Is health politically irrelevant? Experimental evidence during a global pandemic

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ABSTRACT

Objective To investigate how health issues affect voting behaviour by considering the COVID-19 pandemic, which offers a unique opportunity to examine this interplay.

Design We employ a survey experiment in which treatment groups are exposed to key facts about the pandemic, followed by questions intended to elicit attitudes toward the incumbent party and government responsibility for the pandemic.

Setting The survey was conducted amid the lockdown period of 15–26 April 2020 in three large democratic countries with the common governing language of English: India, the United Kingdom and the United States. Due to limitations on travel and recruitment, subjects were recruited through the M-Turk internet platform and the survey was administered entirely online. Respondents numbered 3648.

Results Our expectation was that respondents in the treatment groups would favour, or disfavour, the incumbent and assign blame to government for the pandemic compared with the control group. We observe no such results. Several reasons may be adduced for this null finding. One reason could be that public health is not viewed as a political issue. However, people do think health is an important policy area (>85% agree) and that government has some responsibility for health (>90% agree). Another reason could be that people view public health policies through partisan lenses, which means that health is largely endogenous, and yet we find little evidence of polarisation in our data. Alternatively, it could be that the global nature of the pandemic inoculated politicians from blame and yet a majority of people do think the government is to blame for the spread of the pandemic (~50% agree).

Conclusions While we cannot precisely determine the mechanisms at work, the null findings contained in this study suggest that politicians are unlikely to be punished or rewarded for their failures or successes in managing COVID-19 in the next election.

Trial registration Initial research hypotheses centred on expected variation between two treatments, as set forth in a detailed pre-analysis plan, registered at E-Gap: http://egap.org/registration/6645. Finding no difference between the treatments, we decided to focus this paper on the treatment/control comparison. Importantly, results that follow the pre-analysis plan strictly are entirely consistent with results presented here: null findings obtained throughout.

Key questions

What is already known?

► Political leaders in democracies are sensitive to cues from the electorate and are less likely to implement unpopular policies.

► Electoral accountability is not automatic, however, and it only exists if citizens connect specific policies to politicians and vote accordingly.

► We know little about how public health attitudes affect voting intention or behaviour.

What are the new findings?

► The majority of our respondents believe health is an important policy area and that government has some responsibility for health.

► Most of our respondent think their government is to blame for the spread of the pandemic.

► However, we find that those exposed to key facts about the pandemic are no more likely to favour, or disfavour, the incumbent nor to assign blame to government for the pandemic compared with an untreated control group.

What do the new findings imply?

► It is unclear whether politicians will be punished or rewarded for their failures or successes in managing COVID-19 in the next election.

► Our results suggest that democracies may not improve health because of electoral accountability as is commonly assumed but perhaps for other reasons.

► While we are cautious about drawing strong conclusions from a single experiment, our results also speak to how political institutions might contribute toward the sustainable development goals.

If public health policies are to succeed they must receive support from the people they are designed to help. This is especially true in democracies, where politicians are subject to periodic election and therefore sensitive to cues from the electorate. However, electoral accountability is not automatic; it exists only if citizens connect specific policies to politicians and vote accordingly. Do issues surrounding public health move public opinion and do those opinions translate into voting behaviour?
We know a fair bit about attitudes toward public health in rich countries, where health systems are expansive and expensive, and especially in the United States, where healthcare is an intensely partisan issue.\textsuperscript{1\textendash}13 We know less about attitudes toward public health in the developing world, where the topic is rarely studied.\textsuperscript{14} In neither context is the opinion/behaviour nexus well understood. Although a few studies examine the association between public health attitudes and voting behaviour,\textsuperscript{15} it is difficult to infer causality from such observational data.

The COVID-19 pandemic offers a unique opportunity to observe the interplay between public opinions about public health and electoral politics. This pandemic is one of the worst of the modern era; it is global in scope; it is covered intensely by the press; and the role of political leaders and parties in mitigating or exacerbating the pandemic is front-and-centre in news reportage. If public health matters for popular politics, COVID-19 would seem to be a perfect storm.\textsuperscript{16}

To assess the question, we launched surveys in the United States, the United Kingdom and India. Embedded within the surveys is a survey experiment in which we prime information about the health and economic effects of the COVID-19 pandemic.

**RESEARCH DESIGN**

The COVID-19 pandemic is global in reach, which means mass publics and politicians around the world are confronted with similar challenges. Political responses differ, and exposure to the virus also differs across countries. However, all citizens share the uncertainty of knowing that a massive number of deaths—beyond anything experienced over the past century—is possible. In this general sense, the COVID-19 threat is ubiquitous.

To gauge public opinion across the world an ideal research design would incorporate random samples drawn from every country at regular intervals. We do not have the resources or the logistical wherewithal to carry out such a massive undertaking. Nor is it possible in the midst of this highly contagious pandemic to administer surveys person-to-person, which impedes the ability to recruit random samples in many countries. For our purposes, it is also important to capture opinion in a country at a point in time when the pandemic (as judged by infection and mortality rates) and public attention to it (as judged by popular media accounts) is near its peak. We cannot wait for the pandemic to subside in order to contact research subjects in a safe environment.

Accordingly, we employ a survey recruitment platform that is widely used for survey experiments and which has a significant presence in select countries around the world: Amazon’s Mechanical Turk (‘M-Turk’).\textsuperscript{17} For theoretical reasons, it is vital to include both more and less affluent countries. Accordingly, we selected countries that varied according to economic development and also provide a significant contingent of M-Turk workers\textsuperscript{18}: the USA, the UK and India.

Power analyses suggested a sample size of 1500 in each country; that is, 500 for each arm of the experiment. We were cognisant that the smaller numbers of Turkers in the UK might preclude reaching a full sample in that country. However, the more important issue was obtaining sufficient samples in the developed world (for which the UK and USA could be considered together) and the developing world (for which India would have to suffice).

Recruitment took place over several weeks, from 15 April to 6 June 2020. The US quota was filled within a few days, the Indian quota took nearly 2 months, and the UK quota was not entirely met (n=615). Accordingly, respondents were reached at different points in time in India and the UK, offering information about the stability of responses. The survey was available in English for all three countries and in English and Hindi for India. Survey respondents were compensated through M-Turk according to rates that account for differences in purchasing power parity across the three countries.

The resulting sample is younger, includes more men, and is more educated than the general populations of the three countries—a common pattern among M-Turk studies.\textsuperscript{19} The India sample is also more urban and better off than the general population. Additionally, there are some regional imbalances, with London over-represented in the UK and southern states over-represented in the Indian sample. Further details are provided in online supplemental appendix B.

To ascertain how the COVID-19 pandemic might influence political behaviour we employ a survey experiment in which key facts about the pandemic are revealed to respondents, followed by questions intended to elicit attitudes toward the government and potential voting choices (this follows a widely employed technique known as the survey experiment\textsuperscript{19}). The first treatment deals with the possible economic impact of the pandemic and the second concerns its possible health impact. A filter question ensures that respondents comprehend the information that has been presented to them and also serves to reinforce the initial stimulus. Thus, we construct an experiment with two treatment groups and a control group (which is given no information about the pandemic). Outcome questions of theoretical interest inquire (a) whether respondents would support the incumbent (party and party leader) if an election were held today, and (b) whether they hold the government at fault for allowing the disease to spread. Further details on the setup are contained in box 1 and a complete questionnaire is provided in online supplemental appendix A.

Two hypotheses will guide our discussion. (Initial research hypotheses centred on expected variation between the two treatments, as set forth in a detailed pre-analysis plan, registered at E-Gap: http://egap.org/registration/6645. Finding no difference between the treatments, we decided to focus this paper on the treatment/control comparison. However, it is important to note that results from the
The experiment consists of a pure control and two treatments. The first treatment focuses on the projected economic effects of the COVID-19 pandemic. The US version reads as follows:

As you are probably aware, the Coronavirus disease (COVID-19) has spread around the world. Experts are wrestling with the impact of this pandemic on the United States economy. Some estimates suggest that the economy could shrink by 3.2% this year, that 52.8 million people could end up without work (around 32% of the entire workforce), and that the value of stocks and shares could fall by around 30%.

Similar versions are constructed for the UK and India based on economic projections in those countries. The second treatment focuses on the health effects of COVID-19. The US version reads as follows:

As you are probably aware, the Coronavirus disease (COVID-19) has spread around the world. Experts are wrestling with the impact of this pandemic on public health in the United States. One estimate suggests that around 12.9 million would require hospitalisation (3.9% of the population), around 3.7 million would need critical care, and over 2.8 million people could die (around 0.8% of the population). At present, there is no vaccine for Coronavirus and no cure.

Similar versions are constructed for the UK and India based on health projections for the virus in those countries.

After each treatment, the respondent is asked a multiple-choice question about the information presented in the previous page. For example, after the health treatment US respondents might be asked:

What is the estimated number of fatalities from COVID-19 in the USA, as stated on the previous page? (If you are not sure, check back on the previous page.)

a. It was more than 2 million people
b. It was less than 2 million people

Follow-up questions are constructed so that the correct answer is the highest—(a) rather than (b)—so as to enhance the strength of the treatment. Respondents must answer this follow-up question correctly in order to proceed through the survey.

Two outcome questions gauge the possible impact of these treatments on political behaviour. The first centres on the incumbent: If a national election were held today, would you like to see [Johnson and the Conservative party/Trump and the Republican party/Modi and the BJP] reelected? The second asks whether the government is at fault for allowing the pandemic to spread. Responses are registered on a 100-point feeling thermometer.

To test these hypotheses, we adopt an experimental design that contrasts two treatment conditions with the control condition, as described. We estimate causal effects through the following regression model, which includes background covariates in order to yield greater precision:

\[ \text{Outcome}_i = \text{constant} + \alpha \text{SES}_i + \beta C + \gamma T_i + \delta \text{Country}_i \]

where Outcome is the measurement of the response to the scenario to which the person i was exposed, denoted by T, SES denotes the socioeconomic factors, C stands for demographic factors, and Country represents dummies for the three countries.

RESULTS

To ascertain whether the experiment is effective in priming attitudes we ask several questions. First, we inquire about the (subjective) importance of two prominent policy areas: public health and the economy. Each is gauged on a 100-point feeling thermometer. An index is then constructed by subtracting views on the importance of public health from views about the importance of the economy (which functions as a baseline).

Second, we ask about worries with respect to the health and economic effects of the COVID-19 pandemic. Again, we compose an index by subtracting worries about health from worries about economics (which functions as a baseline).

Results of these analyses, shown in figure 1A,B, indicate that both treatment conditions boost the salience of public health relative to the economy and make people more worried about the health effects of COVID-19. Moreover, the pure health treatment produces a stronger effect than the treatment focused on the economic effects of COVID-19, as one would expect if the experiment is having the intended effect.

Our theoretical interest is not salience or anxiety. We want to know whether the COVID-19 pandemic has electoral repercussions. For this to occur, concern about the virus must affect views about the ruling party and the sitting government, as contained in our two outcome questions (see box 1). These tests are presented in figures 2 and 3.

Neither treatment demonstrates an appreciable effect on either outcome. This generates four null results—a consistent pattern in which treatments designed to heighten the subject’s awareness of the economic and health dangers of the COVID-19 pandemic fail to change their support for the ruling party or their inclination to place blame at the feet of the government.

Granted, if the Indian sample is excluded from the analysis shown in figure 3, those subjected to the economic treatment are slightly less likely to blame their governments (economic condition vs control: \( \beta = -3.5, p=0.027 \)). We are not sure what to make of this small effect on a subsample of respondents. Perhaps the effect means that the health pandemic has reinforced the standing of ruling parties in the USA and the UK, a result that runs against the grain of reportage (which has generally blamed these governments for their tardy response).
any case, it is a very small effect and is not robust in the full sample. We are inclined to regard it as stochastic.

**INTERPRETATIONS**

Null results are often more difficult to interpret than positive or negative results, so we shall spend some time considering what the findings represented in figures 2 and 3 might mean. Do they mean that the COVID-19 pandemic has no political consequences, as we have suggested, or is there some other explanation?

The experiment primes an existing condition that is well known to the participants, and is also highly salient. Under the circumstances, it may be difficult to move the dial, as research subjects are already saturated with information. However, the results shown in figure 1 demonstrate that the experiment did affect salience and anxiety.

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**Figure 1**  
(A) Salience. Point estimates represent marginal effects and vertical bars are 95% confidence intervals. Each person is asked about how important they think each policy (health and economy) is on a scale from 0 to 100 (100=very important). We then calculate the difference (health – economy). The full scale of this measure ranges from −100 to 100. Economic condition versus control: $\beta=1.9$, $p=0.022$; health condition versus control: $\beta=3.7$, $p<0.001$. (B) Worry. Point estimates represent marginal effects and vertical bars are 95% confidence intervals. Each person is asked about how worried they are about the economic and health effects of COVID-19 on a scale from 0 to 100 (100=very worried). We then calculate the difference (health – economy). The full scale of this measure ranges from −100 to 100. Economic condition versus control: $\beta=1.8$, $p=0.234$; health condition versus control: $\beta=3.5$, $p=0.018$. 

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(Acharya A, et al. BMJ Global Health 2020;5:e004222. doi:10.1136/bmjgh-2020-004222)
A null finding may also result if respondents hold an extreme position, as measured by the outcome; they are at one end or the other. For such ‘extremists’ there may be no way to measure the impact of the treatment. This concern is mitigated by our response variable, a 100-point feeling thermometer. Still, 27% of our sample (987 of 3648) sit at the extremes of the scale (at 0 or 100) for the incumbency question (figure 2), and 11% of the sample (391 of 3648) sit at the extremes of the scale for the government-at-fault question (figure 3), as shown in Figure B3. A simple expedient is to remove the extremes from the analysis. Doing so reveals a treatment effect (when public health is gauged against economics); this serves as a negative placebo, showing that subjects were attentive to the treatments and responsive to them. More generally, we doubt that the fear and uncertainty surrounding COVID-19 is so great that it would resist a further stimulus, provided by our—very pointed—reminder of its possible consequences. Arguably, it should be the reverse. If people are already aware of a problem, a reminder of that problem should stimulate those concerns by making them manifest. (By contrast, a less well known or less virulent health problem might not be perceived by subjects as a credible threat.)

Figure 2 Incumbent support. Point estimates represent marginal effects and vertical bars are 95% confidence intervals. Each person is asked about how they would feel if the incumbent in each country was reelected on a scale from 0 to 100 (100=very happy). None of the treatment conditions in any country has a p-value less than 0.1.

A null finding may also result if respondents hold an extreme position, as measured by the outcome; they are at one end or the other. For such ‘extremists’ there may be no way to measure the impact of the treatment. This concern is mitigated by our response variable, a 100-point feeling thermometer. Still, 27% of our sample (987 of 3648) sit at the extremes of the scale (at 0 or 100) for the incumbency question (figure 2), and 11% of the sample (391 of 3648) sit at the extremes of the scale for the government-at-fault question (figure 3), as shown in Figure B3. A simple expedient is to remove the extremes from the analysis. Doing so reveals a treatment effect (when public health is gauged against economics); this serves as a negative placebo, showing that subjects were attentive to the treatments and responsive to them. More generally, we doubt that the fear and uncertainty surrounding COVID-19 is so great that it would resist a further stimulus, provided by our—very pointed—reminder of its possible consequences. Arguably, it should be the reverse. If people are already aware of a problem, a reminder of that problem should stimulate those concerns by making them manifest. (By contrast, a less well known or less virulent health problem might not be perceived by subjects as a credible threat.)
(for both the economics and health treatment conditions) that is often closer to zero than what is recorded in figures 2 and 3. Our null effects do not appear to be driven by a censored scale.

Polarised respondents are also more likely to have stable opinions irrespective of their exposure to the treatment and this may push our results towards the null. We explore whether moderates are responding to our treatments by first identifying those in the control group with less polarised views. Then we use a matching procedure to identify those in the treatment groups who are similar to—according to a set of background characteristics—those in the control group with these moderate views. Our matching procedure then excludes those in the treatment groups who are similar to those in the control group with extreme views. This analysis shows that even when we focus on those likely to hold moderate views on the outcomes of interest we still find null effects (see online supplemental figure C1 and accompanying text).

A null finding may also result from causal heterogeneity, when a treatment has disparate effects—sometimes positive, sometimes negative—on subjects depending on their background conditions. One obvious background condition is the country context. One can easily imagine the COVID-19 pandemic might be experienced differently in the USA, the UK and India. However, figures 2–3 show that this is not the case.

Another background condition is partisanship. It is possible that our experimental prime has the effect of polarising respondents, making supporters of the incumbent even more supportive and opponents even more opposed, culminating in a null average effect. If this were the case, we would expect greater variance in the treatment groups than in the control groups for each country. We find no such differences, as measured by standard deviations.

Of course, background conditions of individual subjects are, in principle, infinite. Our post-survey questionnaire inquired about sex, age, urban/rural location, employment status, educational attainment, income, money saved for emergencies, and current health status. Split-sample tests focusing on subjects who fall into different categories along these various dimensions do not reveal any significant effects (see online supplemental table C1, C2).

**GENERALISABILITY**

With experiments there are often questions about generalisability. In the present instance, one may wonder whether results contained in figures 2 and 3 are indicative of the outcome of theoretical concern—election-day behaviour.

With ‘positive’ treatment effects, generalisability would be more of a concern. After all, talk is cheap: responses to a survey have no consequences for the respondent, while in an election there is something important at stake. But there is no reason to suppose that the cheapness of talk would be conducive to null results. If anything, the reverse seems more likely.

A second concern is the time separation between our experiment and the arrival of the next national elections, which are not imminent in any of the studied countries (half a year in the USA and several years in the UK and India). Since public sentiments wax and wane according to many factors that are impossible to predict, effects associated with COVID-19 uncovered in the midst of a pandemic may dissipate once the pandemic subsides. However, dissipation also seems more of a problem for a ‘positive’ finding than a null finding. There is little reason to suppose that the political ramifications of COVID-19 would increase between now—the height of the crisis (or nearly so) in the three countries under observation—and the next election.

A third issue concerns the specific point in time that we chose for our experiment—late April to early May 2020. Perhaps there was something specific about that point in time, close to the apex of the pandemic, that engendered a null result from our respondents. Some leverage on this question can be garnered from the duration of the recruitment period, which lasted for 3 weeks in the UK and India. This means that our sample from these countries captures the state of the pandemic, and of politics, at somewhat different moments in time. During this period the total number of deaths in the UK rose from ~13 000 to ~40 000, while India’s deaths rose from 405 to over 7000. When we compare responses gathered at different points in time we find a marked increase in the number of Indian respondents (across all treatment arms) who are inclined to blame their government, though there is no change among Indian respondents in their support for the incumbent’s reelection. UK respondents show no changes in their overall responses to either question. Most important, the estimated treatment effects for Indian and UK samples are null across various points in time, as shown in online supplemental figure C2. Accordingly, there is no indication that the results reported here are specific to a particular moment in time.

A fourth issue concerns the representativeness of our sample of M-Turkers. In addition to problems of self-selection, M-Turkers differ along standard demographic dimensions when compared with national populations, as noted. Some of them may be ‘professional’ survey respondents, and many (about three-quarters) have participated in previous surveys about COVID-19. To check whether these factors influenced the receptiveness of our sample to the experimental treatments we replicated the analyses pictured in figures 2–3 across subgroups—defined by those who have, or have not, taken previous surveys related to COVID-19 (according to self-report). Null results were obtained among each subgroup.

Another issue of generalisability concerns our choice of study sites. Are null results in the USA, the UK and India likely to be replicable in other contexts? This is much harder to assess. However, the USA and the UK
are among the countries most affected by the COVID-19 health pandemic; in this respect their background circumstances are propitious. That India had been less affected (as of May 2020) offers a point of contrast. That the null finding persists across all three contexts suggests that these results might be generalisable.

Our three research sites also offer variation on another background condition of potential importance. In the USA, the COVID-19 pandemic has been subject to partisan politics, with a president who downplays its seriousness and has been widely faulted for a weak and inconsistent response to the public health threat. In the UK and India, partisan politics have also been at play, but not in such a prominent fashion. Again, it should be stressed that all three countries register a robust null result.

One may wonder whether findings with respect to this pandemic are generalisable to other health crises such as HIV/AIDS and Ebola. We are not aware of similar survey experiments conducted in the midst of these epidemics so it is difficult to speculate on this point. Likewise, one may wonder whether ‘normal’ public health issues such as the perennial tussle over government’s role in healthcare, the performance of government health services, and their expense would elicit similar responses. It is possible that the extreme nature of COVID-19, and its seemingly irresistible global spread, have inoculated politicians from blame. Further research will be needed to determine whether more mundane public health issues carry a stronger political punch.

DISCUSSION

People in the USA, the UK and India are extremely concerned about the pandemic—both its health effects and economic repercussions—and they become even more concerned when primed with information about the repercussions of the virus (see figure 1). Yet, we find no evidence that these worries translate into changes in political behaviour (see figures 2–3).

Several reasons may be adduced for this (unexpected) null finding. One reason could be that public health is not viewed as a political issue but rather as a matter of personal conduct, group status or socioeconomic standing. Another reason could be that members of the public view public health policies through partisan lenses, which means that health is largely endogenous. (It is worth noting, however, that a recent survey experiment situated in the USA found no impact on attitudes toward COVID-19 when partisan cues were primed.)16 20 Alternatively, it could be that the global nature of the COVID-19 pandemic has inoculated politicians from blame.

Whatever mechanisms might be at work, the null findings of this study suggest that politicians are unlikely to be punished or rewarded for their failures or successes in managing COVID-19 in the next election. One is tempted to conclude that public health issues have little influence on voter preferences in most election cycles. For example, it is not clear whether the stagnation of life expectancy in the USA and the UK, and the low level of public sector health expenditure in India have had much impact on recent elections in those countries. The urgency by which the COVID-19 pandemic has ripped through social, economic and political landscapes may challenge these complacencies, but only if mass publics make connections between the state of public health and what public officials can do. We need more research on how these factors interact, and the extent that they are disconnected, to determine why this might be so.

If public health is politically inconsequential this also raises questions about the impact of political institutions on health outcomes. Most studies suggest a positive relationship between democracy and improved public health proxied by mortality.21–26 Generally, this is attributed to electoral accountability.27 28 Democracies hold free and fair elections and these institutions make politicians more responsive to the preferences of citizens, which are thought to prioritise health.24 29–31 Our results suggest that this commonsensical argument may be flawed. Democracies may promote health, but perhaps for reasons other than electoral accountability. This accords with recent work that questions the viability of accountability as a mechanism of good governance32 or suggests alternative mechanisms such as the selection of good leaders.33

There are many potential implications from this study. At the same time, we want to caution against drawing big conclusions from a single experiment conducted in an exploratory manner. We noted potential problems of generalisability in the previous section. In particular, our M-Turk samples are not randomly drawn from their respective populations; it is possible that different results would be obtained with randomly chosen samples. There is also a question about our choice of country cases; only three countries were included and their representativeness of the world of nation-states could be questioned. Finally, there is a question about the policy itself; there may be features of COVID-19 that do not generalise to other health outcomes. These issues warrant further research.

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Appendix A: Questionnaire

What follows is the questionnaire used for the United States. Similar questionnaires were devised for the United Kingdom (in English) and India (in English and Hindi).

Preliminary

Q1 You are being invited to participate in a research study conducted by Aaron Reeves from the University of Oxford. This study is being conducted in a number of countries and you have been invited to participate because you live in the United States.

Why are we doing this research study? The purpose of this research study is to understand your opinions about current events, and how they are affecting our lives.

Who can participate in this research study? Anyone can participate in this study as long as they are from US.

What will I be asked to do and how much time will it take? If you agree to take part in this study, you will be asked to complete a short online survey. This survey will ask about your knowledge of and opinions about current events, and it will take you approximately 5 minutes to complete.

What are my risks of being in this research study? There are no risks to you by participating in this research. There will be no inconveniences to you other than the time you spend answering the questions. All data will be anonymous and confidential.

How will my personal information be protected? MTurk protects your anonymity and so it will be impossible for anyone to identify who you are. All the questions we are planning to ask are general, such as age and sex, and will therefore be too general to ever identify anyone.

You must be of legal age to participate in this study.

If you have any questions, please contact the study lead at aaron.reeves@spi.ox.ac.uk

Dr Aaron Reeves, PhD, Oxford University

By clicking "continue," you confirm that you have been informed of the study's goals and procedure in writing, that you have understood this information, and that you are aware that participation is
voluntary. You may abort participation at any point without citing a reason and without incurring any negative consequences as a result of doing so.
Control Condition

[No additional questions]

Treatment #1: Economics

Q6 As you are probably aware, the Coronavirus disease (Covid-19) has spread around the world. Experts are wrestling with the impact of this pandemic on the US economy. Some estimates suggest that the economy could shrink by 3.2% this year, 52.8 million people could end up without work (about 32% of the entire workforce), and that the value of stocks and shares could fall by around 30%.

On the next page, there will be a few factual questions about this information.

Q7 Here are some questions about the information presented on the previous page. Please answer to the best of your ability. If you are not sure, you may return to the previous page. (All answers must be correct in order to proceed in the survey.)

[next page...]

Q8 What is the estimated number of job losses created by Covid-19 in the United States, as stated on the previous page?

- It was more than 50 million (1)
- It was less than 50 million (2)

OR...

Q11 How much is the stock market expected to fall as a result of Covid-19?

- It was more than 20% (1)
- It was less than 20% (2)
Q12 As you are probably aware, the Coronavirus disease (Covid-19) has spread around the world. Experts are wrestling with the impact of this pandemic on public health in the US. One estimate suggests that around 12.9 million will require hospitalization (3.9% of the population), around 3.7 million will need critical care, and over 2.8 million people will die (around 0.8% of the population). At present, there is no vaccine for Coronavirus and no cure.

On the next page, there will be a few factual questions about this information.

Q13 Here are some questions about the information presented on the previous page. Please answer to the best of your ability. If you are not sure, you may return to the previous page. (All answers must be correct in order to proceed in the survey).

Q14 What is the estimated number of fatalities from Covid-19 in the United States, as stated on the previous page? (If you are not sure, check back on the previous page).

- It was more than 2 million people (1)
- It was less than 2 million people (2)

OR...

Q15 How many people will require critical care in an Intensive Care Unit?

- It was more than 3 million people (1)
- It was less than 3 million people (2)

Outcomes

Q3 If a national election were held today, on a scale of 0 (sad) to 100 (happy) how would you feel if Trump and the Republican party were reelected?

0 10 20 30 40 50 60 70 80 90 100
Q4 On a scale of 0 (not important at all) to 100 (extremely important), how important are each of these policy areas for you? (To what extent should the government pay attention to these policy areas?)

| Policy Area                        | Scale |
|-----------------------------------|-------|
| The American economy              |       |
| Public health in the US           |       |

Q5 On a scale of 0 (strongly disagree) to 100 (strongly agree), how much do you agree/disagree with the following statement:

| Statement                                                                 | Scale |
|---------------------------------------------------------------------------|-------|
| The government is at fault for allowing the pandemic to spread.           |       |

Q24 On a scale of 0 (disagree) to 100 (agree), how do you feel about the following statement:

| Statement                                                                 | Scale |
|---------------------------------------------------------------------------|-------|
| My main worry about Coronavirus disease (Covid-19) is the spread of the infection through the US and the possibility that I, or a member of my family, might become infected. |       |

Q37 On a scale of 0 (disagree) to 100 (agree), how do you feel about the following statement:

| Statement                                                                 | Scale |
|---------------------------------------------------------------------------|-------|
|                                                                           |       |
My main worry about Coronavirus disease (Covid-19) is its impact on the economy, including the possibility that I or a member of my family might become unemployed or that my investments might lose value.

Q23 On a scale of 0 (no responsibility at all) to 100 (total responsibility), how much responsibility does the government bear...
Background Questions

Q24 In the following questions we ask you to tell us a bit about yourself.

Q25 Gender

- Male (1)
- Female (2)
- Other (please specify) (3) ____________________________

Q26 What year were you born?

▼ 2002 (1) ... 1922 (81)

Q29 How would you describe your current employment?

- Not employed by virtue of retirement, school, or by choice (1)
- Unemployed and looking for work (2)
- Part-time employed (3)
- Full-time employed (4)

Q27 What part of the US do you live in?

▼ Alabama (1) ... Wyoming (81)

Q28 How would you characterize the area where you live?
Q30 What is the highest educational level that you have attained, or expect to attain?

- No formal education (1)
- Incomplete primary school (2)
- Complete primary school (3)
- Incomplete secondary school: technical/vocational type (4)
- Complete secondary school: technical/vocational type (5)
- Incomplete secondary school: university-preparatory type (6)
- Complete secondary school: university-preparatory type (7)
- Some university-level education, without degree (8)
- University-level education, with degree (9)

Q31 What is your annual household income? (USD)

- Below $575 per week (or below $30,000 per year) (1)
- Below $960 per week but above $575 per week (or below $50,000 per year but above $30,000 per year) (2)
- Below $1,900 per week but above $960 per week (or below $100,000 per year but above $50,000 per year) (3)
Q32 In the previous question, we asked you about your income in general categories. It would be helpful if you could also take a guess at your weekly, monthly, or annual salary (choose one) last year. Please enter a number without commas. (This information is completely confidential).

- Weekly ($) (1) ________________________________
- Monthly ($) (2) ________________________________
- Annual ($) (3) ________________________________

Q33 How much money have you saved for emergencies such as job loss or ill health?

- Less than a months salary (1)
- More than a month but less than three months salary (2)
- More than three months but less than six months salary (3)
- More than six months salary (4)

Q34 In general, would you say that your health is...

- Poor (1)
- Fair (2)
- Good (3)
- Very good (4)
- Excellent (5)

Above $1,900 per week (or above $100,000 per year) (4)
Q35 Have you participated in other surveys focused on Coronavirus?

- Yes (1)
- No (2)
Appendix B: Descriptive Statistics
### Table B1: Descriptive statistics for each country sample

|                      | India | UK | US | ALL |                   | India | UK | US | ALL |
|----------------------|-------|----|----|-----|-------------------|-------|----|----|-----|
| **Sample Size**      |       |    |    |     | **Fear employment disruption (0-100)** |       |    |    |     |
| Control (N)          | 501   | 194| 509|1,204| Control           | 72    | 59 | 65 | 67  |
| Econ Treatment (N)   | 511   | 198| 529|1,238| Econ Treatment    | 72    | 62 | 62 | 66  |
| Health Treatment (N) | 487   | 223| 496|1,206| Health Treatment  | 69    | 59 | 61 | 64  |
| Total (N)            | 1499  | 615| 1534|3648 | Total             | 72    | 60 | 63 | 66  |
| Total (%)            | 41%   | 17%| 42%|100  |                   | 72%   | 60 | 63 | 66  |
| **Savings equaling consumption of (%)** |       |    |    |     | **Fear contracting Covid (0-100)** |       |    |    |     |
| Less than a Month    | 39    | 41 | 26 | 34  | Control           | 63    | 70 | 74 | 69  |
| Less than 3 Months   | 35    | 29 | 29 | 32  | Econ Treatment    | 66    | 70 | 71 | 70  |
| Less than 6 Months   | 10    | 12 | 20 | 15  | Health Treatment  | 66    | 71 | 71 | 70  |
| More than 6 Months   | 16    | 18 | 24 | 20  | Total             | 65    | 71 | 71 | 69  |
| **Self-reported health (%)** |       |    |    |     | **Govt can affect economy (0-100)** |       |    |    |     |
| Poor                 | 39    | 41 | 26 | 34  | Control           | 76    | 75 | 79 | 77  |
| Fair                 | 4     | 2  | 2  | 3   | Econ Treatment    | 73    | 76 | 78 | 76  |
| Good                 | 43    | 35 | 36 | 39  | Health Treatment  | 71    | 73 | 77 | 74  |
| Very Good            | 29    | 34 | 37 | 33  | Total             | 74    | 75 | 78 | 76  |
| Excellent            | 12    | 16 | 15 | 14  |                   | 81    | 87 | 83 | 83  |
| **Support for incumbent (0-100)** |       |    |    |     | **Govt can affect public health (0-100)** |       |    |    |     |
| Control              | 65    | 46 | 47 | 53  | Control           | 81    | 87 | 84 | 83  |
| Econ Treatment       | 66    | 44 | 45 | 52  | Econ Treatment    | 81    | 86 | 84 | 83  |
| Health Treatment     | 65    | 43 | 46 | 52  | Health Treatment  | 81    | 87 | 84 | 83  |
| Total                | 65    | 44 | 46 | 53  | Total             | 81    | 87 | 84 | 83  |
| **Govt at fault (0-100)** |       |    |    |     | **Govt responsible for economy (0-100)** |       |    |    |     |
| Control              | 49    | 58 | 61 | 56  | Control           | 74    | 74 | 74 | 74  |
| Econ Treatment       | 50    | 54 | 58 | 54  | Econ Treatment    | 71    | 75 | 73 | 73  |
| Health Treatment     | 51    | 58 | 59 | 55  | Health Treatment  | 72    | 75 | 74 | 73  |
| Total                | 50    | 57 | 59 | 55  | Total             | 72    | 75 | 74 | 73  |
| **Govt responsible for public health (0-100)** |       |    |    |     |                   |       |    |    |     |
| Control              | 77    | 79 | 77 | 78  | Control           | 77    | 79 | 77 | 78  |
| Econ Treatment       | 77    | 80 | 77 | 78  | Econ Treatment    | 78    | 80 | 77 | 78  |
| Health Treatment     | 78    | 80 | 77 | 78  | Health Treatment  | 78    | 80 | 77 | 78  |
| Total                | 77    | 80 | 77 | 78  | Total             | 78    | 80 | 77 | 78  |
### Table B2: Sample characteristics compared to estimates in the underlying population

| Sample size | India Sample | India Population | United Kingdom Sample | United Kingdom Population | United States Sample | United States Population | Total Sample |
|-------------|--------------|------------------|------------------------|----------------------------|-----------------------|--------------------------|--------------|
| Total (N)   | 1499         | --               | 615                    | --                         | 1534                  | --                       | 3648         |
| Total (%)   | 41           | --               | 17                     | --                         | 42                    | --                       | 100          |
| Gender (%)  |              |                  |                        |                            |                       |                          |              |
| Male        | 73           | 52               | 68                     | 49                         | 58                    | 50                       | 66           |
| Female      | 27           | 48               | 31                     | 51                         | 42                    | 50                       | 34           |
| Others      | 0            | -                | 1                      | -                          | 0                     | -                        | 0            |
| Urban/Rural (%) |        |                  |                        |                            |                       |                          |              |
| Rural       | 19           | 66               | 14                     | 17                         | 14                    | 18                       | 16           |
| Urban, suburban | 81     | 34               | 86                     | 83                         | 86                    | 82                       | 84           |
| Education (%) |                |                  |                        |                            |                       |                          |              |
| Completed university | 78   | 11               | 58                     | 29                         | 61                    | 36                       | 68           |
| Some university | 9     | 3                | 16                     | 18                         | 11                    | 20                       | 11           |
| No university | 13  | 87               | 26                     | 47                         | 28                    | 44                       | 21           |
| Income quadrants (%) |           |                  |                        |                            |                       |                          |              |
| Bottom quartile | 12  | 25               | 24                     | 25                         | 21                    | 25                       | 18           |
| Second quartile | 32  | 25               | 25                     | 25                         | 27                    | 25                       | 29           |
| Third quartile | 28  | 25               | 19                     | 25                         | 35                    | 25                       | 29           |
| Fourth quartile | 28  | 25               | 31                     | 25                         | 17                    | 25                       | 24           |
| Employment status (%) |         |                  |                        |                            |                       |                          |              |
| Full-time   | 65           | -                | 49                     | 62                         | 70                    | 62                       | 65           |
| Retired or no work | 5   | -                | 18                     | 23                         | 9                     | 21                       | 9            |
| Part-time   | 21           | -                | 19                     | 12                         | 13                    | 13                       | 17           |
| Unemployed  | 9            | 9                | 14                     | 3                          | 8                     | 4                        | 9            |
| Age (Median, over 18) | 31  | 35               | 29                     | 48                         | 37                    | 45                       | 33           |

Notes: Gender, Urban/Rural distinction in population comes from World Bank Indicators. Education for the UK comes from the European Social Survey from 2018 and for India and the US from the World Values Survey in 2014. Employment status for US comes from Labor Force Statistics from the Current Population Survey, for the UK it comes from the Office for National Statistics and are based on all population above the age 18, for India the unemployment rate comes from Centre for Monitoring Indian Economy as reported. Median age for US, UK, and India comes from latest census projections.
Table B3: Distribution of support for the incumbent across the feeling thermometer by country

| Country | How would you feel if [incumbent] were reelected |
|---------|-----------------------------------------------|
| India   | ![Bar chart for India]                        |
| UK      | ![Bar chart for UK]                          |
| US      | ![Bar chart for US]                          |

100 = very happy
Appendix C: Additional Analyses
Table C1: Government at Fault, Disaggregated by Subgroup

| Subgroups             | Control | Economic Treatment | Health Treatment | p-value of joint test across treatment conditions |
|-----------------------|---------|--------------------|------------------|---------------------------------------------------|
| **Gender**            |         |                    |                  |                                                   |
| Male                  | 55.82   | 54.11              | 54.21            | 0.45                                              |
| Female                | 55.04   | 52.98              | 57.80            | 0.07                                              |
| **Urban/Rural**       |         |                    |                  |                                                   |
| Rural                 | 51.69   | 48.49              | 52.65            | 0.36                                              |
| Suburban/Peri-urban   | 50.96   | 51.99              | 52.19            | 0.83                                              |
| Urban                 | 59.65   | 56.43              | 58.28            | 0.16                                              |
| **Economic status**   |         |                    |                  |                                                   |
| Full-time employed    | 55.66   | 54.47              | 55.64            | 0.67                                              |
| Retired               | 55.12   | 48.60              | 54.78            | 0.21                                              |
| Part-time employed    | 54.52   | 53.33              | 53.65            | 0.92                                              |
| Unemployed            | 59.23   | 54.51              | 59.47            | 0.37                                              |
| **Education**         |         |                    |                  |                                                   |
| University            | 55.14   | 52.92              | 54.51            | 0.31                                              |
| Some university       | 57.98   | 56.88              | 57.15            | 0.95                                              |
| No university         | 55.96   | 54.53              | 57.29            | 0.59                                              |
| **Income**            |         |                    |                  |                                                   |
| Bottom quartile       | 59.63   | 58.49              | 57.69            | 0.79                                              |
| 2nd quartile          | 58.28   | 57.27              | 59.51            | 0.62                                              |
| 3rd quartile          | 56.94   | 53.95              | 55.52            | 0.40                                              |
| Top quartile          | 48.03   | 46.71              | 49.08            | 0.62                                              |
| **Health**            |         |                    |                  |                                                   |
| Good/Fair/Poor        | 57.04   | 55.39              | 56.72            | 0.57                                              |
| Excellent/very good   | 54.14   | 51.62              | 53.92            | 0.30                                              |
| **Other Covid-19 survey** |     |                    |                  |                                                   |
| No                    | 51.78   | 50.60              | 51.40            | 0.86                                              |
| Yes                   | 57.43   | 55.38              | 57.24            | 0.24                                              |

Statement: The government is at fault for allowing the pandemic to spread. 0=strongly disagree, 100=strongly agree. Results disaggregated by sub-group. Test statistics are joint-Wald tests of whether each treatment condition is equal to the control condition within each sub-category. We are testing whether the treatments vary by sub-groups. The p-value is for the F-Test.
### Table C2: Support for Incumbent, Disaggregated by Subgroup

| Subgroups                        | Control | Economic Treatment | Health Treatment | p-value of joint test across treatment conditions |
|----------------------------------|---------|--------------------|------------------|---------------------------------------------------|
| **Gender**                       |         |                    |                  |                                                   |
| Male                             | 55.28   | 53.52              | 52.89            | 0.35                                              |
| Female                           | 50.67   | 52.79              | 51.87            | 0.67                                              |
| **Urban/Rural**                  |         |                    |                  |                                                   |
| Rural                            | 51.75   | 54.18              | 54.08            | 0.73                                              |
| Suburban/Peri-urban              | 49.64   | 48.52              | 49.03            | 0.90                                              |
| Urban                            | 56.63   | 56.16              | 53.97            | 0.35                                              |
| **Economic status**              |         |                    |                  |                                                   |
| Full-time employed               | 54.87   | 53.17              | 55.05            | 0.49                                              |
| Retired                          | 46.75   | 53.89              | 52.23            | 0.29                                              |
| Part-time employed               | 52.69   | 52.97              | 48.23            | 0.28                                              |
| Unemployed                       | 51.89   | 51.94              | 39.24            | 0.01                                              |
| **Education**                    |         |                    |                  |                                                   |
| University                       | 52.74   | 52.40              | 51.55            | 0.77                                              |
| Some university                  | 54.38   | 50.92              | 53.34            | 0.70                                              |
| No university                    | 56.04   | 57.00              | 54.96            | 0.80                                              |
| **Income**                       |         |                    |                  |                                                   |
| Bottom quartile                  | 53.54   | 51.65              | 50.86            | 0.71                                              |
| 2nd quartile                     | 54.72   | 50.87              | 50.35            | 0.18                                              |
| 3rd quartile                     | 50.08   | 53.61              | 54.17            | 0.23                                              |
| Top quartile                     | 56.07   | 55.54              | 53.17            | 0.57                                              |
| **Health**                       |         |                    |                  |                                                   |
| Good/Fair/Poor                   | 51.99   | 50.59              | 50.56            | 0.70                                              |
| Excellent/very good              | 55.37   | 56.54              | 54.44            | 0.59                                              |
| **Other Covid-19 survey**        |         |                    |                  |                                                   |
| No                               | 54.35   | 55.30              | 52.39            | 0.49                                              |
| Yes                              | 53.31   | 52.26              | 52.45            | 0.80                                              |

**Question:** If a national election were held today, would you like to see [incumbent party and party leader] reelected? Results disaggregated by sub-group. Test statistics are joint-Wald tests of whether each treatment condition is equal to the control condition within each sub-category. We are testing whether the treatments vary by sub-groups. The p-value is for the F-Test.
One possible explanation for our results is that polarized people will have largely stable responses to our questions irrespective of their exposure to making the economic and the health effects of Covid-19 more salient. It is possible, however, that people with moderate views may be responding to our treatments but these treatment effects are masked by the stable views of the polarized. To test this possibility, we first identify those with moderate views on our political outcomes in the control group—those responding absence of any treatment. We focus on the control group initially because we are interested in identifying those individuals who, in the absence of the treatment, would have had moderate views. We do this by focusing on those who reported a score between 36 and 65 on the feeling thermometer. There are 278 people in this range for the measure of government fault and 230 people for the incumbent measure.

We then use Coarsened Exact Matching to match these people with moderate views in the absence of the treatment with similar individuals who were exposed to either of the treatment conditions. By matching on these individuals, we remove from our analysis those individuals in the treatment conditions who are dis-similar from those with moderate views in the control group. We match on the following variables: on their socio-economic status (low, middle, and high), their age (30 and under and over 30), their health, whether they live in an urban, a peri-urban, or an urban area, their gender, and the country in which they live. There are 406 strata (or unique cells). CEM is usually assessed using a global fit statistic $\zeta_1$ (or L1). This fit statistic tells us how imbalanced the data sets are before the matching procedure (1 = completely separable or no-overlap while 0 = perfectly balanced). In our analysis, before the matching procedure, $\zeta_1$ is 0.62 while after the matching procedure $\zeta_1$ has fallen to basically 0, suggesting there is no imbalance left in the sample.

Our matching procedure identifies 1554 individuals who are matched to 266 individuals with weakly-held views on whether government was at fault (35 people could not be matched from the control group). For the incumbent analysis, our matching procedure identifies 1376 individuals who are matched to 197 individuals with weakly-held views on the incumbent (33 people could not be matched from the control group). We then estimate two OLS regression models (replicating our earlier analysis) for each outcome: one is unadjusted and the other is a ‘doubly robust’ model (i.e., matched sample while controlling for the matching variables).

We find that even among this group of people who seem to have moderate views that our treatments are unable to alter whether they blame government for the spread of the virus or their support for the incumbent.

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**Figure C1: Treatment effects among those with moderate views**

Figure C1 shows the treatment effects among those with moderate views. The figure indicates that the treatments are unable to alter whether people blame government for the spread of the virus or their support for the incumbent.
(a) Incumbent support

(b) Government at fault
**Figure C2: Changes over Time**

The US is excluded in these because all surveys were completed within several days, leaving no variation over time to explore.

**(a) Incumbent support**

*Question:* If a national election were held today, would you like to see [incumbent party and party leader] reelected?

**(b) Government at fault**

*Statement:* The government is at fault for allowing the pandemic to spread. 0=strongly disagree, 100=strongly agree.
We also test whether the treatment effect varies according to when people participated in the experiment. We find no clear variation in the treatment effects.

**Incumbent support**

**Question:** If a national election were held today, would you like to see [incumbent party and party leader] reelected?

**Government at fault**

**Statement:** The government is at fault for allowing the pandemic to spread. 0=strongly disagree, 100=strongly agree.