ADBI-Chubu University Conference on Transport Infrastructure Development, Spillover Effects and Quality of Life
12-16 October 2020

Session 1: Impacts of COVID-19 on Transport (co-organized with WCTRS COVID-19 Task Force)

A new policymaking framework for addressing the impacts of COVID-19 and future pandemics: **PASS approach** and its applications

Junyi Zhang Prof. Dr. Eng.

Mobilities and Urban Policy Lab, Hiroshima University

Co-chair of WCTRS COVID-19 Task Force

This presentation is based on the following published paper.

- Junyi Zhang (2020) Transport policymaking that accounts for COVID-19 and future public health threats: A PASS approach. Transport Policy, 99, 405-418.

About WCTRS COVID-19 Task Force

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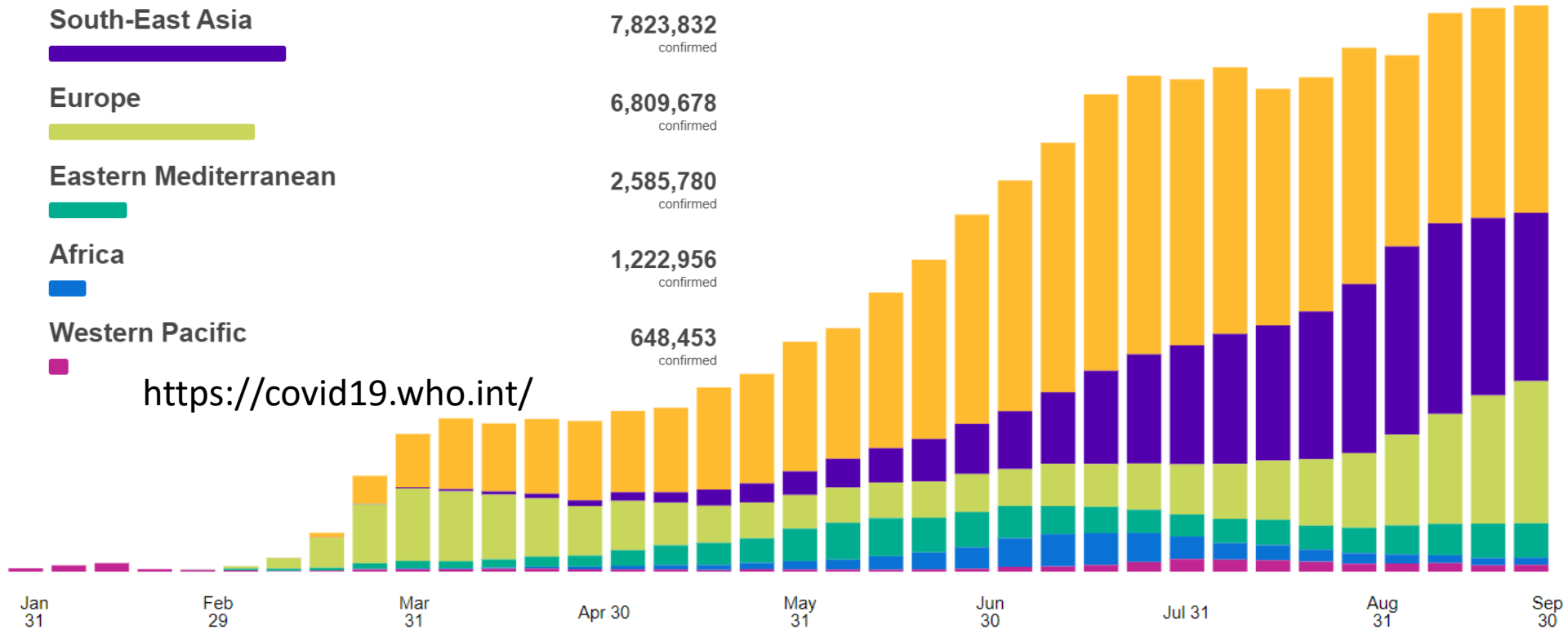
- Established in April 2020
- Activities: Policy recommendations, country- and topic-specific reports, special issues, a handbook, international collaboration
- Details refer to https://www.wctrs-society.com/about-wctrs/wctrs-covid-19-task-force/

Motivations

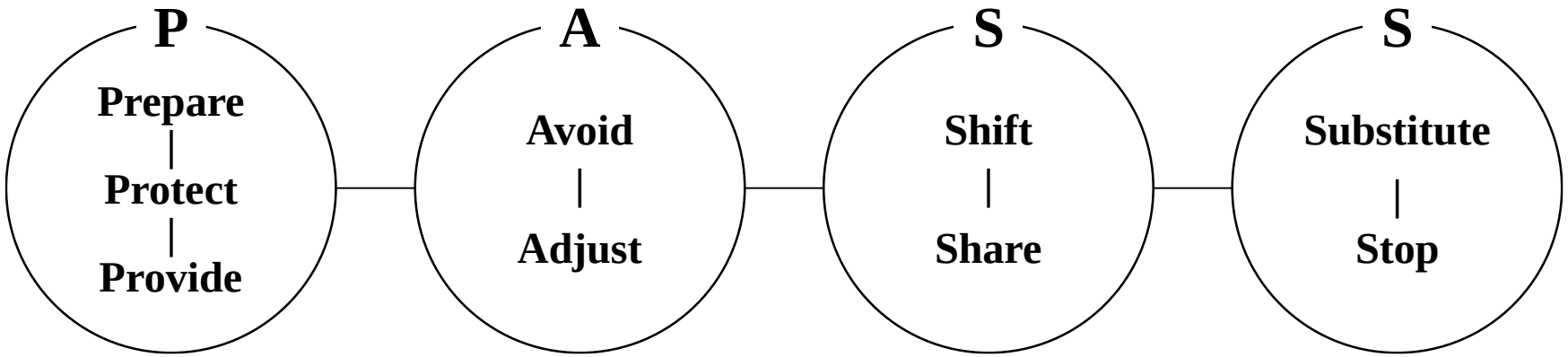
The current and near-future potential impacts must be addressed in a relatively comprehensive and seamless way.



Infection probability = f (contacts via activity participation, contacts via trip making)

PASS Approach

What "should be done" *for addressing the impacts of COVID-19 and future pandemics*



- No systematic approaches had been proposed.
- The PASS approach is in line with general system theory.
- The four major policy categories, namely, P, A, S, and S, are not independent of one another in mitigating/preventing the spread of COVID-19 and future pandemics.

PASS		Government	Transport operators	Transport users
P	Prepare	• What's most important is to prepare well for pandemics. • The government should take the lead and encourage or require other stakeholders to prepare. • Planning should guide every preparedness measure, from a long-term perspective.		
	Protect	• The most important role for government is to protect citizens and firms.		
	Provide	• The second most important role of government is to provide public goods and services that cannot be provided by individuals or firms.		
A	Avoid	• Avoidance should be regarded as most important among all measures after the occurrence of the pandemic.		
	Adjust	• All stakeholders need to adjust their activities to reduce infection risks. • Policies should be adjusted to incorporate measures against infections. • Behavioral adjustments usually do not need big efforts and should be strongly encouraged.		
S	Shift	• The current pandemic has forced our economic and social systems to run 'in a discontinuous manner with threshold shifts (i.e., bifurcations) from the present equilibrium state. • Shift indicates a nonlinear change from one state to a different one.		
	Share	• Measures against the pandemic need collective decisions and actions. Sharing of information and resources is the key to collective decisions and actions.		
S	Substitute	• Substitution measures may involve serious ethical, legal and even human rights issues, which should be properly addressed.		
	Stop	• Stop measures may involve serious ethical, legal and even human rights issues, which should be properly addressed.		

PASS	Government	Transport operators	Transport users
P Prepare	• capacity building: pandemics-driven mindsets (learn lessons from history); create a cross-sectoral organization involving experts and transport operators • institutional design for all measures • policies for supporting guidelines and contingency plans as well as training prepared by transport operators • policies that allow transit operators to stop service operation • establish standards of physical distancing measures and personal protective equipment • legal and regulatory preparations • deregulation of use of smart technology for public health • physical distancing driven urban and transportation planning (or planning of the built environment) against pandemics • public education • supplement budgets to encourage more interdisciplinary research	• capacity building • establish task force by inviting experts • develop guidelines and contingency plans • training based on guidelines and contingency plans • participate in preparations by government and other stakeholders • collaborate across transport operators for seamless measures • develop protection and physical distancing technologies	• capacity building • form anti-virus habits, healthy and "smart" lifestyles • prepare for physical distancing: e.g., use smart technologies to meet various needs in life without making a trip • participate in preparations by government and transport operators
Protect	• monitor and supervise protection measures prepared in advance: keep transport users and operators as well as highly vulnerable people safe • implement economic and institutional measures for protection • encourage use of smart technologies to better protect transport users and general public under the scheme of smart cities • protect people from fake information	• minimize contact between staff and users: e.g., online services • isolate vehicle drivers from passengers • workforce monitoring: check workers' body temperature • service workers' use of personal protective equipment and face masks, etc. • enforce physical distancing and protection measures for both staff and users • enforce use of masks • use smart technologies to check body temperature of users • disinfection and sanitization: use both conventional and smart technologies to keep clean, especially areas which are touched frequently; ventilation	• wear face masks and do not touch face/eyes during trips • wash hands before and after using transport vehicles • protect other passengers by not talking loudly • physical distancing during trips
Provide	• provide scientific and evidence-based information: both what are known and what are unknown • provide guidance for public transit agencies and passengers • provide immediate financial support to those industries whose operations are strictly regulated • provide institutional framework to allow use of smart technologies by sufficiently addressing privacy and human rights issues	• provide antiseptic solution at stations • provide scientific and evidence-based information about how to keep both transport users and service staff safe from the virus • provide transit users with information about levels of congestion inside public transport platforms/vehicles	• provide personal health information (e.g., body temperature, immunity proof) • provide information about spatio-temporal behavioral trajectories to public health authorities, in case of infection • share accurate information and avoid spreading misinformation via social media and within social networks

PASS	Government	Transport operators	Transport users
A Avoid			
	• avoid unstable or inconsistent policy decisions • avoid providing inconsistent information • government officers/staff need to avoid behaving against their instructions to the general public • government officers' and other decision makers' behaviors under pandemics must be regulated with strict punishments	• avoid crowded platforms and operating crowded vehicles: booking-based public transport should be promoted • avoid providing inconsistent information • avoid actions/behaviors which undermine sustainable development	• avoid talking if not wearing masks. • avoid activities/trips needing close physical distance, e.g., visiting crowded places or using crowded transit vehicles. • If crowded places and/or vehicles cannot be avoided, the duration of stay in such places should be reduced • avoid forwarding fake information related to COVID-19 and transport
Adjust			
	• adjust preparations to new contexts or situations • adjust organizational and policymaking processes to incorporate anti-pandemic measures across governmental departments and across sectors	• adjust service schedules (frequencies, operating times, number of routes) and sweeping activities • maintain physical distance between passengers as much as possible: either restricting transport demand or enhancing transport capacity • adjust meetings and staff management and introduce more physical-distancing-friendly workplace arrangements	• adjust activity plans and schedules and ways of social networking • make trips (e.g., commuting) during off-peak hours instead of during peak hours: peak-hour charging may be needed • perform activities online instead of visiting a physical place • practice relaxation without visiting crowded places

PASS	Government	Transport operators	Transport users
S Shift			
	• shift to a pandemic-focused governance approach • shift mindsets of policy makers to a state of emergency • develop safe and affordable alternative travel modes for health care staff and other essential workers • promote modal shift to active transport	• shift mindsets of transport operators to a state of emergency • shift to the operation system under pandemics • staff behaviors should be properly regulated	• shift to flexible working hours or other flexible working arrangements • modal shift, including shift to active transport • shift to a lifestyle suitable to the new normal
Share			
	• information sharing • promote shared economy and shared mobility • allow taxi and public transport vehicles to transport goods • encourage non-office facilities to be tentatively transformed into office spaces for teleworkers • allow use of contact tracers to quickly detect people exposed to the pathogen • offer incentive measures for information sharing	• information sharing • collect passengers' health information • restrict space sharing in public transport • share operational resources across transport operators • voluntarily-shared responsibility: encourage family members of public transit staff to take sufficient physical distancing measures	• share health and behavioral information • share spatio-temporal behavior trajectories and social contacts • job sharing: pure job sharing, split job sharing, and hybrid job sharing

PASS	Government	Transport operators	Transport users
S Substitute	• e-government: substitute face-to-face governmental procedures with online procedures • encourage business operators and the general public to substitute trip-based activities with online activities • make online services accessible to all people • transform the pandemic (crisis) into a new opportunity • transform from the current market-oriented society into a life-oriented society	• substitute trip-driven activities • reduce face-to-face business contacts • public transport vehicles can be substituted as isolation units • railway operators may have to substitute railways with buses, in the case that the railway capacity is not enough to allow sufficient physical distancing • use dedicated public transport vehicles to transport infected patients	• substitute activities involving trips with online activities • postpone some activities: e.g., tourism, leisure, and discretionary activities • reduce trip frequency and distance • unnecessary and non-urgent trips should not be made
Stop	• Lock-down, with potential punishment for violation and incentives for voluntary behavioral change • balance stopping of out-of-home activities and serious economic, financial and job losses • improve the built environment based on better physical distancing design	• stop service operation, but ensure the mobility of essential workers, with proper economic and institutional compensation • modify unsustainable business styles to stop unsustainable human interactions with the environment: behavioral changes toward resilience and sustainability	• stop activities involving trips • stay at home and care for mental health • stop or reduce gatherings, even at home • change lifestyles to stop unsustainable human interactions with the environment: behavioral changes toward resilience and sustainability

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Case studies

- China
- Japan
- South Korea
- Indonesia
- Vietnam
- Philippines
- Cambodia
- Lao PDR
- Myanmar
- Pakistan
- Bangladesh
- Middle East

Common measures		Government	Transport operators	Transport users
P	Prepare Protect Provide	• Prepare for transport vehicles for transporting the infected persons • Immigration restrictions • Guidelines of new working styles	• Prepare for monitoring • Preparing for quarantine • Disinfection of vehicles and wear face shield • Provide congestion levels	• Form a habit of disinfection • Prepare disinfectants • Wear a mask
A	Avoid Adjust	• Avoid the spread across regions • Adjust immigration restrictions	• Avoid infections via vehicles • Adjust timetable and numbers of flights • Adjust ridership	• Avoid unnecessary and non-urgent trips
S	Shift Share	• Shift between different warning levels • Share the information of infection cases and relevant data	• Shift to online payment	• Shift to online lifestyle (Stay-at-home) • Modal shifts (e.g., active transport)
S	Substitute Stop	• Require stopping of airline operation • School closure • Border closure	• Stop using public transport	• Stop social activities • Substitute cash with digital currency

Examples of unique measures

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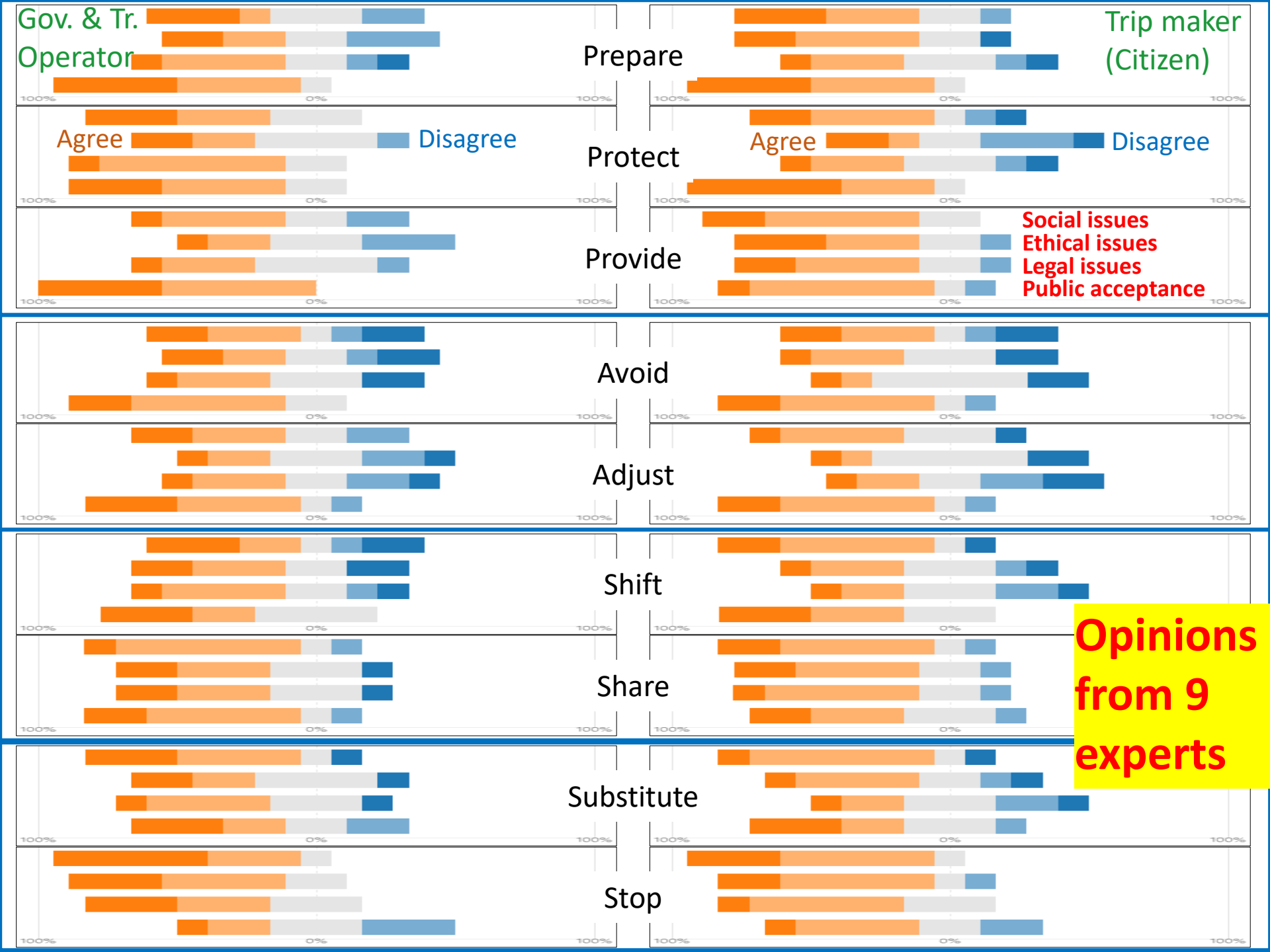
- [China] Provide: Health barcode → Stop: No ride without the health barcode
- [Indonesia] Shift: Office hours in the capital areas are divided into two periods: 07:00 – 15:30 & 10:00 – 18:30 for allowing the shift of commuting period; Stop sharing helmets for motorbike sharing services
- [Myanmar] Adjust: to reduce ridership of expressway buses to half, and to double the ticket price for keeping physical distance; Shift: to require 50% of working population to shift to telework


Gov. & Tr. Operator
Trip maker (Citizen)
Agree
Disagree
Prepare
Protect
Provide
Social issues
Ethical issues
Legal issues
Public acceptance
Avoid
Adjust
Shift
Share
Substitute
Stop
Opinions from 9 experts

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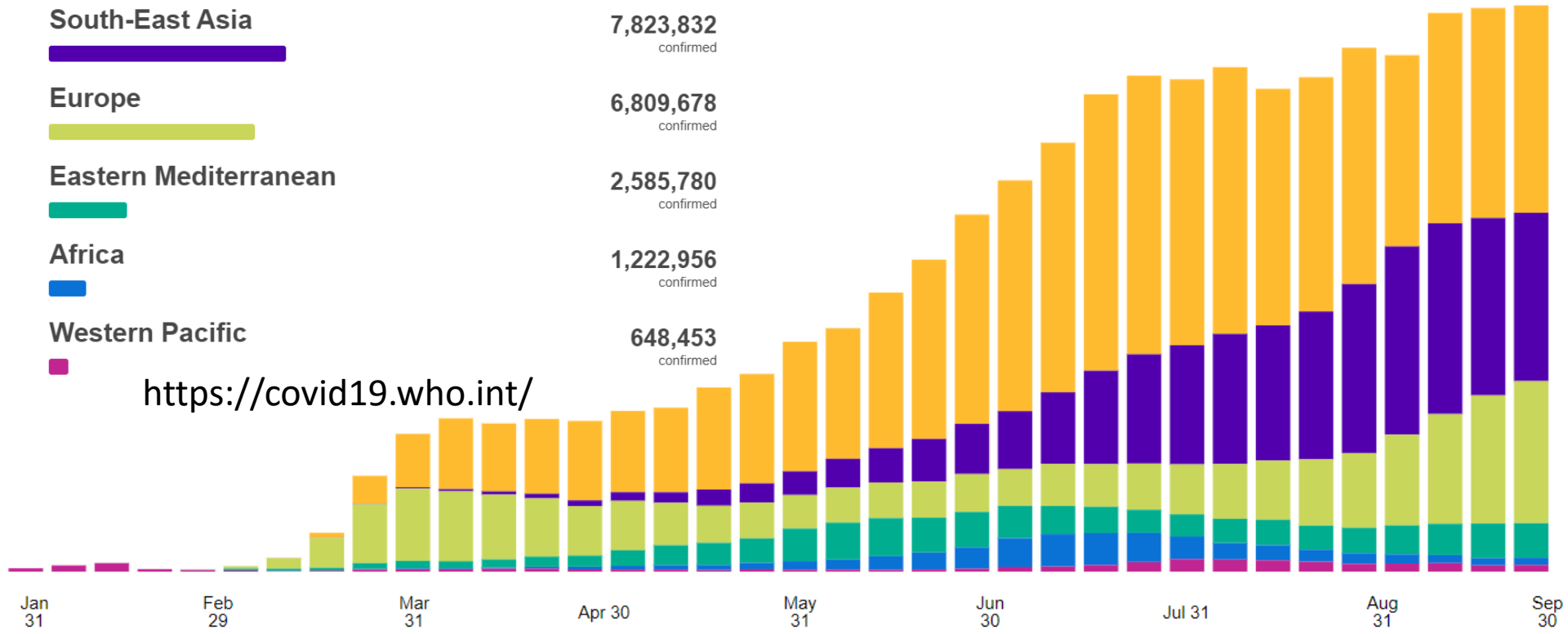
Some free answers

Opinions from 9 experts

- (USA) Big equity issues remain, as nobody is able to work remotely and many do not have access to technology (or know how to use it). The US have experienced very strong opposition to "stop" types of policies, making it almost impossible in many cases to deal with the pandemic
- (Victoria, AU) What should happen but isn't in Victoria is avoiding heavy lock-down measures for too long. People are now not following the rules and complying as they are sick of being shut down.
- (Taiwan) Taiwan released an APP (named 1968) which provides real-time traffic congestion and crowdedness information of freeway network and attraction spots to advise trip decisions of road users. However, the APP needs to position and track all travelers leading to ethical and legal issues.
- (Thai) The job sharing and job matching is one of the current goal of the government. However, with the technology disruption, the skill set is required to be adjusted. Some organization can provide optional for online service. However, mostly is difficult to access by the residents.

Discussion!

The current and near-future potential impacts must be addressed in a relatively comprehensive and seamless way.



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Policy recommendations against COVID-19

How to make?

For the roundtable discussion

How to make policies against COVID-19