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Abstract

We examine how information provision affects the public's policy views on appropriate infection-control policies. We find that negative infection-related information increases support for stricter mobility restrictions, whereas negative economic or social information increases support for prioritizing economic and social activities. We find that these shifts in the policy view are driven by shifts in preferences over infection and socio-economic outcomes, not by shifts in perceptions of the tradeoff between these two competing outcomes.

JEL: C90, D83, D90, H12, I18
Keywords: COVID-19; Information Provision Experiment; Pandemic; Policy Views; Public Health.

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1 Introduction

The COVID-19 pandemic sparked heated debate over the extent to which governments should restrict mobility in order to reduce infection-related deaths. While limiting mobility was broadly recognized as an effective way to slow the spread of disease and prevent medical systems from being overwhelmed, such restrictions also suppressed economic activity and curtailed social interaction. The observed increase in unemployment, deteriorating mental health, and higher suicide rates might have reflected the effects of such restrictions. This tradeoff between "lives and livelihoods" forced governments worldwide to make difficult decisions about how much economic and social activity they were willing to sacrifice in the interest of infection control.

Once a course of action is chosen, policymakers may want to devote considerable effort to obtain public support for adopted policies. Broad public support for policies is crucial because people are more likely to abide by them if they support them. To obtain support for infection-control policies, policymakers and public-health experts extensively communicated to the public the rationales of policies in various ways during the COVID-19 pandemic.

In this paper, we examine how information provision affects the public's view on appropriate infection-control policies. In particular, we conduct information provision experiments in Japan in which we present to our respondents either negative or positive information about actual health, economic, or social outcomes during the COVID-19 pandemic. We measure policy views in two ways: by asking (i) desired priority between infection control and socio-economic activity[1] and (ii) the appropriate duration of the periods with intensive mobility-restriction policies—the periods under the state-of-emergency or priority preventive measures in the context of pandemic policies in Japan.

We find that some information treatments affect the public's policy views. Negative information regarding infections increases support for prioritizing infection control by more and for extending the duration of the state-of-emergency or priority preventive measures—which we will collectively refer to as the SOE in the remainder of the paper. Negative information about economic or social outcomes increases support for prioritizing economic and social activities. Positive information about economic outcomes—somewhat counterintuitively—leads respondents to support prioritizing economic and social activities. In general, negative information has a stronger influence on respondents' policy views than positive information. A follow-up survey conducted two weeks after the initial experiment shows that treatment effects are short-lived, dissipating within two weeks.

[1] In the interest of readability, we use the term 'socio-economic activity' to refer collectively to social activity and economic activity. The term does not exclusively refer to activity with a combination of social and economic elements.

We find significant heterogeneity in the policy view and the responses of the policy view to information provision across demographic groups. Before treatment, the following groups exhibited stronger support for infection control and longer SOE periods: women, older respondents, people without a college degree, those with pre-existing health conditions, individuals vaccinated three or more times, and respondents who had close experience with severe cases or deaths from COVID-19. In terms of treatment effects, older respondents reacted more strongly to any type of information in the direction of supporting infection control. Those personally affected by severe illness or death reacted more strongly to negative infection information and to positive economic or social information, but in the direction of supporting economic and social activity.

Information can change policy views in two ways: it can shift respondents' preferences over infection vs. socio-economic outcomes, or it can change how they perceive the tradeoff between them. We conduct an additional experiment to examine the role of these two channels. Via the causal mediation analysis, we find that some information treatments affect the perceived tradeoff, but that plays a minor role in accounting for the overall effect of information provision on policy views. That is, our information provision affects the public's policy views mainly by affecting their preferences over infection and socio-economic outcomes, not by affecting their perceived tradeoffs.

These findings carry several policy implications. First, negative information appears to be a particularly powerful tool for influencing views on infection control policies, suggesting that policymakers should pay careful attention to the framing of risk-related messages. Second, since treatment effects fade within a short period, it might be necessary for policymakers to provide information to the public repeatedly if they want to achieve persistent changes in public opinion. Third, treatment effects differ across demographic groups. Policymakers can increase messaging effectiveness by tailoring messages to their target audiences—for example, by matching content to the core demographics of each media platform. Finally, our analysis suggests that simple factual information can complement more complex information about the cost and benefits of infection-control policies, which has been shown by Settele and Shupe (2021) to affect the public's policy views via affecting their perception of the health-economy tradeoff.

Our paper is related to a set of papers conducting information provision experiments in the context of the COVID-19 pandemic. Some have examined how information affects beliefs or expectations regarding macroeconomic growth, household finances, and consumer spending against the background of the COVID-19 pandemic. Examples include Binder (2020); Breza et al. (2021); Faia et al. (2024); Galasso et al. (2023); Hanspal et al. (2021); Loomba et al. (2021); Pennycook et al. (2020); and Rafkin et al. (2021). Others have

examined how information affects the public's risk perception and preventive behaviors. Examples include Abel et al. (2021); Akesson et al. (2022); and Sinclair et al. (2021). We differ from these papers in that we focus on the effects of information provision on policy views regarding mobility restriction policies.

Our paper is also related to studies that analyze the effects of information provision on policy views in various contexts. These studies have looked at a broad range of topics, including attitudes toward wealth redistribution, education spending, and support for immigrants. Examples include Alesina et al. (2018); Cruces et al. (2013); Dur et al. (2024); Fehr et al. (2020); Haaland and Roth (2023); Karadja et al. (2017); Kuziemko et al. (2015); and Lergetporer et al. (2018). Although this is a highly active field of research, there has not been much focus on how information provision affects the public views on pandemic policies.

Our paper is closely related to those papers located at the intersection of the two areas discussed in the preceding two paragraphs—COVID-19 and policy views. Carreras et al. (2021), Chmel et al. (2021), Dylong and Koenings (2023), Fuest et al. (2023), Romano et al. (2020), and Rothwell et al. (2023) examined how various information treatments affect the public's view toward COVID-19 containment policies. Our paper is particularly closely related to Fuest et al. (2023) and Carreras et al. (2021) which examine how differently health versus economic information affects the public's policy views. The effect of information provision on policy views in these papers can be interpreted as being driven by either a shift in the preference over health and economic outcomes or a shift in the perceived tradeoff between them. Our paper contributes to this body of work by showing that information provision affects the public's policy view by altering their preferences over health and economic outcomes. Our results are in line with Carrieri et al. (2021) and Hargreaves Heap et al. (2020). They specifically examined the effect of information provision on the public's preference order over health and economic outcomes, finding that some information treatments do affect preferences.

Within this literature, our paper is most closely related to the work of Settele and Shupe (2021), which investigates how various information treatments affect respondents' perceived tradeoff between the economic costs and infection-control benefits of lockdowns and their policy views. They find that lower perceived costs and higher perceived benefits both increase support for longer lockdowns. Our paper complements their work by showing that information provision can also affect the public's view on pandemic policies via altering preferences.

One key difference between our work and these existing papers on COVID-19 policy views and information-provision experiment is the timing of the experiment. All of them conducted the experiment in 2020, often in the spring of 2020 during the initial infection wave

and in the midst of the economic crisis. On the other hand, our experiment was conducted in 2024, after the COVID-19 pandemic was officially over as a WHO-designated public health emergency. It is ex-ante unclear whether the public would respond to information provision in the aftermath of the crisis even if they responded to information provision in the midst of the crisis. Our paper shows that they do respond to information provision even after the crisis is over. This result is important for policy because it suggests that government communication can play an important role in shaping people's views in a future pandemic.

The remainder of the paper proceeds as follows: Section 2 describes the design of the information provision experiment. Section 3 presents respondents' pre-treatment policy views. Section 4 reports the main experimental results on the effect of information provision, including heterogeneity across demographic groups. Section 5 sheds light on the mechanism. Section 6 concludes.

2 Survey Design

In this section, we describe the design of the online survey used to conduct the information provision experiment. We administered the survey in two waves—an initial wave and a supplemental wave—targeting Japanese adults aged 20 to 79. The survey was conducted in collaboration with Cross Marketing, Inc., a Japan-based market research company that maintains a large pool of registered participants. From this pool, we recruited participants using quota sampling to mirror the gender and age distributions of the 2020 Japan Population Census. Respondents received a modest financial incentive upon completion.[2]

2.1 Initial Wave

The initial wave consists of two surveys: a main survey and a follow-up survey. The main survey was administered from February 20 to February 27, 2024 and collected 15,600 responses. The follow-up survey was administered from March 8 to March 18, 2024 and was sent to all main-survey respondents. In total, 14,375 respondents completed the follow-up survey, yielding a retention rate of 92.14%.

Figure 1 summarizes the structure of the main survey. We describe each component below in the order in which it was presented to respondents.

The main survey begins by collecting respondents' background characteristics. We record age, gender, education, income, prefecture of residence, industry of employment (or type of

[2]The initial-wave survey and experiment were approved by the Research Ethics Committee at the University of Tokyo under Case No. 23-544. The supplemental-wave survey and experiment were approved by the Research Ethics Committee at the University of Tokyo under Case No. 24-541.

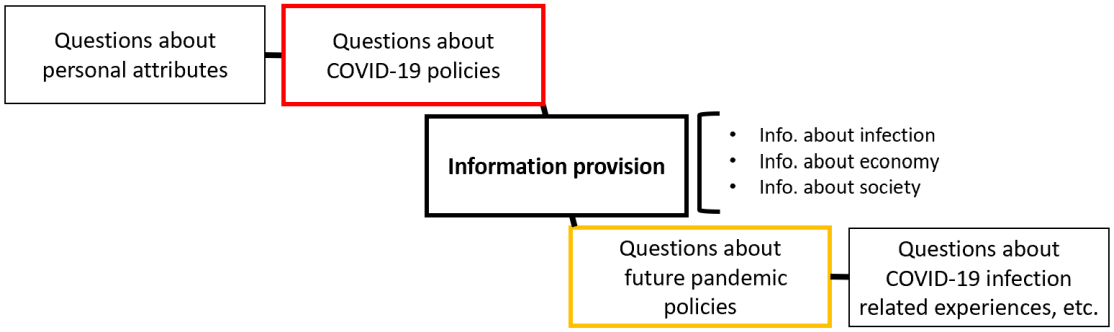

Figure 1: Structure of the Main Survey in the Initial Wave

Note: This figure shows the general flow of the initial-wave main survey. The survey begins at the top left and proceeds toward the bottom right.

non-employment activity), and device used to respond.

Prior to information provision, we collect baseline policy views using two main questions. The first is our 'desired priority' measure: it asks whether the government struck an appropriate balance between infection control and socio-economic activities, which we interpret as the respondent's desired priority (lower values indicate that infection control should have been prioritized more). The second is the 'desired duration' measure, which records how long the respondent thinks the SOEs in Tokyo should have lasted during the pandemic. The questions are posed as follows:

1. *Do you think the Japanese government struck an appropriate balance between maintaining social and economic activity and controlling infections during the COVID-19 pandemic?*

2. *If you had been able to decide the duration of the state of emergency or priority preventive measures periods during the COVID-19 pandemic, how many months would you have implemented them in Tokyo?*

For Question 1, respondents answer on a 5-point Likert scale, with 1 indicating strong support for increased priority on infection control, 3 indicating neutrality (the view that the government's balance was appropriate), and 5 indicating strong support for increased priority on socio-economic activity. For Question 2, respondents choose a number of months, with responses restricted to be between 5 and 15.

We also collect contextual information relevant to these two questions. Specifically, we ask about (i) respondents' perceptions of the government's priority (infection control versus socio-economic activity) during the pandemic, (ii) perceived efficacy of SOEs, (iii) concern about COVID-19 infection, and (iv) knowledge of key pandemic statistics (unemployment,

Table 1: Information Treatments

Tone		**Domain: Infection**
Negative	1.	COVID-19 deaths increased over time.
	2.	One in seven people infected with COVID-19 experienced symptoms lasting more than two months.
Positive	1.	The COVID-19 fatality rate decreased over time.
	2.	The rate of developing severe symptoms from COVID-19 decreased over time.
		Domain: Economic
Negative	1.	Japan's economic recovery was slow compared to G7 countries.
	2.	The economic decline in the COVID-19 crisis was comparable in size to the global financial crisis of 2008.
Positive	1.	The increase in unemployment rate during the COVID-19 crisis was less than half of the increase during the 2008 global financial crisis.
	2.	Japan's economic decline in 2020 is the second smallest among G7 countries.
		Domain: Social
Negative	1.	The number of suicides increased since the COVID-19 crisis began.
	2.	The number of marriages declined significantly since the COVID-19 crisis began.
Positive	1.	ICT equipment became more common in schools since the COVID-19 pandemic began.
	2.	Work-from-home became more common since the COVID-19 crisis began.

Note: This table lists the 12 information treatments by domain (infection, economic, social) and tone (negative, positive).

suicides, and COVID-19 deaths). The full wording of these questions is provided in Appendix G.

After measuring policy views, we randomly assign respondents to one of 14 groups. Of these 14, two are control groups: one control group receives no information, and the other control group receives information unrelated to the COVID-19 pandemic ("irrelevant information"). The other 12 are treatment groups. Each treatment provides information about outcomes in one of three domains: infection-related outcomes, economic outcomes, or social outcomes. Within each domain, treatments vary by tone (negative versus positive), and each domain–tone pair contains two distinct treatments that address different topics. Table 1 summarizes the information treatments by domain and tone. The full treatment materials (including the irrelevant-information control) are reproduced in Appendix B.

Each information treatment consists of a short text statement conveying a single message and a supporting figure. The format is intended to resemble concise, media-style reporting (e.g., a television news segment or talk show graphic), rather than a long or technical presentation. To reduce the chance that results are driven by any single topic, we include two distinct topics within each domain–tone pair. To keep the number of experimental arms manageable, we do not further vary wording or intensity within tone.

After the information provision, respondents again answer the two main questions. To reduce concerns about experimenter demand effects, we rephrase the post-treatment questions to refer to a hypothetical future pandemic:

1. *The state of emergency and priority preventive measures periods are believed to help suppress infections, but at the same time, they are thought to have negative effects on social and economic activity. If a similar pandemic were to occur in the future, how do you think the Japanese government should prioritize social and economic activity versus infection control compared to this time?*

2. *If a similar pandemic were to occur in the future, and you were able to decide the duration of the state of emergency and priority-preventive-measures periods, how many months would you implement them in Tokyo?*

After eliciting post-treatment policy views, we collect background information on respondents' experiences during the COVID-19 pandemic. Specifically, we ask how many times respondents contracted COVID-19 and how many COVID-19 vaccine doses they received. For respondents who contracted COVID-19, we ask whether they experienced severe symptoms.[3] We also ask whether anyone close to the respondent experienced severe symptoms and whether anyone close to the respondent died from COVID-19. To measure baseline health risk, we ask whether the respondent has a pre-existing health condition across a number of categories, including respiratory conditions and endocrine conditions (including diabetes).[4] Because some of these questions may impose an emotional burden, we include a "prefer not to respond" option for questions about the number of infections, severity of symptoms, and proximity to a death or severe case. This concludes the main survey.

Tables 2 and 3 report summary statistics for demographics and COVID-19 experiences, for categorical and continuous variables, respectively. As a data-quality safeguard, we exclude "speeders" who completed the survey in less than two minutes from all analysis and data summaries. "Speeders" comprise 4.6% of responses, and their exclusion does not meaningfully affect our findings.

We sent the follow-up survey approximately two weeks after the main survey to respondents who completed the main survey. The purpose of the follow-up survey was to measure the persistence of the effects of the information provision. We did not re-collect demographic background information and did not provide any additional information treatments. We asked the two main outcome questions (desired priority and desired SOE duration) twice:

[3]Severe symptoms are defined as having been placed on a ventilator or ECMO while under treatment for COVID-19.

[4]See Appendix G for a full list of included health conditions.

Table 2: Summary Statistics of Group Variables

Variable	Group	Frequency (%)
Gender	Female	50.6
	Male	49.4
Education	Less than college	52.8
	College or higher	47.2
Region	Outside Tokyo	64.4
	Tokyo area	35.6
Industry	Service	42.5
	Manufacturing	19.0
	Other	38.6
Health	No health issues	82.5
	Has at least one issue	17.5
Severity	Infected with severe symptoms	0.8
	Infected but not severe	31.2
	Not infected	68.0
Proximity	Close to a death or severe case	8.4
	Not close to a death or severe case	91.6
Device	Smartphone	56.6
	PC	43.4

Note: This table reports frequencies (percent) for categorical respondent characteristics in the initial-wave main survey analysis sample. Total valid observations are 14,921. Categories "other" (gender) and "prefer not to respond" (severity and proximity) are omitted. Device type is missing for a small number of responses due to technical limitations.

Table 3: Summary Statistics of Continuous Variables

Variable	Mean	Std. Dev.
Age	51.5	15.9
Annual Income (million JPY)	3.4	3.1
Times Infected with COVID-19	0.4	0.6
COVID-19 Vaccinations Received	3.3	1.7

Note: This table reports means and standard deviations for continuous respondent characteristics in the initial-wave main survey analysis sample. Total valid observations are 14,921. Respondents selecting "prefer not to respond" for income or infections are excluded for that item.

once about the COVID-19 pandemic and once about a hypothetical future pandemic. We also asked the same contextual questions as in the main survey (e.g., perceived efficacy of SOEs and concern about COVID-19 infection). In the period between the main survey and the follow-up, there were no major economic, health, or social developments that we believe could have meaningfully influenced public perceptions of the COVID-19 pandemic.

2.2 Supplemental Wave

We ran a supplemental wave of the survey from February 18 to February 19, 2025, collecting 4,400 responses. The aim of this wave was to examine whether changes in policy views following information treatment were due to changes in the perceived tradeoff between infection control and economic/social activity under a lockdown. (This is discussed in depth in Section 5.) All respondents in this wave were new to the survey and did not participate in the initial wave. The supplemental wave is similar in design and flow to the initial wave, but does not include a follow-up survey. Additionally, the survey is simplified so that respondents are randomly assigned to one of only four groups—two control groups (irrelevant information provision and no information provision) and two treatment groups (negative information regarding economic activity and negative information regarding infections)—and only desired priority is recorded as a measure of policy views (not desired duration). More details regarding the questions used in the supplemental wave are provided in Appendix G.

3 Pre-treatment Policy Views

In this section, we present an analysis of respondents' policy views prior to the information provision.

For context, non-pharmaceutical interventions (NPIs) in Japan during the COVID-19 pandemic are widely considered to be lenient compared to other countries (Yan et al., 2020; Cross et al., 2020). This is partly due to the government's lack of legal authority to enforce lockdowns. Instead, governments issued requests for people to refrain from non-essential outings and for certain businesses to restrict their hours of operation. Though there were no legal penalties for noncompliance, evidence suggests that Japanese citizens were receptive to these requests, and likely reduced their social interactions to a similar extent as did those in countries with legally mandated lockdowns (Takamatsu et al., 2025; Watanabe and Yabu, 2021). Japan saw comparatively few COVID-19 deaths and had the lowest deaths-per-capita rate among G7 countries.[5]

In terms of economic effects, Japan experienced a 0.7 percentage point increase in unemployment during the pandemic, rising from 2.4% in January 2020 to a peak of 3.1% in October and December 2020—a non-negligible increase given Japan's historically low unemployment rate.[6] Japan's GDP also fell by 4.7% in 2020, its largest annual contraction since the 2008 financial crisis.[7] This decline ranked fifth among G7 countries. Despite avoiding

[5]Source: World Health Organization. (Accessed through *Our World in Data*.)
[6]Source: Labor Force Survey, Ministry of Internal Affairs and Communications.
[7]Source: GDP growth (annual %), World Bank.

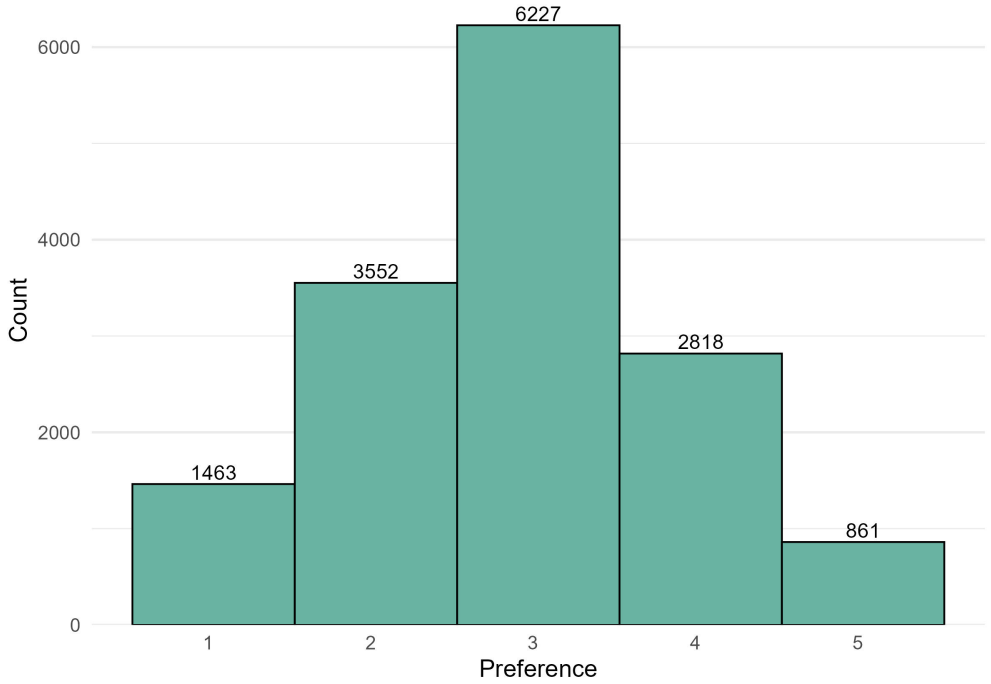

Figure 2: Distribution of Desired Priority

Note: This figure is a histogram of the baseline desired priority response (5-point scale). '1' indicates strong support for prioritizing infection control, '3' indicates neutrality, and '5' indicates strong support for prioritizing socio-economic activity.

a sharper contraction than some leading economies, Japan did not experience the strong rebound in 2021 observed in countries such as Italy and the United Kingdom; instead, its GDP growth was the lowest among G7 countries in both 2021 and 2022.

Figure 2 shows the distribution of respondent evaluations of perceived government priorities during the COVID-19 pandemic. The horizontal axis represents support for prioritizing infection control (left) versus socio-economic activity (right). The neutral point at 3 represents the view that government priorities were appropriate. The distribution is generally symmetric with a mode at 3, but the left tail is slightly heavier. The mean response is 2.88, suggesting a slight inclination towards prioritizing infection control. It is notable that even though Japan was relatively "successful" in containing the virus, respondents still, on average, wanted more priority placed on infection control.

Figure 3 illustrates the distribution of desired SOE duration in months. This distribution is not unimodal, and we observe what appears to be bunching at the upper and lower ends of the scale, suggesting that some respondents would have chosen very short or very long SOEs. There also appears to be a focus on salient values such as 6 and 12 months (a half

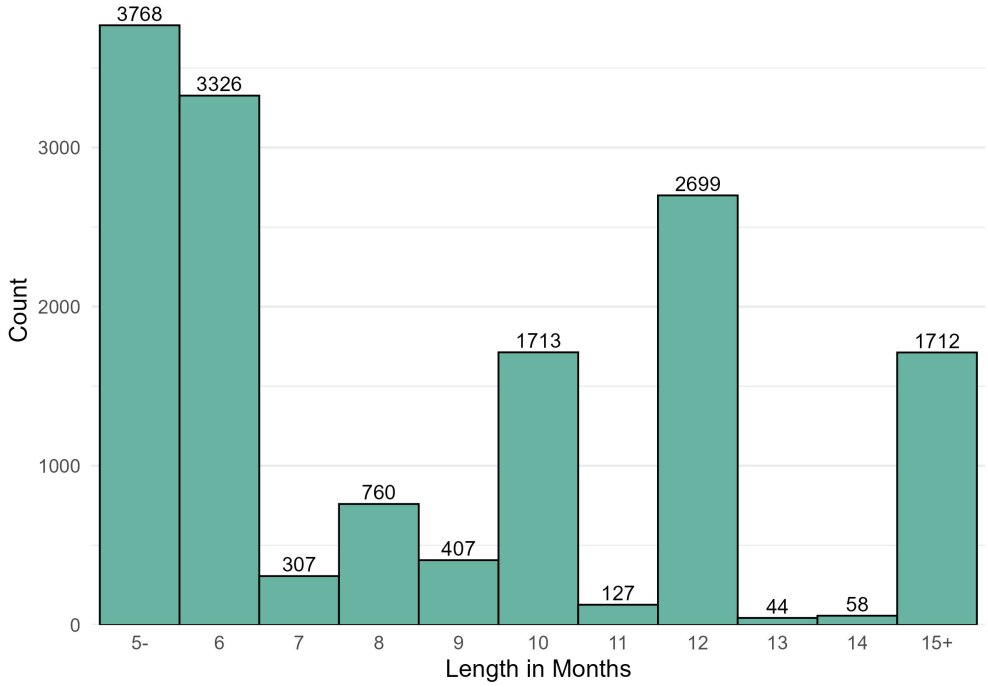

Figure 3: Distribution of Desired SOE Duration

Note: This figure is a histogram of baseline desired SOE duration in Tokyo (months). Responses are top- and bottom-coded by the survey instrument (5 months or less; 15 months or more).

year and a full year), and 8 and 10 months (even numbers). This likely indicates that some respondents did not have an exact duration in mind, and chose a salient number that is close to their desired duration.

The duration and timing of Japan's SOEs varied across prefectures, with urban prefectures such as Tokyo and Osaka seeing longer and more frequent SOEs than rural prefectures. Tokyo was subject to 6 SOEs (including priority preventive measures periods), which lasted approximately 10 months in total.[8] Respondents' mean desired SOE duration of 8.66 months is shorter than the total duration of SOEs in Tokyo.

The average survey responses are heterogeneous across respondent characteristics. Table 4 shows the mean desired priority by characteristic group. Being male, having an income of at least 8M JPY, having a college degree, and having contracted COVID-19 two or more times are associated with higher support for prioritizing socio-economic activity. Being 50 or older,

[8]The dates of SOEs by prefecture can be viewed at "2022 White Paper on Crime: Part 7, Chapter 2, Section 3", *Japan Ministry of Justice* for 2020-2021 and "State of Emergency and Manbou Declarations: Dates, Durations, and a Topic Summary for Time-Series Analysis", *VR Digest* for 2022. (Japanese language only.)

having at least one health issue, being vaccinated at least three times, and having been close to a death or severe case are associated with higher support for prioritizing infection control. Among these, the largest differences in mean response are seen for number of vaccinations received and proximity to a death or severe case.

Table 5 shows the mean desired SOE duration by characteristic group. Being male, having a college education, and living outside the Tokyo area are associated with a shorter desired SOE duration. Being 50 or older, having at least one health issue, having been vaccinated at least three times, having developed severe COVID-19 symptoms, and having been close to a death or severe case are associated with a longer desired SOE duration. The largest differences in mean response are seen for severity of COVID-19 symptoms and proximity to a death or severe case.

These observed heterogeneities in desired priority and desired SOE duration make intuitive sense: Those who are at a higher risk of contracting COVID-19 or developing severe symptoms (older people, people with pre-existing conditions) or who suffered severe symptoms or lost close friends tend to prefer more stringent policies and longer SOEs.

Table 4: Desired Priority by Characteristic Group

Characteristic	Group 1	Group 2	Difference (1−2)
Age	50 or over 2.82	Under 50 2.93	−0.11***
Gender	Female 2.83	Male 2.91	−0.08***
Income	8M JPY or over 2.98	Under 8M JPY 2.87	0.11***
Education	College educated 2.89	Less than college 2.85	0.04**
Region	Outside Tokyo 2.88	Tokyo area 2.86	0.02
Industry	Manufacturing 2.90	Service 2.89	0.01
Health	Has at least one health issue 2.77	Has no health issues 2.89	−0.13***
Infections	Infected <2 times 2.86	Infected 2+ times 2.96	−0.11**
Vaccines	Vaccinated <3 times 3.03	Vaccinated 3+ times 2.81	0.21***
Severity	Infected/Did not develop severe symptoms 2.87	Infected/Developed severe symptoms 2.78	0.09
Proximity	Close to a death or severe case 2.73	Not close to a death or severe case 2.87	−0.14***

Note: This table reports mean baseline desired priority responses by characteristic group (5-point scale; lower = more infection-control priority). "Difference (1–2)" = Group 1 – Group 2. Stars indicate statistical significance of differences: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Table 5: Desired SOE Duration in Months by Characteristic Group

Characteristic	Group 1	Group 2	Difference (1−2)
Age	50 or over 8.78	Under 50 8.43	0.36***
Gender	Female 8.69	Male 8.55	0.14**
Income	8M JPY or over 8.52	Under 8M JPY 8.60	−0.07
Education	College educated 8.56	Less than college 8.68	−0.12**
Region	Outside Tokyo 8.56	Tokyo area 8.73	−0.17***
Industry	Manufacturing 8.49	Service 8.53	−0.04
Health	Has at least one health issue 8.97	Has no health issues 8.55	0.42***
Infections	Infected <2 times 8.61	Infected 2+ times 8.59	0.02
Vaccines	Vaccinated <3 times 8.30	Vaccinated 3+ times 8.74	−0.45***
Severity	Infected/Did not develop severe symptoms 8.41	Infected/Developed severe symptoms 9.25	−0.84***
Proximity	Close to a death or severe case 9.08	Not close to a death or severe case 8.55	0.53***

Note: This table reports mean baseline desired SOE duration in Tokyo (months) by characteristic group. "Difference (1–2)" = Group 1 – Group 2. The outcome uses the survey scale endpoints "5 months or less" and "15 months or more." Stars indicate statistical significance of differences: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

4 Information Provision Experiment

In this section, we present the results of the information provision experiment. We analyze how the information provided to respondents in the main survey affects their responses to the two main questions regarding desired priority and desired SOE duration. Additionally, we examine heterogeneity in the treatment effects across respondent characteristics.

We estimate the effects of information provision using a regression of the form:

$$y_i = \alpha + \sum_{k \in G} \beta_k T_{k,i} + \boldsymbol{\gamma} \mathbf{X}_i + \delta z_i + \varepsilon_i, \quad G = \{IN, IP, EN, EP, SN, SP\}, \tag{1}$$

where y_i is either the respondent's desired priority (5-point Likert scale) after information provision or the respondent's desired SOE duration (months) after information provision, $T_{k,i}$ is a binary indicator for whether respondent i was assigned to treatment group k, $\mathbf{X}_i$ is a vector of controls, and z_i is the respondent's response for the outcome variable before receiving the treatment. The regression controls for respondent demographics (education, income, location, health status), experiences related to COVID-19 (number of prior infections, severity of prior infections, proximity to a death or severe case), and relevant beliefs (perceived risk of contracting COVID-19, level of social and economic concern, and perceived government priority). We also include controls for those in industries that were particularly affected by the pandemic (accommodation, food services, and health services) and groups that may have been less affected by the pandemic (jobless individuals including students).

For ease of interpretation, we group treatments at the domain-tone level for the majority of the analysis (e.g., negative economic information treatment 1 and negative economic information treatment 2 are grouped together). After grouping, there are six treatment groups for analysis: infection negative (IN), infection positive (IP), economic negative (EN), economic positive (EP), social negative (SN), and social positive (SP). Both control treatments (irrelevant information and no information) are also grouped into a single control group. Main findings are not sensitive to these groupings.

Figure 4 shows the effects of information provision on desired priority (Figure 4a) and desired SOE duration (Figure 4b). For desired priority, all of the negative information treatments are significant at the 5% level (with the control value as a reference point). IN reduces the expected response by approximately 0.11 points (compared to the control group), while EN and SN increase the expected response by approximately 0.15 points and 0.07 points, respectively. The results for these treatments follow expectations. We see respondents place more priority on infection control upon being shown negative health outcomes of the pandemic, while respondents place more priority on economic and social activity upon being

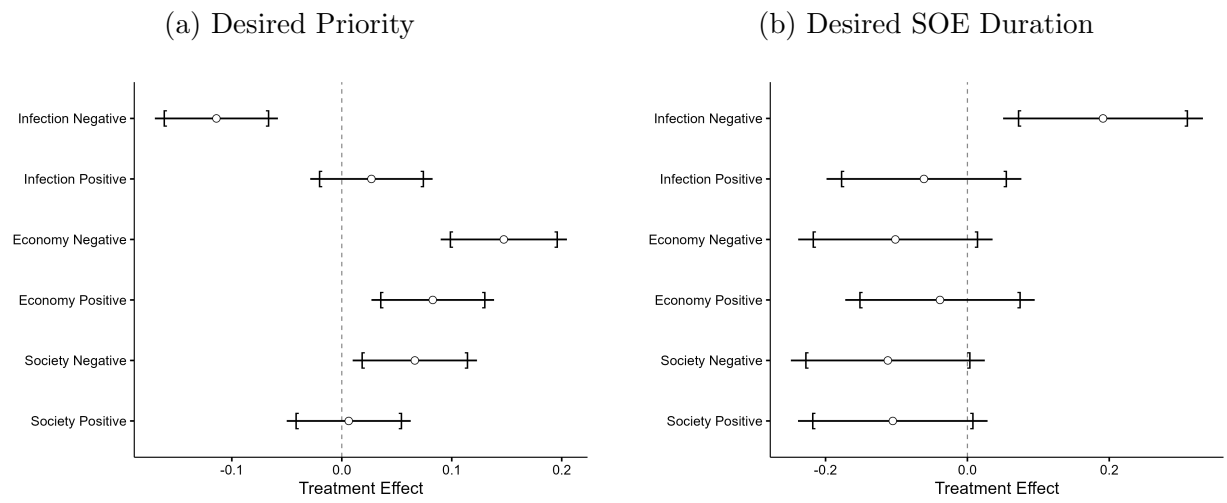

Figure 4: Information Provision Treatment Effects

Note: This figure shows estimated treatment effects for grouped treatments relative to the pooled control group. Panel (a) outcome: post-treatment desired priority (lower = more infection-control priority). Panel (b) outcome: post-treatment desired SOE duration (months). Bars represent 95% confidence intervals. Brackets represent 90% confidence intervals.

shown negative economic/social outcomes of the pandemic.

Neither IP nor SP has a statistically significant effect on desired priority. EP, however, is significant at the 5% level, and increases the mean response by approximately 0.08 points. This is a counterintuitive result, as we would expect positive information about the economy during the pandemic to make respondents less concerned about negative economic outcomes, and allow them to further prioritize infection control. One possible interpretation of this result is that broaching the topic of economic consequences makes potential economic losses more salient to respondents, leading them to weigh economic effects more heavily in their responses.

For desired SOE duration, the only significant treatment is IN, which increases the mean response by approximately 0.19 months (compared to the control group).[9] Treatment effects for SOE duration are generally less significant than those for desired priority. A possible reason for this is that respondents may not necessarily believe that SOE duration has a strong effect on social or economic outcomes. We explore this in more detail in Section 5.

It is also apparent from Figure 4 that the effects of negative information tend to be much larger than the effects of positive information. These results are consistent with the principle

[9]The top and bottom-coding of desired SOE duration in the survey instrument censors the true values of the extreme high and low responses. To ensure that this censoring does not affect our estimates, analysis was also run using a Tobit model. The results of the Tobit-based estimation are not meaningfully different from the figures reported here. See Appendix C for estimation results.

that "losses loom larger," or that negative potential outcomes are more salient than positive potential outcomes—an idea which has been developed in seminal work such as Kahneman and Tversky (1979), Baumeister et al. (2001), and Rozin and Royzman (2001).

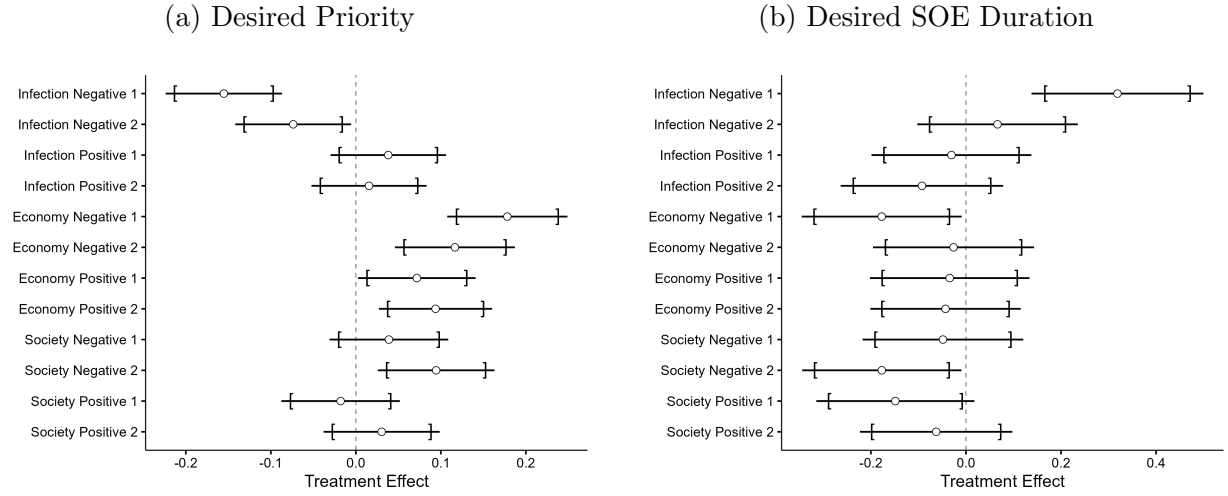

Figure 5: Information Provision Treatment Effects
(Individual Treatments)

Note: This figure shows estimated treatment effects for individual treatments (non-grouped) relative to the pooled control group. Panel (a) outcome: post-treatment desired priority (lower = more infection-control priority). Panel (b) outcome: post-treatment desired SOE duration (months). Bars represent 95% confidence intervals. Brackets represent 90% confidence intervals.

Figure 5 shows the estimated treatment effects when the regression is run with each individual (non-grouped) treatment. The treatment-level results are consistent with the grouped results. For most of the groups with significant effects in the grouped results, both treatments are significant in the non-grouped results (IN, EN, and EP for desired priority). For SN for desired priority and IN for desired SOE duration, only one of the treatments is significant. We observe a large spread in the estimated effects between the two treatments in SN for both desired priority and desired SOE duration. While SN-1 (increased suicides during the pandemic) is largely in line with the control group, SN-2 (decreased marriages during the pandemic) is significant for both questions. This likely indicates that the SN-2 treatment (including the displayed figure) was more salient to respondents, or that respondents believed the issue in SN-2 to be more responsive to infection control measures.

Using data from the follow-up survey, we also examine the persistence of the treatment effects. Figure 6 presents the estimated treatment effects two weeks after the information provision. By this point, none of the treatments remain statistically significant, suggesting

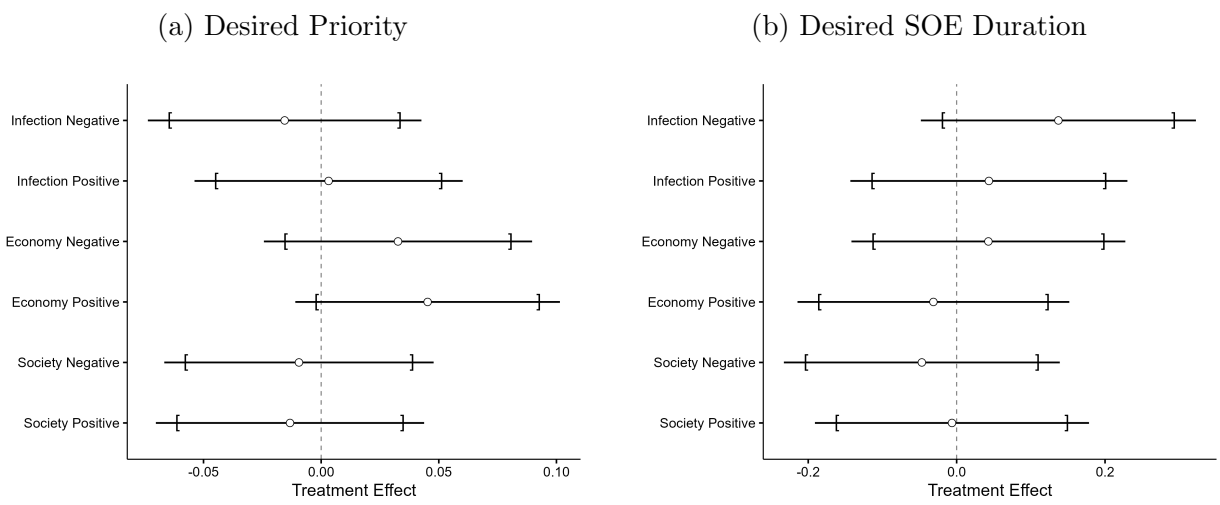

Figure 6: Information Provision Treatment Effects
(Two Weeks After Provision)

Note: This figure shows estimated treatment effects for grouped treatments measured in the follow-up survey (two weeks after information provision), relative to the pooled control group. Panel (a) outcome: post-treatment desired priority (lower = more infection-control priority). Panel (b) outcome: post-treatment desired SOE duration (months). Bars represent 95% confidence intervals. Brackets represent 90% confidence intervals.

that respondents' policy views largely reverted to their prior levels relatively quickly.

To examine heterogeneity in the treatment effects across respondent characteristics, we run regressions that interact the treatment variable with the characteristic of interest:

$$y_i = \alpha + \sum_{k \in G} \beta_k T_{k,i} + \sum_{k \in G} \theta_k T_{k,i} H_i + \boldsymbol{\gamma} \mathbf{X}_i + \delta z_i + \varepsilon_i, \quad G = \{IN, IP, EN, EP, SN, SP\}, \tag{2}$$

where H_i is a binary indicator for whether respondent i in the group with the characteristic of interest. We conduct the heterogeneity analysis for the same groups described in Table 4 and Table 5. Results of the heterogeneity regressions for desired priority are presented in Table 6. Results for desired SOE duration are presented in Table 7.

In the context of desired priority, the main characteristics affecting the treatment effects are age and whether the respondent was close to a severe case or death. Respondents over 50 place a relatively higher priority on infection control in response to all treatments. Respondents who were close to a severe case or death place a relatively higher priority on economic/social activity in response to IN, EP, and SP. It is somewhat surprising that those close to a severe case or death demonstrate information responses that lean toward economic

Table 6: Desired Priority Interaction Regressions

	IN	IP	EN	EP	SN	SP
Female	-0.021	-0.010	-0.015	-0.077	-0.057	0.024
	(0.067)	(0.067)	(0.067)	(0.067)	(0.066)	(0.068)
Age 50+	-0.095*	-0.168***	-0.083*	-0.146***	-0.230***	-0.159***
	(0.049)	(0.048)	(0.048)	(0.049)	(0.048)	(0.050)
4-Year Degree	-0.123*	0.009	0.014	0.055	0.039	0.059
	(0.067)	(0.067)	(0.067)	(0.067)	(0.066)	(0.068)
Tokyo Area	-0.053	-0.021	-0.038	-0.051	0.060	-0.005
	(0.070)	(0.069)	(0.069)	(0.070)	(0.069)	(0.070)
High Income	0.007	0.096	0.009	0.065	0.134	-0.035
	(0.134)	(0.138)	(0.131)	(0.136)	(0.132)	(0.141)
Manufacturing	0.079	-0.088	0.047	0.030	0.041	-0.036
	(0.068)	(0.065)	(0.066)	(0.067)	(0.064)	(0.070)
Severe Infection	0.273	-0.062	0.009	0.530	0.635*	0.330
	(0.368)	(0.346)	(0.338)	(0.467)	(0.332)	(0.366)
Health Issue	-0.024	0.034	0.006	0.080	-0.058	0.017
	(0.087)	(0.090)	(0.087)	(0.087)	(0.087)	(0.088)
2+ Infections	-0.032	-0.100	0.004	-0.221	-0.035	0.240
	(0.157)	(0.162)	(0.179)	(0.165)	(0.164)	(0.169)
3+ Vaccines	0.104*	0.033	0.105*	0.098	0.065	-0.039
	(0.062)	(0.061)	(0.062)	(0.062)	(0.060)	(0.061)
Proximity	0.320***	0.175	0.122	0.287**	0.167	0.273**
	(0.118)	(0.122)	(0.122)	(0.125)	(0.133)	(0.127)
Device (PC)	0.039	0.042	0.064	0.058	-0.009	-0.014
	(0.067)	(0.067)	(0.067)	(0.067)	(0.066)	(0.068)

Note: This table reports heterogeneity in grouped-treatment effects on post-treatment desired priority. Columns correspond to grouped treatments. Each entry is the interaction estimate for the subgroup indicator in the row, with standard errors in parentheses. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Table 7: Desired SOE Duration Interaction Regressions

	IN	IP	EN	EP	SN	SP
Female	0.171	0.136	-0.143	-0.056	0.145	0.108
	(0.197)	(0.196)	(0.194)	(0.194)	(0.197)	(0.193)
Age 50+	0.118	-0.013	0.274**	0.057	0.187	0.028
	(0.145)	(0.142)	(0.139)	(0.141)	(0.145)	(0.139)
4-Year Degree	0.200	0.179	0.024	-0.122	0.317	-0.096
	(0.197)	(0.196)	(0.194)	(0.194)	(0.197)	(0.194)
Tokyo Area	0.084	0.237	0.316	-0.156	0.167	0.170
	(0.207)	(0.204)	(0.202)	(0.201)	(0.208)	(0.201)
High Income	-0.053	0.439	0.244	0.101	-0.084	-1.044***
	(0.395)	(0.392)	(0.384)	(0.390)	(0.387)	(0.380)
Manufacturing	-0.158	-0.139	0.396**	0.254	-0.112	-0.114
	(0.193)	(0.188)	(0.194)	(0.186)	(0.194)	(0.189)
Severe Infection	-0.705	-0.080	0.017	-0.297	-1.434*	-0.458
	(0.798)	(0.813)	(0.709)	(1.120)	(0.777)	(0.700)
Health Issue	0.358	-0.053	0.409	-0.013	0.395	0.226
	(0.257)	(0.256)	(0.258)	(0.254)	(0.265)	(0.252)
2+ Infections	-0.317	-0.186	-0.451	-1.141***	-0.671	-0.585
	(0.441)	(0.430)	(0.451)	(0.431)	(0.429)	(0.436)
3+ Vaccines	-0.003	-0.194	-0.228	-0.001	-0.171	-0.286*
	(0.182)	(0.170)	(0.174)	(0.175)	(0.174)	(0.171)
Proximity	-0.190	-0.009	0.582*	0.209	0.511	0.226
	(0.360)	(0.342)	(0.348)	(0.369)	(0.387)	(0.338)
Device (PC)	0.055	-0.019	0.171	0.007	0.096	0.073
	(0.200)	(0.199)	(0.195)	(0.196)	(0.200)	(0.196)

Note: This table reports heterogeneity in grouped-treatment effects on post-treatment desired SOE duration. Columns correspond to grouped treatments. Each entry is the interaction estimate for the subgroup indicator in the row, with standard errors in parentheses. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

and social considerations. It is possible that this is reflecting the very low prior views among this group. Referring to Table 4, we can see that the mean desired priority for this group is 2.72, which is the lowest of any characteristic group.

In the context of desired SOE duration, there is a scattering of significant estimates for various characteristic-treatment pairs, but there are no characteristics with significant heterogeneity for more than one treatment type. Given this lack of pattern, we conclude that there are no characteristics which appear to meaningfully affect the treatment responses for desired SOE duration.

As a robustness check, we also run the heterogeneity analysis with the individual non-grouped treatments instead of the grouped treatments. The results are consistent with the findings discussed here. Refer to Appendix D for detailed results.

Two implications follow from the experimental results. First, the larger effects of negative (relative to positive) information suggest that message framing matters: risk-related or loss-framed information is likely to affect targets more strongly than comparably "good news." Furthermore, "neutral" messaging, with equal parts positive and negative information, may impart a net negative impression on its audience. Second, because the treatment effects are not detectable two weeks after the intervention, an attempt to shift public support through one-off information provision may not have persistent effects. If policymakers aim to sustain changes in policy views, they may need repeated communication rather than a single message.

5 Preference or Perceived Tradeoff?

Thus far, we have shown that information provision can affect the public's policy views on appropriate mobility-restriction policies. Within the standard framework of economics, the view on appropriate policies can change due to (i) a shift in the public's preference over infection and socio-economic outcomes, or (ii) a shift in the public's perception of the tradeoff between infection and socio-economic outcomes.

We hypothesize that simple facts shift policy views by changing respondents' preferences over infection and socio-economic outcomes, rather than by changing their perceived tradeoff between the two. These facts draw the attention of the public to a particular consequence of the pandemic, possibly making it more likely for them to care about that consequence in evaluating pandemic policies. This hypothesis is based on the grounds that our information treatment is silent about the relationship between infection and socio-economic outcomes: we just provide a fact about one of the two competing outcomes involved in the tradeoff. Nevertheless, it is possible that a simple fact can affect the public's perception of the tradeoff associated with mobility-restriction policies, which could in turn affect their policy view on

appropriate policies.

We conducted the supplemental wave (Section 2.2) to examine whether our results come from shifts in preferences over infection vs. socio-economic outcomes or from shifts in perceived tradeoffs. The experiment design in this wave is similar to that in the initial wave. However, this wave is smaller in scale than the initial wave. It features one pooled control group and two treatment groups (IN and EN) and collects respondents' desired priority as a measure of policy views, but not desired SOE duration.

In the supplemental wave, we also ask respondents about their views regarding the consequences of a hypothetical extension of the SOE period from 10 to 16 months. In particular, we elicit (i) the expected increase in unemployment and (ii) the expected reduction in infection-related deaths associated with an SOE extension. For each respondent, we summarize the perceived tradeoff between these two outcomes using the following ratio:

$$H \equiv \frac{\text{marginal increase in unemployment}}{\text{marginal reduction in infection-related deaths}}.$$

A larger H means that the respondent thinks that the economic cost of reducing infection-related deaths is larger.

To assess whether perceived tradeoffs could be driving the treatment-induced changes in desired priority, we first check a prerequisite for mediation: the treatment must affect the mediator. Table 8 reports treatment effects on both post-treatment desired priority (the outcome) and the perceived tradeoff measure H (the potential mediator), as well as on the two components of H (expected unemployment increases and expected death reductions). The regressions include the same controls as in Section 4, and also control for pre-treatment (prior) values of the dependent variable in each specification. For the component regressions, we control for both unemployment and deaths priors.

Table 8 has two main takeaways. First, both treatments significantly shift desired priority (Column 1): IN increases support for prioritizing infection control (lower desired-priority values), while EN increases support for prioritizing socio-economic activity. Second, only IN significantly affects the perceived tradeoff (Column 2). In contrast, EN does not produce a statistically significant change in H (or in either of its components in Columns 3–4). This pattern suggests that EN is unlikely to operate through perceived tradeoffs. Since the treatment shifts the outcome but does not move the mediator, there is little scope for mediation through the tradeoff channel.

For IN, however, the evidence is less clear from Table 8 alone. IN significantly affects both the outcome (desired priority) and the perceived tradeoff measure H, so it is ambiguous whether the total effect of IN on desired priority is primarily a direct effect or instead

Table 8: Treatment Effect on Desired Priority and Perceived Tradeoff

	(1) Desired Priority	(2) Tradeoff	(3) Increases in Unemployment	(4) Reductions in Death
IN	-0.074**	-57.187***	11234.5	209.285***
	(0.034)	(20.915)	(7528.0)	(45.598)
EN	0.185***	3.786	10585.6	20.947
	(0.034)	(21.856)	(7206.1)	(41.574)
Intercept	1.669***	172.911**	88660.8***	540.806***
	(0.144)	(78.061)	(28720.2)	(173.842)
Controls	✓	✓	✓	✓
Priority Prior	✓	✓		
Tradeoff Prior	✓	✓		
Unemployed Prior			✓	✓
Deaths Prior			✓	✓

Note: This table shows treatment effects in the supplemental wave on desired priority and perceived tradeoffs from extending Tokyo's SOE duration from 10 to 16 months. Column (1) is the treatment effect desired priority. Column (2) is the effect on the tradeoff measure (expected unemployment increase per expected death reduction). Columns (3) and (4) report treatment effects on the two components (expected unemployment increase; expected death reduction). Standard errors are in parentheses. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

operates indirectly through perceived tradeoffs. We test for mediation more formally using causal mediation analysis (CMA) following Imai et al. (2010). We use post-treatment desired priority as the outcome and perceived tradeoffs as the mediator.[10] Specifically, we estimate the following linear system:

$$H_i = \alpha_1^{PT} + \sum_{k \in G} \beta_{1,k}^{PT} T_{k,i} + \boldsymbol{\gamma}_1^{PT} \mathbf{X}_i + \boldsymbol{\delta}_1^{PT} \mathbf{z}_i + \varepsilon_{1,i}^{PT}, \quad G = \{IN, EN\}, \tag{3}$$

$$y_i = \alpha_2^{PT} + \sum_{k \in G} \beta_{2,k}^{PT} T_{k,i} + \mu H_i + \boldsymbol{\gamma}_2^{PT} \mathbf{X}_i + \boldsymbol{\delta}_2^{PT} \mathbf{z}_i + \varepsilon_{2,i}^{PT}. \tag{4}$$

Here, H_i is the perceived tradeoff, y_i denotes post-treatment desired priority, $T_{k,i}$ denotes treatment assignment, $\mathbf{X}_i$ is a vector of controls, and $\mathbf{z}_i$ is a vector containing the respondent's pre-treatment values for the mediator and the desired priority. This framework decomposes each treatment's total effect into an indirect effect operating through H_i (the average causal mediation effect, ACME) and a direct effect that is not transmitted through H_i (the average direct effect, ADE).

Figure 7 reports the CMA results. As expected, there is essentially no mediated (ACME)

[10] Identification assumptions for CMA (including sequential ignorability) are discussed in Appendix E.

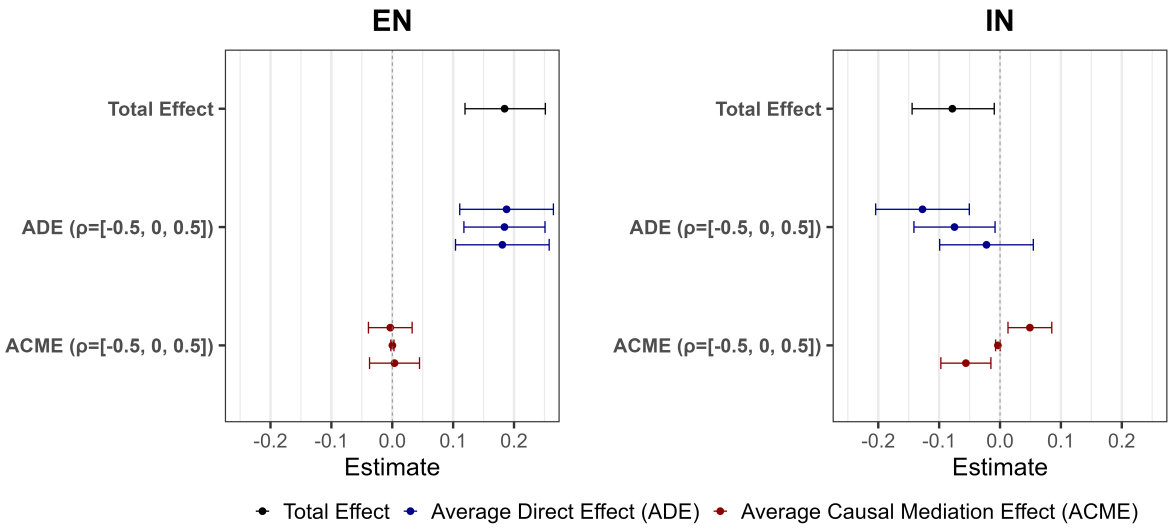

Figure 7: Causal Mediation Analysis: Desired Priority (Perceived Tradeoffs)

Note: This figure shows causal mediation analysis results for policy views in the supplemental wave. Each panel decomposes the total treatment effect into the average direct effect (ADE) and the average causal mediation effect (ACME) through the perceived tradeoff. Bars represent 95% confidence intervals. ρ denotes the assumed correlation between the first- and second-stage residuals.

effect for EN. This is consistent with Table 8 showing no treatment effect of EN on perceived tradeoffs. For IN, there is a statistically detectable mediation effect, but it is quantitatively small. In all cases, the estimated direct effects account for essentially all of the total effects.[11]

Taken together, Table 8 and Figure 7 imply that although negative infection information (IN) shifts perceived tradeoffs under SOEs—primarily by increasing the perceived mortality benefit of SOE extensions—this channel explains only a small fraction of IN's overall effect on desired priority. The evidence is broadly in line with our interpretation that simple information treatments affect policy views mainly by shifting the relative weight respondents place on infection versus socio-economic outcomes, rather than by substantially reshaping their perceptions of the tradeoff between them.

6 Conclusion

In this paper, we examined whether the provision of a simple fact about the COVID-19 pandemic affects the public's policy view on appropriate mobility-restriction policies.

[11]To account for potential deviations from sequential ignorability, we include cases where we explicitly assume non-zero correlation between the residuals of (3) and (4). These correlations are represented as ρ in Figure 7. Our discussion here focuses on the case where sequential ignorability holds and $\rho = 0$. See Appendix E for details.

Our findings indicate that simple facts can meaningfully shift respondents' policy views. Negative information about infections increases support for stricter mobility restrictions, while negative information about economic or social conditions shifts preferences toward economic and social activity. Positive information about economic outcomes—somewhat counterintuitively—also leads respondents to place greater priority on economic and social activity. However, a follow-up survey conducted two weeks after the initial experiment shows that these effects are short-lived. Overall, negative information exerts a stronger influence on policy views than positive information.

Via the supplemental wave, we find that the treatment effects were not driven by changes in respondents' perceptions of the tradeoffs between economic and health outcomes. This suggests that the observed treatment effects are likely due to changes in the respondent's preference over infection and socio-economic outcomes.

These findings have important implications for policymakers and public health officials seeking to manage the public's policy views in a pandemic. The results suggest that negative information can be useful for influencing the public's view on appropriate mobility-restriction policies, but its effects may be short-lived. Thus, the government may need to provide certain information repeatedly to obtain or maintain the public's support for certain policies. Additionally, the government may benefit by tailoring communication strategies to different demographic groups.

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Appendix

A Data

Unemployment data are taken from the Labor Force Survey, published by the Japan Ministry of Internal Affairs and Communications. The data are available online at the following URL: https://www.e-stat.go.jp/en/stat-search/files?page=1&layout=datalist&toukei=00200531&tstat=000001226583&cycle=0&tclass1=000001226851&tclass2=000001226852&stat_infid=000031831358&tclass3val=0

Data on COVID-19 deaths are retrieved from Our World in Data. Data are available for download at:
https://ourworldindata.org/coronavirus

GDP growth data are taken from the World Bank. Data are available for download at:
https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2024&locations=JP&start=1961

B Information Provision Details

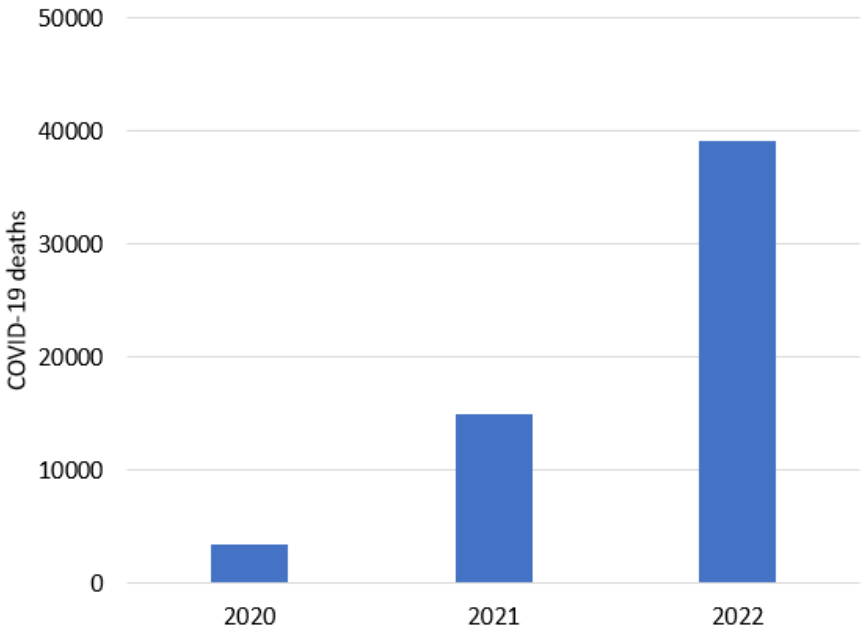
This section presents the figures that were displayed to the respondents during information provision. Respondents not in the control group were shown only the figure corresponding to their information treatment assignment. The figure was shown simultaneously with the text information. For clarity, we have added notes to some of the below figures. These notes were not displayed to respondents during the experiment.

Infection

Negative

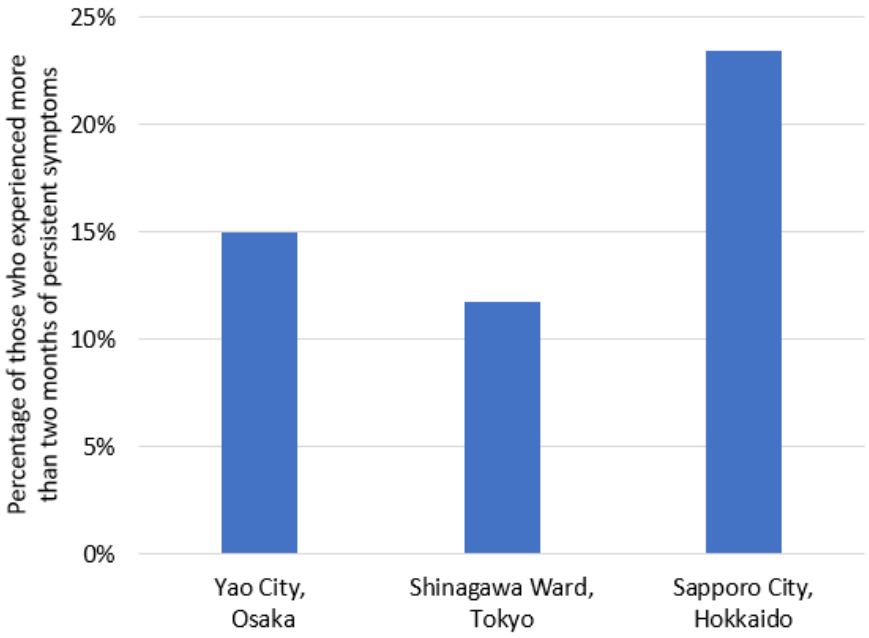
Treatment 1: *COVID-19 deaths increased over time.*

Detailed Text: The figure shows the annual number of deaths due to COVID-19. The number of deaths in 2020 was about 3,500. The number of deaths had since increased to about 15,000 in 2021 and about 39,000 in 2022. About 57,500 people died from COVID-19 in the three years from 2020 to 2022.



Treatment 2: *One in seven people infected with COVID-19 experienced symptoms lasting more than two months.*

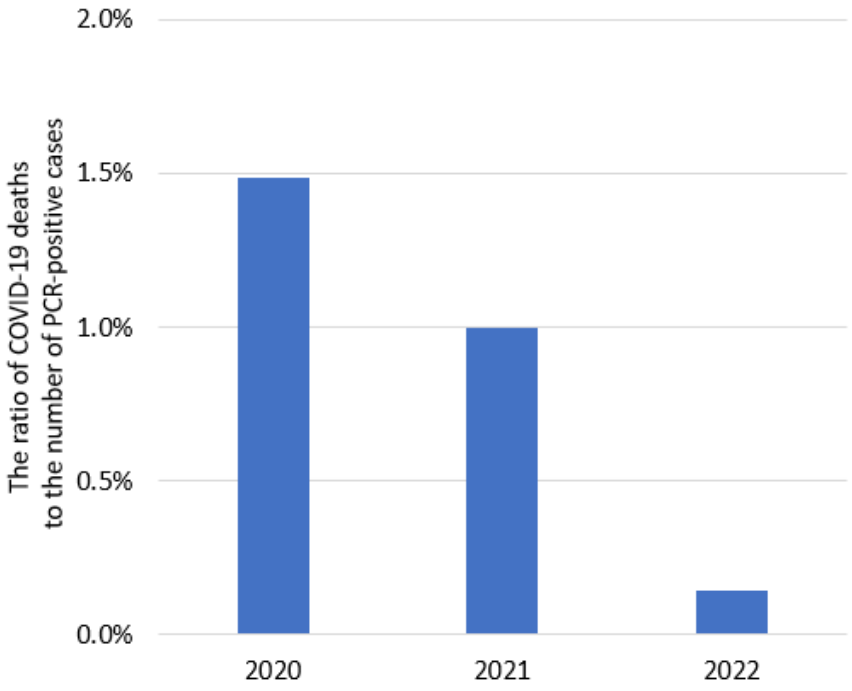
Detailed Text: The figure shows data on post-infection symptoms (so-called long-term effects) of COVID-19, based on a population survey published by the Ministry of Health, Labor and Welfare. More than 4,000 infected people responded to a survey in Yao City, Osaka Prefecture, and 15% of them reported experiencing more than two months of persistent symptoms (e.g., fatigue and malaise, sleep disturbance, difficulty concentrating, difficulty breathing, taste disorder) after the infection. Similarly, in a survey in Shinagawa Ward, Tokyo, 12% of the 8,880 respondents who were infected, and in a survey in Sapporo City, Hokkaido, 23% of those infected reported that they had symptoms that lasted for more than two months.



Positive

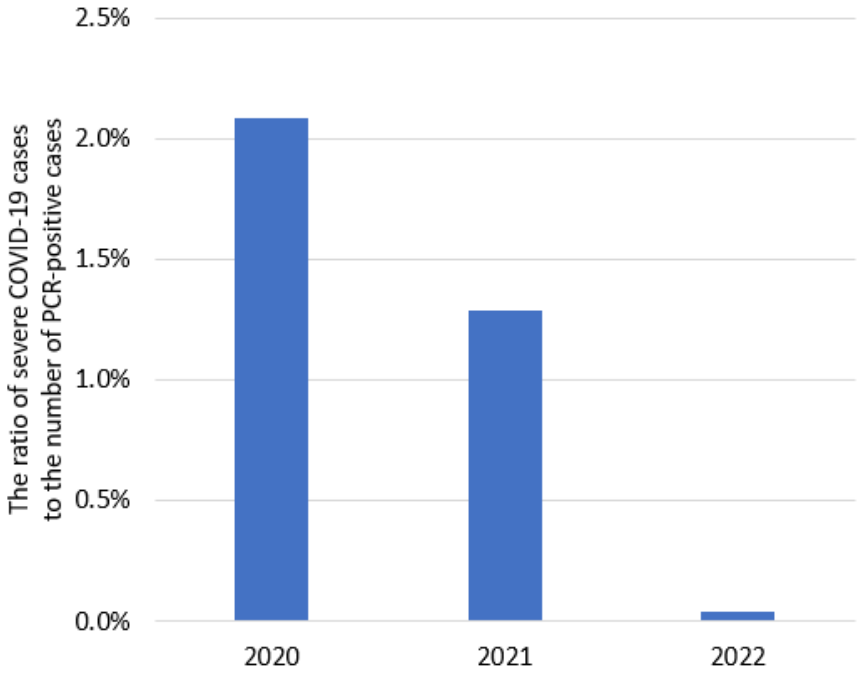
Treatment 1: *The COVID-19 fatality rate decreased over time.*

Detailed Text: The figure shows the number of deaths in one year among the number of PCR-positive cases of COVID-19 in one year. In 2020, the rate was as high as 1.5% (one death for about 70 positive cases), but by 2021, the rate had dropped to 1% (one death for about 100 positive cases), and by 2022, the rate was as low as 0.14% (one death for about 700 positive cases).



Treatment 2: *The rate of developing severe symptoms from COVID-19 decreased over time.*

Detailed Text: The figure shows the number of severe cases (estimated value) in one year among the number of PCR-positive cases of COVID-19 in one year. In 2020, the rate was 2.1% (1 severe case for about 50 positive cases), decreasing to 1.3% (1 severe case for about 80 positive cases) in 2021 and to 0.04% (1 severe case for about 2500 positive cases) in 2022.



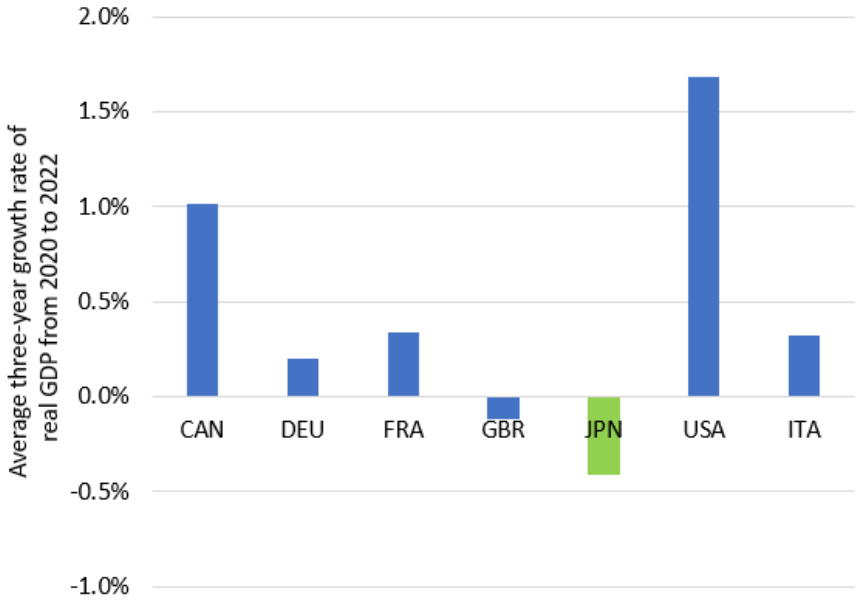
Note: When comparing this figure to that for IP Treatment 1, we see that the rate of developing severe symptoms for 2022 is recorded as being lower than the fatality rate. The reason behind this seemingly impossible figure is the definition of "severe" COVID-19 symptoms. Severe symptoms were defined as having been placed on a ventilator or ECMO. As the pandemic progressed and more information was gathered on the treatment and prognosis of COVID-19 cases, it became apparent that for some cases, the use of a ventilator or ECMO would not meaningfully increase (and may perhaps decrease) probability of survival. As a result, in the late stages of the pandemic it became more common that a patient would die from complications related to COVID-19 without being placed on a ventilator or ECMO. In such a case, the death would be counted as a COVID-19 related fatality, but not as a case that developed severe symptoms. This issue was covered in Sawada and Harada (2022).

Economic

Negative

Treatment 1: *Japan's economic recovery was slow compared to G7 countries.*

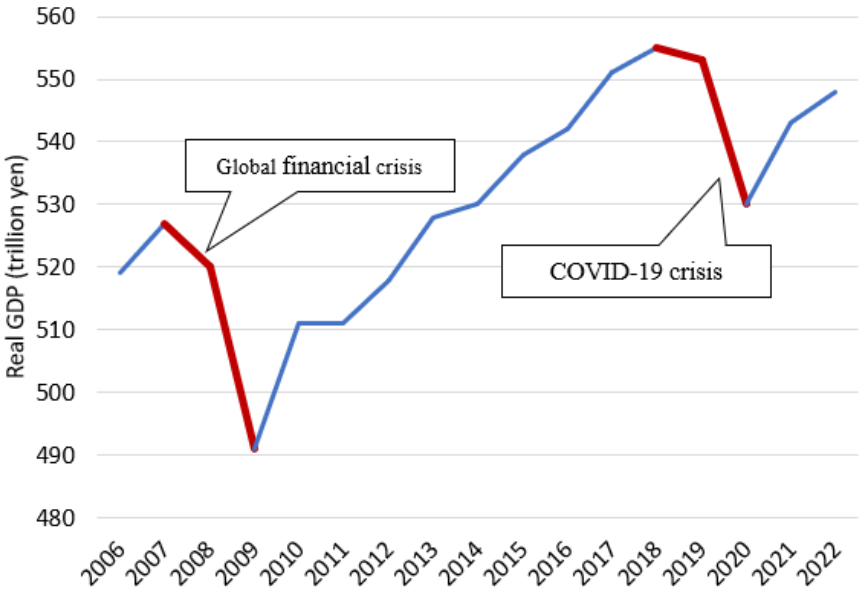
Detailed Text: The figure shows the three-year average growth rate of real GDP (a comprehensive indicator of gross domestic product and economic activity) of the G7 countries from 2020 to 2022. In 2020, all G7 countries experienced negative real GDP growth due to COVID-19. However, in five of the G7 countries, the average growth rate turned positive due to subsequent economic recovery. Japan and the UK were the only countries with a negative three-year average growth rate, with Japan having the slowest economic recovery.



Note: Average growth rate calculated as $[(1+g_{2020})(1+g_{2021})(1+g_{2022})]^{1/3}-1$, where g_i is the GDP growth rate for year i.

Treatment 2: *The economic decline in the COVID-19 crisis was comparable in size to the global financial crisis of 2008.*

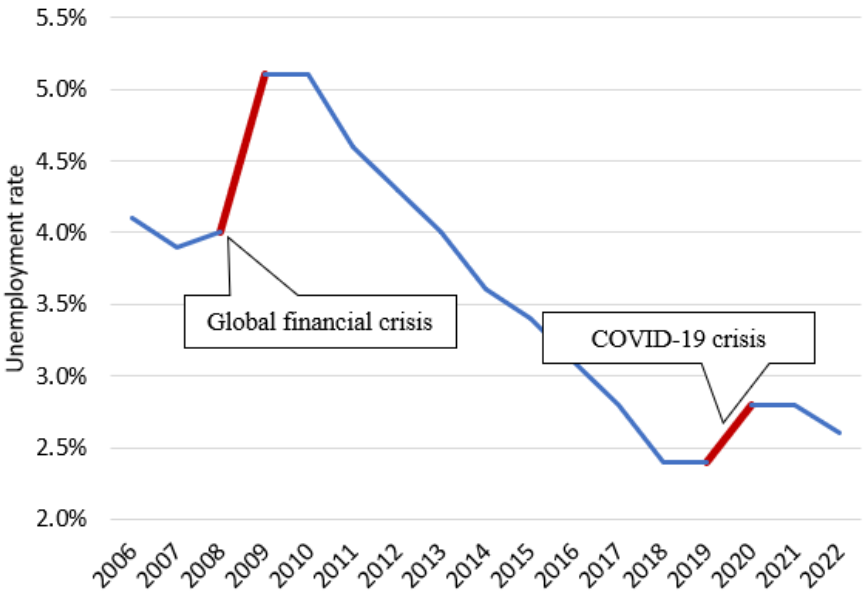
Detailed Text: The figure shows trends in Japan's real GDP (a comprehensive indicator of gross domestic product and economic activity). Due to the COVID-19 crisis, Japan experienced a decline in real GDP of about 25 trillion yen over two years. This decline was close in magnitude to the decline in real GDP during the 2008 global financial crisis, which once had a major negative impact on the Japanese economy.



Positive

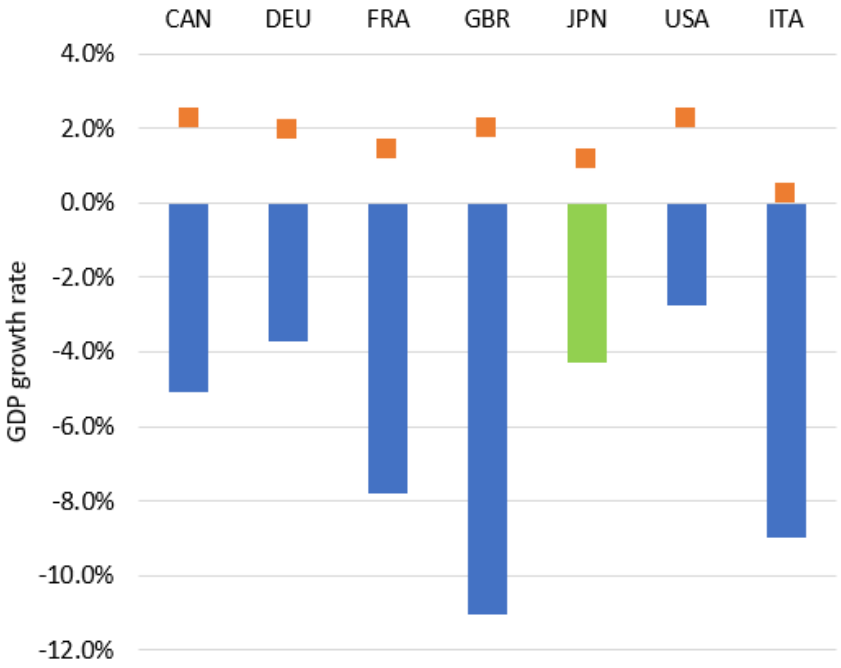
Treatment 1: *The increase in unemployment rate during the COVID-19 crisis was less than half of the increase during the 2008 global financial crisis.*

> **Detailed Text:** The figure shows trends in Japan's unemployment rate. From 2008 to 2009, when the global financial crisis occurred, the unemployment rate increased by 1.1 percentage points (an increase of 710,000 in the number of unemployed people), but in 2020 when the COVID-19 crisis emerged, the unemployment rate increased compared to the previous year. The increase was 0.4 percentage points (an increase of 300,000 people in the number of unemployed people), less than half of the increase during the global financial crisis.



Treatment 2: *Japan's economic decline in 2020 is the second smallest among G7 countries.*

Detailed Text: The figure shows the growth rate of real GDP (a comprehensive indicator of gross domestic product and economic activity) of the G7 countries from 2019 to 2020. We can see that Japan's decline was moderate compared to other G7 countries. In addition, the orange diamond marker represents the average GDP growth rate from 2010 to 2019. If we look at the economic decline in terms of the extent of the decline from this average growth rate, Japan was the country with the second smallest decline among the G7 countries, indicating that the economy did not decline much in relative terms.



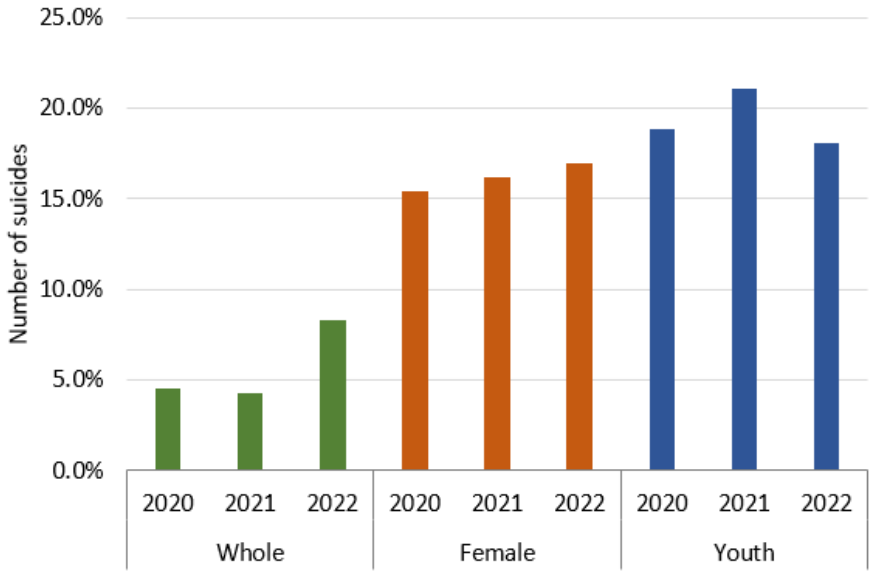
Note: Orange squares represent the geometric mean GDP growth rate from 2010-2019. "Economic decline" is conceptualized as the difference between this mean growth and the GDP growth rate in 2020.

Social

Negative

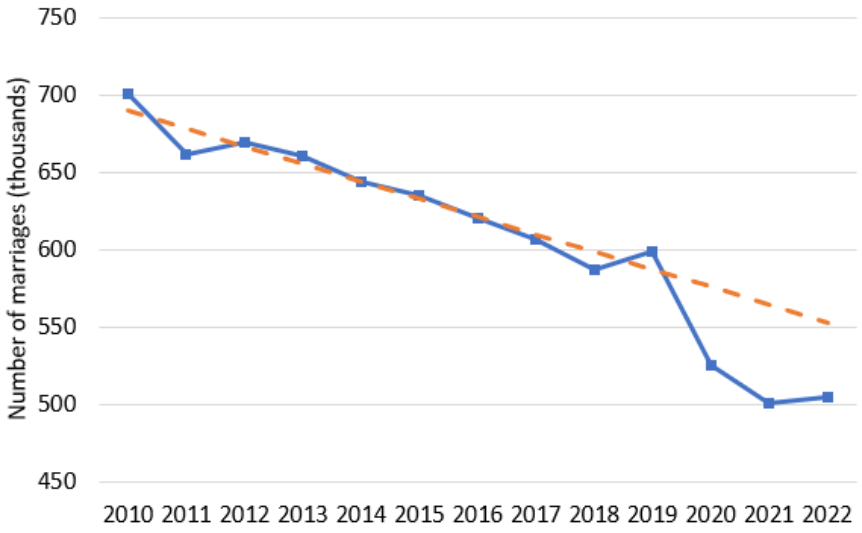
Treatment 1: *The number of suicides increased since the COVID-19 crisis began.*

Detailed Text: The figure shows how much the annual number of suicides has increased after the COVID-19 outbreak compared to the annual number of suicides in 2019 before the outbreak. Until 2018, the number of suicides was on the decline, but due to the COVID-19 outbreak in 2020 and the accompanying state of emergency declaration, the number of suicides increased significantly across Japan in 2020 (about 5%), and has remained high in 2021 and beyond. The increase in suicides was particularly significant among women and young people under the age of 30. In 2020, the number of suicides among women increased by about 15%, while the number of suicides among young people under 30 increased by about 19%.



Treatment 2: *The number of marriages declined significantly since the COVID-19 crisis began.*

Detailed Text: The figure shows the trends in the number of marriages from 2010 to 2022. The dashed line represents the downward trend in the number of marriages from 2010 to 2019, and compared to that trend line, the number of marriages has decreased significantly due to the spread of COVID-19. Compared to the trend line, this is about 50,000 cases (about 9%) below the trend line in 2020, about 63,000 cases (about 11%) in 2021, and about 48,000 cases (about 9%) below the trend line in 2022.

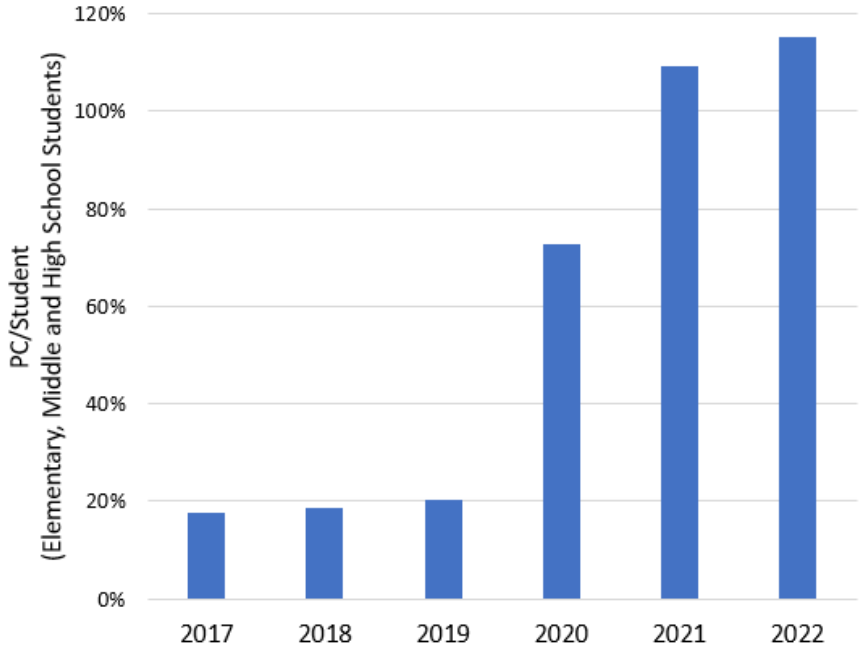


Note: The dashed line is a linear trend calculated using the data from before the pandemic (2010-2019).

Positive

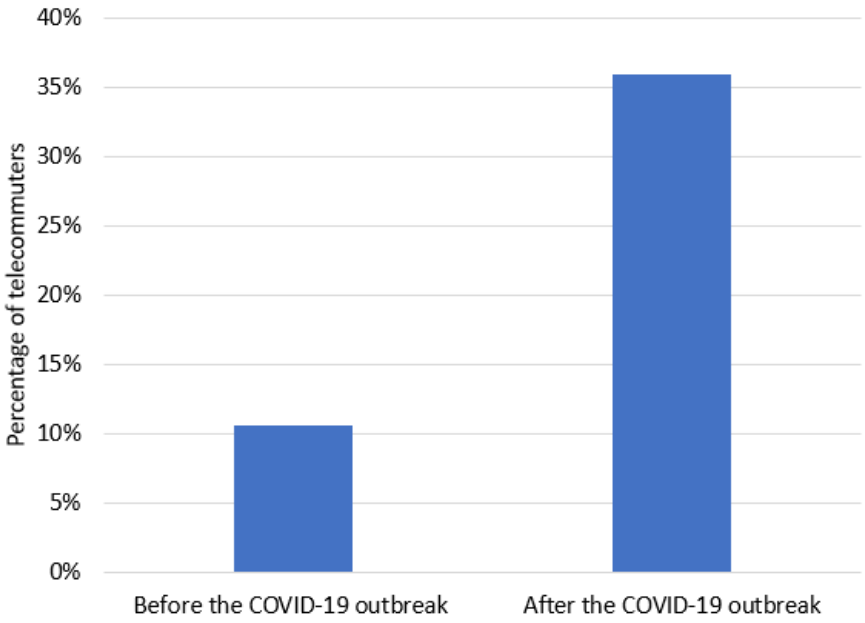
Treatment 1: *ICT equipment became more common in schools since the COVID-19 pandemic began.*

> **Detailed Text:** The figure shows the changes in the number of educational PCs relative to the number of students before and after the spread of COVID-19. Before 2019, the ratio was about 20% (one educational PC for about 5 students), but after the COVID-19 outbreak, ICT equipment has been rapidly upgraded, and after 2021 the ratio has exceeded 100% (one educational PC for about 1 student).



Treatment 2: *Work-from-home became more common since the COVID-19 crisis began.*

Detailed Text: The figure shows how much telecommuting, a flexible work style, was promoted after the COVID-19 outbreak, and is one of the results of a questionnaire survey conducted in late June 2020 by Masayuki Morikawa (Director of the Research Institute of Economy, Trade and Industry). Of the 3,324 working people responding to the questionnaire, the percentage of those who worked at home rose from only 10.6% before the outbreak of COVID-19 to 35.9% after the outbreak.

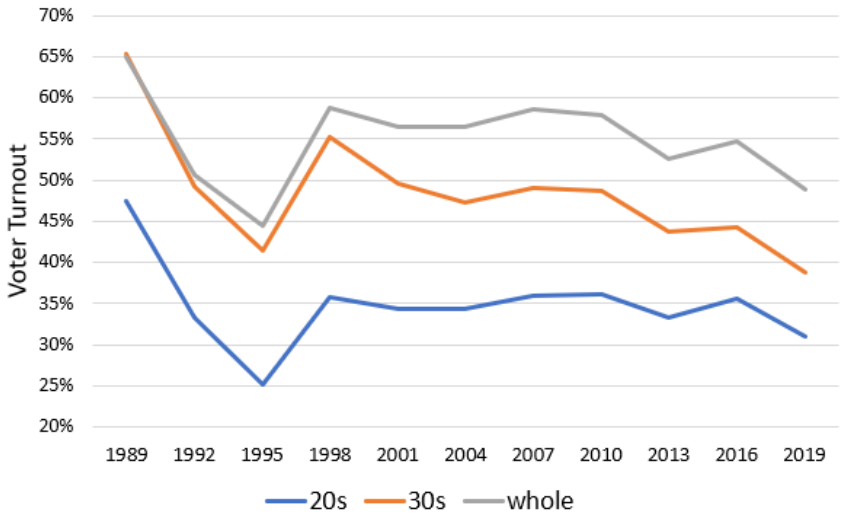


Note: Data from Morikawa (2020). Workers who engage in work-from-home any percent of the time are counted as "telecommuters."

Control (Irrelevant Information)

Voter turnout in Japanese elections

Detailed Text: The figure shows trends in the turnout (estimated value) for people in their 20s, 30s, and overall in the regular election for members of the House of Councilors. For 30 years, voter turnout among people in their 20s has remained low compared to overall voter turnout. On the other hand, voter turnout among those in their 30s hardly differed from overall voter turnout in the 1990s, but has remained lower than overall voter turnout since the 2000s.



C Tobit Analysis

The results corresponding to the right panel of Figure 4 when estimated with a Tobit model are displayed in the table below. The higher magnitude on the estimate for IN compared to Figure 4 suggests that there may be some attenuation in the reported results. However, given that there is no difference in sign or significance level for any variable between Table A1 and Figure 4, we conclude that data censoring caused by the top and bottom-coding of the desired SOE duration variable is not affecting the takeaway results of analysis.

Table A1: Treatment Effect on Desired SOE Duration (Tobit)

Variable	IN	IP	EN	EP	SN	SP
Estimate	0.282***	-0.059	-0.125	-0.029	-0.134	-0.158
Std. Error	0.098	0.098	0.098	0.098	0.099	0.098

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: This table reports Tobit estimates of grouped treatment effects on post-treatment desired SOE duration (months), accounting for censoring at "5 months or less" and "15 months or more." Coefficients are relative to the pooled control group. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

D Individual Treatment Heterogeneity Analysis

The results of the treatment effect heterogeneity analysis using individual (non-grouped) treatments are presented in the tables below.

Table A2: Desired Priority Interaction Regressions (Individual Treatments)

	Female	Age 50+	4-Year Degree	Tokyo Area	High Income	Manufacturing
IN1	0.018	-0.050	-0.152*	-0.046	-0.056	0.103
	(0.081)	(0.067)	(0.081)	(0.085)	(0.164)	(0.096)
IN2	-0.065	-0.140**	-0.098	-0.063	0.082	0.068
	(0.083)	(0.068)	(0.082)	(0.086)	(0.160)	(0.095)
IP1	0.024	-0.263***	-0.091	-0.002	0.108	-0.141
	(0.081)	(0.066)	(0.082)	(0.083)	(0.179)	(0.089)
IP2	-0.046	-0.070	0.113	-0.042	0.084	-0.029
	(0.082)	(0.069)	(0.082)	(0.086)	(0.162)	(0.095)
EN1	0.084	-0.125*	0.066	-0.026	-0.091	0.057
	(0.081)	(0.068)	(0.081)	(0.083)	(0.155)	(0.094)
EN2	-0.114	-0.051	-0.036	-0.056	0.108	0.039
	(0.082)	(0.068)	(0.081)	(0.086)	(0.160)	(0.092)
EP1	-0.041	-0.054	-0.048	-0.064	0.128	0.088
	(0.083)	(0.072)	(0.084)	(0.087)	(0.164)	(0.098)
EP2	-0.115	-0.233***	0.154*	-0.035	-0.002	-0.030
	(0.080)	(0.066)	(0.080)	(0.083)	(0.169)	(0.090)
SN1	-0.055	-0.244***	0.048	0.059	0.211	-0.010
	(0.082)	(0.068)	(0.082)	(0.085)	(0.151)	(0.095)
SN2	-0.057	-0.213***	0.027	0.061	0.037	0.082
	(0.079)	(0.065)	(0.079)	(0.083)	(0.171)	(0.086)
SP1	0.075	-0.138*	0.071	0.034	-0.210	-0.144
	(0.084)	(0.071)	(0.084)	(0.088)	(0.173)	(0.098)
SP2	-0.028	-0.179***	0.049	-0.044	0.146	0.074
	(0.083)	(0.069)	(0.083)	(0.085)	(0.172)	(0.099)
Observations	14921	14921	14921	14921	12539	9168
Adj. R^2	0.105	0.108	0.105	0.104	0.108	0.110

Note: This table reports heterogeneity in individual-treatment effects on post-treatment desired priority. Rows list individual treatments (IN1–SP2). Columns list subgroup indicators. Each entry is the interaction estimate for that subgroup, with standard errors in parentheses. Sample sizes vary across columns as shown. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Table A3: Desired Priority Interaction Regressions (Individual Treatments, Cont.)

	Severe Infection	Health Issue	2+ Infections	3+ Vaccines	Proximity	Device (PC)
IN1	0.501	-0.023	-0.092	0.010	0.351**	0.046
	(0.448)	(0.112)	(0.188)	(0.084)	(0.154)	(0.081)
IN2	-0.131	-0.035	0.028	0.195**	0.279**	0.033
	(0.360)	(0.103)	(0.193)	(0.084)	(0.134)	(0.083)
IP1	-0.163	0.009	-0.239	-0.054	0.129	0.041
	(0.511)	(0.113)	(0.206)	(0.081)	(0.147)	(0.082)
IP2	0.001	0.059	0.037	0.122	0.225	0.043
	(0.371)	(0.108)	(0.189)	(0.082)	(0.153)	(0.082)
EN1	-0.537	0.079	-0.044	0.083	0.045	0.082
	(0.404)	(0.102)	(0.214)	(0.083)	(0.156)	(0.081)
EN2	0.278	-0.090	0.058	0.129	0.197	0.048
	(0.368)	(0.112)	(0.242)	(0.083)	(0.143)	(0.082)
EP1	0.222	0.084	-0.222	0.098	0.271*	0.167**
	(0.425)	(0.110)	(0.200)	(0.083)	(0.164)	(0.083)
EP2	0.912	0.075	-0.213	0.095	0.302**	-0.053
	(0.760)	(0.102)	(0.207)	(0.084)	(0.145)	(0.081)
SN1	0.688	-0.199*	0.005	0.076	0.033	0.013
	(0.483)	(0.107)	(0.201)	(0.082)	(0.184)	(0.081)
SN2	0.587*	0.084	-0.076	0.058	0.260*	-0.024
	(0.349)	(0.104)	(0.204)	(0.077)	(0.150)	(0.080)
SP1	0.005	-0.063	0.172	-0.031	0.306*	-0.013
	(0.446)	(0.105)	(0.203)	(0.083)	(0.158)	(0.085)
SP2	0.515	0.099	0.312	-0.047	0.241	-0.014
	(0.429)	(0.109)	(0.218)	(0.082)	(0.157)	(0.083)
Observations	14921	14921	14679	14921	14278	14921
Adj. R^2	0.105	0.105	0.103	0.105	0.104	0.104

Note: This table reports heterogeneity in individual-treatment effects on post-treatment desired priority. Rows list individual treatments (IN1–SP2). Columns list subgroup indicators. Each entry is the interaction estimate for that subgroup, with standard errors in parentheses. Sample sizes vary across columns as shown. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Table A4: Desired SOE Duration Interaction Regressions (Individual Treatments)

	Female	Age 50+	4-Year Degree	Tokyo Area	High Income	Manufac-turing
IN1	0.192	0.251	0.432*	0.144	-0.254	0.084
	(0.242)	(0.202)	(0.242)	(0.256)	(0.471)	(0.270)
IN2	0.164	-0.011	-0.021	0.035	0.146	-0.433
	(0.242)	(0.201)	(0.241)	(0.252)	(0.484)	(0.274)
IP1	0.115	0.064	0.740***	0.269	0.469	-0.284
	(0.240)	(0.198)	(0.240)	(0.249)	(0.479)	(0.259)
IP2	0.153	-0.090	-0.378	0.204	0.416	-0.006
	(0.240)	(0.198)	(0.240)	(0.251)	(0.469)	(0.269)
EN1	-0.418*	0.431**	0.202	0.235	0.244	0.473*
	(0.236)	(0.194)	(0.236)	(0.246)	(0.469)	(0.277)
EN2	0.132	0.149	-0.160	0.416*	0.243	0.317
	(0.237)	(0.195)	(0.237)	(0.247)	(0.452)	(0.269)
EP1	-0.343	-0.086	0.156	0.015	0.367	0.284
	(0.238)	(0.200)	(0.240)	(0.245)	(0.456)	(0.274)
EP2	0.235	0.196	-0.397*	-0.335	-0.198	0.235
	(0.235)	(0.193)	(0.234)	(0.243)	(0.484)	(0.250)
SN1	0.105	0.215	0.345	0.085	-0.233	0.143
	(0.242)	(0.203)	(0.242)	(0.253)	(0.449)	(0.283)
SN2	0.186	0.158	0.289	0.250	0.115	-0.349
	(0.242)	(0.202)	(0.241)	(0.259)	(0.484)	(0.266)
SP1	0.198	0.069	-0.177	0.095	-1.080**	-0.445*
	(0.237)	(0.196)	(0.238)	(0.248)	(0.461)	(0.267)
SP2	0.022	-0.012	-0.020	0.246	-1.014**	0.228
	(0.234)	(0.191)	(0.235)	(0.242)	(0.444)	(0.265)
Observations	14921	14921	14921	14921	12539	9168
Adj. R^2	0.079	0.079	0.080	0.079	0.079	0.079

Note: This table reports heterogeneity in individual-treatment effects on post-treatment desired SOE duration (months). Rows list individual treatments (IN1–SP2). Columns list subgroup indicators. Each entry is the interaction estimate for that subgroup, with standard errors in parentheses. Sample sizes vary across columns as shown. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Table A5: Desired SOE Duration Interaction Regressions (Individual Treatments, Cont.)

	Severe Infection	Health Issue	2+ Infections	3+ Vaccines	Proximity	Device (PC)
IN1	-0.827	0.494	-0.468	0.347	-0.328	0.215
	(1.038)	(0.314)	(0.542)	(0.243)	(0.477)	(0.246)
IN2	-0.607	0.269	-0.173	-0.341	-0.046	-0.107
	(0.693)	(0.312)	(0.537)	(0.247)	(0.424)	(0.245)
IP1	-1.306	0.057	-0.177	-0.228	0.296	0.198
	(0.813)	(0.311)	(0.528)	(0.227)	(0.413)	(0.243)
IP2	0.615	-0.160	-0.194	-0.153	-0.347	-0.238
	(0.997)	(0.315)	(0.515)	(0.230)	(0.419)	(0.243)
EN1	0.080	0.350	-0.433	-0.192	0.237	0.057
	(1.151)	(0.312)	(0.528)	(0.233)	(0.453)	(0.238)
EN2	-0.058	0.509	-0.435	-0.267	0.884**	0.280
	(0.746)	(0.317)	(0.595)	(0.236)	(0.398)	(0.239)
EP1	0.589	0.058	-1.248**	-0.150	-0.049	0.044
	(1.241)	(0.321)	(0.505)	(0.233)	(0.461)	(0.241)
EP2	-1.395	-0.079	-1.016*	0.163	0.462	-0.030
	(1.634)	(0.298)	(0.537)	(0.233)	(0.462)	(0.236)
SN1	-1.908**	0.703**	-0.929*	0.026	1.035*	0.048
	(0.834)	(0.323)	(0.494)	(0.235)	(0.530)	(0.243)
SN2	-1.131	0.084	-0.421	-0.360	0.102	0.144
	(1.003)	(0.328)	(0.542)	(0.230)	(0.452)	(0.249)
SP1	-0.535	0.471	-0.310	-0.298	0.213	0.063
	(0.899)	(0.303)	(0.508)	(0.232)	(0.413)	(0.241)
SP2	-0.410	-0.022	-0.868	-0.273	0.240	0.082
	(0.821)	(0.307)	(0.549)	(0.224)	(0.408)	(0.238)
Observations	14921	14921	14679	14921	14278	14921
Adj. R^2	0.079	0.079	0.077	0.079	0.077	0.079

Note: This table reports heterogeneity in individual-treatment effects on post-treatment desired SOE duration (months). Rows list individual treatments (IN1–SP2). Columns list subgroup indicators. Each entry is the interaction estimate for that subgroup, with standard errors in parentheses. Sample sizes vary across columns as shown. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

E CMA Identification and Sensitivity Analysis

Following Imai et al. (2010), identification of the average causal mediation effect (ACME) and average direct effect (ADE) relies on a sequential ignorability assumption with two components. First, treatment assignment must be ignorable conditional on pre-treatment covariates. This condition is satisfied by randomized assignment in the supplemental-wave experiment.

Second, conditional on treatment assignment and pre-treatment covariates, the mediator must be as-if randomly assigned. Unlike the first condition, this second condition cannot generally be guaranteed by randomizing treatment alone because the mediator is not experimentally assigned. To mitigate concerns about violations of this condition, we include a rich set of pre-treatment covariates and pre-treatment (prior) measures of the mediator and the outcome in the mediation regressions.

Even with these controls, unobserved factors may jointly affect the mediator and the outcome, inducing correlation between the residuals of Equations (3) and (4). We therefore conduct a sensitivity analysis that allows the residual correlation to vary over a range of values, considering both negative and positive correlations (e.g., $\rho = -0.5$ and $\rho = 0.5$). This analysis follows Imai et al. (2010) and assesses how the estimated mediation results change as ρ varies, providing a gauge of robustness to potential deviations from sequential ignorability.

F Social Norms Channel CMA

In addition to perceived tradeoffs, we also examine whether information provision shifts respondents' policy views through a perceived social norms channel. Here, we define perceived social norms as the respondent's perception of how the average Japanese person would answer the desired-priority question. This channel could matter if respondents experience a psychological cost from deviating from what they perceive to be the societal average, and therefore adjust (consciously or subconsciously) their reported policy views toward that perceived norm (a form of socially desirable responding).

A necessary condition for mediation through perceived social norms is that the information treatments affect the social-norms measure. We first test this condition by estimating treatment effects on (i) post-treatment desired priority and (ii) post-treatment perceived social norms, controlling for the same covariates used in the main analysis and including pre-treatment (prior) values of the relevant dependent variable. Table A6 reports the results.

Table A6 shows that several treatments significantly affect respondents' own desired priority (Column 1), consistent with the main results. However, only the negative infection treatment (IN) has a statistically significant effect on the perceived social-norms measure (Column 2). This pattern suggests that, at most, mediation through perceived social norms is plausible for IN, while it is unlikely to explain treatment effects for the other information treatments.

We next test more formally for mediation through perceived social norms by implementing causal mediation analysis (CMA) following Imai et al. (2010). Identification assumptions

Table A6: Treatment Effect on Desired Priority and Social Norms

	(1) Desired Priority	(2) Social Norms
IN	-0.114***	0.203***
	(0.028)	(0.070)
IP	0.026	-0.054
	(0.028)	(0.069)
EN	0.149***	-0.070
	(0.029)	(0.068)
EP	0.082***	0.032
	(0.028)	(0.067)
SN	0.067**	-0.032
	(0.029)	(0.069)
SP	0.005	-0.065
	(0.029)	(0.067)
Intercept	1.964***	2.069***
	(0.082)	(0.185)
Controls	✓	✓
Priority Prior	✓	✓
Social Norms Prior	✓	✓

Note: This table shows treatment effects on post-treatment desired priority and perceived social norms. Column (1) reports the treatment effect on desired priority. Column (2) reports the treatment effect on the perceived social-norms measure (the respondent's assessment of how the average Japanese person would respond to the desired-priority question). Standard errors are in parentheses. Stars indicate significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

and the sensitivity analysis framework are discussed in Appendix E. Let M_i denote the perceived social-norms measure and let y_i denote post-treatment desired priority. We estimate the following linear system:

$$M_i = \alpha_1 + \sum_{k \in G} \beta_{1,k} T_{k,i} + \boldsymbol{\gamma}_1 \mathbf{X}_i + \boldsymbol{\delta}_1 \mathbf{z_i} + \varepsilon_{1,i}, \quad G = \{IN, IP, EN, EP, SN, SP\}, \tag{5}$$

$$y_i = \alpha_2 + \sum_{k \in G} \beta_{2,k} T_{k,i} + \mu M_i + \boldsymbol{\gamma}_2 \mathbf{X}_i + \boldsymbol{\delta}_2 \mathbf{z_i} + \varepsilon_{2,i}, \tag{6}$$

where $T_{k,i}$ denotes treatment assignment, $\mathbf{X}_i$ is a vector of controls, and $\mathbf{z_i}$ is a vector containing the respondent's pre-treatment values for the mediator and the desired priority. This framework decomposes each treatment's total effect into an indirect effect operating through perceived social norms (ACME) and a direct effect not transmitted through perceived social norms (ADE).

Figure A1 reports the CMA results. With the exception of IN, the estimated mediation effects (ACME) are not statistically significant. For IN, there is a non-zero effect but

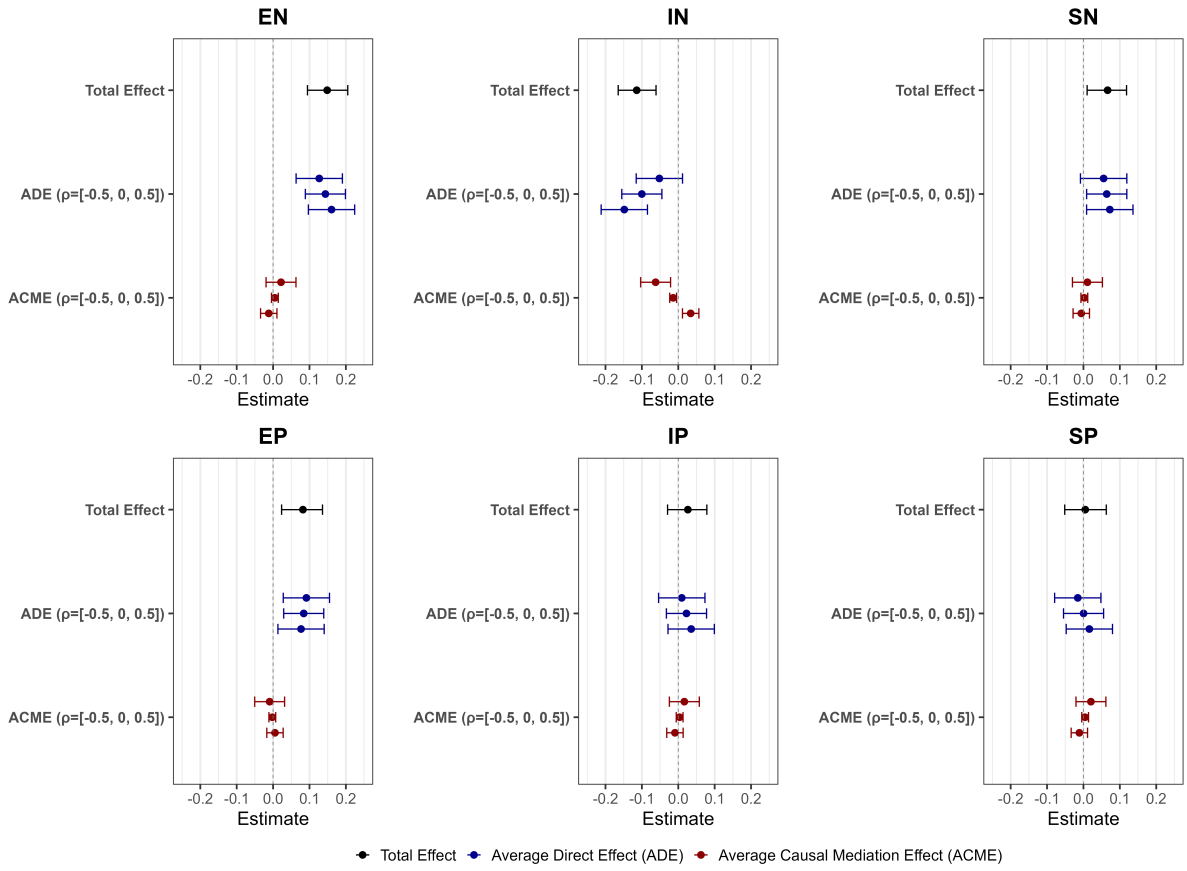


Figure A1: Causal Mediation Analysis: Desired Priority (Social Norms)

Note: This figure shows causal mediation analysis results with post-treatment desired priority as the outcome variable, using perceived social norms as the mediator (the respondent's assessment of the average Japanese person's desired-priority response). Each panel decomposes the total effect for a grouped treatment into ADE and ACME. Bars represent 95% confidence intervals. ρ denotes the assumed correlation between the first- and second-stage residuals; the case $\rho = 0$ corresponds to sequential ignorability.

it is quantitatively small and almost all of the total effect is driven by the direct effect (ADE). Taken together, these results indicate that perceived social norms do not explain the treatment-induced changes in desired priority in a quantitatively meaningful way.

One potential limitation of this exercise is interpretational ambiguity in the perceived social norms question. Upon receiving the information treatment, some respondents may interpret the "average Japanese person" as already having access to the same information (so the respondent is merely "catching up"), while others may interpret the "average Japanese person" as not having this information (so the respondent becomes more informed than average). If respondents differ in which interpretation they adopt, reported perceived social norms may adjust weakly even when social norms (or perceived social norms) are behaviorally relevant, which would attenuate our ability to detect mediation through this channel.

G Survey Questionnaire

Main Survey

A1 Please tell us your gender.

1. Male
2. Female
3. Other

A2 Please tell us your age.

1. [ ] years old {Respondent manually enters integer age.}

A3 Which of the following is your final level of education?

1. Elementary school / junior high school
2. High school
3. Various specialized schools (vocational schools)
4. Junior college
5. Technical college
6. Undergraduate
7. Graduate school master's program
8. Graduate school doctoral program

A4 What was your own gross income including bonuses and taxes (including business income) in 2023? Please select one that applies. (If you are a student, please answer the total amount of your part-time job income, allowances from your parents, scholarships, etc.)

1. Less than 1 million yen (including no income)
2. 1 million to less than 2 million yen
3. 2 million to less than 4 million yen
4. 4 million to less than 6 million yen
5. 6 million to less than 8 million yen
6. 8 million to less than 10 million yen
7. 10 million to less than 12 million yen
8. 12 million to less than 14 million yen
9. 14 million yen or more
10. Prefer not to answer

A5 Which of the following items best describes your job from April 2023 to March 2024? (For respondents who were not working during this period, refer to the "Respondents who were not working during this period" column.)

Respondents who were working during this period

1. Agriculture, forestry

2. Fishery
3. Mining, quarrying, gravel extraction
4. Construction
5. Manufacturing
6. Electricity, gas, heat supply, water
7. Information and communication
8. Transportation, postal
9. Wholesale, retail
10. Financial, insurance
11. Real estate, goods rental
12. Academic research, professional/technical services
13. Accommodation, food service
14. Life-related service, entertainment
15. Education, learning support
16. Medical care, welfare
17. Complex services
18. Service industry (not classified elsewhere)
19. Public service (excluding those classified elsewhere)
20. Others (other industries)

Respondents who were not working during this period

21. Student
22. Homemaker
23. Unemployed
24. Other

A6 Which of the following information devices are you using to answer this questionnaire?

1. PC
2. Smartphone
3. Other

A7 Which prefecture do you live in?

1. Hokkaido
2. Aomori
3. Iwate
4. Miyagi
5. Akita
6. Yamagata
7. Fukushima
8. Ibaraki
9. Tochigi
10. Gunma
11. Saitama
12. Chiba

13. Tokyo
14. Kanagawa
15. Niigata
16. Toyama
17. Ishikawa
18. Fukui
19. Yamanashi
20. Nagano
21. Gifu
22. Shizuoka
23. Aichi
24. Mie
25. Shiga
26. Kyoto
27. Osaka
28. Hyogo
29. Nara
30. Wakayama
31. Tottori
32. Shimane
33. Okayama
34. Hiroshima
35. Yamaguchi
36. Tokushima
37. Kagawa
38. Ehime
39. Kochi
40. Fukuoka
41. Saga
42. Nagasaki
43. Kumamoto
44. Oita
45. Miyazaki
46. Kagoshima
47. Okinawa

SQ1 If you wish to stop responding to the questionnaire, you may do so at any time during the process. If you would like to participate, please select "I can participate" and then click the "Next" button to begin answering the questions.

1. I can participate
2. I cannot participate

B1 During the COVID-19 outbreak, were you worried about the risk of infection? Please select the applicable option.

1. I wasn't worried at all
2. I wasn't too worried
3. Neither
4. I was a little worried
5. I was very worried

B2 During the COVID-19 outbreak, were you worried about the outlook of social and economic activities? Please select the applicable option.

1. I wasn't worried at all
2. I wasn't too worried
3. Neither
4. I was a little worried
5. I was very worried

B3 What do you think the Japanese government's priority was on social and economic activities and infection control during COVID-19?

1. The Japanese government prioritized infection control
2. If anything, the Japanese government prioritized infection control
3. Both were equally prioritized
4. If anything, the Japanese government prioritized social and economic activities
5. The Japanese government prioritized social and economic activities

B4 Do you think the Japanese government appropriately prioritized social and economic activities and infection control during the COVID-19 crisis?

1. The Japanese government should have prioritized infection control more
2. If anything, the Japanese government should have prioritized infection control more
3. It was appropriate
4. If anything, the Japanese government should have prioritized social and economic activities more
5. The Japanese government should have prioritized social and economic activities more

B5 Do you think the average Japanese person believes that the Japanese government appropriately prioritized social and economic activities and infection control during the COVID-19 crisis?

1. The average Japanese person believes that infection control should have been prioritized more
2. If anything, the average Japanese person believes that infection control should have been prioritized more
3. The average Japanese person thinks it was appropriate
4. If anything, the average Japanese person believes that social and economic activities should have been prioritized more

5. The average Japanese person believes that social and economic activities should have been prioritized more

B6 In Tokyo, a state of emergency was declared four times and priority measures to prevent the spread of the virus (hereinafter, prevention measures) were implemented twice. The total implementation period was 10 months. Although state of emergency declarations and prevention measures are thought to contribute to controlling infections, they are also thought to have a negative impact on social and economic activities. Do you think the duration of the state of emergency declaration and the implementation of the prevention measures was adequate?

1. The implementation period should have been longer
2. If anything, the implementation period should have been longer
3. It was appropriate
4. If anything, the implementation period should have been shorter
5. The implementation period should have been shorter

B7 If you had been able to determine the duration of the state of emergency declaration and prevention measures to prevent the spread during the COVID-19 crisis, how many months do you think you would have set the duration of implementation in Tokyo? Please select the option that most closely matches your opinion from below.

1. 5 months or less
2. 6 months
3. 7 months
4. 8 months
5. 9 months
6. 10 months
7. 11 months
8. 12 months
9. 13 months
10. 14 months
11. 15 months or more

B8 If the average Japanese person had been able to determine the duration of the state of emergency declaration and prevention measures to prevent the spread during the COVID-19 crisis, how many months do you think they would have set the duration of implementation in Tokyo? Please select the option that most closely matches your opinion from below.

1. 5 months or less
2. 6 months
3. 7 months
4. 8 months
5. 9 months
6. 10 months
7. 11 months

8. 12 months
9. 13 months
10. 14 months
11. 15 months or more

B9 In Japan, there were about 1.67 million unemployed people as of February 2020, just before the COVID-19 outbreak. How much do you think the number of unemployed people would have increased or decreased after a year? Please select the option that most closely matches your opinion from below.

1. Decrease of 500,000 people
2. Decrease of 400,000 people
3. Decrease of 300,000 people
4. Decrease of 200,000 people
5. Decrease of 100,000 people
6. No change
7. Increase of 100,000 people
8. Increase of 200,000 people
9. Increase of 300,000 people
10. Increase of 400,000 people
11. Increase of 500,000 people

B10 In Japan, the number of suicides in 2019, before the COVID-19 outbreak, was 20,116. About how many additional or fewer suicides do you think there were in 2020 compared to the number of suicides in 2019? Please select the option that most closely matches your opinion from below.

1. Decrease of 5,000 people
2. Decrease of 4,000 people
3. Decrease of 3,000 people
4. Decrease of 2,000 people
5. Decrease of 1,000 people
6. No change
7. Increase of 1,000 people
8. Increase of 2,000 people
9. Increase of 3,000 people
10. Increase of 4,000 people
11. Increase of 5,000 people

B11 How many people do you think died from COVID-19 in Japan during the period from the COVID-19 outbreak to December 31, 2022 (about 3 years)? Please select the option that most closely matches your opinion from below.

1. 0 people
2. 10,000 people
3. 20,000 people
4. 30,000 people

5. 40,000 people
6. 50,000 people
7. 60,000 people
8. 70,000 people
9. 80,000 people
10. 90,000 people
11. 100,000 people

B12 If the total duration of the implementation of the state of emergency and prevention measures in Tokyo had been 16 months, which would be six months longer, instead of 10 months, how much do you think the cumulative number of deaths in Tokyo would have decreased? Please select the option that most closely matches your opinion from below.

1. 0 people
2. 500 people
3. 1,000 people
4. 1,500 people
5. 2,000 people
6. 2,500 people
7. 3,000 people
8. 3,500 people
9. 4,000 people
10. 4,500 people
11. 5,000 people (or more)

B13 If the total duration of the implementation of the state of emergency declaration and prevention measures in Tokyo had been 16 months, which would be six months longer, instead of 10 months, how much do you think the number of unemployed people in Tokyo would have increased? Please select the option that most closely matches your opinion from below.

1. 0 people
2. 10,000 people
3. 20,000 people
4. 30,000 people
5. 40,000 people
6. 50,000 people
7. 60,000 people
8. 70,000 people
9. 80,000 people
10. 90,000 people
11. 100,000 people

{The information treatment corresponding to the respondent's randomly selected group is displayed between B13 and B14. See Appendix B for treatment details.}

B14 Did you know the above news/information?

1. I already knew
2. I feel like I've heard it somewhere, but I'm not sure
3. I learned about it for the first time through this questionnaire

B15 Although state of emergency declarations and prevention measures are thought to contribute to controlling infections, they are also thought to have a negative impact on social and economic activities. If a similar pandemic occurs in the future, how do you think the Japanese government should prioritize social and economic activities and infection control compared to this time?

1. The Japanese government should prioritize infection control
2. If anything, the Japanese government should prioritize infection control more
3. The same priority level as this time is fine
4. If anything, the Japanese government should prioritize social and economic activities more
5. The Japanese government should prioritize social and economic activities more

B16 As explained in the previous question, the duration of implementation of the state of emergency declaration and prevention measures in Tokyo was 10 months in total. If you were able to determine the duration of the state of emergency declaration and prevention measures to prevent the spread of a similar pandemic in the future, how many months would you set the duration of such measures in Tokyo? Please select the option that most closely matches your opinion from below.

1. 5 months or less
2. 6 months
3. 7 months
4. 8 months
5. 9 months
6. 10 months
7. 11 months
8. 12 months
9. 13 months
10. 14 months
11. 15 months or more

B17 If an average Japanese person were able to determine the duration of the state of emergency declaration and prevention measures to prevent the spread of a similar pandemic in the future, how many months do you think they would set the duration of such measures in Tokyo? Please select the option that most closely matches your opinion from below.

1. 5 months or less
2. 6 months
3. 7 months

4. 8 months
5. 9 months
6. 10 months
7. 11 months
8. 12 months
9. 13 months
10. 14 months
11. 15 months or more

C1 Are you currently undergoing treatment or follow-up for any of the following diseases? Please select all that apply. {Respondent selects all that apply.}

1. Malignant neoplasm (cancer)
2. Cerebrovascular disease (cerebral hemorrhage, cerebral infarction, etc.)
3. Respiratory disease
4. Circulatory system disease (angina pectoris, myocardial infarction)
5. Digestive system disease (stomach, intestines, liver, spleen, etc.)
6. Endocrine system disease (diabetes, etc.)
7. Kidney disease
8. Blood system disease (anemia, etc.)
9. None

C2 How many times have you been vaccinated against COVID-19?

1. 0 times
2. Once
3. Twice
4. 3 times
5. 4 times
6. 5 times or more

C3 In total, how many times have you been infected with COVID-19 so far?

1. 0 times
2. Once
3. Twice
4. 3 times or more
5. Prefer not to answer

C4 This question is for those who answered in C3 that they have been infected before. When you were infected, did it become severe enough to require a ventilator or ECMO (extracorporeal membrane oxygenation)? {Question displayed to those who chose 2, 3, or 4 in C3.}

1. Yes
2. No
3. Prefer not to answer

C5 Has anyone close to you been infected with COVID-19 and become seriously ill to the point of requiring a ventilator or ECMO (extracorporeal membrane oxygenation), or passed away?

1. Someone passed away
2. Someone became seriously ill
3. No one passed away or became seriously ill
4. Prefer not to answer

Follow-Up Survey

The follow-up survey is a simplified version of the main survey with a reduced question set and no information provision. The following questions from the main survey are used in the follow-up: B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B15, B16, B17.

Supplemental Wave

The survey for the supplemental wave closely follows the main survey but includes additional questions to allow for mechanism analysis. The added questions are listed below. The "three-year period" refers to the 2020-2022 period during which the pandemic occurred.

B5* Suppose that, during the three-year period mentioned above, the total duration of Tokyo's State of Emergency and priority prevention measures had been 16 months instead of 10 months. By how much do you think the cumulative number of deaths in Tokyo would have decreased?

1. 0 - 500 people
2. 500 - 1,000 people
3. 1,000 - 1,500 people
4. 1,500 - 2,000 people
5. 2,000 - 2,500 people
6. 2,500 - 3,000 people
7. 3,000 - 3,500 people
8. 3,500 - 4,000 people
9. 4,000 - 4,500 people
10. 4,500 - 5,000 people
11. 5,000 people (or more)

B6* Suppose that, during the three-year period mentioned above, the total duration of Tokyo's State of Emergency and priority prevention measures had been 16 months instead of 10 months. By how many people do you think the total number of individuals in Tokyo who experienced unemployment would have increased?

1. 0 - 100,000 people
2. 100,000 - 200,000 people
3. 200,000 - 300,000 people

4. 300,000 - 400,000 people
5. 400,000 - 500,000 people
6. 500,000 - 600,000 people
7. 600,000 - 700,000 people
8. 700,000 - 800,000 people
9. 800,000 - 900,000 people
10. 900,000 - 1,000,000 people
11. 1,000,000 people (or more)

B9* Please imagine a future pandemic similar to the three-year pandemic described above, during which Tokyo again implements State of Emergency and priority prevention measures. If the total duration of those measures were 16 months—six months longer than this time—by how much do you think the cumulative number of deaths in Tokyo would decrease compared to if the duration were the same 10 months as this time?

1. 0 - 500 people
2. 500 - 1,000 people
3. 1,000 - 1,500 people
4. 1,500 - 2,000 people
5. 2,000 - 2,500 people
6. 2,500 - 3,000 people
7. 3,000 - 3,500 people
8. 3,500 - 4,000 people
9. 4,000 - 4,500 people
10. 4,500 - 5,000 people
11. 5,000 people (or more)

B10* Please imagine a future pandemic similar to the three-year pandemic described above, during which Tokyo again implements State of Emergency and quasi-emergency measures. If the total duration of those measures were 16 months—six months longer than this time—by how many people do you think the total number of individuals in Tokyo who experience unemployment would increase compared to if the duration were the same 10 months as this time?

1. 0 - 100,000 people
2. 100,000 - 200,000 people
3. 200,000 - 300,000 people
4. 300,000 - 400,000 people
5. 400,000 - 500,000 people
6. 500,000 - 600,000 people
7. 600,000 - 700,000 people
8. 700,000 - 800,000 people
9. 800,000 - 900,000 people
10. 900,000 - 1,000,000 people
11. 1,000,000 people (or more)