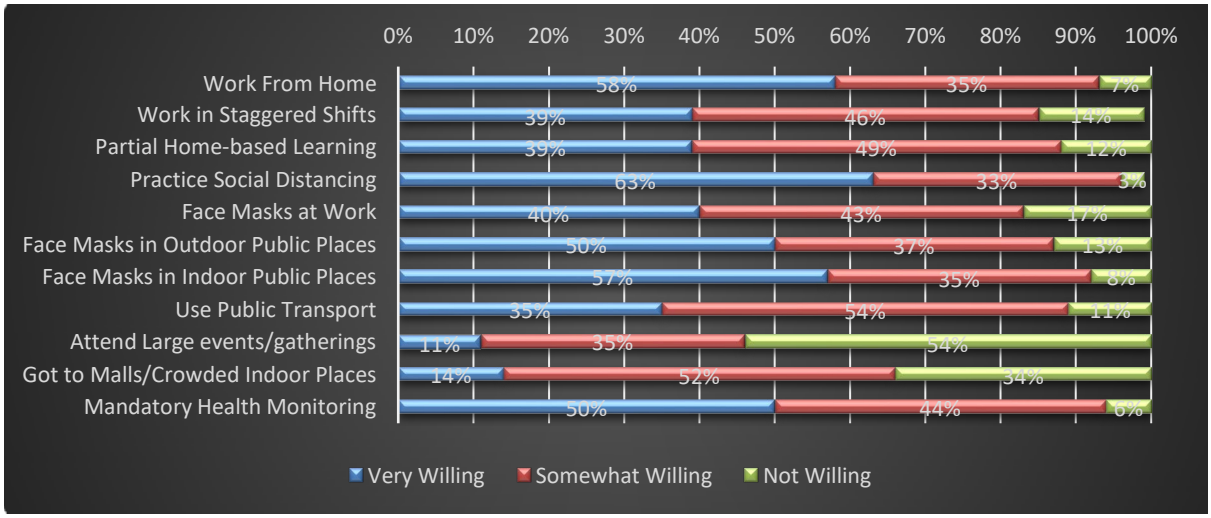

Figure 2: Willingness to continue with mitigation measures after the Circuit Breaker period.

Agreement with Mitigation Measures by Demographic Category

Level of agreement with the mitigation measures was influenced by a number of demographic factors recorded in our survey such as gender, age, race, employment status, family status, and income level.

Agreement with Mitigation Measures by Gender: Our data show significant correlations between gender and agreeing that mitigation measures should be lifted; mandatory COVID testing; wearing face masks; working from home; elderly should stay at home; and social distancing. Some of these differences between female and male perceptions were especially pronounced during first wave of the survey (**Table 10**).

- Women were more likely than men to agree that non-essential workers should work from home; elderly should stay at home; people should practice social distancing; and people should wear masks when out in public.
- During the first wave of the survey, men were more likely than women to agree that the mitigation measures should be lifted. However, by the end of our survey period, both men and women reported similar levels of agreement.
- Initially, women were less likely than men to agree that students should be at school. By the mid-point of the survey period this difference disappeared and over the second half of the survey period women became more likely than men to agree that students should be in school.
- While men generally reported lower levels of agreement with the main protective mitigation measures, men were more likely than women to support wide scale COVID-19 testing of the population.

Agreement with Mitigation Measures by Age: Our data show significant correlations between age and agreeing that people should work from home; people should practice social distancing; students should be in school; and people should wear masks in public. Generally, respondents from older age brackets (45 years old – 54 years old and +55 years old) were more likely to strongly agree with some measures such as social distancing and wearing face masks, but also less likely to agree with people working and studying from home (**Tables 11a-h**).

- Over the duration of the survey period, respondents between 18 years old and 34 years old maintained consistent levels of agreement with the elderly staying home. Respondents over 45 years old registered decreasing agreement that elderly persons should stay at home.
- There were high levels of agreement that everyone should practice social distancing across all age brackets, with this especially pronounced for respondents over 55 years old.
- During the first wave of the survey, less than 10% of respondents felt that students should be in school – with all age brackets sharing a similar level of agreement. Over time, the proportion of respondents who felt that students should be in school increased across all age brackets, but with the most pronounced increase for respondents over 45 years old.
- While there were consistently high levels of support for people to wear masks throughout the survey period, respondents over 55 years old were more likely than other age groups to agree that everyone should wear masks in public. Support dropped slightly for respondents between 25 years old and 34 years old, but generally remained similar across the survey period.
- Over the duration of the survey period, the youngest age bracket [18 years old to 24 years old] expressed lower levels of support for lifting restrictions both in select areas and across the entire country.

Agreement with Mitigation Measures by Race: Our data show some significant correlations between race and practicing social distancing; wearing masks in public; mandatory COVID testing; and that all restrictions should be lifted across the country (**Tables 12a – h**).

- Malay respondents were more likely to agree that restriction should be lifted within specific areas; across the entire country; and that there should be mandatory COVID-19 testing than respondents from the other main ethnic groups.

Agreement with Mitigation Measures by Employment Status: Employment status only had a slight impact on agreement with mitigation measures – with only a few statistically significant differences across employment categories over time. The most pronounced correlation was for wearing masks in public. In general, students and retired respondents consistently registered higher levels of agreement for most mitigation measures than full-time, part-time, and employed respondents but full-time workers were generally less likely to agree with wearing masks in public.

Agreement with Mitigation Measures by Income: Levels of agreement with mitigation measures were generally not consistently significantly related with income level.

Agreement with Mitigation Measures by Education Level: Generally, there were similar levels of agreement on most mitigation measures across education levels, with some statistical correlations between education and wearing mask and lifting restrictions everywhere. Respondents with primary level education were less likely to report supporting most mitigation measures, with this most pronounced for wearing face masks.

Willingness to Continue Mitigation Measures by Demographic Category

Our data show no notable significant correlations between willingness to continue with mitigation measures and employment status; income level; and having at least one child in the household. We found some correlation between some of the features and the other demographic categories. However, most of the difference we observe is between the percentage of respondents who report being ‘very willing’ and ‘somewhat willing’.

Willingness to Continue Mitigation Measures by Gender: Our data show significant correlations between gender and willingness to continue working from home; practicing social distancing; and mandatory health screening.

- Female respondents were more likely to report being ‘very willing’ to continue working from home; practicing social distancing; and agree to mandatory health screening than male respondents

Willingness to Continue Mitigation Measures by Age: Our data show significant correlations between age and willingness to continue working from home; practicing social distancing; and wearing face masks in indoor public spaces.

- Respondents over 45 years old were less likely to agree with working from home.
- Respondents under 35 years old were slightly less likely to agree with practicing social distancing.

- The older the respondent, the more likely to report a willingness to continue wearing face masks in indoor public spaces.

Willingness to Continue Mitigation Measures by Race: Our data show some significant correlations between race and willingness to work staggered shifts; wear face masks; and agree to mandatory health screening. The general pattern is that respondents of Chinese ethnicity were less likely to agree with continuing to wear face masks at work, in public outdoor spaces, and in public indoor places; and to agree to mandatory health monitoring than Malay respondents and respondents of Indian ethnicity.

Willingness to Continue Mitigation Measures by Education Level: Our data show significant correlations between education level and willingness to continue working from home. The higher the education level, the higher the willingness to work from home.

Perception of Trade-Offs between Burdens of Mitigation Measures and COVID-19 Risks

We asked respondents to assess whether they felt that the burdens of the Circuit Breaker measures were greater than their perceived burden of them getting COVID-19, the same as their perceived burden of them getting COVID-19, or less than their perceived burden of them getting COVID-19 (**Table 13**). We found that on average only 18% of respondents felt that the current (at the time of the survey) burdens of the mitigation measures were worse than their perceived burdens of getting COVID-19, whereas 46% felt that the burdens of the mitigation measures were less than the perceived burdensof getting COVID-19, and 36% felt that the burdens of the mitigation measures were about the same as the perceived burdens of getting COVID-19. We found that over the duration of the survey the number of people who felt that potentially contracting COVID-19 was worse than the Circuit Breaker measures slightly declined, while the number of people who felt that the burdens of the Circuit Breaker measures and COVID-19 were the same increased.

Our data show at least some significant correlations between whether respondents felt that the impacts of the mitigation measures were less than, the same, or greater than the potential burdens of contracting COVID-19 and gender; age; and employment status.

- Male respondents were more likely than female respondents to report that they believed that the impacts of the mitigation measures were greater than the potential impact of contracting COVID-19.
- Respondents between the ages of 35 years old and 54 years old were more likely to believe that the mitigation measures were worse than COVID-19 than all other age groups.
- Retired respondents were more likely to feel that the mitigation measures were less burdensome than COVID-19 thanall other groups based upon employment status.
- Higher earners were slightly more likely to see impacts of mitigation measures as less than perceived burdens of contracting COVID-19, than all other groups based upon income.

We asked respondents to state their level of agreement with whether they felt that the disruptions of the mitigation measures on their movement, work, and privacy were worth making to ensure their personal health, the health of their families, and the health of the wider community (**Tables 14 & 16**). We found that on average:

- 78% agreed and only 6% disagreed that the sacrifices to their personal movement were worth making.
- 74% agreed and only 6% disagreed that the sacrifices to their work were worth making.
- 69% agreed and only 9% disagreed that the sacrifices to their privacy were worth making.

Our analysis of levels of agreement by demographic category reveals no notable statistically significant differences in agreement by age, employment status, education level, or race. Our data show some significant correlations with gender and level of household income.

Trade-offs between Mitigation Measures and COVID-19 by Gender: Our data show significant correlations between gender and impacts on movement; work; and privacy (**Tables 17 -19**).

- Female respondents were more likely to report agreement that the negative impacts of the mitigation measures upon movement, work, and privacy were worth making for personal and communal well-being than male respondents.

Trade-offs between Mitigation Measures and COVID-19 by Income Level: Our data show significant correlations between income level and impacts on movement, work, and privacy (**Tables 20 – 22**).

- Respondents with household incomes below $3,000 Singapore dollars per month were less likely to agree that the impacts of the mitigation measures upon their movement, work, and privacy were worth making.

We asked respondents to rank in order of importance which of the following factors should be weighed by policymakers when making decisions about the mitigation measures: health & safety; economics & livelihoods; psychological &social well-being; and privacy & individual liberties. Over 70% of respondents ranked health & safety as their top choice following by economics & livelihoods, psychological well-being, and privacy & individual liberties (**Table 23**). This emphasis on priorities was generally consistent across all demographic categories, with only some minor differences (within 2 – 3%).

Discussion

We found that the vast majority of respondents felt that the Singapore government was doing a good job managing the pandemic during the Circuit Breaker period. There were high levels of agreement for the main mitigation measures used during the Circuit Breaker period – wearing face masks, social distancing, and taking extra measures to product populations with heightened vulnerability to COVID-19. Support for these measures were consistently high, with our data only showing fatigue with working and schooling at home. Additionally, we found high levels of willingness to continue with at least some of the mitigation measures into the future as needed.

Our data suggest that many citizens and permanent residents did not feel that 'the cure was worse than the disease' and accepted the imposition of the mitigation measures for both their own and the wider public good. Our data also show that the vast majority of respondents felt that sacrifices to their personal mobility, working life, and privacy were worth making for a combination of their personal and wider communal well-being. This aligns with our findings that a large percentage of respondents felt that public health and safety should be the top priority driving the implementation of the COVID-19 mitigation measures, followed by economics and livelihoods. People placed much lower emphasis upon psycho-social well-being and very little emphasis upon their privacy and personal liberties.

Acknowledgements

This research was organized by the Hazards, Risk, and Society Research group at the Earth Observatory of Singapore (EOS), a Research Centre of Excellence at Nanyang Technological University, Singapore. EOS's primary mission is to conduct fundamental research on earthquakes, volcanic eruptions, tsunamis and climate change in and around Southeast Asia, toward safer and more sustainable societies. The Hazards, Risk, and Society group conducts field research across Asia on risk, vulnerability, and disaster management and risk reduction. This research is supported by the National Research Foundation Singapore, and the Singapore Ministry of Education under the Research Centres of Excellence initiative. This work comprises Earth Observatory of Singapore contribution no. 389. This research is approved by the NTU IRB board, IRB-2020-05-013-01.

Appendix

Response	7-May-20	21-May-20	4-Jun-20	18-Jun-20	2-Jul-20	16-Jul-20	Average
Getting Worse	31%	11%	13%	8%	20%	32%	17.1%
Getting Better	58%	80%	77%	81%	64%	51%	71.2%
Completely Over	0%	0%	1%	1%	14%	17%	3.6%
Don't Know/None of These	11%	9%	9%	10%	2%	1%	8.2%

Table 1: Respondent perceptions about whether the COVID-19 situation in Singapore was getting better, worse, or staying the same.

	7-May-20	21-May-20	4-Jun-20	18-Jun-20	2-Jul-20	16-Jul-20	Average
Very well	14%	18%	17%	17%	19%	14%	17%
Fairly well	60%	61%	64%	64%	58%	56%	61%
Fairly badly	17%	13%	13%	13%	14%	18%	14%
Very badly	6%	4%	4%	3%	6%	9%	5%
Don't know	3%	3%	2%	2%	3%	3%	2%
Net: TOTAL WELL	74%	80%	81%	81%	77%	70%	78%
Net: TOTAL BADLY	23%	18%	17%	17%	20%	27%	19%

Table 2: Respondent perceptions about how well the Singapore government was managing the COVID-19 pandemic.

	7- May- 20	21-May-20	4-Jun-20	18-Jun-20	Average
Very worried	20%	18%	20%	21%	20%
Fairly worried	36%	34%	35%	38%	36%
Not very worried	29%	29%	29%	26%	28%
Not at all worried	10%	13%	10%	10%	11%
Don't know	4%	4%	4%	3%	4%
Total Very & Fairly Worried	56%	52%	55%	59%	56%
Total Not Very & at all Worried	39%	42%	39%	36%	39%
Not applicable - this doesn't apply to me	2%	2%	2%	2%	2%

Table 3: Respondent concerns that they personally might become unwell because of COVID-19.

	7-May-20	21-May-20	4-Jun-20	18-Jun-20	Average
Very worried	25%	24%	25%	26%	25%
Fairly worried	43%	42%	40%	44%	42%
Not very worried	21%	23%	22%	20%	22%
Not at all worried	5%	5%	7%	5%	6%
Don't know	4%	4%	4%	3%	4%
Not applicable - this doesn't apply to me	1%	3%	2%	3%	2%
Total Very & Fairly Worried	68%	66%	64%	70%	67%
Total Not Very & at all Worried	26%	28%	29%	25%	27%

Table 4: Respondent concerns that their family and friends might become unwell because of COVID-19.

	7-May-20	21-May-20	4-Jun-20	18-Jun-20	Average
Very worried	35%	33%	34%	33%	34%
Fairly worried	45%	47%	46%	47%	47%
Not very worried	11%	13%	12%	12%	12%
Not at all worried	3%	3%	3%	3%	3%
Don't know	4%	3%	4%	3%	4%
Not applicable - this doesn't apply to me	1%	1%	1%	1%	1%
Total Very & Fairly Worried	80%	80%	79%	80%	81%
Total Not Very & at all Worried	14%	16%	16%	15%	15%

Table 5: Respondent concerns that COVID-19 might cause lasting negative impacts on society.

	Very Worried	Fairly Worried	Not Very Worried	Not at all Worried	Total Very & Fairly Worried	Total Not Very and Not Worried	Don't know	Not Applicable
Chinese	17.8%	35.5%	30.8%	10.7%	53.3%	41.5%	2.1%	3.4%
Malay	31.8%	37.3%	17.0%	9.5%	69.1%	26.5%	0.8%	3.5%
Indian	15.5%	34.5%	28.8%	11.5%	50.0%	40.3%	2.4%	7.4%
Other	18.3%	40.0%	19.8%	14.8%	58.3%	34.6%	2.9%	4.3%

Table 6: Respondent concerns averaged over the course of the survey that they might become personally unwell because of COVID-19, by race.

	Very Worried	Fairly Worried	Total Worried	Not Very Worried	Not at all Worried	Total Not Worried	Don't know	Not Applicable
Chinese	21.3%	43.5%	64.8%	24.3%	5.9%	30.2%	1.8%	3.4%
Malay	43.3%	37.8%	81.1%	11.8%	5.0%	16.8%	1.1%	1.1%
Indian	23.3%	40.5%	63.8%	19.3%	4.9%	24.2%	3.5%	8.6%
Other	33.8%	38.3%	72.1%	15.8%	5.1%	20.9%	2.9%	4.1%

Table 7: Respondent concerns averaged over the course of the survey that their family and friends might become personally unwell because of COVID-19, by race.

Agreement to wider circuit breaker restrictions	**7-May-20**	**21-May-20**	**4-Jun-20**	**18-Jun-20**	**2-Jul-20**	**16-Jul-20**	**Average**
At present, non-essential workers should be staying at home	66%	58%	57%	54%	48%	49%	53%
At present, elderly and vulnerable people should be staying at home	79%	77%	75%	72%	71%	69%	73%
At present, everyone should be practicing social distancing	84%	82%	81%	82%	78%	84%	82%
At present, students should be in school	8%	14%	24%	22%	23%	24%	21%
At present, everyone should be wearing a mask in public	84%	82%	82%	82%	79%	82%	82%
At present, everyone should be tested for COVID-19	35%	35%	38%	38%	35%	35%	36%
At present, the restrictions should be applied only in infected clusters/ areas but not everywhere	20%	23%	22%	26%	22%	23%	23%
At present, government restrictions should be lifted everywhere	10%	11%	12%	12%	10%	11%	11%
None of the above	1%	2%	3%	3%	2%	2%	2%

Table 8. Summary of agreement with mitigation measures for each survey wave.

	Very Willing	Somewhat Willing	Not Willing
Work from Home	58%	35%	7%
Work in Staggered Shifts	39%	46%	14%
Partial Home-based Learning	39%	49%	12%
Practice Social Distancing	63%	33%	3%
Face Masks at Work	40%	43%	17%
Face Masks in Outdoor Public Places	50%	37%	13%
Face Masks in Indoor Public Places	57%	35%	8%
Use Public Transport	35%	54%	11%
Attend Large events/gatherings	11%	35%	54%
Got to Malls/Crowded Indoor Places	14%	52%	34%
Mandatory Health Monitoring	50%	44%	6%

Table 9. Average willingness to continue with some of the main mitigation measures used to contain COVID-19 transmission.

Table 10a. Work from Home			
	Male	Female	P Value
7-May	61%	70%	***p* = .002****
21-May	55%	62%	***p* = .029***
4-Jun	53%	62%	***p* = .004****
18-Jun	52%	58%	***p* = .043***
2-Jul	45%	52%	***p* = .03***
16-Jul	48%	50%	*p* = .417
Average	52%	59%	

Table 10b. Elderly stay at home			
	Male	Female	P Value
7-May	74%	83%	***p* < .001*****
21-May	73%	82%	***p* = .001****
4-Jun	70%	80%	***p* < .001*****
18-Jun	67%	76%	***p* = .001****
2-Jul	66%	75%	***p* = .001****
16-Jul	64%	73%	***p* = .002***
Average	69%	78%	

Table 10c. Practice Social Distancing			
	Male	Female	P Value
7-May	79%	88%	***p* < .001*****
21-May	79%	86%	***p* = .003****
4-Jun	76%	86%	***p* < .001*****
18-Jun	78%	86%	***p* = .001****
2-Jul	75%	80%	*p* = .099
16-Jul	80%	87%	***p* = .002****
Average	78%	86%	

Table 10d. Students learn in school			
	Male	Female	P Value
7-May	12%	4.90%	***p* < .001*****
21-May	16%	10%	***p* = .010***
4-Jun	25%	24%	*p* = .781
18-Jun	20%	24%	*p* = .136
2-Jul	22%	24%	*p* = .379
16-Jul	23%	24%	*p* = .645
Average	20%	18%	

Table 10e. Wear face masks in public			
	Male	Female	P Value
7-May	78%	89%	***p* < .001*****
21-May	80%	85%	***p* = .035***
4-Jun	77%	87%	***p* < .001*****
18-Jun	79%	84%	*p* = .052
2-Jul	77%	81%	***p* = .049***
16-Jul	77%	87%	***p* < .001*****
Average	78%	86%	

Table 10f. Wide-scale COVID-19 Testing			
	Male	Female	P Value
7-May	43%	28%	***p* < .001*****
21-May	38%	31%	***p* = .03***
4-Jun	42%	34%	***p* = .008****
18-Jun	43%	32%	***p* < .001*****
2-Jul	39%	31%	***p* = .010***
16-Jul	39%	31%	***p* = .004****
Average	43%	28%	***p* < .001*****

Table 10g. Lift Restrictions by selected areas			
	Male	Female	P Value
7-May	26%	15%	***p* < .001*****
21-May	25%	20%	*p* = .066
4-Jun	24%	19%	***p* = .023***
18-Jun	28%	21%	***p* = .010***
2-Jul	23%	21%	*p* = .355
16-Jul	24%	21%	*p* = .303
Average	26%	15%	***p* < .001*****

Table 10h. Lift restrictions everywhere			
	Male	Female	P Value
7-May	14%	6.70%	***p* < .001*****
21-May	12%	8.30%	***p* = .039***
4-Jun	14%	9.50%	***p* = .014***
18-Jun	15%	8.50%	***p* = .002****
2-Jul	11%	10%	*p* = .751
16-Jul	14%	9.50%	***p* = .022***
Average	13%	9%	

Table 10. Percentages of respondents who **agreed** with respective mitigation measures, by gender (data limited to male and female categories).

Table 11a. Work from Home						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	78%	72%	75%	79%	87%	***p* = .001****
21-May	73%	76%	75%	78%	80%	*p* = .479
4-Jun	70%	72%	73%	77%	79%	*p* = .218
18-Jun	72%	69%	72%	73%	72%	*p* = .945
2-Jul	78%	74%	65%	66%	73%	***p* = .019***
16-Jul	72%	66%	61%	72%	73%	***p* = .026***
Average	74%	72%	70%	74%	77%	

Table 11b. Elderly stay at home						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	78%	72%	75%	79%	87%	***p* = .001****
21-May	73%	76%	75%	78%	80%	*p* = .479
4-Jun	70%	72%	73%	77%	79%	*p* = .218
18-Jun	72%	69%	72%	73%	72%	*p* = .945
2-Jul	78%	74%	65%	66%	73%	***p* = .019***
16-Jul	72%	66%	61%	72%	73%	***p* = .026***
Average	74%	72%	70%	74%	77%	

Table 11c. Practice Social Distancing						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	82%	81%	80%	82%	90%	***p* = .006****
21-May	75%	81%	80%	84%	89%	***p* = .007****
4-Jun	74%	78%	78%	80%	**89%**	***p* = .001****
18-Jun	79%	80%	78%	86%	85%	*p* = .104
2-Jul	77%	72%	76%	77%	83%	***p* = .038***
16-Jul	82%	79%	81%	85%	90%	***p* = .005****
Average	78%	79%	79%	82%	88%	

Table 11d. Students learn in school						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	10%	8%	11%	7%	8%	*p* = .612
21-May	12%	8%	8%	14%	19%	***p* < .001*****
4-Jun	25%	23%	20%	25%	28%	*p* = .298
18-Jun	16%	15%	19%	23%	30%	***p* < .001*****
2-Jul	14%	16%	20%	27%	29%	***p* < .001*****
16-Jul	18%	17%	24%	27%	28%	***p* = .023***
Average	16%	14%	17%	20%	24%	

Table 11e. Wear face masks in public						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	81%	79%	76%	85%	91%	***p* < .001*****
21-May	79%	77%	79%	84%	89%	***p* = .005****
4-Jun	79%	78%	77%	80%	91%	***p* < .001*****
18-Jun	83%	76%	79%	82%	86%	*p* = .066
2-Jul	80%	72%	77%	77%	86%	***p* = .002****
16-Jul	80%	78%	78%	82%	89%	***p* = .005****
Average	80%	77%	78%	82%	89%	

Table 11f. Wide-scale COVID-19 Testing						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	37%	45%	38%	29%	31%	***p* = .005****
21-May	29%	33%	39%	39%	32%	*p* = .182
4-Jun	34%	40%	41%	36%	36%	*p* = .534
18-Jun	38%	36%	40%	34%	39%	*p* = .737
2-Jul	35%	40%	41%	33%	30%	***p* = .047***
16-Jul	35%	40%	41%	31%	30%	***p* = .038***
Average	35%	39%	40%	34%	33%	

Table 11g. Lift Restrictions by selected areas						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	23%	23%	22%	16%	20%	*p* = .437
21-May	22%	19%	21%	22%	27%	*p* = .317
4-Jun	23%	19%	20%	19%	25%	*p* = .297
18-Jun	18%	19%	22%	22%	34%	***p* = .002****
2-Jul	16%	23%	23%	24%	22%	*p* = .496
16-Jul	12%	18%	27%	25%	25%	***p* = .010***
Average	19%	20%	23%	21%	26%	

Table 11h. Lift restrictions everywhere						
	18-24	25-34	35-44	45-54	55+	P Value
7-May	8%	14%	17%	9%	5%	***p* < .001*****
21-May	8%	7%	10%	14%	11%	*p* = .286
4-Jun	14%	13%	13%	10%	11%	*p* = .846
18-Jun	5%	12%	12%	12%	13%	*p* = .169
2-Jul	8%	12%	14%	13%	8%	*p* = .119
16-Jul	7%	10%	18%	15%	8%	***p* =.001****
Average	8%	11%	14%	12%	9%	

Table 11. Percentages of respondents who **agreed** with respective mitigation measures, by age group.

Table 12a. Work from home					
	Chinese	Malay	Indian	Other	P Value
7-May	67%	62%	67%	51%	*p* =.161
21-May	59%	54%	65%	56%	*p* = .508
4-Jun	59%	49%	54%	58%	*p* = .270
18-Jun	55%	50%	55%	65%	*p* = .544
2-Jul	47%	47%	57%	57%	*p* = .207
16-Jul	50%	52%	44%	40%	*p* = .433
Average	56%	52%	57%	55%	

Table 12b. Elderly stay at home					
	Chinese	Malay	Indian	Other	P Value
7-May	83%	66%	79%	54%	***p* < .001***
21-May	78%	76%	75%	75%	*p* = .91
4-Jun	76%	71%	73%	75%	*p* = .743
18-Jun	72%	72%	74%	65%	*p* = .806
2-Jul	70%	75%	72%	73%	*p* = .613
16-Jul	69%	72%	69%	62%	*p* = .672
Average	75%	72%	74%	67%	

Table 12c. Practice social distancing					
	Chinese	Malay	Indian	Other	P Value
7-May	86%	77%	78%	79%	***p* = .011***
21-May	85%	75%	73%	75%	***p* = .007****
4-Jun	82%	77%	78%	69%	*p* = .133
18-Jun	82%	84%	74%	84%	*p* = .330
2-Jul	79%	72%	74%	74%	*p* = .111
16-Jul	85%	86%	74%	80%	***p* = .039***
Average	83%	79%	75%	77%	

Table 12d. Students remain in schools					
	Chinese	Malay	Indian	Other	P Value
7-May	7%	14%	11%	13%	***p* = .015***
21-May	13%	24%	7%	6%	***p* = .006****
4-Jun	25%	27%	23%	14%	*p* = .455
18-Jun	23%	20%	12%	26%	*p* = .153
2-Jul	24%	19%	19%	30%	*p* = .240
16-Jul	25%	20%	15%	32%	*p* = .055
Average	19%	21%	14%	20%	

Table 12e. Wear face mask in public					
	Chinese	Malay	Indian	Other	P Value
7-May	85%	79%	80%	72%	***p* = .047***
21-May	84%	78%	77%	69%	***p* = .036***
4-Jun	83%	76%	84%	72%	*p* = .121
18-Jun	82%	82%	80%	77%	*p* = .916
2-Jul	81%	76%	75%	65%	***p* = .049***
16-Jul	84%	82%	74%	72%	*p* = .053
Average	83%	79%	78%	71%	

Table 12f. Widescale COVID-19 testing					
	Chinese	Malay	Indian	Other	P Value
7-May	32%	45%	42%	54%	***p* < .001*****
21-May	33%	49%	32%	39%	***p* = .041****
4-Jun	36%	47%	45%	44%	*p* = .061
18-Jun	36%	45%	38%	4%	*p* = .3
2-Jul	33%	42%	39%	46%	***p* = .038****
16-Jul	33%	41%	40%	45%	*p* = .073
Average	34%	45%	39%	39%	

Table 12g. Lift restrictions by area					
	Chinese	Malay	Indian	Other	P Value
7-May	20%	22%	21%	23%	*p* = .91
21-May	22%	22%	27%	25%	*p* = .845
4-Jun	20%	30%	22%	31%	*p* = .076
18-Jun	23%	35%	35%	16%	***p* = .008****
2-Jul	21%	29%	25%	19%	*p* = .124
16-Jul	21%	28%	27%	32%	*p* = .071
Average	21%	28%	26%	24%	

Table 12h. Lift restrictions everywhere					
	Chinese	Malay	Indian	Other	P Value
7-May	7%	23%	8%	21%	***p* < .001*****
21-May	9%	20%	12%	22%	***p* = .001****
4-Jun	10%	24%	11%	17%	***p* = .001****
18-Jun	10%	17%	19%	23%	***p* = .005****
2-Jul	9%	16%	12%	16%	***p* = .043****
16-Jul	9%	19%	16%	20%	***p* = .001****
Average	9%	20%	13%	20%	

Table 12. Percentages of respondents whom **agreed** with respective mitigation measures, by race.

Burdens of circuit breaker restrictions vs. burdens of getting COVID-19 is…	7-May-20	21-May-20	4-Jun-20	18-Jun-20	2-Jul-20	16-Jul-20	Average
less than the potential burdens of us getting COVID-19	47%	48%	46%	47%	46%	42%	46%
the same as the potential burdens of us getting COVID-19	31%	32%	36%	35%	38%	41%	36%
more than the potential burdens of us getting COVID-19	22%	20%	18%	18%	16%	17%	18%

Table 13. Percentages of respondents who agreed with the statements about the trade-off between the burdens of the mitigation measures, as compared with the perceived burden of contracting COVID-19.

	7-May-20	21-May-20	4-Jun-20	18-Jun-20	2-Jul-20	16-Jul-20	Average
Strongly disagree	3%	3%	3%	3%	2%	2%	3%
Disagree	3%	2%	2%	3%	3%	3%	3%
Neither agree nor disagree	12%	13%	14%	15%	15%	17%	16%
Agree	46%	47%	44%	47%	48%	49%	47%
Strongly agree	36%	34%	34%	30%	31%	28%	31%
Don't know	1%	1%	2%	1%	1%	1%	1%
Total Agree	82%	81%	79%	77%	79%	77%	78%
Total Disagree	6%	5%	5%	6%	5%	5%	6%

Table 14. Aggregate response on whether respondents felt that the current restrictions on, their personal movement are worth making to ensure the health of themselves, their family & wider community.

	7-May-20	21-May-20	4-Jun-20	18-Jun-20	2-Jul-20	16-Jul-20	Average
Strongly disagree	3%	3%	3%	2%	2%	2%	2%
Disagree	3%	3%	3%	3%	3%	5%	4%
Neither agree nor disagree	15%	14%	17%	18%	20%	20%	19%
Agree	48%	51%	50%	50%	48%	49%	49%
Strongly agree	30%	28%	25%	26%	25%	24%	25%
Don't know	1%	1%	1%	1%	1%	1%	1%
Total Agree	78%	65%	75%	68%	68%	72%	74%
Total Disagree	6%	6%	6%	5%	5%	5%	6%

Table 15. Aggregate response on whether respondents felt that the current restrictions on their work are worth making to ensure the health of themselves, their family & wider community.

	7-May-20	21-May-20	4-Jun-20	18-Jun-20	2-Jul-20	16-Jul-20	Average
Strongly disagree	2%	3%	3%	4%	3%	4%	4%
Disagree	3%	3%	5%	6%	5%	4%	5%
Neither agree nor disagree	18%	18%	19%	23%	21%	23%	21%
Agree	45%	48%	44%	45%	47%	48%	46%
Strongly agree	31%	26%	28%	21%	23%	20%	23%
Don't know	1%	1%	2%	1%	1%	1%	1%
Total Agree	76%	74%	72%	66%	70%	68%	69%
Total Disagree	5%	6%	8%	10%	8%	8%	9%

Table 16. Aggregate response on whether respondents felt that the current requirements on my personal privacy (contact tracing, monitoring, data collection) are worth making to ensure the health of themselves, their family & wider community.

	Male	Female	P Value
7-May	79%	86%	***p* = .016***
21-May	79%	85%	***p* = .025***
4-Jun	76%	83%	***p* = .023***
18-Jun	76%	81%	*p* = .368
2-Jul	79%	80%	*p* = .069
16-Jul	72%	82%	***p* < .001****
Average	76.8%	82.8%	

Table 17. The current restrictions on my personal movement are worth making to ensure the health of myself, my family & wider community, by gender.

	Male	Female	P Value
7-May	76%	81%	*p* = .403
21-May	76%	83%	*p* = .161
4-Jun	70%	83%	***p* = .002****
18-Jun	76%	77%	*p* = .506
2-Jul	75%	74%	***p* = .039***
16-Jul	70%	77%	***p* = .047***
Average	73.8%	79.2%	

Table 18. The current restrictions on my work are worth making to ensure the health of myself, my family & wider community, by gender.

	Male	Female	P Value
7-May	73%	79%	*p* = .164
21-May	72%	80%	***p* = .041***
4-Jun	68%	77%	***p* = .003****
18-Jun	65%	69%	*p* = .110
2-Jul	71%	70%	*p* = .084
16-Jul	62%	75%	***p* < .001****
Average	68.5%	75.0%	

Table 19. The current requirements on my personal privacy (contact tracing, monitoring, data collection) are worth making to ensure the health of myself, my family & the wider community, by gender.

	< 1k	1 - 2.9	3 - 3.9	4 - 5.9	6 - 7.9	8 - 9.9	10 - 14.9	15 - 19.9	20+	P Value
7-May	76%	77%	85%	83%	83%	84%	85%	90%	82%	*p* = .636
21-May	72%	82%	80%	79%	83%	86%	86%	80%	89%	*p* = .272
4-Jun	71%	78%	78%	87%	75%	80%	87%	72%	80%	*p* = .106
18-Jun	66%	74%	79%	79%	76%	81%	88%	84%	83%	***p* = .007****
2-Jul	74%	74%	74%	80%	82%	83%	79%	93%	79%	***p* = .002****
16-Jul	65%	65%	80%	82%	82%	79%	83%	73%	79%	***p* = .028***
Average	71%	75%	79%	82%	80%	82%	85%	82%	82%	

Table 20. The current restrictions on my personal movement are worth making to ensure the health of myself, my family & wider community, by household income.

	< 1k	1 - 2.9	3 - 3.9	4 - 5.9	6 - 7.9	8 - 9.9	10 - 14.9	15 - 19.9	20+	P Value
7-May	68%	72%	82%	77%	77%	82%	86%	87%	82%	*p* = .107
21-May	64%	77%	77%	81%	76%	82%	84%	80%	86%	*p* = .634
4-Jun	44%	72%	72%	85%	76%	77%	83%	83%	76%	***p* = .002****
18-Jun	58%	72%	78%	77%	73%	77%	84%	83%	76%	*p* = .415
2-Jul	68%	62%	73%	79%	78%	71%	78%	78%	84%	***p* = .001****
16-Jul	48%	63%	77%	71%	77%	78%	77%	69%	82%	*p* = .454
Average	58%	70%	77%	78%	76%	78%	82%	80%	81%	

Table 21. The current restrictions on my work are worth making to ensure the health of myself, my family & wider community, by household income.

	< 1k	1 - 2.9	3 - 3.9	4 - 5.9	6 - 7.9	8 - 9.9	10 - 14.9	15 - 19.9	20+	P Value
7-May	69%	70%	82%	81%	76%	78%	80%	84%	82%	***p* = .040***
21-May	70%	73%	76%	77%	76%	83%	77%	80%	81%	*p* = .324
4-Jun	73%	74%	66%	80%	68%	69%	82%	73%	73%	*p* = .373
18-Jun	63%	63%	75%	65%	67%	63%	76%	73%	75%	*p* = .196
2-Jul	63%	65%	73%	72%	78%	73%	72%	73%	85%	***p* = .009****
16-Jul	57%	59%	73%	71%	76%	69%	68%	73%	74%	*p* = .393
Average	66%	67%	74%	74%	74%	73%	76%	76%	78%	

Table 22. The current requirements on my personal privacy (contact tracing, monitoring, data collection) are worth making to ensure the health of myself, my family & the wider community, by household income.

	First Priority	Second Priority	Third Priority	Forth Priority
Health & Safety	71%	18%	7%	3%
Economics & Livelihoods	17%	46%	25%	11%
Psychological & Social Well-being	8%	28%	48%	17%
Privacy & Individual Liberties	4%	8%	19%	69%

Table 23. Respondent ranking of which factors should serve as the basis of COVID-19 policy decisions, averaged across the survey period.

About the Authors

Dr. Patrick Daly is a Senior Research Fellow at the Earth Observatory of Singapore, Nanyang Technological University.His research interests are on disaster management and recovery, disaster risk reduction, and human adaption to long-term climate change. He has conducted extensive field work in disaster situations across South and Southeast Asia and published over 70 scientific articles, including recent papers in *Nature Sustainability*, *Nature Communications*, *PNAS*, and the *International Journal of Disaster Risk Reduction*. Patrick edited *Rebuilding Asia Following Natural Disasters: Approaches to Reconstruction in the Asia-Pacific Region* (Cambridge University Press, 2016) and is currently working on a monograph assessing long-term recovery after the 2004 Indian Ocean tsunami in Aceh, Indonesia.

Dr. Caroline Brassard is adjunct Assistant Professor at the Lee Kuan Yew School of Public Policy (LKY SPP), National University of Singapore. Her current research focuses on the risks, mitigation measures and impacts of COVID-19 on vulnerable groups in Singapore and Bangladesh. She also researches on poverty alleviation policies in urbanising Asia. She has also been an academic adviser at the Centre for Peace and Justice, BRAC University, Dhaka, Bangladesh since 2017. Caroline co-edited *Urban Spaces and Gender in Asia: Perspectives on Social and Economic Inclusion* (Springer 2020) and *Natural Disaster Management in the Asia-Pacific: Policy and Governance* (Springer 2015).

Dr. Jamie McCaughey is an AXA Postdoctoral Research Fellow in the Weather and Climate Risks group at ETH Zürich.His research interests are how people are impacted by and can adapt to natural hazards and climate change, communityand household adaptation to sea-level rise in highly stressed social-ecological systems, and household resilience following the 2015 Nepal earthquake. He has worked extensively in science education as a classroom teacher, as a teacher trainer for the Singapore Ministry of Education, and as a co-designer for an interactive exhibition at Science Centre Singapore. At the Earth Observatory of Singapore, Nanyang Technological University, he worked to link research on natural hazards to decisions on disaster management in local governments and community organisations in Indonesia.

Dr. Reuben Ng is an Assistant Professor at the Lee Kuan Yew School of Public Policy and Lead scientist at the Institute for the Public Understanding of Risk, National University of Singapore. His research interests are on successful ageing, preventative health, and psychometrics. He has spent the past 16 years in government, private consulting, and research, and has published over 50 journal articles and conference papers and taught extensively in Asia and the United States.

Dr. Laavanya Kathiravelu is an Assistant Professor at the Division of Sociology at Nanyang Technological University (NTU). Her research and teaching interests lie in the intersections between migration, urban studies, and race and ethnicity. Her first book is *Migrant Dubai: Low Wage Workers and the Construction of a Global City* (Palgrave Macmillian 2016). She was a Fung Global Fellow at Princeton University between 2015 – 2016 and prior to joining NTU, was a Postdoctoral Research Fellow at the Max Planck Institute for the Study of Religious and Ethnic Diversity. Laavanya is a board member of the migrant welfare organization, HOME.

Professor Benjamin Horton is Director of the Earth Observatory of Singapore and Professor at the Asian School of the Environment at Nanyang Technological University. His research interests are sea-level change, adaptations to climate change, and hazard risk reduction. He has published over 220 journal articles, including over 30 papers in highimpact journals such as *Science*, *Nature*, *PNAS*, and *Geology*.

About the Centre for Non-Traditional Security Studies (NTS Centre)

The **S. Rajaratnam School of International Studies (RSIS)** is a think tank and professional graduate school of international affairs at the Nanyang Technological University, Singapore. An autonomous school, RSIS' mission is to be a leading research and graduate teaching institution in strategic and international affairs in the Asia Pacific. With the core functions of research, graduate education, and networking, it produces research on Asia Pacific Security, Multilateralism and Regionalism, Conflict Studies, Non-traditional Security, Cybersecurity, Maritime Security and Terrorism Studies.

NTS Centre conducts research and produces policy-relevant analyses aimed at furthering awareness and building the capacity to address non-traditional security (NTS) issues and challenges in the Asia Pacific region and beyond. The Centre addresses knowledge gaps, facilitates discussions and analyses, engages policymakers, and contributes to building institutional capacity in Sustainable Security and Crises. The NTS Centre brings together myriad NTS stakeholders in regular workshops and roundtable discussions, as well as provides a networking platform for NTS research institutions in the Asia Pacific through the NTS-Asia Consortium.

For more details, please visit www.rsis.edu.sg and http://www.rsis.edu.sg/research/nts-centre. Join us at our social media channels at www.rsis.edu.sg/rsis-social-media-channels or scan the QR code.