

## Comments

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Professor Chung's paper, "What makes states more successful at containing the pandemic?" extensively reviews the state-society-citizens relations. Through the discussion of the paper, it uses "game model" to examine the cost-benefit calculations among government decision on requesting for cooperation, citizen responding to the request and citizen responding negatively. It starts from fiscal or infrastructure factors and their relation with government's request. Then, it focuses on why citizen comply and what is the belief of cooperative behaviors. These discussions can improve the traditional idea of "legitimacy triangle", which are security, economic and statecraft. Also, it can echo the "whole of society" proposal from the United Nations. Therefore, it is a very important academic paper.

However, I would like to raise some discussions on this paper: 1. Difficulties of calculation on some issues. 2. Differences from long-term and short-term cooperation. 3. Regional cooperation issues related to the paper, such as nationalism, populism, trade protectionism and the role of China. As for the first question, there are some issues hardly to be calculated. For example, privacy is hard to be calculated in the pure cost and benefit analysis. As we have discussed at the last seminar on the issue of privacy, government always "plays too much role" rather than constrains themselves. Once government holds the power to track or influence citizen's privacy, it might be hard for citizen to "calculate" how much they have already lost because of the asymmetric ability of gaining information.

Second, the issue of how citizen to calculate on their compensation is also related to "how long their cooperative belief will last". As we can see on many countries, citizen will cooperate and are satisfied more in a short term, but in a long term, they might be more impatient and non-cooperative. This paper might consider more on this difference.

Finally, I would like to use the paper's Hypothesis 6 and replace it with some keywords as follows: "The stronger the countries in Asia's believe that the cost of some global problems, the more possibilities that they will comply to China's recommendations". Maybe we can discuss more in the future through this hypothesis on the geopolitical competition between the United States and China. It will be a fruitful deliberation when connecting to our Keynote speaker prof. MINE's idea of "paradox of geopolitics and nationalism in the post-pandemic" and Prof. TAMAI's "gap of economic stagnation" in Asia.

**SASAKI, Satoshi**

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I find it is very interesting that a model of effective control measures for COVID-19 is analyzed using a simple game theory, subgame perfect equilibria (SPE) and the effects of country-specific measures. You shared important new contributive discoveries. I would like to make comment on three points.

First of all, my perspectives are based on my specialty, epidemiology and global health. There are three factors that can be a cause of infectious disease a transmission to occur. The first is the presence of pathogens; the second is the presence of the modes of transmission; and the third is the presence of host or human beings. In epidemiology, infection control can be possible if we can cut the chain of infection. For instance, historically many pandemics had been successfully controlled by removing pathogen such as smallpox. The block of possible portal of entry would also prevent from the spread of infection. Protecting the host themselves by receiving vaccinations may help individual's ability to resist infection or to limit pathogenicity. For COVID-19 eliminating the virus and boosting immunity through vaccination is not yet available in many areas even though some countries such as the UK had authorized the coronavirus vaccine for use. It may take a considerable amount of time to distribute to sufficient population. In that respect, the only control available at this time may be a block the transmission route. The modes of transmission of COVID-19 are direct contact and droplet spread. Wearing a mask, washing hands, and taking a physical distance can be effective to prevent from dissemination of infectious agents. Also, receiving PCR screening for people with suspicious symptoms and staying home would be important if the test result was positive. It is, therefore, highly relevant from an epidemiological point of view that the analysis is considered to be greatly contributive to control the current pandemic.

Second, this research pointed out that incentives are the contributing factors for the citizens to comply with recommendations or guidelines offered by the government. That means the cost is less if the citizen cooperates. I am also interested that "belief" of the citizens really matters and it is necessary for them to clearly understand about the cost. You state, "how strong a belief each citizen holds regarding the effectiveness of their protective measures, the belief that their cooperative behaviors make a difference, really matters because those citizens' firm beliefs prevent the community from plunging into disorder and chaos." Here I would like to share my thoughts on what makes citizen's belief more firmed in three different views. First, evidence-based policy, that is what enhances their belief. The government has to analyze the effectiveness of infectious control policy based on empirical evidence and offer an effective and feasible policy. Second, message has to be clear and simple when distributing to the citizens. In Japan, the early stage of the spread of COVID19, the government sent a message to citizens to reduce their person to person contact by 80%. This message encouraged people to stay home and reduce

social movement and contributed to curb the spread of COVID 19. Third, the government administrative leadership also plays a crucial role to support people. If the citizen understood the value of the policy that the government public health officials provided, they would follow; therefore, the outbreaks can be well controlled.

For infectious control, especially the early stage of outbreak, rapid and comprehensive response is indispensable. The leader needs to speak to the citizens clearly and convincingly about control policy and guidelines that they have to follow. If they succeed to change their behavior, the outbreaks can be controlled at the early stage. We can see the good example in New Zealand, prime minister Jacinda Ardern demonstrated her strong leadership and successfully contain the COVID19. She explained control policy directly to the citizens using the alert level chart and conduct lockdown. She also delivered clear message “go hard, go early” to make them understand and share common goal to overcome the tragedy.

Finally, I would like to comment from a point of view of human security. COVID19 is a heavy threat to human security. Especially for the vulnerable, such as extremely disadvantaged, refugees and internal displaced people face more serious threats to the health and risk of COVID 19. According to this research, “a poor country where fiscal resources are lacking is less likely to take measures to promote cooperative behaviors from its citizens, a country where infrastructural power is weak is less likely to take measures to promote cooperative behaviors from its citizens” this research gives us an opportunity to think about what kind of intervention and support are required from human security point of view. For example, in developing countries, it is difficult to continue strict infection control measures for a long period of time. A recent survey of 20 African countries found that more than 70% of countries are at risk of food shortages if urban lockdown last for more than two weeks. At that time, it was important for developed countries and international organizations to provide them “essential needs” such as necessary medicines and consumables. From a public health perspective, it is vital to empower residents and to encourage them to follow preventative measures which are sustainable. This study may have implications not only for presenting typologies of successful cases of infection control, but also for suggesting what efforts are needed for vulnerable countries and regions.