RESEARCH ARTICLE

On Precaution Versus COVID-19: Are People Really Complacent?

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As of this writing, the Philippines is experiencing a surge in COVID-19, a year after implementing nationwide lockdowns and curfews. Although vaccines are being shipped and rolled out, the country appears to be regressing, with hospitals being filled to the brim. Complacency has been the usual suspect, with the government blaming individuals and business establishments for not staying at home and for not observing the minimal health protocols. But are people really complacent? This paper develops a simple game to address such a question.

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As of this writing, the Philippines is currently on a streak, with new COVID-19 cases surging at a staggering 10,000 cases per day by the last week of March 2021, which incidentally marks a year since the government started scrambling to contain the virus by implementing curfews and lockdowns. Alarmingly, hospitals and quarantine facilities are being filled again with COVID-19 cases, as if the country is regressing to square one as other countries have begun living out their post-pandemic life.

The government has never shied away from blaming the population's complacency in observing minimum health standards. In a virtual briefing, Health Undersecretary Maria Rosario Vergeire noted that the public has not been wearing face masks and face shields and observing physical distancing in public places, hence the surge in cases. Notwithstanding the ”excellent” performance of the Philippine government in curbing this pandemic, there is still some truth to this complacency (Naval, 2021). People are starting to get tired after being cooped up for a year. Having a taste of pre-COVID life is definitely attractive, and grabbing every opportunity to feel that normalcy again must be worth the risk.

Then again, the pandemic is still far from over, and even with the vaccination roll-out, people will still need to stay home and observe minimum health protocols. But what exactly will motivate people to do this? Is it fair to conclude that the people are complacent? This paper aims to answer this by building a simultaneous game, with individuals choosing between staying home and going out for leisure. I shall attempt to examine which parameters will trigger people to forego leisure trips and stay home.

The paper is organized as follows. In Section 2, I revisit the literature on how individuals perceive risks, particularly amid a health crisis. I shall review the factors that drive people to take safer measures (excluding draconian policies). Next, I build the signaling game without government intervention. Section 5 concludes the paper with a short discussion of the findings.

Related Literature

Recent studies on public compliance to health protocols have been largely empirical, examining perceptions conditional on characteristics such as country location, information, and credibility of information that they are receiving. At the individual level, moral foundations tend to induce compliance with social distancing protocols (Qian & Yahara, 2020). Harper et al. (2020) observed that the COVID-19 pandemic had triggered widespread anxiety due to self-preservation that individuals are compelled to change their behavior and adopt social distancing protocols. Fear of harming other people, given the nature of the pandemic, also nudges behavioral changes. In relation to this, Ebrahimi et al. (2021) and Carlucci et al. (2021) highlighted the altruism of individuals, suggesting that people who care about the welfare of their significant others or other people tend to adhere to protocols. This hints that keeping the disease from spreading out of altruism or moral considerations must be a cooperative game, with a healthy (and pandemic-free) environment as a public good (Yong & Choy, 2021).

Then again, relying on morals to stop the disease from spreading may not be enough. Empirical analyses also suggest that individual appraisal of threat matters in compliance. Al-Hasan et al. (2020) found that threat appraisal (in terms of severity and vulnerability), coping appraisal (in terms of self-efficacy and response efficacy), and knowledge can effectively improve adherence. Results suggest that threat appraisal positively affects adherence across the sample of individuals from the United States, Kuwait, and South Korea. Shiina et al. (2021) also verified this variation in risk perception across countries, with Western countries showing frequent precautionary behavior, especially when acquaintances are infected. Trust in the information source also affects compliance. In Fridman et al. (2020), individuals find governments credible, but this trust is evident mostly in the older, white population in the United States. A higher degree of trust in the government is associated with accurate knowledge about COVID-19 and adherence to social distancing protocols. Higher trust in private, traditional media is associated with less accurate knowledge about COVID-19. Interestingly, in a related study, Simonov et al. (2020) found that higher Fox News viewership is significantly associated with less compliance to social distancing measures. And as if this is not sobering enough, social media trust is associated with lower adherence to social distancing. These findings suggest that incomplete information and trust may have a significant bearing on the individual's propensity to adopt social distancing behavior.

Unsurprisingly, if individuals are conditioned by trust, political inclination will definitely play a role in social distancing compliance. Barrios and Hochberg (2020) noted that political partisanship, at least in the United States, has a bearing on social distancing compliance. Researchers observed that states with social distancing protocols have more compliant individuals than states without social distancing protocols. Largely, Republican counties are associated with lower social distancing compliance. The political affiliation of the governor also affects compliance—that is, "misaligned" states tend to observe lower compliance. On a similar note, Trump counties are associated with lower risk perception, with individuals searching less information about the disease and ditches social distancing behavior (Barrios & Hochberg, 2020). Individuals living in corrupt states (as measured by Corruption Convictions Index and Corruption Reflections Index) tend to comply less with social distancing, particularly stay-at-home measures (Dincer & Gillanders, 2021). Nonetheless, political partisanship may not be as relevant for countries other than the United States, as noted by Harper et al. (2020) when they covered respondents outside the U.S. In any case, the degree of political influence on social distancing cannot be ignored, and that the credibility of the government can either increase or decrease the level of compliance.

Finally, dire socioeconomic conditions may induce a false sense of invincibility in individuals. The younger population tends to score lower in adherence compared to the older population. Higher educated individuals tend to adhere to the measures. Unemployed (students) are less likely to comply than employed individuals, while healthcare professionals are highly likely to comply (Carlucci et al., 2021). At an aggregate level of analysis, Brown and Ravallion (2020) showed that higher median income is associated with lower social distancing. Older people tend to follow social distancing protocols as they have the option to stay at home. Counties with a larger share of blacks are less likely to follow social distancing/stay-at-home policies, although this might be explained by their higher times at the workplace, hinting that the burden of work falls on them.

In sum, people are generally compelled to follow social distancing protocols, but such compliance depends on the credibility of information sources, which eventually extends to the degree of trust in policymakers managing the pandemic. In the next section, I shall build this model of compliance while taking into consideration these external factors.

The Base Model

For simplicity, let me consider a signaling game with two players living in a country afflicted by the deadly COVID-19 virus. The mechanics presented here are largely based on Gibbons (1992). Suppose that there is no vaccine yet that can revert things to normal that each player can only either choose to stay home or go out. I further simplify the model by excluding the case where the person is an essential worker and has no choice of staying or working from home.

Formally, let me define a sequential game Γ2 = [I,{σi},{ui}] where σ1 = {H,O} and σ2 = {h,o} are the players' strategy profiles, and UI represents the payoffs from staying home (H for player 1, h for player 2) and from going out (O for player 1, o for player 2). Define an indicator si = 1 if player i chooses to stay home (H for Player 1 or h for Player 2) and si = 0 if player i chooses to go out (O for Player 1 or o for Player 2). Given that the individual is privileged enough to stay home without exposing themselves to earn, it is assumed that they receive a fixed payoff π if they stay home. If they decide to go out, they would definitely gain some value—say, the feeling of normalcy when they start to dine out again with friends. However, going out exposes the individual to COVID-19, and this is an expense to the player. Any irresponsible action will affect the other person's welfare, be it in the form of an overloaded health care system, higher taxes to pay, or even unemployment due to lockdowns when cases start to surge again; thus, COVID-19 exposure is a form of a loss for the player who decides to stay home given that the other player decided to go out. Suppose that nature decides to infect, denoted by θ1, or not to infect, denoted by θ2, with a given probability P(θ) ϵ [0,1]. This yields the payoff function.

$$u_i(s_i, s_{-i}, \theta_j) = s_i[\pi - z(\theta_j) - I(\theta_j)\gamma(1 - s_{-i})] + (1 - s_i)[\pi - e(\theta_j) - \gamma^2 I(\theta_j)(1 - s_{-i})] \quad (1)$$

Here, z(θj) represents the reduction in utility for deciding to stay home if nature decides not to infect (out of sheer luck) such that z(θ2) > 0 and z(θ1) = 0. If nature decides to infect, the player bears a cost e(θj) such that e(θ1) > 0 and e(θ2) = 0. I set an indicator function I(θj) such that I(θ1) = 1 and I(θ2) = 0. Figure 1 shows the extensive form of the signaling game.

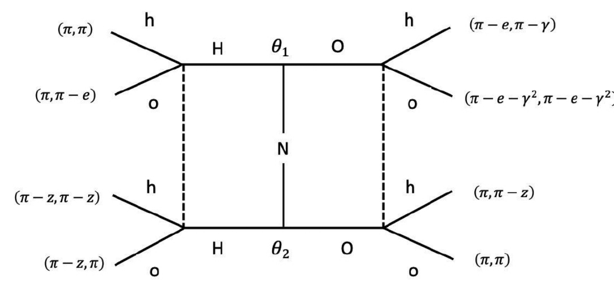

Figure 1. Sequential Form Game of Staying Home - No Government

Separating Perfect Bayesian Equilibrium

In the subsequent analysis, I shall examine the best response for Player 2 given the strategy of Player 1. From Figure 1, we can see that if Player 1 is infected by COVID-19 (type θ_1), they will never play *O*. If they are of type θ_2, they will never play H. Therefore, Player 1's actions identify their type so that:

$$s_1 = \begin{cases} 1 & \text{if } \theta = \theta_1 \\ 0 & \text{if } \theta = \theta_2 \end{cases} \quad (2)$$

This gives us some information about some conditional probabilities. Given the strategy of Player 1, I have $P(s_1 = 1|\theta_1) = 1$, $P(s_1 = 0|\theta_2) = 1$, $P(s_1 = 1|\theta_2) = 0$, and $P(s_1 = 0|\theta_1) = 0$. From here, I can build Player 2's beliefs upon observing the action of Player 1. Let μ represent the conditional probability that Player 1 is vulnerable given their actions:

$$\mu(\theta_j|s_1) = \frac{P(s_1|\theta_j)P(\theta_j)}{P(s_1|\theta_1)P(\theta_1) + P(s_1|\theta_2)P(\theta_2)} \quad (3)$$

For simplicity, I assume that nature tosses a fair coin so that $P(\theta_1) = P(\theta_2) = 0.5$. This provides the conditional probabilities that Player 2 will assign to Player 1:

$$\begin{aligned} &\mu(\theta_1|s_1 = 1) = 1 \\ &\mu(\theta_1|s_1 = 0) = 0 \\ &\mu(\theta_2|s_1 = 1) = 0 \\ &\mu(\theta_2|s_1 = 0) = 1 \end{aligned} \quad (4)$$

I can then map the best responses of Player 2. If Player 1 plays H ($s_1 = 1$), the expected utility of Player 2 is given by:

$$\begin{aligned} &E[u_2(s_2 = 1, s_1 = 1)] = \pi \\ &E[u_2(s_2 = 0, s_1 = 1)] = \pi - e(\theta_1) \end{aligned} \quad (5)$$

This indicates that the best response for Player 2 is to stay home as well if Player 1 stays home. If Player 1 plays O ($s_1 = 0$), the expected utility of Player 2 is given by:

$$\begin{aligned} &E[u_2(s_2 = 1, s_1 = 0)] = \pi - z(\theta_2) \\ &E[u_2(s_2 = 0, s_1 = 0)] = \pi \end{aligned} \quad (6)$$

This indicates that the best response for Player 2 is to go out if Player 1 goes out. Both players staying home ($s_1 = 1, s_2 = 1$) when $\theta = \theta_1$ and going out ($s_1 = 0, s_2 = 0$) when $\theta = \theta_2$ is a perfect Bayesian equilibrium if Player 1 has no incentive to deviate. Indeed, given how the payoffs are designed and given μ, choosing to go out will not be in Player 1's best interest. If Player 1 is infected and still chooses to go out, Player 2 will mistake him for a θ_2 and choose to go out $s_2 = 0$, which will lead to a worse payoff for Player 1 at $[\pi - e(\theta_1) - \gamma^2]$.

Proposition 1 *Given a set of beliefs $\mu(\theta_j|s_1)$ and $P(\theta_1) = P(\theta_2)$, the separating perfect Bayesian equilibrium is given by:*

$$s_1^*(\theta) = \begin{cases} 1 & \text{if } \theta = \theta_1 \\ 0 & \text{if } \theta = \theta_2 \end{cases}$$

$$s_2^*(s_1, \mu(s_1)) = \begin{cases} 1 & \text{if } s_1 = 1 \\ 0 & \text{if } s_1 = 0 \end{cases}$$

$$\mu(s_1) = \begin{cases} \mu(\theta_1|s_1 = 1) = 1 \\ \mu(\theta_1|s_1 = 0) = 0 \end{cases}$$

The preceding analysis suggests that people tend to be extra careful given the pandemic. People will always choose to stay home if they see other people staying at home, taking it as a sign that it is not safe to go out. If they see other people go out, it could be an indication of safety, a sense of normality. However, this could be a false appraisal of the situation. Player 1 going out does not necessarily indicate that the world is safer (!), and in fact, using Player 1's action as a signal for θ could be alarmingly adverse.

Pooling Perfect Bayesian Equilibrium

To examine if this game has a pooling Bayesian equilibrium, suppose that Player 1 chooses to stay at home $s_1 = 1$ regardless of whether he is vulnerable (θ_1) or not (θ_2) so that $P(s_1 = 1|\theta_1) = P(s_1 = 1|\theta_2) = 1$. Retaining the assumption that $P(\theta_1) = P(\theta_2) = 0.5$, this tweaks Player 2's beliefs. The probability that Player 1 is θ_1 is given by

$$\mu(\theta_1|s_1 = 1) = \frac{P(s_1 = 1|\theta_1) \cdot 0.5}{P(s_1 = 1|\theta_1) \cdot 0.5 + P(s_1 = 1|\theta_2) \cdot 0.5} = 0.5 \quad (7)$$

which is also the same for $\mu(\theta_2|s_1 = 1) = 0.5$. The complication here is that Bayes' rule cannot be applied if Player 1 decides to go out (just for the heck of it) $s_1 = 0$. Therefore, an arbitrary probability will have to be assigned for $\mu(\theta_1|s_1 = 0) = \rho \in [0,1]$. Player 2's expected utility when they play $s_2 = 1$ is given by:

$$E[u_2(s_2 = 1, s_1 = 1)] = 0.5 \cdot \pi + 0.5 \cdot (\pi - z(\theta_2)) = \pi - 0.5z(\theta_2) \quad (8)$$

When Player 2 plays $s_2 = 0$, the expected payoff is given by:

$$E[u_2(s_2 = 0, s_1 = 1)] = 0.5 \cdot (\pi - e(\theta_1)) + 0.5 \cdot \pi = \pi - 0.5e(\theta_1) \quad (9)$$

This suggests that Player 2's choice depends on the value of z, and e. For practical reasons, assume that $e(\theta_1) > z(\theta_2)$; that is, the cost of being infected is strictly greater than losing some utility from missing out. Player 2 will then always choose to stay home if Player 1 chooses to stay home. If, for some reason, Player 2 values the fear of missing out more than they value the possible expense from contracting COVID-19, then Player 2 will choose to go out. This suggests that the decision of Player 1 becomes less informative to Player 2 that it boils down to the relative cost of going out versus staying at home. Hence, I hold the assumption that $e(\theta_1) > z(\theta_2)$.

If Player 1 decides to go out, Player 2's expected utility from playing $s_2 = 1$ is given by:

$$E[u_2(s_2 = 1, s_1 = 0)] = \rho[\pi - \gamma] + (1 - \rho)[\pi - z(\theta_2)] \quad (10)$$

The expected utility from playing $s_2 = 0$ is given by:

$$E[u_2(s_2 = 0, s_1 = 0)] = \rho[\pi - e(\theta_1) - \gamma^2] + (1 - \rho) \quad (11)$$

From here, the cutoff ρ^* where Player 2 is indifferent between staying home or going out can be solved. Equating (10) and (11), we have:

$$\rho^* = \frac{z(\theta_2)}{z(\theta_2) - (e(\theta_1) + \gamma^2)} \quad (12)$$

If $\rho > \rho^*$, then Player 2 will choose $s_2 = 1$. If $\rho < \rho^*$, then Player 2 will choose $s_2 = 0$. The best response for Player 2 is then given by:

$$s_2 = \begin{cases} 1 \; if \; \rho > \rho^* \\ 0 \; if \; \rho < \rho^* \\ \tau \in [0,1] \; if \; \rho = \rho^* \end{cases} \quad (13)$$

However, there is no reason to believe that Player 1 will always choose to stay home $s_1 = 1$. Consider the case where Player 1 is θ_2. Choosing to go out (or deviate from the "equilibrium path") will always yield a higher payoff π than the "equilibrium" payoff $\pi - z(\theta_2)$. This is true regardless of Player 2's valuation of ρ. Therefore, a pooling Bayesian equilibrium does not exist in this game—type θ_1 will always push players to stay at home, whereas type θ_2 will push players to go out.

Government intervention and credibility

In this section, let me tweak the story a bit and focus on government credibility and its possible effect on an individual's strategies. Given its resources, the government is in a better position to know exactly how COVID-19 can spread out in a given country compared to ordinary citizens like Players 1 and 2. However, it is known that some governments responded better than others, and these better responding governments saw significant drops in cases.

Pooling Perfect Bayesian Equilibrium and government

Suppose that the government can either be an effective type θ_1 or ineffective type θ_2. Suppose that the government G can either choose to curb the pandemic by implementing quarantine rules and extensive contact tracing and isolation measures or to implement half-baked quarantine measures due to (misplaced) economic priorities. Specifically, the government's strategy profile is $\sigma_G = \{C,NC\}$. For now, leave out Player 2 and suppose that Player 1 can observe the government's action. Player 1's strategy profile is still given by $\sigma_1 = \{H,O\}$.

As in the earlier case, let s_G be an indicator function equal to 1 if the government decides to curb the pandemic and 0 otherwise. The government's payoff function is given by:

$$u_G(s_G, s_1, \theta_j) = s_G[-F(\theta_j) - (1 - s_1) \cdot F(\theta_j) + g(\theta_j) + [g(\theta)]^2 \cdot (s_1)] + (1 - s_G)\left[-F(\theta_j) - [\gamma(\theta_j)]^2(1 - s_1)\right] \quad (14)$$

Here, $F(\theta_j)$ refers to fiscal spending conditional on the type θ. By assumption, $F(\theta_1) > F(\theta_2)$. If Player 1 decides to go out, this fiscal spending increases as this move by the player adds to the burden of the government. $g(\theta_j)$ is a credibility premium that the government realizes if it is θ_1 so that $g(\theta_2) = 0$; $[g(\theta_j)]^2(s_1)$ is a bonus gain if Player 1 decides to stay home. One may consider credibility premium as an indication that the policy to curb is effective in bringing society back to normal. On the other hand,

$\gamma(\theta_j)$ measures the additional loss to the government if it decides not to curb the pandemic. I assume $\gamma(\theta_2) > \gamma(\theta_1)$. When Player 1 chose to ditch social distancing measures, this loss worsens.

On the other hand, the payoff function of the citizen Player 1 is given by:

$$u_1(s_1, s_G, \theta_1) = s_1[(1+\theta_1)\pi(s_G)] + (1-s_1)[(1+\theta_1)\pi(s_G) - \gamma^2] \tag{15}$$

Here, $\pi(s_G)$ is a transfer from the government depending on its action. If $s_G = 0$ or if it chooses not to act, $\pi(s_G) = 0$. I also included some premium $(1 + \theta_1)$ where the citizen benefits more if the government is of type θ_1. If the citizen chooses to go out, they could still get the transfer, but they are weighed down by some cost γ^2.

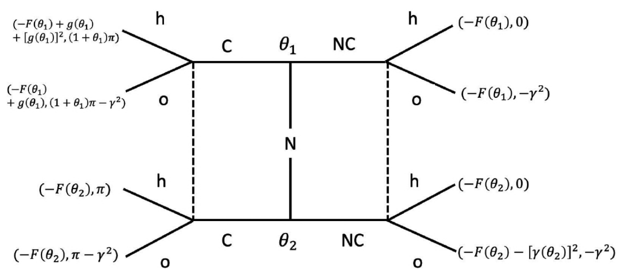

Figure 2. Sequential Form Game of Staying Home - With Government

Of course, doing nothing is political suicide, so the government will still choose to act regardless of its type. The question is whether there is a pooling equilibrium or not. By construction, $P(s_G = 1|\theta_1) = P(s_G = 1|\theta_2) = 1$. Suppose that for simplicity, citizens assume that $P(\theta_1) = P(\theta_2) = 0.5$. Then, as in Equation (7), the probability that the government is effective given that it chooses to act is denoted by:

$$\mu(\theta_1|s_G = 1) = \frac{P(s_G = 1|\theta_1) \cdot 0.5}{P(s_G = 1|\theta_1) \cdot 0.5 + P(s_G = 1|\theta_2) \cdot 0.5} = 0.5 \tag{16}$$

Some arbitrary probability for the other choice of not responding is assigned if the government is of type θ_1 as $\mu(\theta_1|s_G = 0) = \rho \in [0,1]$.

Using the probability in Equation (16), the citizen's expected payoff from staying home is:

$$E[u_1(s_G = 1, s_1 = 1)] = 0.5 \cdot (1+\theta_1)\pi(s_G) + 0.5\pi(s_G) = (1 + 0.5\theta_1)\pi(s_G) \tag{17}$$

Meanwhile, the expected payoff from going out is given by:

$$E[u_1(s_G = 1, s_1 = 0)] = 0.5 \cdot [(1+\theta_1)\pi(s_G) - \gamma^2] + 0.5 \cdot [\pi(s_G) - \gamma^2] = (1 + 0.5\theta_1)\pi(s_G) - \gamma^2 \tag{18}$$

This suggests that the citizen will always choose to stay home no matter what the government type is if the government implements measures. This is evident in the Philippines, where people did stay home, especially during the early months of lockdown implementation. Notably, the payoff for the individual is higher when the government is of type θ_1; that is, having an effective government is beneficial for citizens as they could be receiving sufficient aid, better services, and a safer environment amid the presence of the virus.

If the government decides not to implement anything and chooses $s_G = 0$, it is easy to see that the citizen will always choose to stay home, considering that the payoff from not staying at home is $-\gamma^2$. In both scenarios, the citizen will always choose to stay home. To show that $(s_G = 1, s_1 = 1)$ is a pooling equilibrium, I show that there is no incentive for the government to deviate and not do anything if it is inept. With the citizens choosing to stay home, the θ_1 government receives $-F(\theta_1) + g(\theta_1) + (g(\theta_1))^2$, which is definitely higher than when it switches to do nothing at $-F(\theta)$. On the other hand, the θ_2 government will receive the same payoff $-F(\theta_2)$, which means that it will be indifferent and will not switch to do nothing.

Proposition 2 *Given a set of beliefs $\mu(\theta_j|s_1)$ and $P(\theta_1) = P(\theta_2)$, the pooling perfect Bayesian equilibrium is given by:*

$$s_1^*(s_G, \mu(s_G)) = \begin{cases} 1 & \text{if } s_G = 1 \\ 1 & \text{if } s_G = 0 \end{cases}$$

$$s_G^*(\theta) = \begin{cases} 1 & \text{if } \theta = \theta_1 \\ 1 & \text{if } \theta = \theta_2 \end{cases}$$

$$\mu(\theta_1|s_G = 1) = 0.5$$

$$\mu(s_1) = \mu(\theta_1|s_1 = 0) = \rho$$

On government type

For simplicity, the previous section assumed that the perceived probability of government effectiveness $P(\theta_1) = 0.5$. However, government perception may vary along the way depending on the actions that they have done before; therefore, looking at how individuals respond conditional to the **perceived** government type may provide a richer story on compliance. Here, I generalize Equation 16 so that:

$$\mu(\theta_1|s_G = 1) = \frac{P(s_G = 1|\theta_1) \cdot \tau}{P(s_G = 1|\theta_1) \cdot \tau + P(s_G = 1|\theta_2) \cdot (1-\tau)} = \tau \quad (19)$$

where τ is the probability that government is θ_1. This modifies the expected utility from staying at home:

$$E[u_1(s_G = 1, s_1 = 1)] = \tau \cdot (1+\theta_1)\pi(s_G) + (1-\tau)\pi(s_G) = (1+\tau\theta_1)\pi(s_G) \quad (20)$$

Consequently, the expected payoff from going out is given by:

$$E[u_1(s_G = 1, s_1 = 0)] = \tau \cdot [(1+\theta_1)\pi(s_G) - \gamma^2] + \tau \cdot [\pi(s_G) - \gamma^2] = (1+\tau\theta_1)\pi(s_G) - \gamma^2 \quad (21)$$

This adds an element to the discussion. A higher value of could be an indication of higher trust in government, which means that the expected payoffs from staying at home increases with τ. Interestingly, it also appears beneficial for those who choose to go outside. The cost to the individual as captured by γ^2 is still in Equation 21, but when the government perception is good, when it delivers its promise of making it safe for the people amid the pandemic, then individuals still get a positive expected payoff.

Discussions and Conclusion

The preceding analysis provided a picture of compliance among individuals and between individuals and the state. Among individuals, people will always comply and stay at home if they see other people doing the same. Staying at home indicates that the threat of the pandemic is real, and it is safer to stay indoors to avoid any contact with other people. The cost of catching COVID-19 outweighs the (potentially) psychological benefits from going out. The interaction between the government and individuals also shows that people, regardless of what the government does, will always find it beneficial to stay at home. The payoffs from staying home are even better with an effective (type θ_1) government, which indicates that people live in a safer environment and that their needs are being well provided.

One critical aspect of this model is that we explicitly excluded individuals who have no choice but to go out for work. When we account for medical and non-medical frontliners in the model, we may expect to see changes in the payoffs and equilibria as people may opt to forgo their personal safety just to make ends meet. This could be more evident when we account for the government's interaction with individuals. This is beyond the scope of the current model, but it would be interesting to see how frontliners will respond when the government is effective in implementing policies to curb COVID-19.

Another possible area for further discussion is the selected priors for the model. For simplicity, I assumed that the probability of being infected is 0.5, and the probability of being an inept government is 0.5. Changing the priors will likely yield a different equilibrium and a different story. Nonetheless, this could be a good starting point to introduce varying scenarios in the model presented.

Most importantly, the findings from the models rely heavily on the construction of the payoff functions. Although the underlying story for the payoff functions is sensible, alternative specifications may be more reasonable, and this will have an effect on the equilibria. Simulations may also be implemented to verify the equilibria established in this paper.

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