Chapter 14
Trust and Public Policy: Lessons from the Pandemic

Mausumi Das and Ajit Mishra

Trust is the foundation upon which the legitimacy of democratic institutions rests. Public trust helps governments govern on a daily basis and respond to the major challenges of today and tomorrow.
—'Building Trust to Reinforce Democracy' , OECD Report, 2022.

Abstract This paper examines the importance of mutual confidence or trust between a government and its citizens on the effectiveness of public policies. We develop a theoretical framework where the designing of government policies and the concomitant actions of the citizens are meditated by the degree of social trust. We introduce a short-term aggregative health shock—a pandemic—which is novel: its characteristics are not fully known at the onset. This creates scope for government intervention in the form of framing the policy announcement and its information content. We use this framework to examine the relationship between government communication, social trust and compliance. For any given level of trust, we analyse the equilibrium framing of the policy as well as the corresponding response and examine the degree of policy effectiveness as a function of the existing level of trust.

Keywords Trust · Public policy · Pandemic

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14.1 Introduction

This paper examines the importance of mutual confidence or trust between a government and its citizens for the effectiveness of public policy at the time of a pandemic. Policies become ineffective when either the delivery agents (government officials) or citizens for whom the policies are designed act in manners which negate the intended outcome of these policies. Much of the public policy literature has focused on one crucial aspect of effective policy making: incentives. In this paper, we highlight another equally important aspect: trust.

Trust is broadly defined as 'cooperative attitude outside the family circle'.[1] It also entails an element of reciprocity. According to Coleman (1990), an individual exhibits trust if he or she places voluntary resources at the disposal of another party without any legal commitment from the latter, but with the expectation that the act of trust will pay off. In the case of the government trusting its citizens, the absence of legal precommitment is important.

The relationship between trust and economic development is now well recognized. Trust is believed to foster development through multiple channels. First, trust forms the backbone of any market exchange. As Arrow (1972) wrote: 'virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time'. Moreover, in a world of incomplete contracts and imperfect information, trust directly impacts overall economic efficiency by reducing transaction costs and increasing information sharing. Second, since investment in physical and human capital entails interaction among agents over multiple periods, the level of trust could influence their rate of accumulation. Third, trust constitutes the very foundation of international trade relations. Fourth, trust could facilitate R&D investment and technology transfer.[2]

While the role of trust in commercial transactions has been explored in detail (both theoretically and empirically), its role in the arena of policymaking has remained relatively unexplored. It is obvious that if common people do not have trust in the government then implementation of even the most well-intentioned policies would become a challenge. At the same time, if the government believes that citizens are subversive, then it is likely to spend too much effort and resources in monitoring and regulating, which are economically wasteful. Moreover, too much regulation may signal a prickly government, which can further erode the trust of the citizens. Thus, the lack of mutual trust between a government and its citizens can snowball into a bad equilibrium where the private agents are discouraged from taking any productive initiative while a major part of the government resources is spent on policing the agents.

These inefficiencies can become more pronounced during periods of great uncertainty—such as a pandemic. As we know, the COVID-19 pandemic was quite

[1] Algan and Cahuc (2014).

[2] Dearmona and Grier (2009) provide strong empirical support for a positive relationship between trust and economic growth using panel data for 51 countries. Also, see Algan and Cahuc (2014) for a comprehensive survey.

unprecedented not only in terms of its spread but also in terms of the scarcity of information about its infectivity and virulence (at least at the onset). As governments across the globe started gathering information and processing them quickly to come up with appropriate policies, their effectiveness depended on compliance by the common people. This is where trust would have played a critical role. States which have had a history of participatory governance structure would have found it easier to implement various COVID-appropriate policies and ensure compliance than states which have historically been more authoritarian.

Articles published in various national and global media at the onset of the pandemic as well as various interim reports of international agencies, such as the WHO, indeed lent credence to this view. A case in point is the state of Kerala in India. Kerala reported its first case of COVID-19—the first reported case in India—on 30 January 2020. The patient was a medical student who travelled from Wuhan, China to her hometown in Kerala on January 23. Upon returning, the student was asked to report to the nearby hospital for screenings and to self-isolate at home. At the same time, the Health Department of the state of Kerala also initiated an intensive tracking system to trace individuals who came in contact with the student; they were also told to quarantine in their homes. A week later, on January 30, the student tested positive for the virus, whereupon she was immediately transferred to an isolation ward at the Thrissur Medical College hospital. She stayed there for the next 28 days—being treated following all COVID protocols and also being tested for the virus every alternate day. The student was released from the hospital on February 20 after she tested negative for a whole week, and was allowed to return home. Despite being isolated for more than a month, the student was full of praise about the treatment she received from medical staff and the state. In a report published in the National Post, she was quoted as follows: 'The nurses and doctors who attended to me were calm and friendly, even though they had to camp out in the hospital. I had counsellors to speak to when I felt low. Even the health minister called to tell me the whole state was behind me and praying for my quick recovery'.[3] In the same newspaper article, Dr. Anant Bhan, a researcher in bioethics and global health policy, commented that the student's account of her experience probably added to public trust in the system, especially after concern and complaints had been registered in other parts of the country: 'It helped people understand that they would be taken care of and increased chances that they would report to the government for testing'. This was in sharp contrast with repeated reports of people escaping hospitals or quarantine in some other states, forcing them to undertake draconian measures to ensure compliance.[4] A report of WHO, published in July 2020, attributed the success of Kerala in controlling the initial spread of the infection to its timely and comprehensive response in

[3] See Desai (2020).

[4] For example, the state of Uttar Pradesh passed an ordinance in May 2020 that made hiding coronavirus infection a crime with a jail term of one to three years and a hefty fine of Rs 10000–Rs 10 lakh. For details, see Sharma (2020).

collaboration with key stakeholders and strong community engagement.[5] This policy template, hailed in the WHO report as 'a great example for other states to emulate', was obviously based on broad community support and mutual trust between the government and its citizens.

In this paper, we develop a theoretical framework where the designing of government policies and the concomitant actions of the citizens are meditated by the level of social trust. We introduce a short term (one period) health shock in our model, whose characteristics are not fully known in the current time period.[6] This creates scope for government intervention in the form of framing the policy announcement and its information content. We use this framework to examine the relationship between government communication, social trust and compliance. For any given level of trust, we analyse the equilibrium framing of the policy as well as the corresponding response and examine the degree of policy effectiveness as a function of the existing level of trust. We then allow for a dynamic interaction between the framing of the policy today and the level of social trust tomorrow and analyse its long run consequences from the perspective of governance structure as well as preparedness for future uncertainties.

Our paper is close in spirit to that of Aghion et al. (2010), but our model structure is very different. In our model, the main policy tool under consideration is public communication, which directly interacts with people's degree of social trust. Ours is a dynamic framework where the degree of social trust evolves over time. Moreover, introduction of a short-term uncertainty allows us to examine the possible deviations from the non-pandemic steady state and its long-run implications. It also makes our model suitable for analysing policies at the time of the COVID-19 pandemic.

Our work is directly motivated by an emerging empirical literature that links public trust with the efficacy of COVID-19 response by governments in different countries. In the section that follows we first discuss this motivating evidence. We then present our model in Sect. 14.3. Section 14.4 concludes by offering some directions for future research.

14.2 Motivating Evidence

Reported incidence and mortality from the COVID-19 virus varied greatly not only from country to country but also within the same geographical regions. It also defied the usual trend of death observed for other communicable diseases. Unlike malaria, typhoid, diphtheria or H.I.V., wealthier countries with more healthcare resources have had a greater burden from COVID-19 than have low-income countries with fewer healthcare resources, which Mukherjee (2021) referred to as an 'epidemiological mystery'. This unusual pattern in the spread and impact of the pandemic has led

[5] See here: https://www.who.int/india/news/feature-stories/detail/responding-to-covid-19---learnings-from-kerala.

[6] This could be interpreted as an epidemiological shock arising out of the novel coronavirus.

researchers to explore factors other than per capita income and health infrastructure to explain the observed geographical variation in the incidence and mortality rate of COVID-19. One of the key factors that has been repeatedly highlighted in this recent literature is the degree of social trust.

In a study published in Lancet, Bollyky et al. (2022) used data on daily SARS-CoV-2 infections and COVID-19 deaths for 177 countries and territories and 181 subnational locations for a period of 21 months (from 1 January 2020 to 30 September 2021) to assess the potential correlates of COVID-19 prevention and treatment across these countries. To this end, they estimated the cumulative infection rate and infection-fatality ratio (IFR) for all these countries, which were further standardized for environmental, demographic, biological and economic factors. The authors then tested for the correlation of these standardized national cumulative infection rates and IFRs with a number of variables such as pandemic preparedness indices; health system capacity indicators; governance indicators; inequality and societies' trust in their government, science and their communities. Their results are presented in Table 14.1.

This study clearly identifies social trust as one of the key factors in lowering the infection rate due to COVID-19 pandemic. As Fig. 14.1 shows, while most of the health and governance indicators were not meaningfully associated with standardized infection rates or IFR, measures of trust in the government and interpersonal trust, as well as less government corruption, had large, statistically significant associations with lower standardized infection rates and IFR. Indeed, according to the authors, 'If these modelled associations were to be causal, an increase in trust of governments such that all countries had societies that attained at least the amount of trust in government or interpersonal trust measured in Denmark, which is in the 75th percentile across these spectrums, might have reduced global infections by 12.9% for government trust and 40.3% for interpersonal trust'. High levels of government and interpersonal trust, as well as less government corruption, were also found to be associated with higher COVID-19 vaccine coverage among middle-income and high-income countries, where vaccines were readily available.

Another study by Lenton et al. (2022) examines the role of social and cultural factors in determining country-level resilience to COVID-19. 'Resilience' is defined as the rate of recovery of a system from perturbation back towards a presumed, pre-existing stable state—here zero infection and associated deaths—where rapid recovery equals high resilience. Using data for 157 countries, the authors report that resilience to COVID-19 varied by a factor of approximately 40 between countries for cases per capita, and approximately 25 for deaths per capita. Looking for an explanation for this variance, the authors found that trust within society was positively correlated with country-level resilience to COVID-19, as was the adaptive increase in stringency of government interventions when epidemic waves occur. By contrast, countries where governments maintained greater background stringency tended to have lower trust within society and tended to be less resilient. In fact, all countries where more than 40% of the respondents agree that 'most people can be trusted' achieved a nearly complete reduction of new cases and deaths. Based on these results, the authors comment that 'trust can improve resilience to epidemics and other unexpected disruptions, of which COVID-19 is unlikely to be the last'.

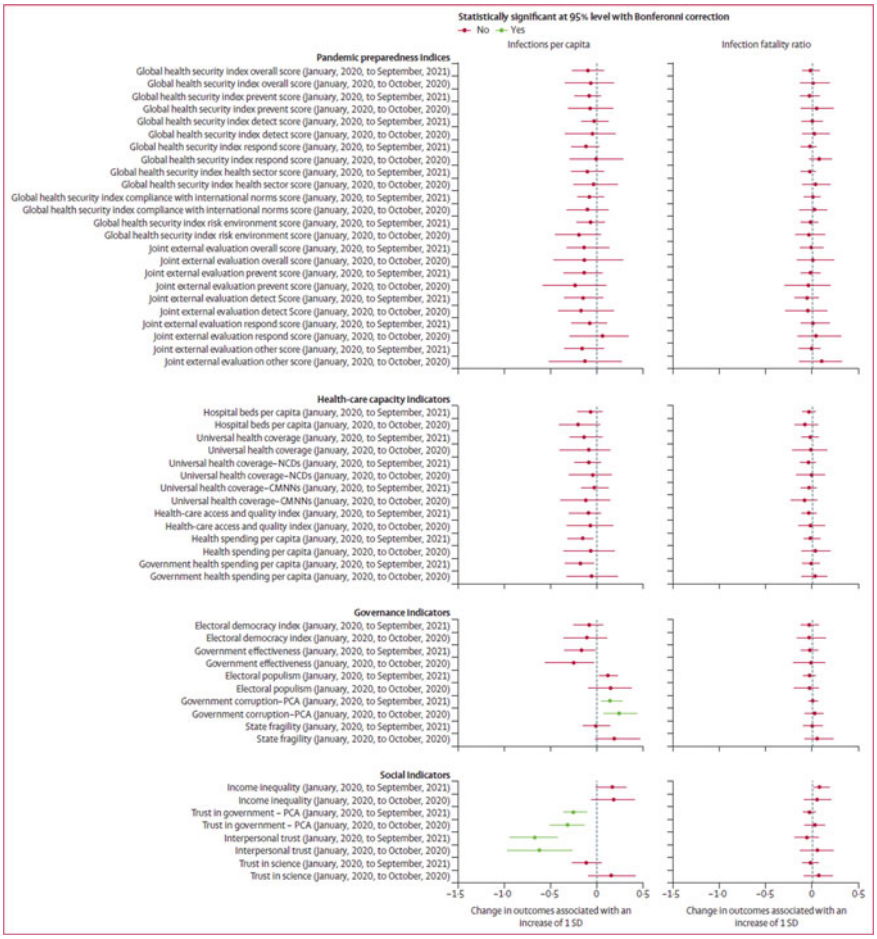

Fig. 14.1 Correlates of infection rate and IFR (*Source* Bollyky et al. (2022))

Our final piece of motivating evidence comes from Israelsen and Malji (2021), who undertook a comparative study of the initial COVID-19 response by two states in India: Kerala and Gujarat. Both states have a democratically elected government in charge of the state adminstartion, but the two states differ in their overall governance structure. Kerala has had a history of strong popular movements such as the temple entry movement of the 1930s, workers movements in the 1950s and 1960s, literacy movements in the 1980s and gender, caste and people's movements from the 1990s onwards, which have contributed towards the development of a strong civil society and inclusive social policies, making it a vibrant participatory democracy.[7]

[7] In this context it is worth a mention that Kerala, despite having the largest minority concentrations of Christians and Muslims than any other Indian state (each group roughly representing 20% of the

Table 14.1 COVID data—average: first 100 days

	India	Kerala	Gujarat
Case fatality rate (%)	3.20	0.64	6.20
Total cases	474,391	3603	29520
Covid case per 100k	30	11	94

(*Source* Israelsen and Malji (2021))

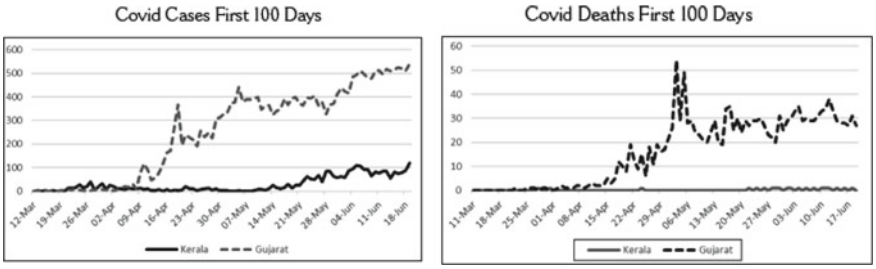

Fig. 14.2 COVID data in Kerala and Gujarat—first 100 days (*Source* Israelsen and Malji (2021))

In contrast, in Gujarat, the state's relationship with its citizens is organized around a centralized delivery of public goods that promote market interactions (e.g. roads, ports and power), but leaves little scope for social mobilization and cohesion. Indeed, despite being economically one of the most prosperous states in India, it lags behind in terms of many of the social indicators of development. Gujarat also has had a long history of communal conflicts in the post-independence era. It is therefore expected that the degree of social trust would be high in Kerala and low in Gujarat. In this backdrop, Israelsen and Malji (2021) compare the initial impact of COVID-19 in Kerala vis-a-vis Gujarat for the first 100 days—starting on 11 March 2020, when the WHO declared the novel coronavirus a global pandemic, to 19 June 2020. The authors argue that during this initial period, Kerala did a much better job in terms of 'flattening the curve' than Gujarat, which is reflected in Table 14.1.

The stark contrast in initial COVID numbers between the two states is apparent not only in terms of the averages but also in terms of the dynamics of the disease over the first 100 days, as captured by the progress of the absolute number of COVID cases and COVID deaths in the first 100 days. These are shown in Fig. 14.2.

Israelsen and Malji (2021) argue that inclusionary social policies, along with state official's transparency and communicativeness concerning the handling of the pandemic, meant that there was a high level of public trust in the government, ensuring that there would be a high level of citizen cooperation in attempts at 'flattening the curve' in Kerala, which was lacking in Gujarat.

population), has rarely seen a communal conflict in the post-independence era. See Heller (2020) for elaboration.

The empirical evidence presented here suggests a strong correlation between social trust and effectiveness of government policies at the time of a pandemic. We now develop a theoretical model that attempts to capture the precise mechanism through which this correlation works.

14.3 The Model

Consider an economy populated with a continuum of risk-neutral agents of mass one, each endowed with one unit of labour. A single final commodity is produced in the economy using labour as the only input. However, the same good can be produced in two sectors, which are characterized by different technologies as well as different social distancing opportunities:

(i) a modern industrial sector which generates α units of final good per unit of labour employed;
(ii) a home production sector which generates β units of final good per unit of labour employed, where $\beta < \alpha$.

The industrial sector also requires workers to congregate in a confined physical space (a factory) where there is little scope for social distancing. In situations of a pandemic, this creates a potential health hazard, generating a negative externality for everybody engaged in industry production. The negative externality is measured by a disutility cost δ, which is directly related to the intensity of the pandemic.

The health hazard due to the pandemic can however be mitigated if people follow COVID-appropriate behaviour such as wearing masks, cleaning hands regularly, avoiding public gatherings and so on. The individual cost of maintaining these COVID protocols is small, measured by a number ε close to zero. But their impact can be large depending on how many people in the community are adhering to these protocols.[8] Accordingly, we posit that for any pandemic of a given intensity δ, its health hazard can be reduced by some percentage ρ, where the exact value of ρ is endogenous: it depends on agents' collective behaviour. In particular, if everybody in the community adheres to the COVID protocols, then the health hazard associated with the pandemic is brought down to its minimum level, assumed to be zero.[9] On the other hand, if nobody in the community follows the COVID-appropriate behaviour, then the pandemic affects people with its full intensity. Thus, we define the effective health hazard (δ^e) associated with a pandemic of intensity δ as

[8] Many studies found that community mask adherence and community attitudes towards masks were associated with a substantive reduction in COVID-19 cases and deaths. See for example, Adjodah et al. (2021).

[9] The assumption that everybody following the COVID protocols can reduce the effective health hazard of a pandemic to zero—irrespective of its intensity—is of course an exaggeration. However, there is no doubt that a coordinated effort by all agents in the community can greatly reduce the risk of infection. The qualitative results of our model will not change even if we allow a small percentage of transmission possibility when everybody is masked.

$$\delta^e = \rho(n_m)\,\delta;\ \rho' < 0;\ \rho(0) = 1;\ \rho(1) = 0. \tag{14.1}$$

Here, $n_m \in [0, 1]$ denotes the fraction of the people in the society who follow COVID-appropriate behaviour.

Perfect competition in both sectors ensures that the sectoral wage rates are equal to the respective marginal/average products of labour. It is then obvious that when there is no pandemic, all agents will be engaged in industrial production, which offers a higher wage α. The concomitant utility and aggregate income, also measured by α, are at their maximum possible level. This non-pandemic steady state constitutes our benchmark—an ideal scenario where atomistic agents acting in isolation attain the best possible outcome for themselves and for the society.

Keeping this benchmark in mind, we now focus on a pandemic situation, when working in the industrial sector entails a health hazard. The impact of the health hazard depends on the intensity of the pandemic as well as on the preventive measures undertaken at the community level to contain the spread of the virus. Since agents acting in isolation can no longer ensure the best possible outcome for themselves, trust in others—in the community and in the government—now assumes special significance.

14.3.1 Pandemic, Uncertainty and Trust

One unique feature of the COVID-19 virus was that very little was known about it at the onset of the pandemic. Government health officials in various countries were investing time, effort and resouces in gathering information, often in coordination with international health agencies such as the WHO. Given the general lack of information and uncertainty, the communication strategy of the government was of paramount importance. When confronted with a novel virus for which there is no pre-existing treatment or vaccine, the most effective way for a government to protect its citizens is by convincing them to take measures to protect themselves and one another. Compliance with government guidance on maskwearing, physical distancing, contact tracing or a new vaccine depends on citizens' confidence that the government is trustworthy—a belief that the government knows what it is doing and is acting for the common good. Thus, the presence of uncertainty creates the scope for effective government intervention, but its effectiveness depends crucially on the degree of public trust.

Trust is important not only for compliance with government policy but also for maintaing prosocial behaviour and cooperation among citizens in a crisis time like the COVID-19 pandemic. Indeed, many of the behaviours that are known to be effective in reducing the transmission of the virus involve a tradeoff between self and collective interests, requiring people to bear individual costs (albeit small) to benefit others. Yet, these same behaviours offer benefits of protecting the community from exposure to the virus, reducing the spread of the virus, and maintaining well-functioning healthcare institutions. Thus, everyone would fare better by acting cooperatively.

Whether such cooperation occurs or not depends on how much confidence people have in one another, i.e. on the degree of interpersonal trust.

In the theoretical construct that follows, we distinguish between two different types of social trust: (a) Public trust—the trust a citizen places in the government and other public institutions; (b) Interpersonal trust—the trust a citizen places in his fellow citizens.[10] As we argue below, both play a crucial role in determining the equilibrium outcome at the time of a pandemic.

As mentioned earlier, at the onset of the COVID pandemic, even government authorities lacked enough information about the infectivity of the virus and its virulence. Nonetheless, the state officials were better informed than the ordinary citizens because of their access to large-scale data and their close links with officials in other countries and international agencies. We therefore postulate that based on collected data, the government first receives a signal δ about the intensity of the pandemic, drawing from a uniform distribution with support $[\underline{\delta}, \bar{\delta}]$. It then decides to communicate this to the public along with some broad guidelines about COVID-appropriate behaviour, such as wearing masks, cleaning hands, avoiding crowded places etc. At the moment, we shall assume that the government communicates the entire signal content truthfully to its citizens.

Upon receiving the message from the government, an agent chooses his best course of action. The action space of agent consists of two decisions:

(i) Whether to work in the industrial sector or engage in home production;
(ii) Contingent on working in the industrial sector, whether to follow the COVID-appropriate behaviour or not.

Working in home production generates a pay-off β, which is independent of δ. Since the agent stays at home, there is neither a chance of him being exposed to the virus nor any need to follow COVID-appropriate behaviour. On the other hand, if the agent joins the industrial sector, then in the absence of any COVID-appropriate behaviour, the pay-off of the agent is given by $\alpha - \delta$. If however he and some others—altogether n_m fraction of agents in the community—adhere to the COVID-appropriate behaviour, then working in the industrial sector generates a pay-off $\alpha - \varepsilon - \rho(n_m)\delta$. A decision tree showing the actions of an agent i and his corresponding pay-offs is depicted in Fig. 14.3.

It is obvious that the optimal choice of action by an agent depends on the intensity of the pandemic (δ) as well as the fraction of people who undertake the COVID-appropriate behaviour (n_m). Given ε, the agent will join the industrial sector if and only if his pay-off from working in the industrial sector, denoted by $\pi(\delta, n_m)$, is at least as high as β. When the individual cost of following the COVID protocols (ε) is negligible, one can easily verify that there exists a threshold level of pandemic intensity, defined by $\hat{\delta} \equiv \alpha - \beta$, such that

[10] Similar distinction is also made between trust within a close group such as family and clan on one hand, and within ties outside—as they have different implications. See Banfield (1958).

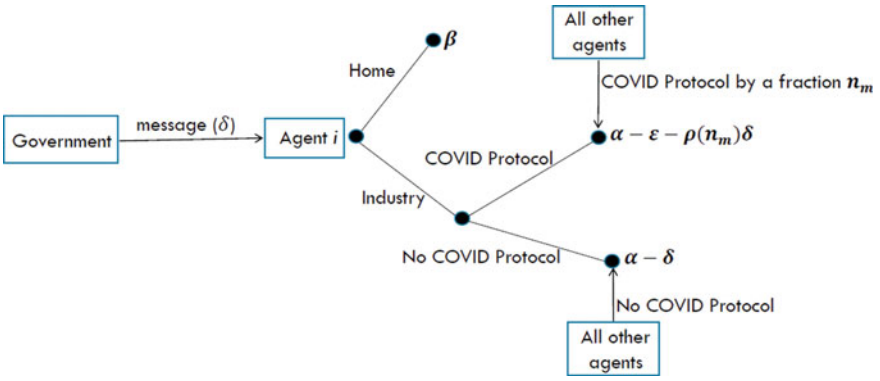

Fig. 14.3 Decision tree

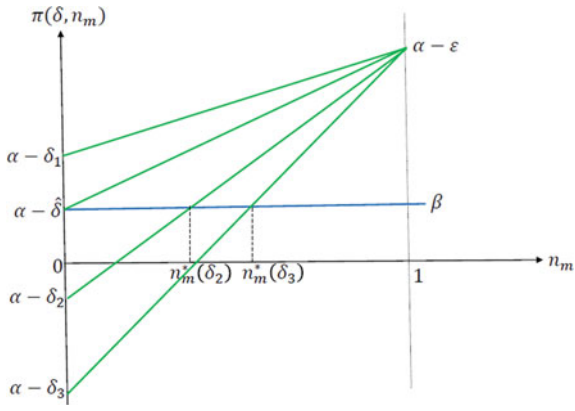

Fig. 14.4 Pay-off comparison: industry versus home production

$$\text{for } \delta \leqq \hat{\delta},\ \pi(\delta, n_m) \geqslant \beta \ \text{ for all } n_m \in [0, 1]\,;$$

$$\text{for } \delta > \hat{\delta},\ \pi(\delta, n_m) \gtreqless \beta \text{ iff } n_m \gtreqless n_m^*(\delta) \equiv \rho^{-1}\left(\frac{\alpha - \varepsilon - \beta}{\delta}\right).$$

These pay-off comparisons are shown in Fig. 14.4, where we plot the $\pi(\delta, n_m)$ function with respect to n_m. The characterization of the $\rho(n_m)$ function specified in Eq. (14.1) allows us to fix the two intercept terms $\pi(\delta, 0)$ and $\pi(\delta, 1)$ for different values of δ. Since we have postulated that when everybody in the community strictly adheres to the COVID protocols (i.e. when $n_m = 1$), the effective health cost associated with the pandemic is brought down to zero irrespective of the intensity of the pandemic, it implies that the intercept term at $n_m = 1$ remains unchanged as the pay-off line shifts responding to a change in δ.

In Fig. 14.4, we have depicted four cases—each corresponding to a different value of δ. One of them relates to the threshold value $\hat{\delta}$: in this case, $\pi(\hat{\delta}, 0) = \beta$, which implies that even when nobody in the community follows the COVID protocols, pay-off from working in industrial production—despite the infection—exactly matches the pay-off from working in home production. Needless to say, as more and more people adhere to the COVID protocols, the risk of getting infected goes down, raising the pay-off from working in industry production vis-a-vis home production. If the intensity of the pandemic is even weaker than $\hat{\delta}$, as depicted in Fig. 14.4 by δ_1, then working in the industrial sector *always* generates higher pay-off than working at home production. The other two cases depicted in Fig. 14.4 relate to strong pandemic intensities δ_2 and δ_3- both of which are higher than the threshold value $\hat{\delta}$. In this case, working in the industrial sector generates higher pay-off if and only if enough people in the community ($n_m^*(\delta_2)$ and $n_m^*(\delta_3)$, respectively) adhere to the COVID protocols. A pandemic of greater intensity ($\delta_3 > \delta_2$) requires a higher fraction of the population to follow COVID appropriate behaviour ($n_m^*(\delta_2) > n_m^*(\delta_3)$) in order to make the pay-off from the industrial sector comparable to that from home production. Since the relative pay-off from the industrial sector now depends crucially on the action of other agents in the economy, this is where the level of social trust—public as well as interpersonal— plays a critical role.

To make things interesting, let us assume

$$\hat{\delta} \in (\underline{\delta}, \bar{\delta}). \qquad \textbf{(Assumption 1)}$$

Assumption 1 implies that the signal observed by the government could lie below or above the threshold level. This allows us to explore a whole range of possibilities where the degree of social trust interacts with the intensity of the pandemic to generate the equilibrium outcome.

Consider two types of societies: a high-trust society and a low trust society. The high-trust society is characterized by a high degree of public trust *and* interpersonal trust. Thus, in the high-trust society, agents fully believe in any message communicated by the government. They also have full trust in the cooperative behaviour of their fellow citizens. In contrast, the low-trust society is characterized by a low degree of public trust, compounded by a low level of interpersonal trust. Thus, in the low-trust society, agents believe that the government is not being truthful in its message conveyed to the public. In addition, they have little faith in their fellow citizens and do not expect any cooperation from them. We now compare the equilibrium outcomes during a pandemic in high-trust vis-a-vis low-trust societies.

14.3.1.1 High-Trust Society

In a high-trust society, all agents believe the government announcement that there is a pandemic of intensity δ. They also believe that their fellow citizens will abide by the announced guidelines regarding COVID-appropriate behaviour. Thus, in equilibrium, $n_m = 1$. Therefore, from Fig. 14.4, it is obvious that everybody in the high-trust

society will join the industrial sector, irrespective of the value of δ. The equilibrium pay-off of an agent is the high-trust society given by

$$\pi(\delta, 1) = \alpha - \varepsilon > \beta \tag{14.2}$$

Note that, when the individual cost of following the COVID protocols (ε) is negligible, the equilibrium outcome in a high-trust society becomes almost equivalent to that of the no-pandemic benchmark. Thus, in a high-trust society, individuals' optimal course of action also generates the socially optimal outcome, which makes proactive government policies redundant. Indeed, the only policy that a government needs to follow is to truthfully convey the received signal content to the citizens and outline the appropriate COVID protocols; there is no need to take recourse to restrictive policies such as travel restrictions or lockdown.[11]

14.3.1.2 Low-Trust Society

Now consider a society where agents are low in trust. Hence, when the government announced that there is a pandemic of intensity δ, the agents believe that the government is not being truthful about the intensity. They also believe that none of their fellow citizens will follow any COVID protocols. Thus, in equilibrium, $n_m = 0$.

Notice that, even if the agents believe in the government's message about the pandemic intensity, lack of interpersonal trust means that they will always operate at an inefficient equilibrium. From Fig. 14.4, it is easy to see that for any pandemic intensity $\delta \leqslant \hat{\delta}$, everybody in the economy will join the industrial sector, but nobody will follow COVID-appropriate behaviour. On the other hand, for any pandemic intensity $\delta > \hat{\delta}$, the agents will stay at home—working in home production, since working in the industrial sector without any COVID protocols now gives lower returns. The equilibrium pay-off of an agent in this case is given by

$$\pi(\delta, 0) = \begin{cases} \alpha - \delta & \text{for } \delta \leqslant \hat{\delta}; \\ \beta & \text{for } \delta > \hat{\delta}. \end{cases} \tag{14.3}$$

The problem gets compounded when the agents are also lacking in public trust. To see this, suppose the agents believe that the government is misreporting the intensity

[11] In this context, one might recall the Swedish experiment. In February 2020, as COVID-19 had begun sweeping across Europe leading to a complete shutdown of many countries, Sweden remained open. The country's approach at that time was controversial. Although the death rate from COVID-19 did go up sharply in Sweden, some have argued that compared to other countries in Europe, it was not the worst off. For example, It was not as bad as Italy, Spain, the U.K. and Belgium. According to Pickett (2021), the Swedish Government allowed for small liberties such as going to restaurants, bars and parties, which made the government appear quite permissive. Staying at home was optional rather than mandatory, but mobility data from cell phones show that Swedes did significantly reduce their movement. This seems to support our hypothesis that a trusting population will respond favourably to the permissive policy of the government on their own, making coercive policies such as a lockdown redundant.

and the true pandemic intensity is $\tilde{\delta} \neq \delta$. Given that the agents earn a higher income from the industrial sector, it seems plausible to assume that they underplay the threat of infection from working in this sector, such that $\tilde{\delta} < \delta$. Accordingly, we postulate that

$$\tilde{\delta} = \gamma\delta;\ 0 < \gamma < 1, \qquad \textbf{(Assumption 2)}$$

where γ measures the degree of public trust. A high value of γ means high public trust.

The agent will now choose their optimal course of action based on their perceived pandemic threat $\tilde{\delta}$, instead of the received signal δ. When the pandemic intensity is low, i.e. $\delta \leqslant \hat{\delta}$, this distrust in government does not impact the optimal occupation choice of an agent. Since they underplay the pandemic threat, they join the industrial sector anyway, without any COVID protocol. Nevertheless, there is now a difference between the agents' expected pay-off $\pi(\gamma\delta, 0)$, and their actual pay-off $\pi(\delta, 0)$, such that

$$\pi(\delta, 0) < \pi(\gamma\delta, 0).$$

Lack of public trust can however precipitate a serious health crisis if the pandemic intensity is sufficiently high, i.e. $\delta > \hat{\delta}$. In this case, agents underplaying the pandemic threat means that they might decide to join the industrial sector without adhering to any COVID protocol, when they should have actually stayed home. These possibilities are shown in Fig. 14.5.

In Fig. 14.5, the red dotted lines represent an agent's expected pay-off under a pandemic of intensity δ, while the green lines depict the corresponding actual pay-off. It is easy to see that for any δ-value greater than $\hat{\delta}$, a possibility now arises where the distrusting agents, who underplay the government's message and defy the broad directives issued by the government, not only end up with a lower actual pay-off than they had anticipated but also choose a course of action which is socially harmful.

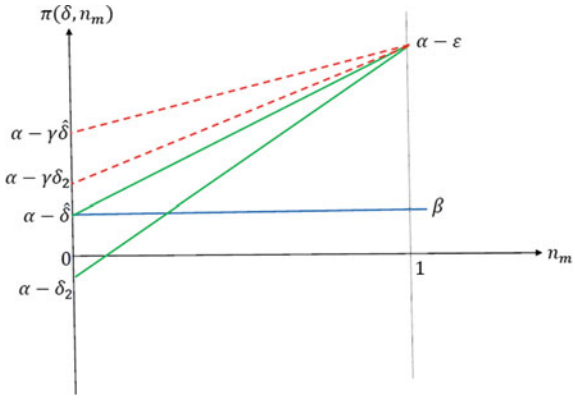

Fig. 14.5 Pay-offs under distrust

This situation is depicted in Fig. 14.5 by the lines corresponding to δ_2. By joining the industrial sector without COVID protocol, the agents now create a negative health externality for everybody, lowering their pay-offs below that from home production. Thus, not only do they deviate from what is socially optimal but also harm themselves in the process.

This range of possibilities of course depends on the degree of public trust (γ). In particular, there exists an interval of δ values, given by $(\alpha - \beta, \frac{\alpha-\beta}{\gamma})$, such that if the received signal lies within this range, then the distrusting agents, though better off by working at home, will land up in the factories defying the government directives—thereby creating a health crisis. Higher is the value of γ, greater is the length of this interval where the agents' act of defiance results in a health crisis. In such cases, (costly) coercive actions are needed to make agents follow the directives issued by the government.

14.3.1.3 Manipulation of Information and Trust Dynamics

Coercive actions are economically and politically costly. They are economically costly because the government has to spend resources in monitoring the agents. They are politically costly because the government forces agents undertake actions which they are not willing to undertake otherwise, which obviously does not make the government very popular! This brings us to an alternative policy consideration: what if the government willfully distorts the information it communicates to the people, knowing that people are going to process this information is a biased manner anyway? In particular, suppose instead of truthfully communicating the received signal δ to its citizens, the government now announces a δ' where $\delta' \neq \delta$? Indeed, if the government is perfectly aware of the degree of trust γ, then it can cleverly manipulate the information content of its announcement by declaring that $\delta' = \frac{\delta}{\gamma}$. The distrusting agents will make a downward adjustment to the announced intensity by exactly the same factor γ, and will operate on the basis of the actual δ, which perfectly suits the purpose of the government. This seems to be a win-win strategy for the government, where it can get agents to behave by simply misreporting some information, thereby avoiding the economic and political costs associated with a coercive policy![12]

[12] Public authorities suppressing information at the time of COVID was not uncommon at all, although in most of these cases, the governments were accused of under-reporting rather than over-reporting the intensity of the disease. For example, Nayanan (2021) writes: 'Over a year of the pandemic, the Indian government's communication has been marked by mixed messaging, the downplaying of potential threats, grandstanding on the administration's handling of the crisis and a reluctance to share information'. More recently, WHO officials complained that China's COVID-19 data does not convey an accurate picture of the situation there and underplays the impact of the disease. See here: https://www.reuters.com/world/china/whos-tedros-concerned-by-china-covid-surge-calls-again-data-2023-01-04/.

Such a strategy however can be problematic on several accounts. First, it is not obvious that the cost of this strategy is necessarily negligible. After all, declaring that the pandemic is going to be of very high intensity (even though it actually may not be) could create unnecessary panic and disorder, making governance difficult. Secondly, projecting that the pandemic is likely to cause a lot of damage may be seen as an acknowledgement of a weak healthcare system, which would dent the reputation of the government. Last, but not least, distortion of information, even if effective in the short run, may further erode the trust of the citizens which will have adverse consequences for the future.

This latter idea can be formally explored by bringing in a time dimension into the picture and by postulating that the signal content changes in every time period, which necessitates the government and the private agents to recalibrate their actions in every period.[13] It is also reasonable to assume that while the government receives the signal at the beginning of the period, agents can costlessly verify the signal content at the end of the period—after they have undertaken their optimal course of action. If the government is truthful about communicating the signal content to the citizens, then this verification process does not yield any surprises: the game is played in the second period exactly the same way, albeit with a fresh draw of δ. But if the government is found to have suppressed/distorted the information content of the signal, then in the next period the degree of public trust (γ) goes down. In particular, one can formulate a dynamic equation capturing the evolution of trust such that

$$\gamma_{t+1} = \gamma_t - f\left(\left|\delta - \delta'\right|\right);\ f(0) = 0;\ f' > 0.$$

To the extent, public trust is an important determinant of compliance, such erosion of trust would seriously jeopardize the effectiveness of policies in confronting a fresh wave of the epidemic or any similar health shock arising in the future.

14.4 Conclusion

The objective of the paper has been simply to highlight the role of trust (of different kinds) in the context of policy effectiveness, without delving into the formal treatment of equilibria. The analysis in this paper can be extended in several directions. Note that we have only considered the case of homogenous society where individuals behave in the same manner. We can model heterogeneous individual behaviour explicitly by considering individuals with different costs of compliance or attitude towards trust.

Second, as the example in the text shows, in a low-trust society the government can improve social welfare by deviating from truth telling. For example, should it exaggerate the pandemic intensity to induce efficient decisions by citizens? But once

[13] This assumption is not very outlandish. Over time, as more information about COVID-19 became available, both the WHO and state officials changed their directives multiple times. Moreover, the virus mutated many times, making the previous prediction about its infectivity and potency invalid.

this is allowed, individuals can factor this deviation into account and trust dynamics will be affected. Government has been a passive player in our analysis—but this extension will incorporate strategic behaviour by the government also.

Lastly, we can also consider information acquisition by the citizens. There was an explosion of information (misinformation) during the pandemic. In many cases, citizens would benefit from additional information about the underlying states, so that optimal action can be chosen. For example, government announces δ but the exact ρ function may depend on some another state of nature. The individual can acquire this information about ρ to take optimal decisions. Given that information is likely to be noisy (especially during the pandemic and with a free-for-all social media), and such information may be costly to acquire, this issue of information acquisition deserves careful attention.

These avenues are to be explored in our future work.

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