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THE POLITICAL SCAR OF EPIDEMICS

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ABSTRACT

What political legacy can we expect from the Coronavirus pandemic? Drawing evidence from past epidemics, we find that epidemic exposure in an individual's "impressionable years" (ages 18 to 25) has a persistent negative effect on confidence in political institutions and leaders, but not in other institutions or individuals. We find similar negative effects on confidence in public health systems however, suggesting that the loss of confidence in political institutions and leaders is associated with healthcare-related policies. In line with this argument, our results are mostly driven by individuals who experienced epidemics under weak governments with less capacity to act against the epidemic, disappointing their citizens. We provide evidence of this mechanism by showing that weak governments took longer to introduce policy interventions in response to the COVID-19 outbreak. These results imply that the Coronavirus may leave behind a long-lasting political scar on the current young generation ("Generation Z").

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"*Let me be blunt, too many countries are headed in the wrong direction. The virus remains public enemy number one, but the actions of many governments and people do not reflect this. The only aim of the virus is to find people to infect. Mixed messages from leaders are undermining the most critical ingredient of any response: trust.*"

(Tedros Adhanom Ghebreyesus, Director-General's opening remarks at the media briefing on COVID-19 - 13 July 2020, World Health Organization)

1. Introduction

Epidemics are stress tests for governments. Public officials and institutions face the challenge of assembling information and mounting effective interventions against a rapidly spreading and potentially fatal disease. They must communicate that information, describe their policies and convince the public of their trustworthiness. Fukuyama (2020) argues that the keys to success in dealing with COVID-19 are "whether citizens trust their leaders, and whether those leaders preside over a competent and effective state." By way of example, Rothstein (2020) ascribes the greater success at containing the COVID-19 in Nordic countries compared to Italy to greater trust in government.

Trust in government is not a given, however. Specifically, there is reason to ask how epidemic exposure itself will affect such trust. On the one hand, there is the "rally 'round the flag hypothesis." Trust in and support for political institutions and leaders tend to rise in the wake of actual and potential disasters (Mueller 1970, Baum 2002).[2] On the other hand, trust in government may decline because public institutions and those charged with their operation fail to prevent or contain the pandemic. And in both cases the persistence of the effect is unclear.

In this paper, we provide evidence on the effects of epidemics on trust in government.[3] We use data on trust and confidence in governments, elections, and

[2] For example, Chanley (2002) shows that in the days after the 11 September 2001 attacks, public trust in the U.S. government rose to levels not seen since the 1960s.

[3] There is limited evidence on other political impacts of epidemics and containment efforts. Campante et al. (2020) find that heightened concern about Ebola led to lower voter turnout in the

national leaders from the 2006-2018 Gallup World Polls (GWP) fielded in nearly 140 countries annually.[4] These are three related aspects of political trust. Questions about confidence in government elicit opinions about the political institutions and officials comprising government broadly defined. Questions about national leaders (leaders at the time of the poll, which is not necessarily the same as the time of epidemic exposure) elicit opinions about the head of state or government, namely the individual with the most influence over and most clearly associated with the actions taken by government. Questions concerning confidence in elections elicit views of the integrity and efficacy of the process by which those leaders are chosen. In practice, we obtain very similar results for all three dependent variables. We also use the average and the first principal component of these variables as a way of identifying their common element and again obtain very similar results.

We link individual responses to the incidence of epidemics since 1970 as tabulated in the EM-DAT International Disasters Database. Building on work suggesting that attitudes and behavior are durably molded in what psychologists refer to as the "impressionable" late-adolescent and early-adult years (e.g. Krosnick and Alwin 1989, Giuliano and Spilimbergo 2014), we show that exposure to epidemics at this specific stage in the life course durably shapes confidence in government, elections and national leaders.

United States but no evidence of an anti-incumbent effect. Amat et al. (2020) show that following the COVID-19 outbreak in Spain, citizens expressed a stronger preference for technocratic governance and strong leadership. Bol et al. (2020) surveyed citizens of 15 European countries and found that the imposition of lockdown was associated with a 2 percent increase in trust in government. Another body of research examines the impact of trust in government on epidemics and containment efforts. Marlow et al. (2007) show that trust in government is a predictor of flu vaccine acceptance by mothers in the United States. Using survey evidence from Liberia during the Ebola epidemic, Blair et al. (2017) report that respondents who expressed low trust in government were less likely to take precautions in their homes or abide by government-mandated social distancing.

[4] We group the terms confidence, trust, and approval under the general heading of trust. Confidence is the belief that certain future outcomes will obtain. Trust is vesting confidence in specific institutions or individuals for delivering those outcomes. Approval is a function of trust and other factors, such as, in the present context, success in containing epidemics. Checkland, Marshall, and Harrison (2004) and Smith (2005), also working in a public health context, argue that confidence is something that is entrusted in systems (what we refer to here as institutions), whereas trust is vested in individuals (in the present context, leaders). A further discussion of the relationship between trust and confidence is Adams (2005).

The effects are substantial: an individual with the highest exposure to an epidemic (relative to zero exposure) is 5.1 percentage points less likely to have confidence in the national government; 7.2 percentage points less likely to have confidence in the honesty of elections;[5] and 6.2 percentage points less likely to approve of the performance of the national leader.[6] These effects represent the average treatment values for the remainder of life. They decay only gradually and persist for two decades. These adverse effects are unique to political institutions and cannot be detected in the same individuals' confidence in military, banks or media. Nor is the loss of political trust paralled by the loss of in-group or out-group trust in the same society. There is no evidence of a generalized decline in trust, in other words; our findings pertain specifically to trust in political institutions and leaders.

Throughout, we control for other potentially confounding shocks that were experienced by individuals at the time of the epidemic. These include *economic shocks* (the growth and stability of the economy, inflation, GDP per capita and so on) and *social* and *political shocks* (internal conflict, external conflict, corruption scandals, democratic accountability, revolutions, assasinations, purges, riots, anti-government demonstrations and so on). We further incorporate fixed effects (country, year, age, cohort and country by year). We use the approach of Oster (2019) to establish that our results are unlikely to be driven by omitted variables.[7]

The effects we identify are specific to communicable diseases, such as viruses, that spread contagiously and where a timely and effective policy response is needed for containment. For non-communicable diseases, we do not see the same impact of impressionable-year outbreaks on subsequent views of the trustworthiness of

[5] Readers may recall some discussion of how confidence in the presidential primary election in Wisconsin in 2020 might be affected by it occurring in the midst of COVID-19. Among the mechanisms highlighted in this debate is the possibility that mail-in balloting and other complications will slow the vote count and "invite a distrust of the election process" (Ad Hoc Committee for 2020 Election Fairness and Legitimacy 2020).

[6] The respective averages of these three variables in our sample are 51 percent, 50 percent, and 50 percent.

[7] The estimates suggest that for our results to be spuriously generated, the degree of selection on unobservables relative to observables needed to be 12 to 25 times (depending on the outcome) as important for the outcomes as the included control variables. This is unlikely, since we control directly for various determinants of past and current political trust.

governments and leaders. This suggests that our finding of significant and persistent impacts reflects the success or failure of governmental authorities and agencies in putting in place timely and effective measures against contagion.

We document that individuals exposed to epidemics in their impressionable years are less likely to have confidence in the public health system and the safety and efficacy of vaccination. The former is indicative of trust in the overall health policies of the government, while the latter reflects attitudes toward pharmaceutical interventions. These findings again suggest that the perceived adequacy of health-related government interventions during epidemics is important for trust in government generally.

The magnitude and persistence of the effect depends on the strength of the government at the time of the epidemic. When individuals experience epidemics under weak governments, the negative impact on trust is larger and more persistent. This is consistent with the idea that such governments are less capable of effectively responding to epidemics, hence leading to a long-term fall in political trust. We substantiate this conjecture by considering this same conditioning factor, government strength, in the context of COVID-19. We show that government strength is associated with statistically significant improvements in policy response time.

Finally, we show that our results are driven by the reaction to epidemic exposure in democracies. In democracies, residents sharply and persistently revise downward their political trust in the event of impressionable-year epidemic exposure. The same is not true, however, in autocracies. Evidently, citizens expect democratic governments to be responsive to their health concerns, and where the public-sector response is not sufficient to head off the epidemic they revise their views in unfavorable ways.[8] In autocracies, in contrast, there may not exist a comparable

[8] Consistent with this, Economist (2020) discusses that democracies typically respond more effectively to epidemics; our results suggest that when they disappoint this expectation, they are more severely punished. Below we address and dismiss the alternative interpretation that respondents in autocracies are more reluctant to volunteer a lack of trust or confidence in government.

expectation of responsiveness and hence little impact on political trust. In addition, democratic regimes may find consistent messaging more difficult. Because such regimes are open, they may allow for a cacophony of conflicting official views (Associated Press, 2020). This may result in a larger impact on trust when things go wrong.

Our data cover some 750,000 respondents in 142 countries, which speaks to the generality of the findings. Our treatment variable, exposure to epidemics, is more plausibly exogenous than the man-made shocks employed in previous literature. Note that it is commonplace in the law to regard epidemics and pandemics as "Acts of God" and to invoke escape clauses in contracts. The number of people affected by a virus in different countries may still depend on country characteristics. But there is also a random component in natural infection and mortality rates across different epidemics, which changes from virus to virus and thus brings randomness to our setting. Ebola was more deadly but less contagious, for example, than COVID-19. To be sure, trust in government may affect the severity of an epidemic (as we note in our opening paragraph). But as we show below, our findings are robust to using as the key explanatory variable a zero/one indicator for the occurance of an epidemic rather than its intensity.

Section 2 reviews kindred literatures. Sections 3 through 5 describe our data, empirical strategy, and model. Section 6 presents the baseline results, while Section 7 reports a battery of robustness checks. Sections 8 and 9 then offer evidence on mechanisms and political behavior, respectively, after which Section 10 concludes.

2. Literature

Our analysis connects up to several literatures. First, there is work in economics on the determinants and correlates of trust.[9] Contributions here (e.g. Greif 1989,

[9] In addition, there is work in political science and psychology. Levi and Stoker (2000) survey work in political science on how trust is conceptualized. They argue that trust is both relational and conditional. By relational, they mean that it involves an individual making herself vulnerable to another individual, group, or institution (such as government) that has the capacity to do her harm or to betray her. By conditional, they mean that trust is placed in specific individuals and institutions

Alesina and La Ferrara 2000, Nunn and Wantchekon, 2011) tend to focus on trust in other individuals (in-group and out-group trust) rather than trust in political institutions and leaders. Exceptions are Becker et al. (2016), Algan et al. (2017), and Dustmann et al. (2017).[10] Becker et al. (2016) show that the historical presence of high-quality institutions (in regions previously governed by the Habsburg Empire) is associated with greater trust in government agencies today.[11] Algan et al. (2017) study the implications of the Great Recession for general trust and political attitudes (as well as for voting for anti-establishment parties), using regional data for Europe. They show that crisis-driven economic insecurity tends to be associated with lack of political trust. Dustmann et al. (2017) use data from the European Social Survey to identify economic and social characteristics associated with lack of trust in national parliaments and the European Parliament. They find that positive economic outcomes are important for trust in national parliaments, but that voters look to other competences when evaluating the trustworthiness of the European Parliament.

Another literature analyzes how past experience shapes attitudes and behaviors. Malmandier and Nagel (2011) show that stock market returns experienced by an individual affect his or her subsequent financial risk-taking. Krosnick and Alwin

over specific domains. Citizens may entrust their lives to their government during wartime or in a public health emergency, for example, but not otherwise. Work in psychology proceeds along similar lines. Thus, Mayer et al. (1995) also distinguish three dimensions of trustworthiness, which they denote ability, benevolence, and integrity. By ability, they mean the perceived technical competence of the trustee in a particular domain of interest. Perceptions of ability, therefore, consist, as they put it, "of a subjective evaluation of the various skills and capabilities that may be needed for the trustee to actually accomplish what it is being trusted to do." Benevolence derives from the extent to which the trustor believes the trustee is prepared to expend effort to protect the trustor. Integrity refers to the perception that the trustee follows a set of internalized values acceptable to the trustor. All three aspects may be relevant to the problem at hand.

[10] Other recent papers also analyze approval of leaders and governments, but they consider different independent variables. Margalit (2011) shows that job losses from import competition depressed the vote share of the incumbent president in 2004 and 2008 in the United States. Aksoy et al. (2018) show that trade shocks affect political approval of governments and leaders, Guriev et al. (2019) show that an increase in broadband mobile internet access reduces government approval, and Guriev and Treisman (2019) find that approval of leaders is higher in non-democracies when media and internet are restricted covertly, but approval ratings fall when citizens observe censorship.

[11] Specifically, they consider trust in the courts and police (one of which we also consider below).

(1989) and Osborne et al. (2011) show that partisanship and party affiliation are affected by past experience and, once formed, remain stable for long periods.

Third, there is the literature, already noted, on the importance of the "impressionable years" in durably shaping attitudes and values. A seminal study pointing to the importance of this stage of the lifecycle is the repeated survey of women who attended Bennington College between 1935 and 1939 (Newcomb 1943, Newcomb, Koenig, Flacks and Warwick 1967), among whom beliefs and values formed then remained stable for long periods. An early statement of the resulting hypothesis is Dawson and Prewitt (1969); Krosnick and Alwin (1989), among others, then pinpoint the impressionable years as running from ages 18 to 25.[12]

When rationalizing the importance of the impressionable years, some scholars draw on Mannheim's concept of the "fresh encounter," suggesting that views are durably formed when late adolescents and early adults first encounter new ideas or events. Others invoke Erikson (1968) to suggest that individuals at this age are open to new influences because they are at the stage of life when they are forming their sense of self and identity. Still others suggest that attitudes are pliable at this stage of the lifecycle because views have not yet been hardened by confirmatory information (Converse, 1976). Spear (2000) links the literature on the impressionable years to work in neurology describing neurochemical and anatomical differences between the adolescent and adult brain, suggesting that these neurochemical and anatomical changes are associated with durable attitude formation. Niemi and Sobieszek (1977, p.221 et seq) suggest that only in the late adolescent years have young people

[12] Some contributions to this literature suggest that attitudes toward, including trust in, other individuals are instilled by parents at a very early age (see e.g. Erikson 1950; 1968), but that attitudes toward institutions, such as the political institutions we analyze here, are instilled by one's peers, typically at the juncture where adolescent leaves the parental household. As we explain below, we also checked whether epidemic exposure at a younger age had a significant effect on attitudes toward political institutions (in general it did not). This is not to deny that the family is also an important source of political ideas (the literature on political socialization surveyed by Niemi and Sobieszek, 1977, suggests that it in fact is), but to claim that extra-familial experience is also important.

developed "the cognitive capacity to deal with political ideas" and that the same can be said to some extent of individuals in their university years (p.222).

In terms of applications, Giuliano and Spilimbergo (2014) establish that experiencing a recession between the ages of 18 and 25 has a significant impact on political preferences and beliefs about the economy. Using survey data from Chile, Etchegaray et al. (2018) show that individuals in their impressionable years in periods of political repression have a greater tendency to withhold their opinions, compared to those who grew up in less repressive times. Farzanegan and Gholipour (2019) find that Iranians experiencing the Iran-Iraq War in their impressionable years are more likely to prioritize a strong defense. Akbulut-Yuksel, Okoye, and Yuksel (2018) show that Germans in their impressionable years during the Nazi expulsion of Jews are less interested in politics later in adulthood, compared to the less exposed.

Finally, we should mention two recent papers. Aasve et al. (2020), who use the approach of Algan et al. (2017) to study the impact of the 1918-19 Spanish flu pandemic on social trust. Analyzing the General Social Survey for the United States, they find that individuals whose families emigrated to the United States from a country with many Spanish flu victims display less trust in other people.[13] Fetzer et al. (2020) use an experimental research design to establish that individuals'

[13] The negative impact on trust resembles our findings, although their focus is trust in other people as opposed to trust in political institutions and leaders. Aasve et al. (2020) have only one epidemic occurring at one point in time and an unusually small sample (36 observations at country-year level). Historical data on excess mortality are less accurate than modern data and the fact that the 1918-19 Spanish Flu coincides with the end of the World War I complicates the causal inference. Furthermore, as discussed below, we fail to detect any corresponding drop in trust towards out-group or in-group individuals in our setting.

beliefs about pandemic risk factors are associated with Covid-19 are causally related to their economic anxieties.

3. Data

Our principal data sources are 2006-2018 Gallup World Polls (GWP) and the EM-DAT International Disasters Database. GWP are nationally representative surveys fielded each year starting in 2006 in about 150 countries, with responses from approximately 1,000 individuals in each country. Our full sample (depending on outcome variable) includes around 750,000 respondents in 142 countries.[14]

The outcome variables come from questions asked of all Gallup respondents about their confidence in the national government, their confidence in the honesty of elections, and their evaluation of the job performance of the incumbent leader:[15] (i) "In (this country), do you have confidence in each of the following, or not: … How about the national government?" (ii) "In (this country), do you have confidence in each of the following, or not: … How about the honesty of elections?" (iii) "Do you approve or disapprove of the job performance of the leadership of this country?"[16] A visual summary of these variables is in **Appendix Figure B.1-B.3**.

GWP provides information on respondents' age, gender, educational attainment, marital status, religion, urban/rural residence, labor market status, and income. Controlling for employment status and income allows us to measure the impact of past epidemics on confidence in political institutions and leaders free of any direct effect on material well-being.

[14] We drop observations for Nagorno-Karabakh, Northern Cyprus, Somaliland, and Puerto Rico, as they are not international recognised independent states.
[15] We do not observe the respondent's, leader's or government's position on the left or right of the political spectrum. The political coloration of the government or leader could in principle be incorporated into our setting.
[16] These questions are part of the Gallup "national institutions index." If a respondent asks for clarification or interpretation of the question, Gallup surveyors are trained to answer "However *you* interpret the question," or "It is whatever the question means to *you*." If a respondent asks whether there is a more neutral response option than "yes" or "no," surveyors are trained to ask whether "there is one that you lean more towards."

We also examine responses to three additional GWP questions: whether respondents have confidence in the military; confidence in financial institutions or banks; and confidence in media freedom. This helps to determine whether what we are capturing is the impact of epidemic exposure on trust and confidence in political institutions and political leaders specifically, as distinct from any impact on trust in society, its institutions, and its leaders generally.

Data on the worldwide epidemic occurrence and its effects are drawn from the EM-DAT International Disasters Database from 1970 to the present.[17] These data are compiled from UN agencies, non-governmental organizations, insurance companies, research institutes, press agencies, and other sources. The database includes epidemics (viral, bacterial, parasitic, fungal, and prion) meeting one or more of the following criteria:

- 10 or more deaths;
- 100 or more individuals affected;
- Declaration of a state of emergency;
- Calls for international assistance.

Our dataset includes 47 different types of epidemics and pandemics since 1970. This includes large outbreaks of Cholera, Ebola, and H1N1 and also more limited epidemics. Averaged across available years, H1N1, Ebola, Dysentery, Measles, Meningitis, Cholera, Yellow Fever, Diarrhoeal Syndromes, Marburg Virus, and Pneumonia were the top 10 diseases causing epidemic mortality worldwide. Many of these epidemics and pandemics affected multiple countries.[18]

137 countries experienced at least one epidemic since 1970. This includes 51 countries in Africa, 40 in Asia, 22 in the Americas, 19 in Europe, and 5 in Oceania.

[17] EM-DAT was established in 1973 as a non-profit within the School of Public Health of the Catholic University of Louvain; it subsequently became a collaborating center of the World Health Organization. It also gathers historical information on epidemics that took place before it was founded; however, those data are patchy and biased towards well-recorded epidemics. Hence we only focus on epidemic cases that EM-DAT "live" collected after it was founded in early 1970s.
[18] Note that the EM-DAT International Disasters Database does not include data on non-communicable diseases. We employ separate data on non-communicable diseases below.

The most epidemic-prone countries in the dataset are Niger (25), Nigeria (25), Congo (22), Cameroon (21), Mozambique (20), Sudan (20), Uganda (20) and India (19). Advanced countries in our sample all experienced 5 or fewer epidemics.[19]

Each epidemic is tagged with the country where it took place. When an epidemic affects several countries, the database contains separate entries for each country. EM-DAT provides information on the start and end date of the epidemic, the number of deaths and the number of individuals affected, where the number of individuals affected is how many require assistance with basic survival needs such as food, water, shelter, sanitation, and immediate medical treatment during the period of emergency. **Figure 1** provides a visual summary. We aggregate all epidemic-related information in this database at the county-year level and merge it with Gallup World Polls.

In robustness checks, we employ a panel dataset on diseases from Institute for Health Metrics and Evaluation (IHME) and a dataset on recent epidemics from Ma et al. (2020). To explore underlying mechanisms, we use data from the Wellcome Global Monitor, Google Trends, the European Center for Disease Prevention Control, the Johns Hopkins Coronavirus Resource Center, and the Oxford COVID-19 Government Response Tracker.[20]

Table 1 shows descriptive statistics for the outcome variables, country characteristics, and individual characteristics. Averaging across all country-years, nearly 50 percent of respondents say they have confidence in elections, have confidence in the national government, or approve of the performance of the leader.[21]

[19] We do not provide the full country-year-epidemic list due to space constraints. Interested readers can find the full list of epidemic cases used in our paper online: https://www.dropbox.com/sh/cwe5n1ie8f4zmbl/AAAD9JdVnjXvQciAYX9ID7WOa?dl=0

[20] See Appendix A for additional details on these data sources and our construction of variables.

[21] There of course is very considerable heterogeneity within and across countries. For comparison, 72 percent respondents had confidence in the military, while only 60 and 54 percent had confidence

4. Empirical Model

To assess the effect of past epidemic exposure on confidence in government, elections and political leaders, we estimate the following specification:

$$Y_{i,c,t,a,b} = \beta_1 \text{Exposure to epidemic (18-25)}_{icb} + \beta_2 X_i + \beta_3 \text{Number of people affected}_{ct-1} + \beta_4 C_c + \beta_5 T_t + \beta_6 A_a + \beta_7 B_b + \beta_8 C_c * \text{Age} + \varepsilon_{ict} \quad (1)$$

where Y_{ictab} is a dummy variable for whether or not respondent *i* of age *a* and birthyear *b* in country *c* at time *t* approves or has confidence in an aspect of their country's political institutions or leadership. Responses to all three questions are coded as dummy variables, with one representing a positive answer and zero otherwise. We estimate linear probability models for ease of interpretation.

To measure the *Exposure to epidemic (18-25)*, we calculate for each respondent the number of persons affected by an epidemic as a share of the population, averaged over the 8 years when the respondent was aged 18 to 25, consistent with the "impressionable years" hypothesis.[22] *Number of people affected* controls for whether or not the individual is also exposed to an epidemic contemporaneously. This is also calculated as the number of individuals affected by an epidemic as a share of the population in the country of residence in the year immediately prior to the interview.[23]

in banks and financial institutions and in the media, respectively. We use responses to these questions in placebo tests discussed below.

[22] The effect of an epidemic on younger cohorts may also depend on the nature of the virus (i.e., how lethal it is to the young). Unfortunately, EM-DAT does not contain information on the ages of the affected or of those who died. In addition, our treatment variable cannot differentiate between individuals who are themselves infected and individuals who may react to the infection of others. Thus, we can only calculate the average treatment effect across all types of epidemics operating through a combination of these channels.

[23] This variable is lagged to ensure that the independent variable is realized before the dependent variable, since Gallup World Polls may interview individuals at any point in the year (not necessarily at its end).

The vector of individual controls X_i includes indicator variables for urban residence and the presence of children in the household (any child under 15), and dummy variables for gender, marital status, employment status, religion, educational attainment, and within-country-year income deciles. We control for income before taxes in both log and log squared form.[24] It is possible that prior epidemic exposure affects an individual's responses partly by affecting his or her subsequent income. But we can rule out that prior exposure affects an individual's responses solely by affecting his or her subsequent income by controlling for household income separately. A sense of the relative importance of this and other channels can be gained by comparing specifications with and without this income variable.[25]

We include fixed effects at the levels of country (C_c), year (T_t), and age (A_a). The country dummies control for time-invariant variation in the outcome variable caused by factors that vary cross-nationally. Year dummies capture the impact of global shocks that affect all countries simultaneously. Age dummies control for the variation in the outcome variable caused by factors that are heterogeneous across (but homogenous within) age groups. We also include country-specific age trends (C_c*Age) and cohort fixed-effects (B_b).

A fully saturated specification includes also country-year fixed effects, which account for possible omitted country features that may change with time (such as GDP per capita, population, political regime, etc.).[26] We cluster standard errors by country and use sample weights provided by Gallup to make the data representative

[24] These individual respondent controls are important, since epidemics may have an effect depending on gender (Archibong and Annan, 2017) and a variety of other socioeconomic characteristics. Note that the income measure includes all wages and salaries, remittances from family members living elsewhere, and all other income sources. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor. This makes income estimates comparable across countries.

[25] In later parts of our analysis, we also control for the past GDP growth during an individual's impressionable years, which should in principle take into account any epidemic-induced change in income at the country and cohort level. We thank an anonymous referee for this suggestion.

[26] This forces us to drop contemporaneous epidemic exposure, because it is perfectly correlated with the country-year effects.

at the country level. Finally, we limit our sample to individuals born in the same country in which they were interviewed by Gallup.[27]

5. Threats to Identification

One can imagine several potential threats to identification. First, estimates could be driven by factors that are specific to each cohort, since our treatment categorizes individuals in each country by year of birth. Some cohorts could have cohort-specific attitudes toward political institutions and leaders or be more or less trusting than others in general. Individuals born in the late 1940s and early 1950s, for example, may vest less trust in political institutions and leaders because they experienced the widespread protests against political repression in the late 1960s, their impressionable years. We therefore include dummies for year of birth so as to compare the individuals only within the same birth cohort.[28]

Second, independent of the cohort effects, individuals may exhibit differential behavior across the life cycle. They may become more (or less) trusting as they age, for example. Political views and ideologies may change from more liberal when young to more conservative when older (Niemi and Sobieszek 1977). Age-specific factors may also matter if different generations were exposed to epidemics with different probabilities; given advances in science and improvements in national healthcare systems, one might anticipate that epidemics are less likely to be experienced by younger generations. We therefore include a full set of age-group dummies, which eliminates any influence on our outcome variables of purely age-related and generational effects.

[27] We cannot guarantee that these individuals spent all of their impressionable years in their country of birth, but any measurement error arising from this concern only stacks the cards against us by lowering the precision of our estimates. Furthermore, to the extent that large epidemics push individuals to migrate to other countries not affected by the same epidemic, we may have a survivorship bias in our sample that leads us to underestimate the true effect of a past epidemic experience.

[28] Including these dummies biases our estimates downward if epidemics are correlated across countries and affect them simultaneously. In this case, any common effect of an epidemic on a specific cohort will be subsumed by these cohort-specific dummies, and our treatment will pick up the variation in past epidemics only when they were staggered across countries.

Generational trends in political attitudes could be heterogeneous across countries. Some national cultures may be more flexible and open to change in individual values and beliefs, leading to larger differences across generations. We therefore include country-specific linear age trends.

Third, any relevant omitted variable that varies across countries and years can bias estimates even when conventional country and year fixed effects are included separately. This issue arises when we observe individuals' attitudes toward national political institutions and leaders. Because the identity of those leaders and the structure of those institutions may change over time, it can be difficult to separate these shifts in identity and structure from the treatment (i.e., the epidemic). For instance, even when approval of a leader declines following an epidemic, we may not capture this effect if the epidemic simultaneously triggers a change in the identity of the leader, bringing in someone for whom approval levels are higher.

We address this by including dummies for each county-year pair. This eliminates all heterogeneity in our outcome variables tracable to country-specific time-varying factors, such as changes in the government or leader. Thus, the treatment only compares individuals within the same country and survey year, ensuring that these individuals face the same political institutions and leaders. This strategy also mitigates concerns that the results are driven by other structural differences between countries that are repeatedly exposed to epidemics and those that are not.

Fourth, in any study of the impact of past experience on current outcomes, the underlying assumption is that the effect is durable and persistent. This is the essence of the "impressionable years" hypothesis. To the extent that this is not the case because the effect has a relatively short half-life, our empirical strategy will be biased towards failing to reject the null hypothesis of no effect. We explore this by tracing the impact of past epidemic exposure across different age groups and show that the effect persists at least for two decades while decaying gradually as individuals age. Hence, the full-sample estimates represent the average treatment effect across the whole life cycle after the impressionable years.

Fifth, although we fully saturate our specifications with fixed effects, there could still be other past exposures correlated with epidemics. To address this concern, we control for various past economic, political and social factors in the country in question in the individual's impressionable years. Including these controls for other past conditions has no impact on the stability of our coefficients of interest. In addition, we use the methodology developed by Oster (2019). The results suggest that our findings are unlikely to be driven by unobserved variation.

6. Results

Tables 2-4 report estimates of Equation (1). The dependent variables are a dummy indicating that the respondent has confidence in the national government (**Table 2**), a dummy indicating that the respondent approves of the performance of the leadership of his or her country (**Table 3**), and a dummy indicating that the respondent has confidence in the honesty of elections (**Table 4**). In all three tables, Column 1 reports estimates with country, year, and age group fixed effects. Column 2 adds the logarithm of individual income and its square, demographic characteristics, within country-year income decile fixed effects, and labor market controls. Column 3 adds country-specific age trends, while column 4 adds cohort fixed effects. Column 5 fully saturates the specification with country*year fixed-effects, non-parametrically controlling for all potentially omitted variables that can vary across countries and years.

Column 1 of **Table 2** shows a negative and statistically significant relationship between exposure to an epidemic in the individual's impressionable years and current confidence in the national government. In contrast, the measure of contemporaneous epidemics is positive but statistically imprecise. Columns 2 to 4 show that the estimated effects change little as controls are added and that country-specific age-trends seem to be necessary for precisely identifying the effect of past epidemics in our setting.

Column 5 restricts all variation to within country-year observations and reports conservative estimates that are smaller in magnitude but still significant at 1 percent level.[29] In our preferred model (Column 4), an individual with the highest exposure (0.032, that is, *the number of people affected by an epidemic as a share of the population* in individual's impressionable years) relative to individuals with no exposure has on average 5.1 percentage points (-1.592*0.032) less confidence in the national government after his or her impressionable years.[30] Given that the mean level of this outcome variable is 50 percent, the effect is sizable.

Tables 3 and 4 report results for approval of the performance of the leader and confidence in the honesty of elections. The results on impressionable-year epidemic exposure have the same sign, statistical significance, and magnitude (a 6.2 percentage point decrease in approval of the political leader and a 7.2 percentage point decrease in the honesty of elections, where the mean outcome level is 50 percent).

How persistent are the effects?

We investigate persistence by estimating our baseline specification on the subsample of individuals closest to their impressionable years (that is, ages 26 to 35) and then repeatedly rolling the age window forward in a series of separate estimations. This permits us to observe how the coefficients change as we increase the distance between the age range in which impressionable individuals had exposure to epidemics and the age at which they are surveyed. If the effects are

[29] It makes sense that the point estimates shrink when we only compare individuals within the same country and point in time. It is likely that both treatment and control groups in this setting must have experienced the same epidemics but only in different parts of their life cycle (impressionable vs non-impressionable years). Hence, to the extent that epidemics carry negative effects for other experience windows, we are only estimating the differential impact on individuals who were in their impressionable years during these epidemics, thus reducing the size of our point estimates.

[30] Because epidemics are rare events and our main independent variable of interest, *Exposure to epidemic (18-25)*, is skewed to the right, it may not be appropriate to use its standard deviation or mean for understanding the effect size.

persistent, then the estimated coefficient should not change substantially as distance increases between the time of exposure and time of observation.

Figure 2, based on Column 4 of **Tables 2-4**, shows the effect of epidemic exposure on the outcome variables. The effects on the base subsample (i.e., 26-35) are more than three times larger than the point estimates for the full sample, confirming that the age groups closest to the experience window (i.e., 18-25) are disproportionately affected (compared to other age groups).[31] For this base sample, the median time distance between the past experience window (median age: 21.5 years) and the subsample (median age: 30.5 years) is 9 years, hence documenting the effect of past epidemics in the medium term.

When the model is re-estimated on successively older subsamples, the magnitude of the impact remains stable for the first six estimations following the base sample before decaying gradually. It nearly vanishes when estimated on the subsample of individuals aged 36 to 45, when the median distance between the experience window and the subsample is 19 years. On this basis**,** we conclude that epidemic experience during the impressionable years has persistent effects on political trust that can remain evident for two decades of adult life.[32]

Role of country characteristics

We consider the baseline specification (Column 4 of **Table 2**) for various country subsamples. Each cell of **Table 5** reports a separate regression. Each column shows the coefficient estimates for our main variable of interest: average epidemic exposure during the impressionable years. We report the baseline estimates for our main outcome variables in the top row.

[31] We examine this specific point further below, where we compare impressionable year epidemic exposure with exposure when individuals are younger and older than 18-25 (see **Appendix Figure B.4**).

[32] We formally test the decay in the effect of epidemic exposure on political trust by interacting our main treatment variable with respondents' age. **Appendix Table B.1** confirms the earlier figures and shows that the negative effect of impressionable-period epidemic exposure is mitigated in later ages.

The negative impact of epidemic exposure on confidence in the government and its leader is larger in low-income countries, although the difference across groups is not always statistically significant. This pattern is in line with evidence from Gómez et al. (2020), who find that people in the low-income countries see their governments more untrustworthy and unreliable in the context of public reactions to the COVID-19 pandemic.

The negative impact of an epidemic also tends to be larger in countries with democratic political systems; the difference in coefficients for democracies and non-democracies is consistently significant at standard confidence levels.[33] An interpretation is that respondents expect democratically-elected governments to be responsive to their needs and are especially disappointed when such governments do not respond in ways that prevent or contain an epidemic. In contrast, the effect of prior epidemic exposure is insignificantly different from zero in non-democracies, where there may be no similar presumption of responsiveness. In addition, democratic regimes may have more difficulty with consistent messaging. Because such regimes are open, they may allow for a cacophony of conflicting official views, resulting in a larger impact on confidence and trust. Either way, our results are driven by respondents in democratic regimes.[34]

These results go some way toward addressing the issue of external validity in the context of COVID-19. The effects we report here are not limited to low-income countries, autocratic governments, or fragile democracies – the kind of regimes that are popularly associated with prominent epidemics such as Ebola. This suggests

[33] We classify political regimes based on the most recent Polity5 dataset. Countries with Polity scores 5 and above are classified as democracies.

[34] This finding could also be explained by preference falsification, a phenomenon in which individuals' responses to public surveys might be affected by social desirability or implicit authoritarian pressures (Kuran, 1987). Such biases could naturally arise more often in non-democratic countries where survey participants feel the urge to hide their true beliefs, reducing the heterogeneity across respondents within the same country and time point. In an unreported robustness check, we dropped ten per cent of the highest-ranking observations (in terms of approval of the leader) at the country-year level in our sample assuming that preference falsification -if exists- would be prevalent especially on these observations. We obtain similar results implying that preference falsification by itself is unlikely to explain the difference between democracies and autocracies.

that our results may also have broader applicability to global pandemics such as COVID.

7. Robustness

In this section we report further analyses establishing the robustness of our findings.

Are the results driven by other past experience?

The literature suggests that economic conditions (Hetherington and Rudolph, 2008), social conflict (De Juan and Pierskalla, 2016), and corruption (Anderson and Tverdova, 2003) also affect political trust. **Appendix Tables B.2 and B.3** therefore consider whether our results are driven by other omitted economic, social and political exposures that individuals may have experienced in their impressionable years.

In **Appendix Table B.2** we include measures from the ICRG data set, which captures 12 aspects of national economic and political conditions.[35] In particular, we include the following 12 indices to account for past economic, political, and social conditions: government strength, socio economic conditions, investment profile, internal conflict, external conflict, corruption, military presence in politics,

[35] These are (1) government strength - an assessment both of the government's ability to carry out its declared programs and its ability to stay in office; (2) socioeconomic conditions - an assessment of the socioeconomic pressures in a society that could constrain government action or fuel social dissatisfaction; (3) investment profile - an assessment of factors affecting risks to investment not captured by other political, economic and financial risk components; (4) internal conflict - an assessment of political violence in the country and its actual or potential impact on governance; (5) external conflict - an assessment of the risk to the incumbent government from foreign action, including both non-violent external pressure and violent external pressure; (6) corruption - an assessment of corruption in the political system; (7) military in politics – an assessment of the military's involvement in politics, even at a peripheral level; (8) religious tensions – an assessment of whether a single religious group seeks to replace civil law by religious law and to exclude other religions from the political and/or social process; (9) law and order – an assessment of the strength and impartiality of the legal system and popular observance of the law; (10) ethnic tensions - an assessment of the degree of tension within a country attributable to racial, national, or linguistic divisions; (11) democratic accountability - a measure of how responsive government is to the people; and (12) bureaucracy quality – an assessment of whether bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services.

religious tensions, law and order, ethnic tensions, democratic accountability and bureaucracy quality.

In **Appendix Table B.3**, we control for GDP growth, GDP per capita, inflation rate, political regime (Polity2 scores), assassinations, general strikes, terrorism/guerrilla warfare, purges, riots, revolutions, and anti-government demonstrations during the individual's impressionable years. For all non-economic variables (excluding Polity2), we use the CNTS dataset in order to capture as many aspects of political conflict as possible. In both tables, we calculate the average values for each one of these dimensions during the impressionable years of each individual. Including these past experiences as controls makes for smaller samples, since ICRG and CNTS cover only some of the countries and years in our main sample.

None of these additional controls has much impact on the coefficients for past epidemics. Both the point estimates and statistical significance remain stable.[36] Note that we cannot directly control for pre-epidemic levels of social and political trust due to lack of data availability.[37] However, we do control for various factors that can explain both social and economic trust, therefore it is unlikely that our results can be explained by omitted variables bias or reverse causality.

Nevertheless, we follow the method proposed by Oster (2019) to shed light on the importance of unobservables in **Appendix Table B.8,** where Panel A is based on the models with past exposure controls as in **Table B.2** and Panel B is based on the models with past exposure controls as in **Table B.3**.

[36] In addition **Appendix Tables B.4 and B.5** show that we get similar results if we were to control for the pre-existing values in the past (i.e., ages 10-17) instead of impressionable years (i.e., ages 18-25) in order to make sure that the past controls themselves are not influenced by the epidemic in the same experience window. Furthermore, our results remain qualitatively unchanged in **Appendix Tables B.6 and B.7** after controlling for both impressionable-year experiences and country*year fixed effects at the same time (à la Model 5 in **Tables 2-3-4**).

[37] By interpolating the corresponding values across all historical waves of the World Values Surveys, we have created a country panel dataset on various social and political trust variables for the purpose of using them to control for pre-epidemic levels of trust in a country. However, due to poor country-year coverage in the old editions of the WVS, the size of our main Gallup sample falls by 95 percent to about 35,000 respondents. We, therefore, do not report the results as we lack statistical power due to very sample size in these analyses.

We first reprint the baseline estimates for our main outcomes in the top row for comparison purposes. The second row of each panel then presents the estimation bounds where we define R_{max} upper bound as 1.3 times the R-squared in specifications that control for observables following Oster (2019). The bottom row presents Oster's delta, which indicates the degree of selection on unobservables relative to observables that would be needed to fully explain our results by omitted variable bias.

The results in **Appendix Table B.8** show very limited movement in the coefficients. The high delta values (between 12 and 24 depending on the outcome) are reassuring: given the wide range of controls we include in our models, it seems implausible that unobserved factors are 12 to 24 times more important than the observables included in our preferred specification.[38]

Are the results unique to political institutions and leaders?

It is important to establish that the relationship between epidemic exposure and subsequent views of political institutions and leaders is not simply part of a broader reassessment of social institutions and social trust (both in-group and out-group). If exposure to past epidemics worsens attitudes toward all national institutions and reduces social trust generally, it would be misleading to interpret the findings in **Tables 2-4** as the effect of the epidemic exposure specifically on trust in political institutions and leaders narrowly defined.

We therefore estimate similar models for outcomes related to views of other institutions. In **Appendix Table B.9, o**utcome variables equal one if the individual has confidence in the military (column 1), in banks and financial institutions (column 2), and in media freedom (column 3); has relatives or friends to count on – a proxy for in-group trust (column 4); and has helped a stranger in the past month – a proxy for out-group trust (column 5). The first three variables represent the confidence in non-political insitutions in the same country, while the last two

[38] The rule of thumb to be able to argue that unobservables cannot fully explain the treatment effect is for Oster's delta to be over the value of one.

capture the potential change in individuals' trust towards their in-group or out-group peers.[39]

There are no meaningful relationships between past epidemic exposure and any of these variables, consistent with our hypothesis that loss of trust by individuals with epidemic experience is specific to political institutions and leaders, and not a reflection of the general loss of trust in society and its institutions.[40]

Are the results driven by non-comparable samples?

Not all Gallup respondents answered all three questions. Thus, the results could conceivably be biased by heterogenous, non-comparable samples across the three response variables. We therefore also consider only individuals who answered all three questions. We construct a new variable ("political trust") that measures the average response of an individual across the three outcomes. We also construct a dependent variable that is the first principal component of these three variables. The results, reported in **Appendix Tables B.10-B.11**, confirm that our findings are robust across overlapping samples and alternative measures of political trust.[41]

Are the results unique to impressionable years?

One could argue that our treatment effect can be influenced by the potential differential response in individuals who may have experienced the same epidemics

[39] As Gallup does not have direct questions on generalized (social) trust, we refer to these two variables as the closest proxies to measure the in-group and out-group trust. Alternatively, using a measure of individual donations or the civic engagement index in Gallup generates very similar results.

[40] We understand that one could be concerned with media freedom in countries with low political trust and its potentially negative relationship with individuals' confidence in media. However the media is not a political institution strictly defined, even though it can be influenced by politics. We have no priors about how individuals might change their opinions about the media in the midst of a health crisis. One could easily argue that individuals' confidence in media may *rise* instead of falling if it functions well as a transmitter of life-saving information during the epidemic. Our results show that there is not much change in the long-term confidence in media, consistent with this - a priori - ambiguous direction of the relationship.

[41] In **Appendix Table B.12**, we also compare our 3 main outcome variables as well as 4 placebo outcomes (except the one on confidence in media which has a very small coverage in Gallup) over the exact same group of individuals who have responded to all 7 questions. Again, we find that the loss of political trust after past epidemic exposure is unmatched by any of the alternative outcomes.

not during their impressionable-years but in other close experience windows before or after. Since these individuals will be categorised as counterfactuals in our setting, their potential differential response may drive our estimates upwards or downwards. In order to check this possibility, we re-estimate our specification with a focus on these alternative windows.

Appendix Figure B.4 shows the effect of exposure in successive eight-year age windows (analogous to the eight-year window of ages 18 to 25).[42] The analysis again considers our two composite dependent variables: the average of the three outcome variables and the first principal component of the responses. In both cases, the negative effect is only evident when epidemic exposure occurs in the individual's impressionable years.[43] This alleviates the concern in our setting that a counterfactual individual who experiences the same epidemic a little earlier or later than the impressionable age window may produce a differential response compared to an individual who has not experienced any epidemics at any of these windows.[44]

Are the results robust to alternative data for epidemics?

We also analyze the recent large-scale epidemics reported in Ma et al. (2020), which constructs a country panel dataset starting in the early 2000s. This list of countries affected by post-2000 epidemics includes, at some point, almost all the countries in the world. For instance, H1N1 in 2009 alone infected more than 200 countries.

Several aspects of this dataset make it less than ideal for our purposes. One is its

[42] We repeat the analysis only for the first four windows after birth to make sure we have age-wise comparable samples across separate estimations. It is important to keep in mind that as we check the later experience windows, respondents' age at the time of the survey has to restricted to those older than the corresponding experience window.

[43] We again find the same for the three individual response variables. Results are available upon request. Additionally, we checked the alternative experience windows rolling them by one year from 10-17 ages to 18-25. We find that the effects increase in older-age windows and reach their maximum during ages 16-23 before declining.

[44] This interpretation is especially valid for the base-sample estimates (i.e., ages 26-35) in **Figure 2**. In this subsample, only possible past experience windows are from ages 2 to 25 and hence, given the lack of response in earlier age windows, it can be argued that our treatment captures the hypothetical difference between an individual who experienced epidemics in their impressionable years and another who never experienced any epidemics at all.

short time span, which allows us to consider only individuals young enough to be in their impressionable years between 2000 and 2018.[45] Another is that the dataset does not contain country-specific intensity measures and thus only can be used in dichotomous form. As will be clear later, epidemic intensity matters, in that only large epidemics in EMDAT dataset have a significant impact on political trust. At the same time, this list of recent epidemics buttresses our assumption of the exogeneity of our treatment variable, since the *occurrence/start* of an epidemic (as opposed to its *intensity*) is likely to be uncorrelated with country or cohort characteristics.[46]

In **Appendix Table B.13,** where we utilize this dataset, *exposure to an epidemic (18-25)* takes a value of 1 if the respondent experienced SARS, H1N1, MERS, Ebola, or Zika in his or her impressionable years. The results for confidence in elections and approval of the leader (as well as average and principal component proxies for political trust) are robust to the use of these alternative data. In line with our earlier results, the adverse impact of past epidemics is only evident in democratic countries. These results thus provide further evidence that the causal direction of the relationship runs from past epidemic experience to political trust later in life.

Do countries with and without a pandemic display similar pre-trends?

As mentioned earlier, Ma et al. (2020) provide a comprehensive dataset of pandemic events in this century. By creating an event-study setting around the dates on which a pandemic was declared by the WHO for a specific country, we can investigate whether countries experiencing pandemics exhibit the same pre-trends as other countries. We can also analyse how quickly the overall level of political trust changes after a pandemic.

[45] This also means that we must drop all observations in Gallup before 2008-9 to ensure that the first impressionable-years cycle (2000-2007) is calculated before we apply this variable onto individuals.
[46] As we show below, there is no evidence of a differential pre-trend in political trust between countries that were recently hit by an epidemic and those that were not.

To do this, we estimate the following model:

$$Y_{i,\,c,\,t,\,a,\,b} = \beta_1 \text{LaggedPandemic}_{ict} + \beta_2 X_i \quad (2)$$

$$+ \beta_3 C_c + \beta_4 T_t + \beta_5 A_a + \beta_6 B_b + \beta_7 C_c * \text{Age} + \varepsilon_{ict}$$

LaggedPandemic is a dummy taking on a value of 1 if the WHO announced a pandemic for the country *c* in the year immediately preceding survey year *t* and 0 otherwise. This variable is lagged by one year to ensure that all respondents in the country experienced the pandemic (since Gallup surveys could be undertaken at any point of a year).[47]

Appendix Table B.14 shows that political trust starts declining immediately. In **Figure B.5**, we re-estimate the model changing the timing of the variable of interest. This helps to visualise the short-term response and also to check if the countries that were struck by a pandemic and those that were not shared similar trends in terms of their political trust levels before the pandemic hit the former.[48] Countries with and without a pandemic share a common trend in the pre-event window; the divergence starts only after the pandemic hits. This supports the exogeneity assumption we made in a previous section in which we employed the *occurence* (rather than *intensity*) of recent epidemics as a shock to individuals' impressionable years.

Whereas there is no pre-trend prior to an epidemic infecting a country for the first time, the approval of the leader declines by more than 6 percentage points two years after. This aggregagre effect is large. It is comparable to the lifetime effect that we found for impressiomable-year exposures.

[47] Here we do not include the past epidemic exposure variable as we would like to capture the response of the whole population, rather only those for whom we can calculate the past experience window.

[48] We conservatively restrict the event window around the pandemic to plus/minus 2 years. This is because different pandemic events in Ma et al. (2020) may hit the same country in a matter of couple of years, which complicates the identification in larger event windows.

Is the response specific to communicable diseases?

Poor public-policy responses to communicable diseases may have a powerful negative effect on trust in political institutions because those diseases can spread contagiously, making that policy response especially urgent. In contrast, non-communicable diseases may develop over longer periods and be driven by individual decisions and characteristics, such as lifestyles and demographics, instead of or in addition to government policy. Hence non-communicable diseases may not have equally powerful long-term effects on trust in political institutions. If they do, such effects should be smaller.

Since the EM-DAT International Disasters Database does not include data on non-communicable diseases, we use data from IHME for the period 1990 to 2016.[49] The communicable and non-communicable disease measures are population-adjusted and expressed in terms of Disability Adjusted Life Years Lost (DALYs).[50] As explained by Roser and Ritchie (2020), DALYs are a standardized metric allowing for direct comparison and summing of the burden of different diseases.

We present results in **Appendix Table B.15** for all countries in Column 1, for democratic countries in Column 2, and for non-democratic countries in Column 3. The top panel shows results for the outcome variable "confidence in the national government," the middle panel for "approval of the leader," and the bottom panel for the "confidence in honesty of elections." Each column in each panel is a separate regression in which we simultaneously include both types of past exposure (exposure to communicable and non-communicable diseases, respectively).

There is a significant negative impact, as before, on confidence in the government and in elections of past exposure to communicable diseases. In contrast, we find no

[49] Similar to the previous exercise, this dataset is more limited than the EMDAT data that spans a much longer time period from the 1970s.

[50] Communicable diseases include diarrhea, lower respiratory disease, other common infectious diseases, malaria & neglected tropical diseases, HIV/AIDS, and tuberculosis. Non-communicable diseases include cardiovascular diseases, cancers, respiratory disease, diabetes, blood and endocrine diseases, mental and substance use disorders, liver diseases, digestive diseases, musculoskeletal disorders, and neurological disorders.

statistically significant association between trust in these political institutions and exposure to non-communicable diseases during the impressionable years. The results thus confirm that the association we document is unique to communicable diseases. It remains the case, as before, that the full sample results are driven by respondents in democratic countries.

Are large epidemics different?

The effects we identify are larger for more severe epidemics. In **Appendix Table B.16**, we re-estimate our baseline model where, instead of the continuous variable reported in the top row, use indicators for the top 0.5 percent of exposures to epidemics, the top 1 percent, the top 2 percent, and the top 5 percent, each in a separate estimation. An epidemic exposure in the top 0.5, 1, or 2 percent of exposures causes a significant fall in an individual's confidence in elections, the national government, and its leader.[51]

Moreover, the magnitude of the effect linearly increases with more intense experiences, which leads us to undertake the next analysis.

Are the results driven by the intensive or extensive margin?

In **Appendix Table B.18**, we distinguish the intensive and extensive margins of the treatment. For the extensive margin, we mean whether the effect is due to any level of epidemic exposure. To capture this, we construct a binary variable based on whether the number of persons affected by epidemics during the individual's impressionable years is positive or zero. For the intensive margin, we limit the sample to individuals with positive epidemic exposure in their impressionable

[51] Readers may wonder how many democracies are included among the top 2 per cent of most severe epidemics. It turns out that there are more democracies than autocracies in this limited sample. Democratic cases include Japan (1978), Botswana (1988), Bangladesh (1991), Peru (1991), Mozambique (1992), Paraguay (2006) and Haiti (2010). In **Appendix Table B.17**, we estimate an interacted model and find that the loss of political trust is larger in those experience windows during which the epidemic-stricken country was relatively more democratic.

years. Approximately 55 percent of respondents in our surveys have no exposure to epidemics when impressionable and hence are dropped.

Table B.18 shows that the treatment works via the intensive margin. It is not simply being exposed to an epidemic that generates the effect; rather, conditional on being exposed, the severity of the epidemic drives the results. When individuals with no epidemic exposure are excluded from the sample, the estimated effects of past exposure are, if anything, larger than in the full sample.

Falsification

We undertake two falsification exercises. **Appendix Table B.19** focuses on the GWP subsample of individuals aged 30 or above who migrated to the country of interview in the previous 5 years. These individuals did not spend their impressionable years in the country of the interview. For falsification purposes, we assume that they did so (as opposed to spending those years in their country of origin). Second, **Appendix Table B.20** assigns all individuals in the full sample to a random country for the calculation of their experience during impressionable years while keeping all else the same as in **Tables 2-3-4**.

In both cases, we find no effect of these "made-up" and "randomly-assigned" treatments on political trust.

Multiple hypothesis testing

We also conducted multiple hypothesis testing by employing a randomization inference technique recently suggested by Young (2019). This helps to establish the robustness of our results both for individual treatment coefficients in separate estimations and also for the null that our treatment does not have any effect across any of the outcome variables (i.e., treatment is irrelevant), taking into account the multiplicity of the hypothesis testing procedure. The method builds on repeatedly randomizing the treatment variable in each estimation and comparing the pool of randomized estimates to the estimates derived via the true treatment variable. The

results presented in **Appendix Table B.21** show that our findings remain robust both for the individual coefficients and the joint tests of treatment significance.

Excluding potential "bad controls"

One might worry that some of the individual characteristics (such as household income) are themselves affected by epidemic related economic shocks. We checked for potential "bad controls" (Angrist and Pischke, 2008) by excluding these individual characterisitics. Doing so does not substantively change the point estimates for our variables of interest (see **Appendix Table B.22**).[52]

Robustness to Alternative Treatment Definitions

One might be concerned that large population may increase the intensity of the epidemic as well as the intensity of the epidemic affecting the population counts (through both mortality and immigration). We, therefore, checked the robustness of our results using population *unadjusted* treatment variable: the number of individuals affected by an epidemic averaged over the 8 years when the individual was aged 18 to 25. The results presented in **Appendix Table B.23** show that our results are robust to this alternative definition.

Ruling Out Influential Observations

We rule out the importance of influential observations by plotting the coefficients of our preferred specifications as one year is omitted at a time. **Appendix Figure B.6** shows that our coefficient estimates are quite stable even as a specific survey year is eliminated from our main sample in each iteration.

We repeat a similar analysis with **Appendix Figure B.7** in which we drop one random country at a time in each estimation for 15 consecutive trials (for illustration purposes) and again find that our estimates are not driven by any single country.[53]

[52] We therefore keep these controls in our baseline specification to avoid omitted variable bias.
[53] Results are similar for dropping any country within our sample and available upon request. We have also undertaken a dfbeta analysis (unreported here) on all three main outcome variables and confirmed that the highest absolute dfbeta value among all observations in our sample is 0.04 and

8. Evidence on Mechanisms

Weak, unstable governments with limited legislative strength, limited unity, and limited popular support presumably are less able to mount effective responses to epidemics. If they are prone to disappointing their constituents, we would expect the effects we identify to be strongest when the government in office at the time of exposure is weak and unstable, other things equal.[54]

To explore this hypothesis, we use ICRG data on government strength. These data are widely used in economics (see, for example, Knack and Keefer, 1997; Chong and Gradstein, 2007; Asiedu and Lien, 2011), political science and sociology (see, for example, Evans and Rauch, 1999; Grundler and Potrafke, 2019; Souva et al., 2008). They measure, for the period since 1984, the unity of the government, its legislative strength, and its popular support.[55] We expect weak governments to perform poorly in epidemics, and conjecture that individuals will downgrade their confidence in government and trust in its leaders more severely as a result.

We first calculate the average score for government strength in the individual's impressionable years. We then construct an indicator that takes the value of 1 for this past experience if the observation is in the bottom half/tercile/quartile of impressionable-year government strength index scores across all respondents.[56] We include this measure of impressionable-year government strength by itself in

thus much smaller than the standard threshold of 1.00 further alleviating the concerns about influential outliers.

[54] There is vast literature in political science on how fragmented and weak governments (such as multiparty coalitions) are "plagued" by agency problems that may distort the policymaking process (Martin and Vanberg, 2005). An economic example of this phenomenon has been shown on coalition governments leading to excessive public spending due to reduced electoral accountability on the part of the government parties (Velasco, 2000; Bawn and Rosenbluth, 2006). Mian et al. (2014) illustrate that governments become more polarized and weaker in the aftermath of financial crises, which is likely to produce a deadlock in the parliament and decrease the chances of major financial reform.

[55] Whereas in the ICRG dataset this index is labelled government stability, we refer to it as government strength, since we think this is a better name for what is essentially the implementation capacity of the incumbent government.

[56] It is crucial to include this variable categorically rather than in a continuous form to make sure that it is unlikely to respond to changes in the pandemic experience.

addition to interacting it with impressionable-year epidemic exposure to distinguish epidemic-specific and general effects.

This leads to the following specification:

$$Y_{i,c,t,a,b} = \beta_{10}\text{Exposure to epidemic}_{icb} \times \text{Government strength}_{icb} + \beta_9\text{Government strength}_{icb} + \beta_0 + \beta_1 X_{ict} + \beta_2\text{Exposure to epidemic}_{icb} + \beta_3\text{Number of people affected}_{ct-1} + \beta_4 C_c + \beta_5 T_t + \beta_6 A_a + \beta_7 B_b + \beta_8 C_c * \text{Age} + \varepsilon_{ict} \quad (3)$$

The effect of exposure to an epidemic in **Table 6** is more than twice as large if the epidemic is experienced under a weak government. The point estimates on the weak government dummy are small in magnitude and mostly statistically insignificant. This suggests that we are identifying not a "weak government effect" per se but rather the interaction with the effect of epidemic exposure in the presence of a weak government.

Figures 3-5 show further evidence of the importance of government strength at the time of the epidemic. We again restrict the observations to the 26-35 age range and re-estimate the Equation (3) when rolling the age window forward. In each figure, the top panel shows the estimates for the total effect on individuals experiencing epidemics under weak governments, while the bottom panel shows the corresponding estimates for individuals experiencing epidemics under strong governments.

For all outcomes, the negative impact on trust is larger and more persistent for respondents who experienced epidemics under weak governments. Again, this is consistent with the notion that these individuals became and remained more disenchanted with their country's political institutions and leaders, insofar as those

institutions and leaders failed to adequately respond to the country-wide public-health emergency.[57]

Health policy at the time of the epidemic

Governments' pharmaceutical interventions, in particular their vaccination policies, have played an important role in the prevention of contagious disease.[58] Using data from GWP and the Wellcome Global Monitor, we therefore analyze whether attitudes regarding the health system and vaccination are affected by exposure to an epidemic.

In the top panel of **Table 7**, the outcome is a dummy variable indicating that the respondent has confidence in the national healthcare system (via GWP).[59] In the second panel, it is a dummy indicating that the respondent agrees or strongly agrees that "vaccines are effective." In the third panel, it is a dummy indicating the respondent agrees or strongly agrees that "vaccines are safe." In the fourth panel, it is a dummy indicating the respondents' "children received a vaccine" that was supposed to prevent them from getting childhood diseases such as polio, measles, or mumps. In the final panel, it is whether the respondent agrees or strongly agrees that "vaccines are important for children to have." The specification is otherwise as in Column 4 of **Table 2**.

The results show that here too opinions are affected negatively by impressionable-year epidemic exposure. These results suggest that the same experience causing individuals to lose confidence in society's capacity specifically to deliver adequate health outcomes also causes them to lose confidence in the political system and its

[57] An additional implication of Tables 3-6 is that even individuals experiencing epidemics under strong governments display less political trust in the aftermath. This finding is consistent with a model of learning where citizens may ex-ante over-trust their government (independent of whether it is weak or strong) and where epidemics serve as stress tests that can reveal new (negative) information about the government, thus correcting the initial optimism. That our findings are generally stronger for less-educated people (see Table 5) supports such an interpretation.

[58] The U.S. Centers for Disease Control and Prevention lists vaccination as one of the "Ten Great Public Health Achievements in the 20th Century" because of its impact on morbidity and mortality (Barraza et al., 2018).

[59] The exact wording of the question is as follows: "In this country, do you have confidence in each of the following, or not? How about healthcare or medical systems?"

leaders more generally. In line with previous findings, **Table 7** then shows that the negative impact of epidemic exposure is larger in countries with democratic political systems.[60]

Again consistent with earlier findings, **Table 8** shows that individuals exposed to an epidemic in their impressionable years have more negative perceptions of health-related government policies if the epidemic was experienced under a weak government. Note that the sample is smaller since we use the Wellcome Global Monitor (2018) and ICRG covers only part of the countries and years in in our main sample. Despite much smaller sample size, 12 of the 15 interactions here are significant at the 95% confidence level.

Evidence from COVID-19

Given the absence of internationally comparable data on policy interventions in response to past epidemics, we examine the association of government strength with policy interventions in the context of COVID-19.

To do so, we investigate the relationship between government strength, measured as before, and the number of days between the date of first confirmed case and the date of the first COVID-19 policy (i.e. non-pharmaceutical intervention: school closure, workplace closure, public event cancellation, public transport closure, or restrictions on within-country movement) on a large sample of countries. We also provide case studies detailing the link between government strength and policy interventions for France, South Korea and the United Kingdom in **Appendix C**.

Our sample consists of 78 countries that adopted non-pharmaceutical interventions between January 1, 2020 and March 31, 2020. We estimate OLS models, controlling for average Google search volume one week before the policy intervention to account for the possibility that public attention to COVID-19

[60] These results are in line with Legido-Quigley et al. (2020), who argue that the integration of specific services like vaccination into the health system as a whole amplifies the capacity to absorb and adapt to health crises.

accelerates the non-pharmaceutical response. We also control for (log) cumulative own country cases one week before the policy, (log) cumulative own country deaths one week before the policy, (log) GDP per capita, (log) urbanization rate, (log) total population, (log) share of the population age 65 and above, Polity2 score, and a dummy variable indicating whether a country experienced an epidemic since 2000.

Table 9 reports the results for the full sample in Column 1, for countries with above-median Polity2 scores in Column 2, and for countries with below-median Polity2 scores in Column 3.[61] Although we make no causal claims, we find that government strength is *associated* with a statistically significant improvement in policy response time: a one standard deviation (0.765) increase in government strength reduces policy response time by three days.[62] This is a hint of why exposure to epidemic leads to major negative revisions of confidence in governments and trust in political leaders when governments are weak.

According to Column 2, a one standard deviation (0.765) increase in government strength reduces the policy response time by four days in more democratic countries (those with above-median Polity2 scores). In contrast, there is little evidence that government strength reduces the policy response time in countries with below-median Polity2 scores. It is sometimes suggested that more democratic countries, where it is necessary to build a political and social coalition in support of restrictive policies, found it more difficult to respond quickly to the outbreak of COVID-19, compared to less democratic countries where "pseudo-democratic" leaders can move unilaterally to limit traditional political and civil rights and short-circuit democratic processes.[63] Evidently, government weakness is mostly a problem in democratic societies, since this is there where it translates into a greater delay and less timely intervention.

[61] We cannot split the sample into democracies vs. non-democracies because we have only 10 countries in the non-democracy sample. This is why we instead split the sample by below and above the median polity score.
[62] Three days can make a substantial difference in the context of COVID-19, given the infection's high rate of reproduction when no non-pharmaceutical intervention is put in place.
[63] See for example the discussion in Diamond (2020).

9. Evidence on Political Behavior

Even if epidemic exposure in one's impressionable years affects self-reported trust in government, elections, and political leadership, it is not obvious that it also alters actual behavior. For example, one might expect that less confidence in elections leads individuals to vote less and take more political action through non-electoral means, (by participating taking place in demonstrations, participating in boycotts and signing petitions, for example).[64]

GWP lacks information data on such behavior. We therefore turn to the World Values Survey (WVS) and the European Social Survey (ESS). We use all available waves of the WVS covering the period 1981-2014, as administered in more than 80 countries, where we focus on the democracies. We also consider annual waves of the ESS for the period 2002-2018 in over 30 countries. The WVS and ESS give us as many as 103,000 and 171,000 responses, respectively, depending on the question. We estimate our baseline model (Column 4 of **Table 2**) on several outcome variables related to individuals' political behaviour

Some of the results, in **Appendix Table B.24**, are consistent with the preceding conjecture.[65] ESS respondents with epidemic exposure in their impressionable years are significantly less likely to have voted in recent national elections. Both WVS and ESS respondents are significantly more likely to have attended or taken part in lawful/peaceful public demonstrations. WWS respondents are significantly more likely to have joined boycotts and signed a petition. These are the type the

[64] Early evidence in the context of the recent COVID-19 crisis suggests that the young generation in US is more likely to sympathise with the George Floyd protests and more critical of the way US government is handling the health crisis (Pew Research Center, 2020).

[65] Note that we are not describing the self-reported behavior of the same individuals who, we showed above, self-reported less confidence and trust in elections, the national government, and the national leader (where one might worry, there could be selective misreporting to minimize cognitive dissonance). Rather, we are analyzing completely different data sets where respondents are asked about actual political behavior and actions. This fact makes these additional findings especially striking.

responses one would expect from individuals rendered less confident in elections and other conventional governmental institutions.[66]

10. Conclusion

In this paper we have shown that experiencing an epidemic can negatively affect an individual's confidence in political institutions and trust in political leaders, with negative implications for this collective capacity. This negative effect is statistically significant, large and persistent. Its largest and most enduring impact is on the attitudes of individuals who are in their impressionable late-adolescent and early-adult years when an epidemic breaks out. It is limited to infectious or communicable diseases, where a government's success or failure in responding is especially important. It is the largest in settings where there already exist doubts about the strength and effectiveness of government.

We also find that epidemic exposure in one's impressionable years matters mainly for residents of democratic countries. Residents in democracies sharply revise downward their confidence and trust in political institutions and leaders following significant exposure, whereas the same is not true in autocracies. It may be that citizens expect democratic governments to be responsive to their concerns and that where the public-sector response is not adequate, they revise their attitudes unfavorably. In autocracies, there may not exist a comparable expectation of responsiveness. In addition, democratic regimes may find consistent messaging more difficult. Because such regimes are open, they may allow for a cacophony of conflicting official views, resulting in a larger impact on confidence and trust.

[66] Other results are insignificant. There is no difference in the likelihood of never voting in national elections among WVS respondents as a function of impressionable year epidemic exposure. Nor is there any difference among WWS respondents in the likelihood of having joined unofficial strikes or occupying buildings or factories. Our analysis of these variables is necessarily based on smaller samples, which may account for the contrast. However, the majority of the results where we have larger samples are consistent with the idea that not just self-reported trust but actual political behavior are affected by epidemic exposure in the expected manner.

The implications are disturbing. Imagine that more trust in government is important for effective containment, but that failure of containment harms trust in government.[67] One can envisage a scenario where low levels of trust allow an epidemic to spread, and where the spread of the epidemic reduces trust in government still further, hindering the ability of the authorities to contain future epidemics and address other social problems. As Schmitt (2020) puts it, "lack of trust in government can be a circular, self-reinforcing phenomenon: Poor performance leads to deeper distrust, in turn leaving government in the hands of those with the least respect for it."

[67] A relevant study by Ajzenman et al. (2020) examines how political leader's words and actions affect people's behaviour in the context of COVID-19 pandemic. The authors show that after Brazil's president publicly and emphatically dismissed the risks associated with the COVID-19 virus and advises against isolation, social distancing by residents in pro-government localities fall relative to places in which pro-government sentiment is weaker.

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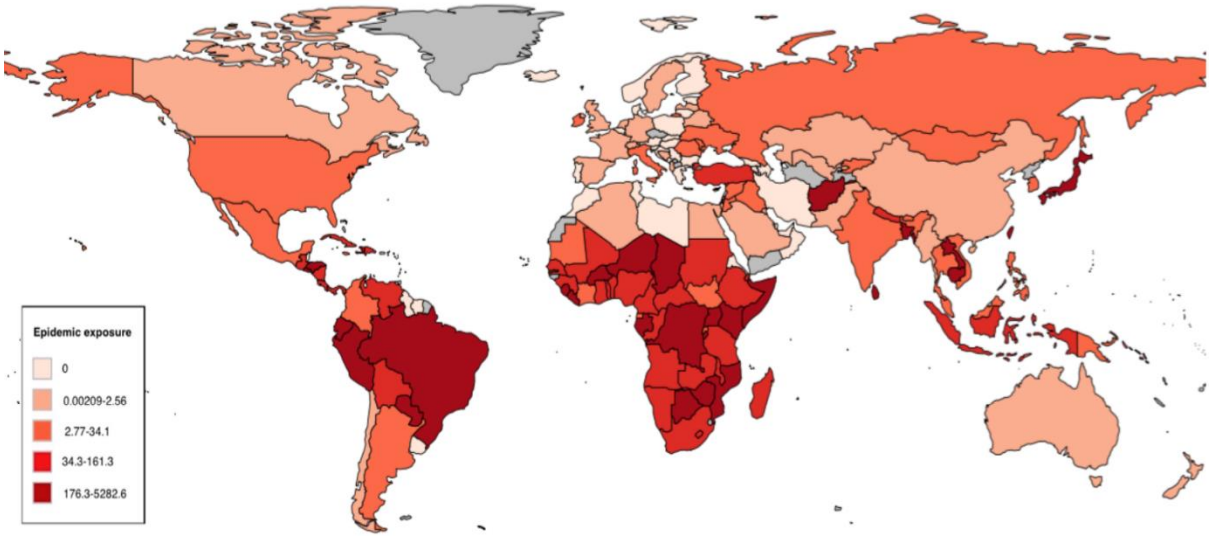
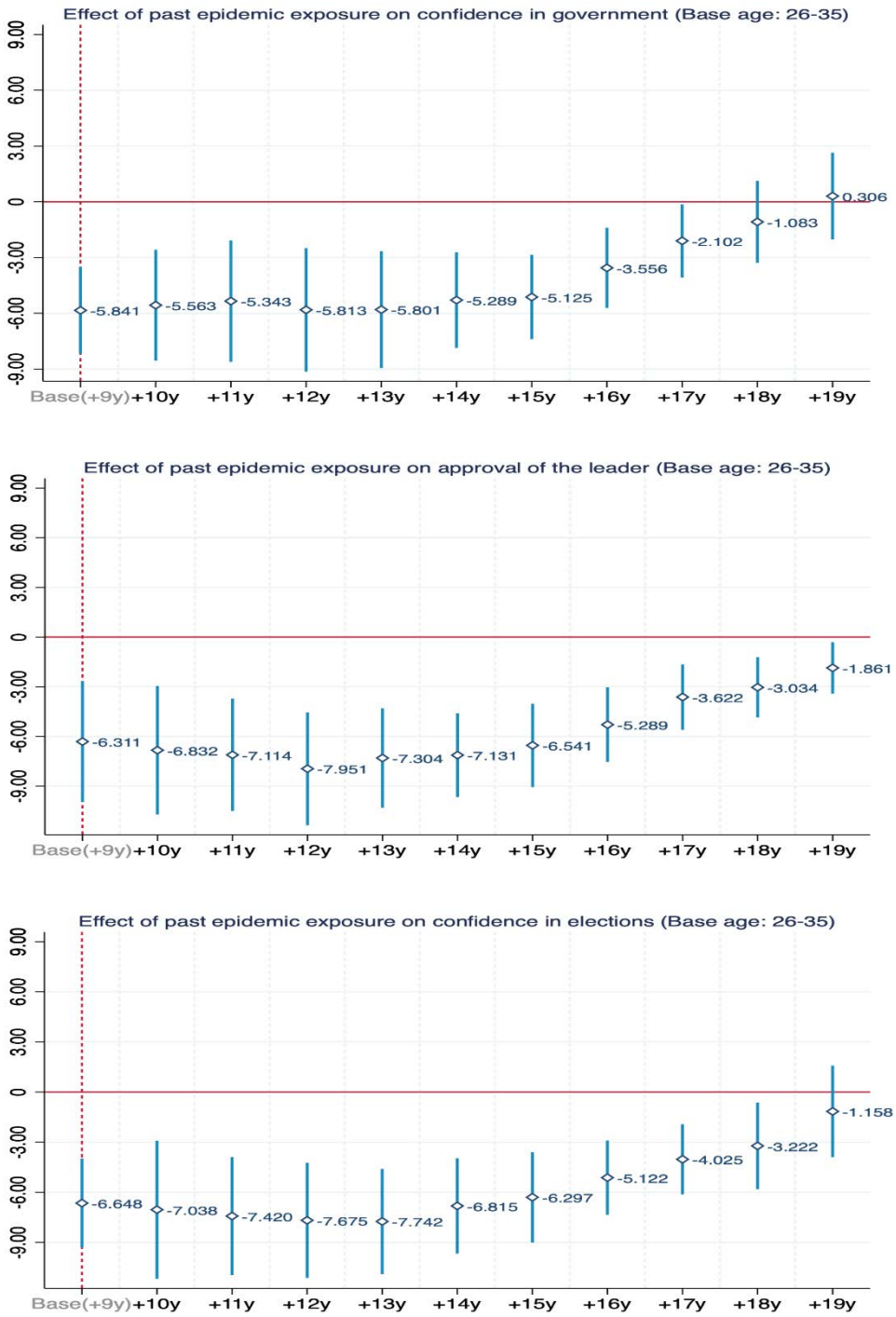
Figure 1: Average Number of People (per million) Affected by Epidemics, 1970-2017



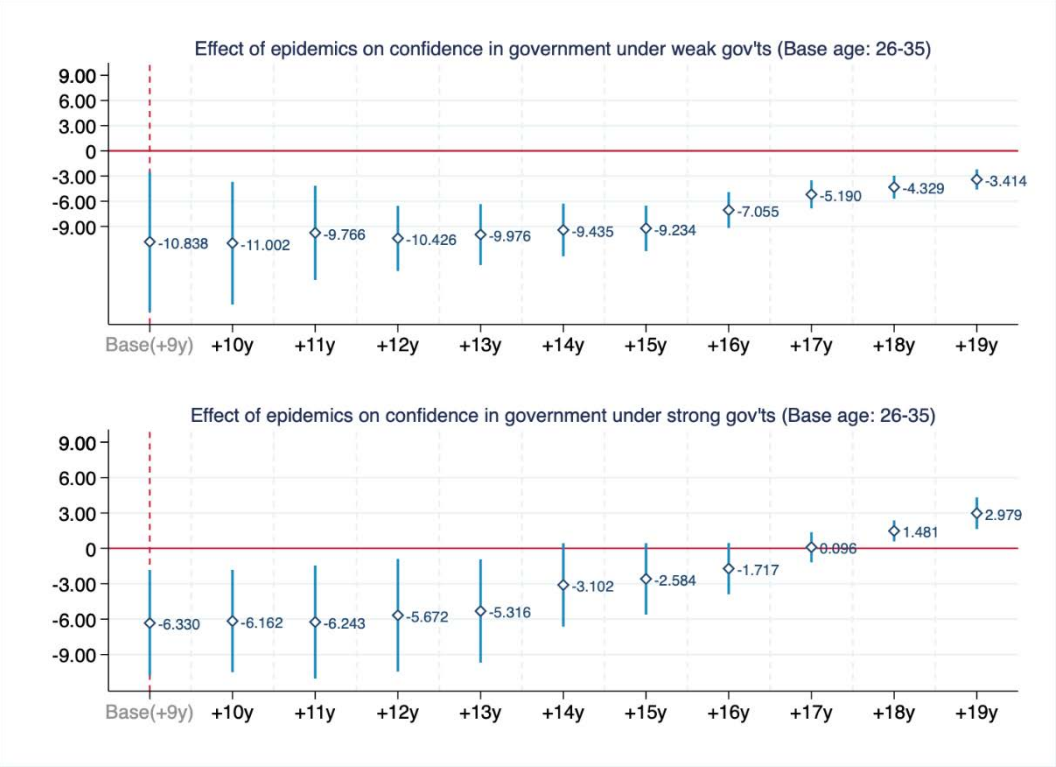
Notes: This figure shows the number of people affected by epidemics (per million), averaged across all available years. Source: EM-DAT International Disaster Database, 1970-2017, UN Population Database, 1970-2017, and authors' calculations.

Figure 2: Effects of Epidemics in Impressionable Years over Subsamples with Rolling Age-Windows



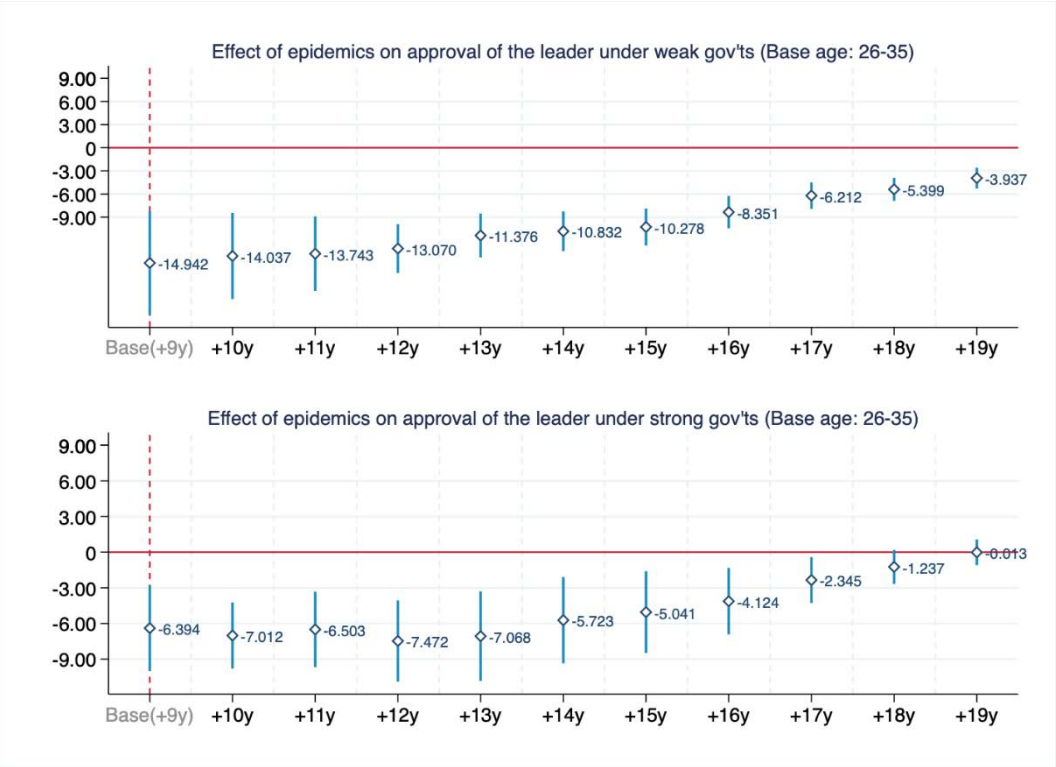
Note: This figure shows the persistency of the effects on three main outcome variables by restricting the observations to the respondents who are in the 26-35 age range at the time of the survey (Base sample) and then repeatedly rolling this age window forward by one year for each separate estimation. The specification is Column 4 of Table 2 and only the estimated coefficient on *Exposure to epidemic (18-25)* is plotted. Confidence intervals are at 95% significance level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Figure 3: Effects of Epidemics on Confidence in Government over Subsamples with Rolling Age-windows (separately under weak and strong governments)



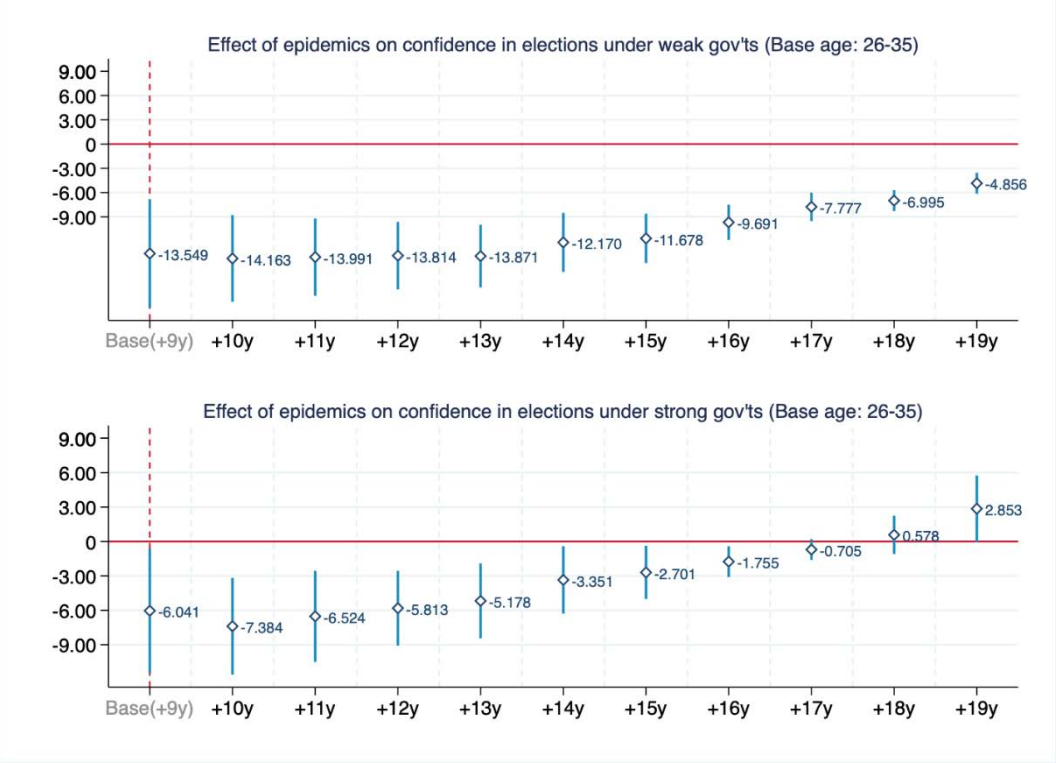
Note: This figure shows the persistency of the effects on three main outcome variables by restricting the observations to the respondents who are in the 26-35 age range at the time of the survey (Base sample) and then repeatedly rolling this age window forward by one year for each separate estimation. The specification is Equation 3/Table 6. The lower panel only plots the coefficient on *Exposure to epidemic (18-25)* whereas the upper panel plots the sum of the coefficients on *Exposure to epidemic (18-25)* and its interaction with bottom quartile government strength dummy. Confidence intervals are at 95% significance level.
Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Figure 4: Effects of Epidemics on Approval of the Leader Over Subsamples with Rolling Age-Windows (separately under weak and strong governments)



Note: This figure shows the persistency of the effects on three main outcome variables by restricting the observations to the respondents who are in the 26-35 age range at the time of the survey (Base sample) and then repeatedly rolling this age window forward by one year for each separate estimation. The specification is Equation 3/Table 6. The lower panel only plots the coefficient on *Exposure to epidemic (18-25)* whereas the upper panel plots the sum of the coefficients on *Exposure to epidemic (18-25)* and its interaction with bottom quartile government strength dummy. Confidence intervals are at 95% significance level.
Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Figure 5: Effects of Epidemics on Confidence in Elections over Subsamples with Rolling Age-Windows (separately under weak and strong governments)



Note: This figure shows the persistency of the effects on three main outcome variables by restricting the observations to the respondents who are in the 26-35 age range at the time of the survey (Base sample) and then repeatedly rolling this age window forward by one year for each separate estimation. The specification is Equation 3/Table 6. The lower panel only plots the coefficient on *Exposure to epidemic (18-25)* whereas the upper panel plots the sum of the coefficients on *Exposure to epidemic (18-25)* and its interaction with bottom quartile government strength dummy. Confidence intervals are at 95% significance level.
Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Table 1: Sample Characteristics

Variables	(1) Mean (Standard deviation)
Main dependent variables	
Confidence in national government	0.50 (0.50) – N: 760099
Confidence in honestly of elections	0.51(0.49) – N: 736679
Approval of the leader	0.51 (0.49) – N: 719742
Have confidence in the health system	0.62 (0.49) – N: 98283
Placebo outcomes	
Have confidence in the military	0.72 (0.45) – N: 730156
Have confidence in the banks	0.59 (0.49) – N: 809972
Have confidence in the media	0.54 (0.50) – N: 190167
Individual-level characteristics	
Age	41.58 (10.41)
Male	0.47 (0.49)
Tertiary education	0.18 (0.38)
Secondary education	0.50 (0.50)
Married	0.63 (0.48)
Urban	0.40 (0.49)
Christian	0.57 (0.49)
Muslim	0.20 (0.40)
Country-level characteristics	
Exposure to epidemic	0.002 (0.0015)
Government strength	7.33 (1.26)

Notes: Means (standard deviations). This table provides individual and aggregate level variables averaged across the 13 years (2006-2018) used in the analysis. The sample sizes for some variables are different either due to missing data or because they were not asked in every year.

Table 2: The Impact of Exposure to Epidemic (18-25) on Confidence in National Government

Outcome ➔	(1) Have confidence in national government	(2) Have confidence in national government	(3) Have confidence in national government	(4) Have confidence in national government	(5) Have confidence in national government
Exposure to epidemic (18-25)	-1.073*	-0.924	-1.614***	-1.592***	-0.508**
	(0.594)	(0.576)	(0.265)	(0.262)	(0.219)
The number of people affected $_{t-1}$	0.548	0.739	0.733	0.740	--
	(3.478)	(3.484)	(3.457)	(3.452)	
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
Individual income	No	Yes	Yes	Yes	Yes
Demographic characteristics	No	Yes	Yes	Yes	Yes
Income decile fixed effects	No	Yes	Yes	Yes	Yes
Labor market controls	No	Yes	Yes	Yes	Yes
Country*Age trends	No	No	Yes	Yes	Yes
Cohort fixed effects	No	No	No	Yes	Yes
Country*Year fixed effects	No	No	No	No	Yes
Observations	760099	760099	760099	760099	760099
R^2	0.138	0.144	0.145	0.145	0.182
Mean of outcome	0.50	0.50	0.50	0.50	0.50

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is a dummy variable indicating that the respondent has confidence in "national government". *Exposure to epidemic (18-25)* defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). *The number of people affected* refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Table 3: The Impact of Exposure to Epidemic (18-25) on Approval of the Leader

Outcome ➔	(1) Approval of the leader	(2) Approval of the leader	(3) Approval of the leader	(4) Approval of the leader	(5) Approval of the leader
Exposure to epidemic (18-25)	-1.521***	-1.501***	-1.916***	-1.957***	-0.583***
	(0.380)	(0.369)	(0.326)	(0.330)	(0.118)
The number of people affected $_{t-1}$	0.201	0.184	0.141	0.120	--
	(2.696)	(2.735)	(2.710)	(2.712)	
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
Individual income	No	Yes	Yes	Yes	Yes
Demographic characteristics	No	Yes	Yes	Yes	Yes
Income decile fixed effects	No	Yes	Yes	Yes	Yes
Labor market controls	No	Yes	Yes	Yes	Yes
Country*Age trends	No	No	Yes	Yes	Yes
Cohort fixed effects	No	No	No	Yes	Yes
Country*Year fixed effects	No	No	No	No	Yes
Observations	719742	719742	719742	719742	719742
R^2	0.127	0.132	0.133	0.133	0.182
Mean of outcome	0.51	0.51	0.51	0.51	0.51

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is a dummy variable indicating that the respondent approves "the job perfomance of the leader". *Exposure to epidemic (18-25)* defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). *The number of people affected* refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Table 4: The Impact of Exposure to Epidemic (18-25) on Confidence in Elections

Outcome ➔	(1) Have confidence in honesty of elections	(2) Have confidence in honesty of elections	(3) Have confidence in honesty of elections	(4) Have confidence in honesty of elections	(5) Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-1.643**	-1.481*	-2.226***	-2.258***	-1.181***
	(0.794)	(0.811)	(0.341)	(0.339)	(0.273)
The number of people affected $_{t-1}$	-3.734*	-3.582	-3.645*	-3.625*	--
	(2.203)	(2.187)	(2.195)	(2.182)	
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
Individual income	No	Yes	Yes	Yes	Yes
Demographic characteristics	No	Yes	Yes	Yes	Yes
Income decile fixed effects	No	Yes	Yes	Yes	Yes
Labor market controls	No	Yes	Yes	Yes	Yes
Country*Age trends	No	No	Yes	Yes	Yes
Cohort fixed effects	No	No	No	Yes	Yes
Country*Year fixed effects	No	No	No	No	Yes
Observations	736679	736679	736679	736679	736679
R^2	0.137	0.144	0.146	0.146	0.178
Mean of outcome	0.51	0.51	0.51	0.51	0.51

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is a dummy variable indicating that the respondent has confidence in "honesty of elections". *Exposure to epidemic (18-25)* defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). *The number of people affected* refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Table 5: Heterogeneity

	(1)	(2)	(3)
	Coefficient on Exposure to Epidemic (18-25) (standard error)	Coefficient on Exposure to Epidemic (18-25) (standard error)	Coefficient on Exposure to Epidemic (18-25) (standard error)
Outcome ➔	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections
Full sample	-1.592*** (0.262)	-1.957*** (0.330)	-2.258*** (0.339)
Males	-1.153** (0.470)	-1.351** (0.528)	-2.014*** (0.379)
Females	-2.042*** (0.416) [A]	-2.516*** (0.545) [A]	-2.551*** (0.413)
Low-income countries	-11.181 (7.577)	-20.701* (11.546)	-11.753*** (4.145)
High-income countries	-1.212*** (0.262)	-1.503*** (0.260) [A]	-1.773*** (0.343) [A]
Less than degree level	-1.657*** (0.285)	-1.753*** (0.295)	-2.249*** (0.330)
Degree level education	0.658 (1.242) [A]	-5.120*** (1.328) [A]	-1.071 (0.816) [A]
Rural	-1.518*** (0.268)	-1.377*** (0.265)	-1.967*** (0.357)
Urban	-3.015*** (0.781) [A]	-6.195*** (1.452) [A]	-4.049*** (0.893) [A]
Low-income HH	-0.226 (0.341)	-0.112 (0.339)	-2.527*** (0.485)
Middle-income HH	-3.015*** (0.781)	-3.140*** (1.008)	-2.207** (0.869)
High-income HH	-0.854* (0.457)	-3.572*** (0.455)	-1.559*** (0.389)
Democratic countries	-1.884*** (0.249)	-1.587*** (0.301)	-2.514*** (0.287)
Non-democratic countries	3.097 (2.497) [A]	2.061 (2.529) [A]	0.880 (3.480) [A]

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. See notes to Table 2. [A] indicates statistically significant difference in each pair of means at p<.05. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Table 6: The Role of Government Strength

Outcome ➔	(1) Have confidence in national government	(2) Approval of the leader	(3) Have confidence in honesty of elections
Exposure to epidemic (18-25)*MedianGov.Strength	-4.033***	-1.092	-2.987***
	(0.876)	(0.849)	(0.618)
Exposure to epidemic (18-25)	-0.235	-3.018***	-1.901**
	(1.038)	(1.044)	(0.833)
MedianGov.Strength	0.014*	0.015*	-0.000
	(0.008)	(0.009)	(0.007)
Exposure to epidemic (18-25)*BottomTercileGov.Strength	-3.919***	-2.230***	-4.863***
	(0.719)	(0.629)	(0.559)
Exposure to epidemic (18-25)	-1.048	-2.514***	-1.183*
	(0.808)	(0.693)	(0.698)
BottomTercileGov.Strength	0.013*	0.023***	0.002
	(0.008)	(0.008)	(0.007)
Exposure to epidemic (18-25)*BottomQuartileGov.Strength	-3.578***	-2.027***	-4.643***
	(0.748)	(0.542)	(0.521)
Exposure to epidemic (18-25)	-1.289	-2.657***	-1.373*
	(0.889)	(0.640)	(0.800)
BottomQuartileGov.Strength	-0.000	0.010	-0.002
	(0.008)	(0.010)	(0.008)
Observations	422523	394323	412051
*R*2	0.136	0.115	0.136

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. The specification is Equation 3. See Tables 2-3-4 for variable definitions. Results reported in each column and panel come from separate models. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1970-2017, and the International Country Risk Guide.

Table 7: Impact of Exposure (Ages 18-25) on Attitudes towards Healthcare

	(1)	(2)	(3)
	Full-sample	Democratic countries	Non-democratic counties
Outcome ➔	Confidence in healthcare	Confidence in healthcare	Confidence in healthcare
Exposure to epidemic (18-25)	-6.760***	-6.543***	-5.964
	(1.270)	(1.649)	(4.084)
Observations	95732	72793	22939
R^2	0.092	0.098	0.172
Outcome ➔	Vaccines are effective	Vaccines are effective	Vaccines are effective
Exposure to epidemic (18-25)	-1.178**	-1.699***	-0.596
	(0.564)	(0.554)	(0.470)
Observations	81930	52638	25258
R^2	0.092	0.072	0.139
Outcome ➔	Vaccines are safe	Vaccines are safe	Vaccines are safe
Exposure to epidemic (18-25)	-1.685	-2.703***	-0.618*
	(1.039)	(0.672)	(0.341)
Observations	81847	52612	25195
R^2	0.142	0.117	0.202
Outcome ➔	Children received a vaccine	Children received a vaccine	Children received a vaccine
Exposure to epidemic (18-25)	-0.339	-1.432***	0.941
	(0.847)	(0.417)	(0.650)
Observations	67125	42415	21477
R^2	0.049	0.056	0.038
Outcome ➔	Vaccines are important for children to have	Vaccines are important for children to have	Vaccines are important for children to have
Exposure to epidemic (18-25)	-0.525	-1.037*	-0.009
	(0.566)	(0.549)	(0.295)
Observations	83666	53623	25928
R^2	0.091	0.084	0.110

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is a dummy variable indicating that: the respondent agrees or strongly agrees that "vaccines are effective" in the top panel; the respondent agrees or strongly agrees that "vaccines are safe" in the second panel; the respondent reports that their "children received a vaccine" that was supposed to prevent them from getting childhood diseases such as (such as polio, measles or mumps)," in the third panel; the respondent agrees or strongly agrees that "vaccines are important for children to have" in the bottom panel. Exposure to epidemic (18-25) defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). The number of people affected refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Each specification includes country-fixed effects, year-fixed effects, demographic (a male dummy, a dummy for each age group, dummy variables for educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), and labor market (full-time employed, part-time employed, unemployed) characteristics, within-country income-deciles, dummy variables for living in an urban area and presence of children in the household (any child under 15). Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: the Wellcome Global Monitor, 2018 and EM-DAT International Disaster Database, 1970-2017, and Polity5.

Table 8: The Role of Government Strength and Attitudes toward Healthcare and Vaccination

Outcome ➔	(1) Have confidence in healthcare	(2) Vaccines are effective	(3) Vaccines are safe	(4) Children received a vaccine	(5) Vaccines are important for children to have
Exposure to epidemic (18-25)*MedianGov.Strength	-16.783	0.862	-3.554**	-3.253***	-3.084***
	(29.181)	(0.981)	(1.772)	(0.610)	(0.777)
Exposure to epidemic (18-25)	1.071	-3.112***	-2.033	0.855	0.806
	(35.099)	(0.824)	(1.843)	(0.810)	(0.777)
MedianGov.Strength	0.023**	-0.013*	-0.011	-0.005	-0.003
	(0.011)	(0.007)	(0.009)	(0.004)	(0.005)
Exposure to epidemic (18-25)*BottomTerc.Gov.Strength	-19.117	-1.815**	-5.386***	-1.526***	-2.337***
	(27.583)	(0.762)	(1.585)	(0.405)	(0.797)
Exposure to epidemic (18-25)	-3.716	-0.921	-1.090	-0.577	0.056
	(26.485)	(1.046)	(1.510)	(0.586)	(0.585)
BottomTercileGov.Strength	0.001	-0.004	-0.006	-0.005	-0.007
	(0.009)	(0.007)	(0.008)	(0.005)	(0.006)
Exposure to epidemic (18-25)*BottomQuar.Gov.Strength	-49.140**	-2.142***	-5.987***	-1.926***	-2.058**
	(23.329)	(0.723)	(2.099)	(0.529)	(1.024)
Exposure to epidemic (18-25)	8.549	-1.057	-0.776	-0.350	-0.179
	(20.633)	(0.740)	(1.722)	(0.703)	(0.776)
BottomQuartileGov.Strength	0.004	0.005	-0.002	-0.001	-0.002
	(0.010)	(0.007)	(0.008)	(0.005)	(0.005)
Observations	49517	49799	49779	38702	50791
R^2	0.110	0.078	0.133	0.048	0.091

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. The specification is Equation 3. See Table 7 for variable definitions. Results reported in each column come from separate models. Results use the sampling weights and robust standard errors are clustered at the country level. Source: EM-DAT International Disaster Data 2017, the Wellcome Global Monitor, 2018, and International Country Risk Guide.

Table 9: Government Strength and Policy Response Time to COVID-19

	(1)	(2)	(3)
Sample ➔	Full-sample	Above Median Polity Score	Below Median Polity Score
Government strength	-3.611**	-5.357** [A]	-.0837
	(1.731)	(2.560)	(2.077)
	[-2.764]	[-4.231]	[-0.062]
Continent fixed effects	Yes	Yes	Yes
Country characteristics	Yes	Yes	Yes
Average Google search volume one week before the policy	Yes	Yes	Yes
(log) cumulative own country cases one week before the policy	Yes	Yes	Yes
(log) cumulative own country deaths one week before the policy	Yes	Yes	Yes
Observations	78	39	39

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. OLS regressions. Outcome variable is *the number of days* between the date of the first confirmed case and the date of the first COVID-19 policy (i.e. non-pharmaceutical intervention: school closure, workplace closure, public event cancellation, public transport closure, or restrictions on within-country movement) in the own country. *Government strength* is an assessment of both the government's ability to carry out its declared programs and its ability to stay in office. It ranges between 12 (maximum score) and 0 (minimum score) with higher scores indicating better quality. Country characteristics include (log) GDP per capita, (log) urbanization rate, (log) total population, (log) share of population age 65 and above, Polity Score, and a dummy variable indicating whether a country experienced any epidemic since 2000. We add 1 to every country observation and then apply a logarithmic transformation. Brackets report point estimates for one standard deviation (0.765) increase in government strength index. Robust standard errors are clustered at the country level. [A] indicates statistically significant differences between the pair estimates. The sample consists of 78 countries that ever-adopted non-pharmaceutical policy between 1/1/2020 and 31/03/2012. Source: EM-DAT, European Centre for Disease Prevention Control, Google, Polity V, Oxford COVID-19 Government Response Tracker, the International Country Risk Guide, World Bank.

Appendix A: Additional Data and Sources

International Country Risk Guide

Our data on institutional quality are from the International Country Risk Guide (ICRG). This measures 12 political and social attributes for approximately 140 countries from 1984 to the present. We focus on *government strength*, which is an assessment both of the government's ability to carry out its declared programs and its ability to stay in office.[68] Specifically, the index score is the sum of three subcomponents: (i) Government Unity; (ii) Legislative Strength; and (iii) Popular Support. In the original ICRG dataset, this measure is called as government stability. Throughout the paper, we refer to government stability as *government strength* as it captures the policy-making strength of the incumbent government. Scores for government strength range from a maximum of 12 and a minimum of 0.

Wellcome Global Monitor

The Wellcome Global Monitor (WGM) is a nationally representative survey fielded in some 160 countries in 2018. It is a global survey of how people think and feel about key health and science challenges, including attitudes towards vaccines and trust in doctors, nurses and scientists. WGM also provides information on respondents' demographic and labor market characteristics. We use the Wellcome Global Monitor (WGM) to explore the mechanisms underlying our findings, and specifically whether these run through attitudes and feeling about the public health response to epidemics.

Google Trends

We use Google Trends data on searches to measure public attention paid to the COVID-19 pandemic. More specifically, we collected data on the volume of Google searches for "corona; korona; Wuhan virus; COVID; COVID-19," translating these search terms into the official language of each country. We

[68] Other institutional quality index measures cover democratic accountability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, and bureaucracy quality.

assemble these data on a daily basis at the country level for the period from January 1 through March 31, 2020. Observations are scaled from 0 (lowest attention) to 100 (highest attention). We exclude 21 countries where the internet is classified as "not free" according to Freedom House (2019).

COVID-19 Related Cases and Deaths

We obtain daily data on the coronavirus related cases and deaths by country from the European Center for Disease Prevention and Control (ECDC) and the Johns Hopkins Coronavirus Resource Center (JHCRC). There are minor reporting differences between the two sources. We use both datasets and create our measures of cases and deaths using the maximum value reported in either dataset.

Government Policy Responses

We rely on the Oxford COVID-19 Government Response Tracker (OxCGRT) for information on public policy responses to the outbreak (Hale et al., 2020). Specifically, we use the information on the following responses: (i) closing of schools and universities; (ii) workplace closures; (iii) public event cancellations; (iv) closing of public transport; (v) restrictions on internal movement. We again gather these data for the period between January 1, and March 31, 2020.

Communicable and Non-communicable Diseases

We distinguish communicable diseases (diarrhea, lower respiratory, other common infectious diseases, malaria and neglected tropical diseases, HIV/AIDS, tuberculosis, other communicable diseases) from non-communicable diseases (cardiovascular diseases, cancers, respiratory disease, diabetes, blood and endocrine diseases, mental and substance use disorders, liver diseases, digestive diseases, musculoskeletal disorders, neurological disorders, other non-communicable diseases) using data from the Institute for Health Metrics and Evaluation. These data are at the country-level data and cover the period 1990-2016. These measures are population-adjusted and expressed in Disability Adjusted Life Years Lost (DALYs), which is a standardized metric allowing for direct comparison and summing of burdens of different diseases (Roser and Ritchie,

2020). Conceptually, one DALY is the equivalent of one year in good health lost to premature mortality or disability (Murray et al. 2015).

Country Characteristics

Data on GDP per capita and urbanization rate come from the World Bank. We obtain the data on the total population and population by age from the United Nations. Data on political regime characteristics are from the Polity5 Series, with scores ranging from -10 to +10. We define 5 and above democracies.

Political Behaviour

We use the World Values Survey (WVS) and the European Social Survey (ESS) to measure political behavior. We use all available waves of the World Values Survey from 1981 to 2014. The dataset covers more than 80 countries and we use 6 variables to capture political behavior. In particular, questions aim to capture some forms of political action that people can take and asked as follows: please indicate whether you have done any of these things, whether you might do it or would never under any circumstances do it: (i) attending lawful/peaceful demonstrations; (ii) the respondent signing petition; (iii) joining in boycotts; (v) occupying buildings or factories; (vi) joining unofficial strikes. We code "have done" and "might do" as 1 and zero otherwise. We also use the question on whether the respondent voted in recent parliament elections.

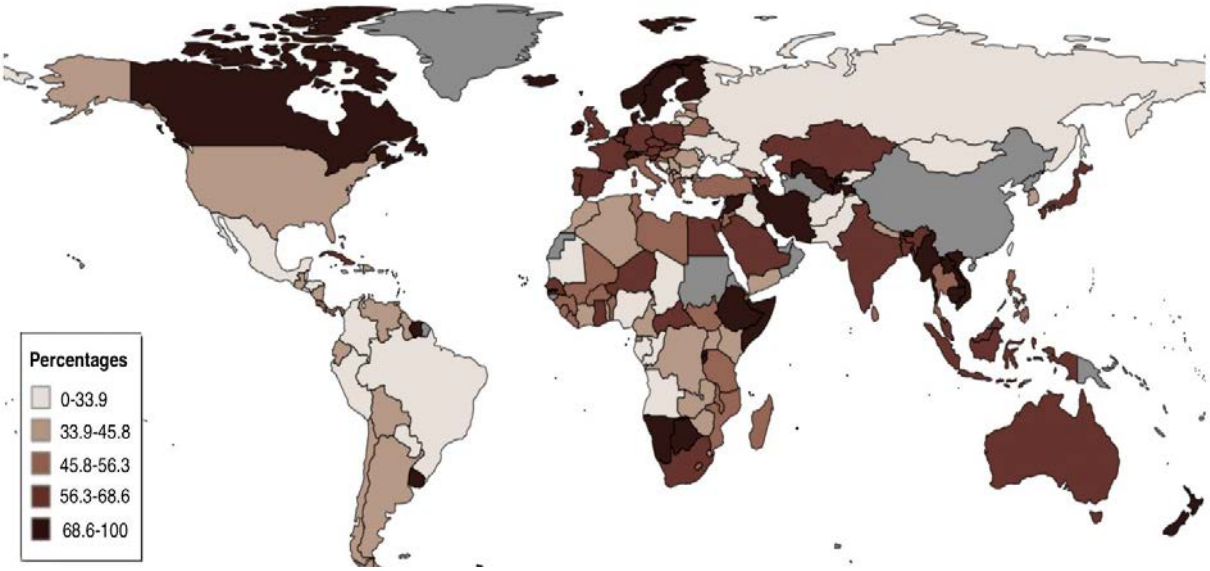
Additional data on political behavior come from the 2002-2018 European Social Surveys. These surveys are fielded biannually in over 30 European countries. The key outcome variables we use come from questions asked to all ESS respondents: (i) during the last 12 months, have you taken part in a lawful public demonstration?; (ii) did you vote in the last national election? We code "yes" as 1 and zero otherwise.

The Cross-National Time-Series (CNTS) Data

We use the following variables from CNTS data to control for individuals' past domestic political experiences. The variable definitions are as follows: (i) Assassinations: any politically motivated murder or attempted murder of a high government official or politician; (ii) General Strikes: any strike of 1,000 or more industrial or service workers that involves more than one employer and that is aimed at national government policies or authority; (iii) Terrorism/Guerrilla Warfare: any armed activity, sabotage, or bombings carried on by independent bands of citizens or irregular forces and aimed at the overthrow of the present regime. A country is also considered to have terrorism/guerrilla war when sporadic bombing, sabotage, or terrorism occurs; (iv) Purges: any systematic elimination by jailing or execution of political opposition within the ranks of the regime or the opposition; (v) Riots: any violent demonstration or clash of more than 100 citizens involving the use of physical force; (vi) Revolutions: any illegal or forced change in the top government elite, any attempt at such a change, or any successful or unsuccessful armed rebellion whose aim is independence from the central government; (vii) Anti-government Demonstrations: any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature.

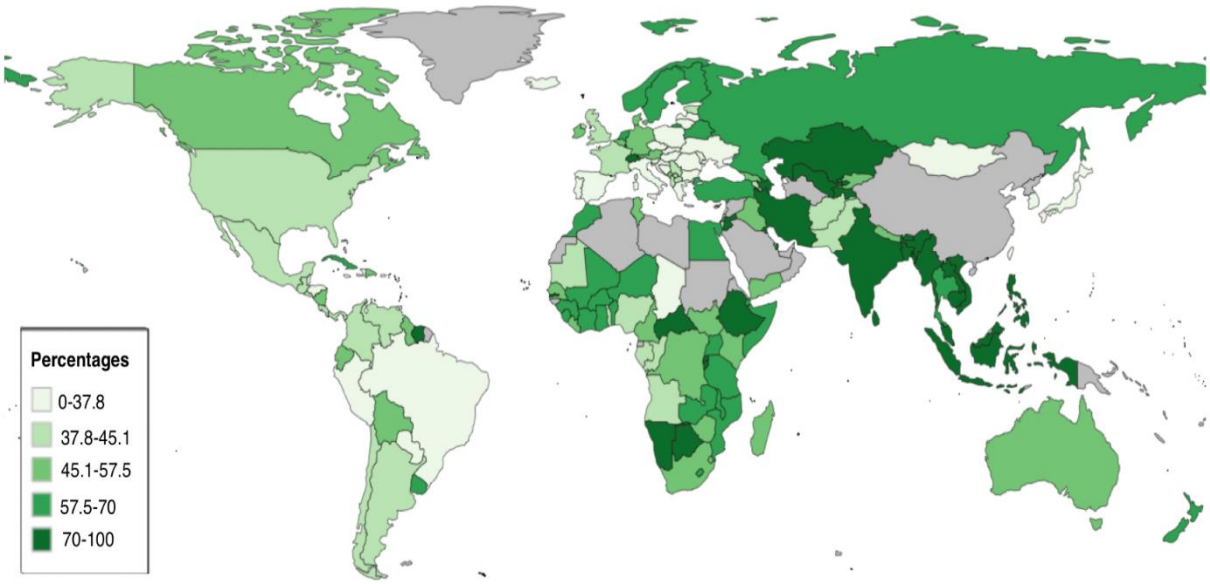
Appendix B: Additional Evidence and Analysis

Appendix Figure B.1: Share of Respondents Who Have Confidence in Honesty of Elections



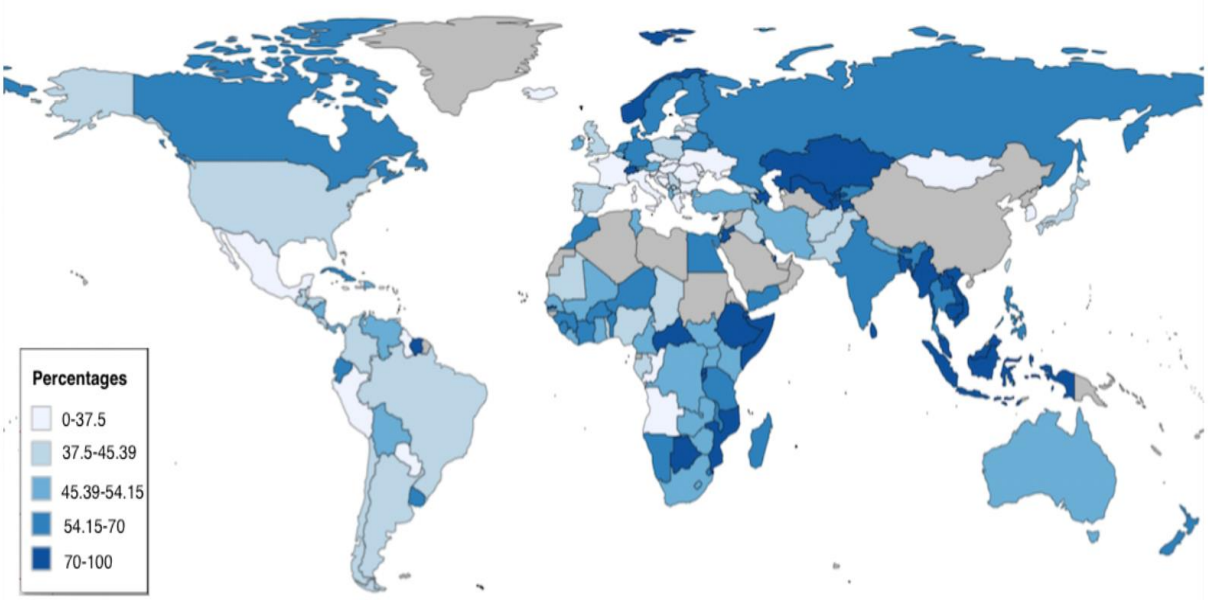
Notes: This figure shows the share of respondents who have confidence in honesty of elections, averaged across all available years. Source: Gallup World Polls, 2006-2018.

Appendix Figure B.2: Share of Respondents Who Have Confidence in National Government



Notes: This figure shows the share of respondents who have confidence in national government, averaged across all available years. Source: Gallup World Polls, 2006-2018.

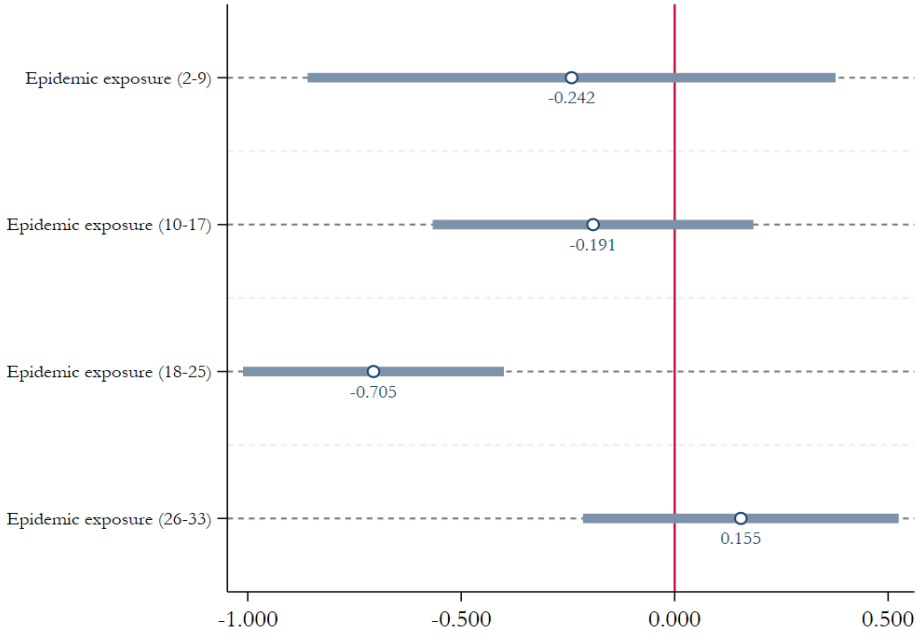
Appendix Figure B.3: Share of Respondents Who Approve the Performance of the Leader



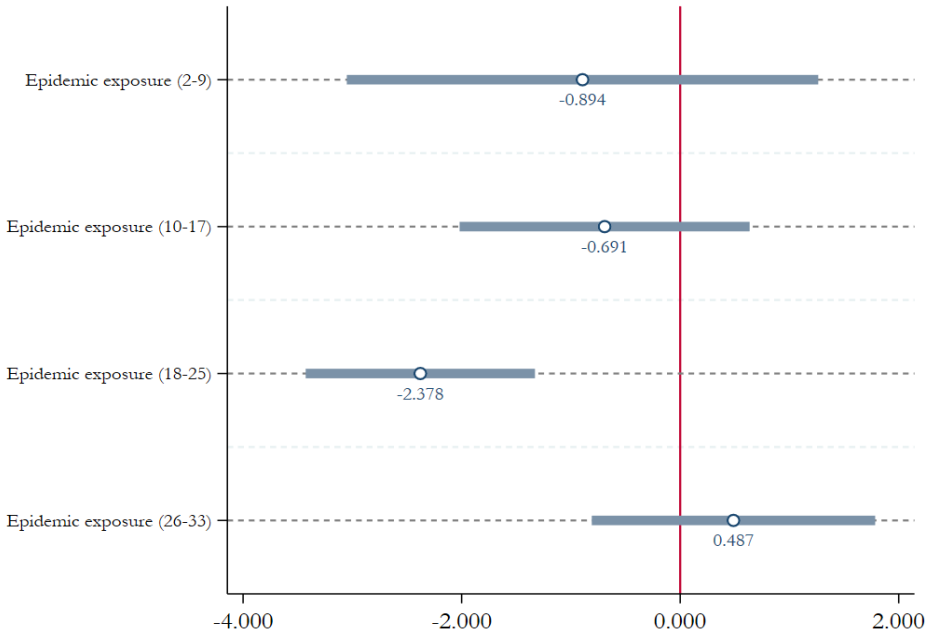
Notes: This figure shows the share of respondents who approve the performance of the leader, averaged across all available years. Source: Gallup World Polls, 2006-2018.

Appendix Figure B.4: Effects of Epidemics in Alternative Treatment Years

Panel A: Dependent variable is the average of all three outcome variables

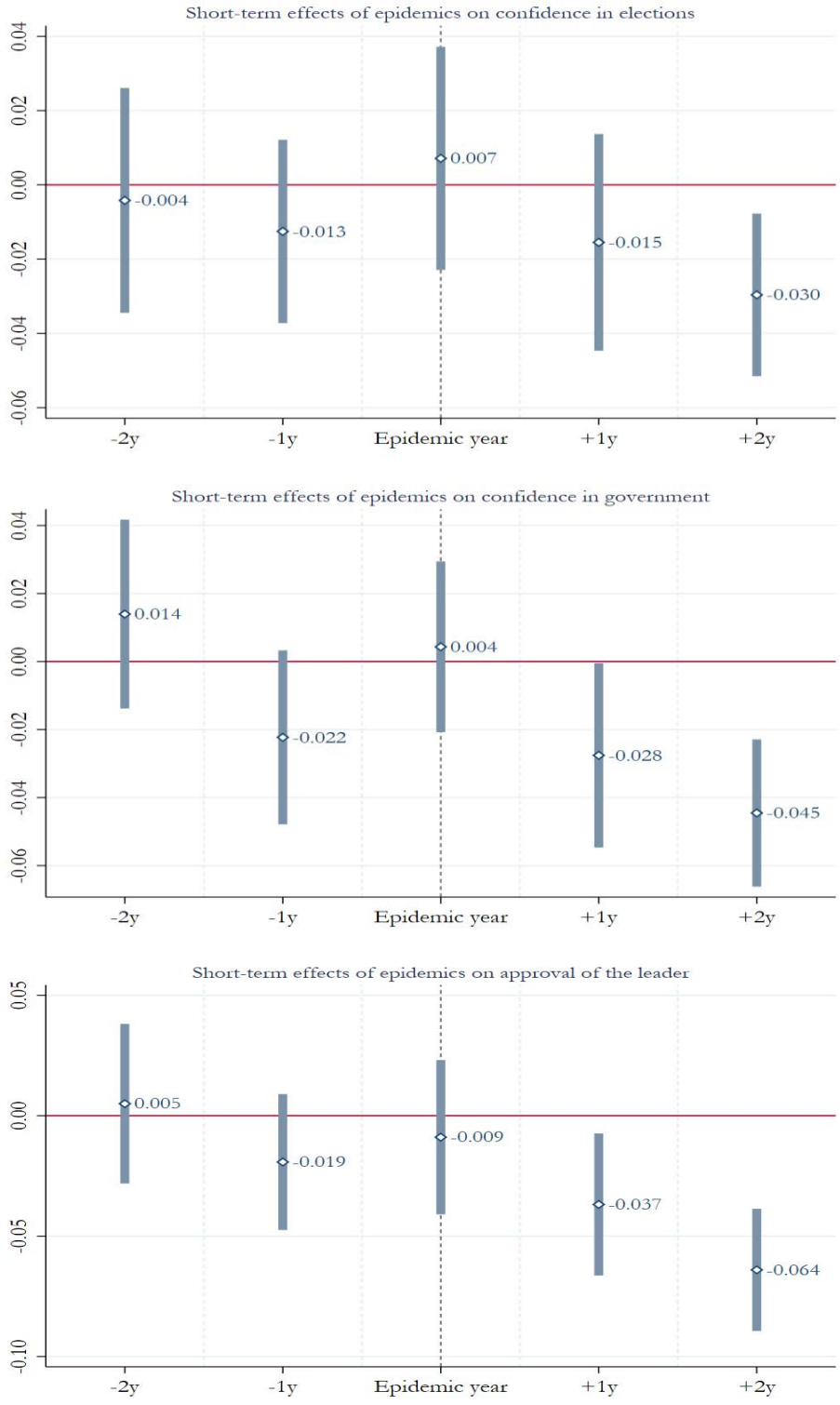


Panel B: Dependent variable is the 1st principal component of responses



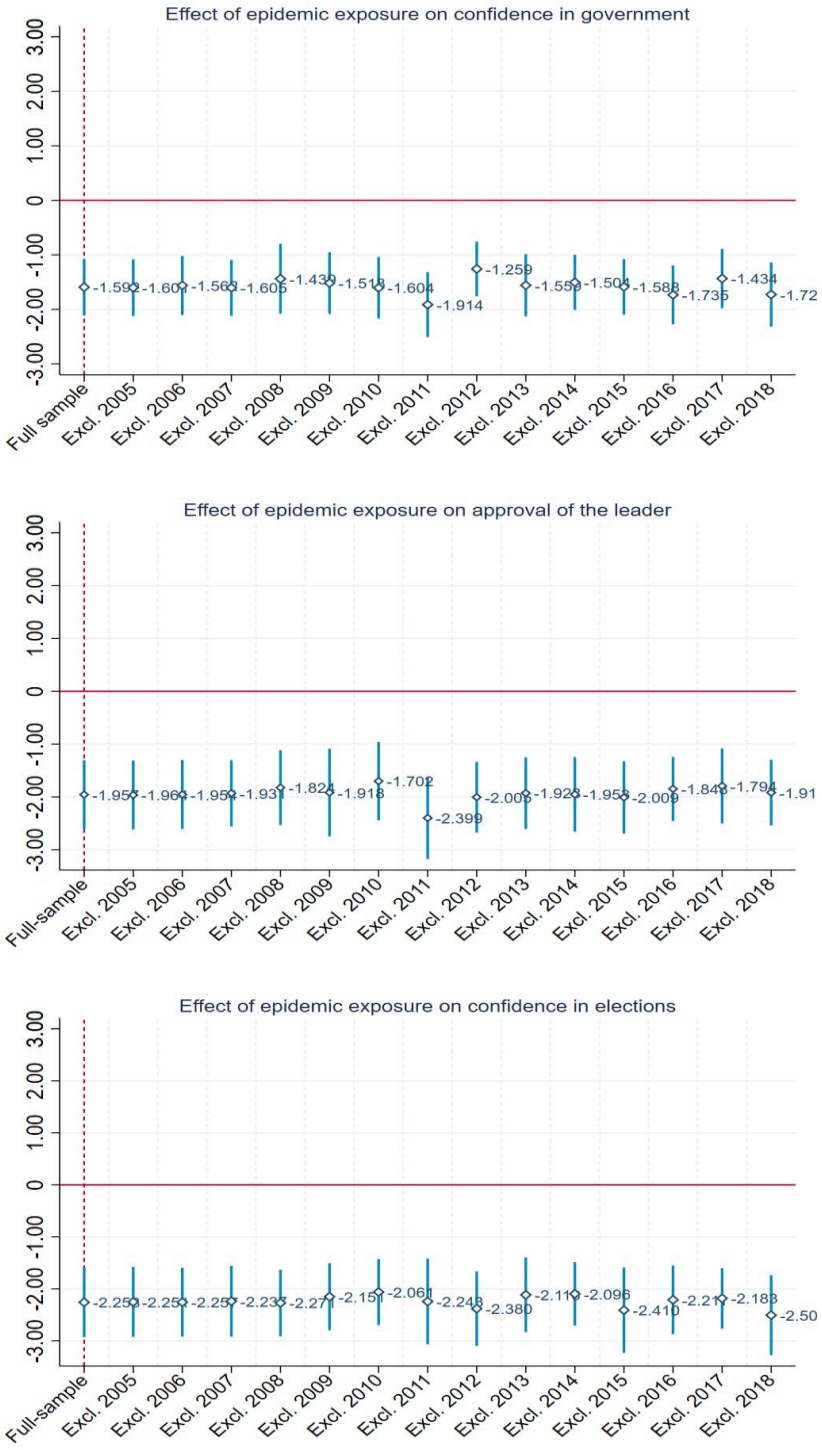
Notes: This figure shows the treatment effect for various age bands. That is, we calculate for each individual the number of people affected by an epidemic as a share of the population, averaged over the 8 years when the individual was 2-9 years old, 10-17 years old, 18-25 years old, and 26-33 years old. Each point estimate comes from four separate models. Specification is Column 5 of Table 2. Confidence intervals are at 95% significance level. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Figure B.5: Short-term Effect of Epidemics on Political Trust



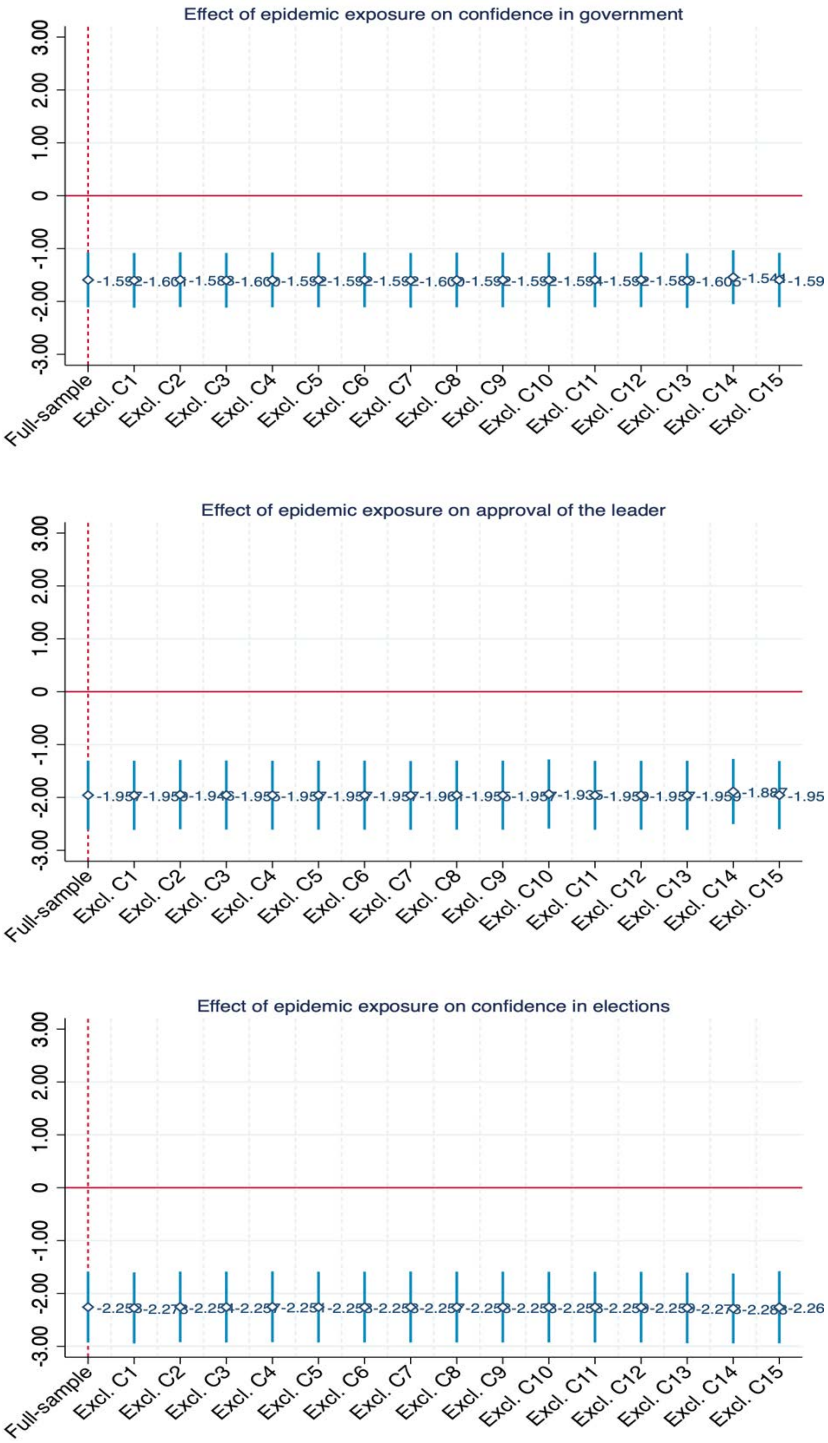
Note: Epidemic year corresponds to the year in which World Health Organisation (WHO) declared one of the following pandemic/epidemic outbreaks for the country in which Gallup respondent resides: SARS, H1N1, MERS, Ebola, or Zika. Specification is the same as in Equation 2. Confidence intervals are at 90% significance level. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and Ma et al., 2020.

Appendix Figure B.6: Robustness to Dropping One Year at a Time



Note: This figure shows the point estimates on Exposure to epidemic (18-25) variable on three main outcome variables while dropping one sample year at a time. The specification is Column 4 of Tables 2, 3 and 4. Only the estimated coefficient on Exposure to epidemic (18-25) is plotted. Confidence intervals are at 95% significance level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Figure B.7: Robustness to Dropping One Country at a Time



Note: This figure shows the point estimates on Exposure to epidemic (18-25) variable on three main outcome variables while randomly dropping one sample country at a time. The specification is Column 4 of Tables 2, 3 and 4. Only the estimated coefficient on Exposure to epidemic (18-25) is plotted. Confidence intervals are at 95% significance level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.1: Persistency of the Effect

	(1)	(2)	(3)
Outcome variable ➔	Have confidence in national government	Approval of the Leader	Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-19.683***	-18.251*	-17.498**
	(4.340)	(10.260)	(7.159)
Exposure to Epidemic (18-25)*Age	0.464***	0.418*	0.391**
	(0.104)	(0.250)	(0.167)
The number of people affected $_{t-1}$	0.649	0.039	-3.693*
	(3.432)	(2.698)	(2.174)
Country fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes
Individual income	Yes	Yes	Yes
Demographic characteristics	Yes	Yes	Yes
Income decile fixed effects	Yes	Yes	Yes
Labor market controls	Yes	Yes	Yes
Country*Age trends	Yes	Yes	Yes
Cohort fixed effects	Yes	Yes	Yes
Observations	760099	719742	736679
R^2	0.145	0.133	0.146

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is a dummy variable indicating that the respondent has confidence in "honesty of elections". *Exposure to epidemic (18-25)* defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). *The number of people affected* refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.2: Robustness to Controlling for Other Economic and Political Shocks

Outcome ➔	(1) Have confidence in national government	(2) Have confidence in national government	(3) Approval of the leader	(4) Approval of the leader	(5) Have confidence in honesty of elections	(6) Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-3.589***	-3.417***	-3.926***	-3.944***	-4.373***	-4.219***
	(0.585)	(0.787)	(0.487)	(0.746)	(0.636)	(0.0849)
The number of people affected $_{t-1}$	0.847	0.876	0.872	0.698	-3.308*	-3.354*
	(3.183)	(3.019)	(2.419)	(2.218)	(1.851)	(1.701)
Government strength (18-25)	--	-0.001	--	-0.012*	--	0.006
		(0.005)		(0.007)		(0.005)
Socioeconomic conditions (18-25)	--	-0.018***	--	-0.007	--	-0.018***
		(0.006)		(0.007)		(0.006)
Investment profile (18-25)	--	0.007	--	0.010*	--	0.002
		(0.006)		(0.006)		(0.006)
Internal conflict (18-25)	--	-0.007	--	-0.013**	--	-0.002
		(0.005)		(0.006)		(0.005)
External conflict (18-25)	--	0.002	--	-0.001	--	0.006
		(0.005)		(0.006)		(0.004)
Corruption (18-25)	--	-0.009	--	-0.010	--	-0.005
		(0.010)		(0.010)		(0.009)
Military in politics (18-25)	--	0.021**	--	0.019*	--	0.010
		(0.009)		(0.011)		(0.009)
Religious tensions (18-25)	--	-0.003	--	-0.005	--	-0.003
		(0.011)		(0.014)		(0.010)
Law and order (18-25)	--	0.030**	--	0.045**	--	0.041***
		(0.015)		(0.017)		(0.014)
Ethnic tensions (18-25)	--	0.011	--	0.013	--	0.005
		(0.008)		(0.010)		(0.007)
Democratic accountability (18-25)	--	-0.005	--	-0.009	--	-0.016**
		(0.007)		(0.010)		(0.006)
Bureaucracy quality (18-25)	--	-0.017	--	-0.024	--	-0.022
		(0.016)		(0.021)		(0.014)
Observations	422523	422523	408564	408564	412051	412051
R^2	0.136	0.137	0.139	0.140	0.137	0.137

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1984-2017, and ICRG 1984-2017.

Appendix Table B.3: Robustness to Controlling for Other Economic and Political Shocks

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome ➔	Have confidence in national government	Have confidence in national government	Approval of the leader	Approval of the leader	Have confidence in honesty of elections	Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-1.879***	-1.743***	-2.274***	-2.204***	-2.519***	-2.185***
	(0.502)	(0.632)	(0.515)	(0.576)	(0.348)	(0.544)
The number of people affected $_{t-1}$	3.118**	3.077**	1.634	1.478	-1.900**	-1.825**
	(1.374)	(1.381)	(1.540)	(1.505)	(0.800)	(0.811)
Assassinations (18-25)	--	0.006	--	0.008*	--	0.002
		(0.005)		(0.004)		(0.005)
General Strikes (18-25)	--	0.010	--	0.012	--	0.005
		(0.007)		(0.009)		(0.007)
Terror./Guerrilla Warfare (18-25)	--	-0.023*	--	-0.015	--	-0.024**
		(0.012)		(0.020)		(0.011)
Purges (18-25)	--	0.021	--	0.035*	--	0.019
		(0.015)		(0.018)		(0.015)
Riots (18-25)	--	-0.003	--	-0.000	--	-0.001
		(0.004)		(0.006)		(0.003)
Revolutions (18-25)	--	0.014	--	-0.006	--	0.019*
		(0.013)		(0.014)		(0.011)
Anti-gov. Demons. (18-25)	--	-0.002	--	-0.001	--	-0.001
		(0.002)		(0.002)		(0.002)
GDP Growth (18-25)	--	0.001	--	0.002	--	0.001
		(0.002)		(0.002)		(0.001)
GDP Per Capita (18-25)	--	-0.000	--	0.000*	--	-0.000
		(0.000)		(0.000)		(0.000)
Inflation (18-25)	--	0.000	--	0.000	--	0.000
		(0.000)		(0.000)		(0.000)
Polity (18-25)	--	-0.001	--	-0.001	--	0.001
		(0.002)		(0.002)		(0.002)
Observations	429204	429204	398284	398284	415441	415441
R^2	0.134	0.134	0.123	0.123	0.159	0.159

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1970-2017, and CNTS 1970-2017.

Appendix Table B.4: Robustness to Controlling for Other Economic and Political Shocks (Ages 10-17)

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome ➔	Have confidence in national government	Have confidence in national government	Approval of the leader	Approval of the leader	Have confidence in honesty of elections	Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-3.478***	-2.205*	-5.000***	-3.627***	-4.496***	-3.839***
	(1.182)	(1.153)	(0.813)	(1.040)	(1.132)	(1.002)
The number of people affected $_{t-1}$	0.795	1.060	0.426	0.315	-3.149*	-3.017**
	(3.111)	(2.672)	(2.351)	(1.957)	(1.667)	(1.258)
Government strength (10-17)	--	0.002	--	-0.017**	--	0.010
		(0.007)		(0.008)		-0.007
Socioeconomic conditions (10-17)	--	-0.010	--	0.006	--	-0.011
		(0.009)		(0.012)		-0.008
Investment profile (10-17)	--	-0.005	--	-0.002	--	-0.012
		(0.009)		(0.012)		-0.008
Internal conflict (10-17)	--	-0.003	--	-0.003	--	-0.011*
		(0.007)		(0.007)		-0.006
External conflict (10-17)	--	-0.008	--	-0.019***	--	-0.002
		(0.006)		(0.007)		-0.006
Corruption (10-17)	--	-0.009	--	-0.015	--	-0.015
		(0.015)		(0.015)		-0.015
Military in politics (10-17)	--	0.035*	--	0.034*	--	0.016
		(0.014)		(0.017)		-0.012
Religious tensions (10-17)	--	-0.036**	--	-0.051**	--	-0.034**
		(0.017)		(0.020)		-0.015
Law and order (10-17)	--	0.037**	--	0.059***	--	0.049***
		(0.019)		(0.022)		-0.016
Ethnic tensions (10-17)	--	0.015	--	0.033**	--	0.012
		(0.011)		(0.016)		-0.012
Democratic accountability (10-17)	--	0.001	--	-0.007	--	0.004
		(0.013)		(0.016)		-0.012
Bureaucracy quality (10-17)	--	-0.036*	--	-0.048**	--	-0.03
		(0.019)		(0.024)		-0.019
Observations	274953	274953	257901	257901	268600	268600
R^2	0.135	0.137	0.113	0.116	0.135	0.137

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1984-2017, and ICRG 1984-2017.

Appendix Table B.5: Robustness to Controlling for Other Economic and Political Shocks (Ages 10-17)

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome ➔	Have confidence in national government	Have confidence in national government	Approval of the leader	Approval of the leader	Have confidence in honesty of elections	Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-1.622***	-1.639***	-2.465***	-2.811***	-2.657***	-2.748***
	(0.349)	(0.537)	(0.419)	(0.596)	(0.277)	(0.430)
The number of people affected $_{t-1}$	3.236**	3.230***	1.501	1.378	-2.348***	-2.277***
	(1.254)	(1.197)	(1.279)	(1.205)	(0.647)	(0.645)
Assassinations (10-17)	--	0.006	--	0.016	--	0.012**
		(0.010)		(0.013)		(0.005)
General Strikes (10-17)	--	0.028**	--	0.047***	--	0.022**
		(0.013)		(0.012)		(0.010)
Terror./Guerrilla Warfare (10-17)	--	-0.042*	--	-0.061**	--	-0.004
		(0.025)		(0.027)		(0.022)
Purges (10-17)	--	0.012	--	0.010	--	0.02
		(0.022)		(0.021)		(0.019)
Riots (10-17)	--	-0.001	--	-0.014	--	-0.005
		(0.006)		(0.008)		(0.005)
Revolutions (10-17)	--	-0.054***	--	-0.039*	--	-0.037**
		(0.019)		(0.022)		(0.015)
Anti-gov. Demons. (10-17)	--	-0.005	--	0.003	--	0.001
		(0.007)		(0.005)		(0.005)
GDP Growth (10-17)	--	0.003	--	0.004	--	0.004*
		(0.002)		(0.003)		(0.002)
GDP Per Capita (10-17)	--	-0.000	--	0.000	--	-0.000
		(0.000)		(0.000)		(0.000)
Inflation (10-17)	--	0.000	--	0.000	--	0.000
		(0.000)		(0.000)		(0.000)
Polity (10-17)	--	-0.001	--	-0.004	--	-0.003
		(0.002)		(0.003)		(0.002)
Observations	315587	315587	293751	293751	306094	306094
R^2	0.126	0.127	0.116	0.117	0.158	0.159

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1970-2017, and CNTS 1970-2017.

Appendix Table B.6: Robustness to Controlling for Other Economic and Political Shocks and Country*Year Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome ➔	Have confidence in national government	Have confidence in national government	Approval of the leader	Approval of the leader	Have confidence in honesty of elections	Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-0.613**	-0.577**	-0.502**	-0.529**	-1.269***	-1.293***
	(0.253)	(0.286)	(0.197)	(0.259)	(0.191)	(0.192)
Government strength (18-25)	--	0.002	--	0.006***	--	0.002
		(0.002)		(0.002)		(0.002)
Socioeconomic conditions (18-25)	--	-0.002	--	-0.001	--	-0.003
		(0.002)		(0.002)		(0.002)
Investment profile (18-25)	--	0.002	--	0.002	--	0.001
		(0.002)		(0.002)		(0.002)
Internal conflict (18-25)	--	-0.002	--	-0.001	--	0.003
		(0.002)		(0.002)		(0.002)
External conflict (18-25)	--	0.001	--	0.002	--	0.002
		(0.002)		(0.002)		(0.002)
Corruption (18-25)	--	-0.005*	--	-0.003	--	-0.003
		(0.003)		(0.003)		(0.003)
Military in politics (18-25)	--	-0.002	--	-0.000	--	0.002
		(0.003)		(0.003)		(0.003)
Religious tensions (18-25)	--	0.002	--	0.007**	--	-0.003
		(0.003)		(0.003)		(0.004)
Law and order (18-25)	--	0.003	--	-0.004	--	0.006
		(0.004)		(0.004)		(0.004)
Ethnic tensions (18-25)	--	0.002	--	0.000	--	-0.002
		(0.003)		(0.002)		(0.003)
Democratic accountability (18-25)	--	-0.002	--	0.001	--	-0.009***
		(0.002)		(0.003)		(0.003)
Bureaucracy quality (18-25)	--	0.009	--	0.011*	--	0.009*
		(0.006)		(0.006)		(0.005)
Observations	422523	422523	408564	408564	412051	412051
R^2	0.174	0.174	0.166	0.166	0.170	0.170

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 5 of Table 2 country*year fixed effects. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1984-2017, and ICRG 1984-2017.

Appendix Table B.7: Robustness to Controlling for Other Economic and Political Shocks and Country*Year Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome ➔	Have confidence in national government	Have confidence in national government	Approval of the leader	Approval of the leader	Have confidence in honesty of elections	Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-0.630***	-0.607***	-0.765***	-0.623***	-1.346***	-1.198***
	(0.184)	(0.217)	(0.158)	(0.200)	(0.159)	(0.205)
Assassinations (18-25)	--	-0.001	--	0.000	--	-0.004
		(0.003)		(0.002)		(0.003)
General Strikes (18-25)	--	0.002	--	-0.000	--	-0.003
		(0.004)		(0.005)		(0.004)
Terror./Guerrilla Warfare (18-25)	--	-0.002	--	-0.006	--	-0.015***
		(0.006)		(0.004)		(0.005)
Purges (18-25)	--	0.025*	--	0.025	--	0.007
		(0.013)		(0.018)		(0.016)
Riots (18-25)	--	-0.003	--	0.000	--	-0.001
		(0.002)		(0.002)		(0.002)
Revolutions (18-25)	--	0.016**	--	0.009	--	0.021***
		(0.007)		(0.007)		(0.007)
Anti-gov. Demons. (18-25)	--	0.001	--	-0.001	--	0.001
		(0.001)		(0.001)		(0.001)
GDP Growth (18-25)	--	0.000	--	0.001**	--	0.000
		(0.001)		(0.001)		(0.001)
GDP Per Capita (18-25)	--	-0.000	--	0.000**	--	0.000
		(0.000)		(0.000)		(0.000)
Inflation (18-25)	--	0.000	--	0.000	--	0.000
		(0.000)		(0.000)		(0.000)
Polity (18-25)	--	-0.001	--	0.000	--	0.001
		(0.001)		(0.001)		(0.001)
Observations	429204	429204	398284	398284	415441	415441
R^2	0.134	0.170	0.171	0.171	0.192	0.192

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 5 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1970-2017, and CNTS 1970-2017.

Appendix Table B.8: Robustness to Omitted Variables Bias

	(1)	(2)	(3)
Outcome variable ➔	Have confidence in national government	Approval of the Leader	Have confidence in honesty of elections
Panel A: Estimation model: Columns 2, 4 and 6 of Appendix Table B.2, which controls for various past economic and political shocks			
Exposure to Epidemic (18-25)	-3.417***	-3.944***	-4.219***
	(0.787)	(0.746)	(0.849)
Bounds on the treatment effect (δ=1, Rmax=1.3*R)	(-3.417, -3.844)	(-3.944, -4.120)	(-4.219, -4.635)
Treatment effect excludes 0	Yes	Yes	Yes
Delta (Rmax=1.3*R)	11.60	24.24	19.02
Panel B: Estimation model: Columns 2, 4 and 6 of Appendix Table B.3, which controls for various past economic and political shocks			
Exposure to Epidemic (18-25)	-1.743***	-2.204***	-2.185***
	(0.632)	(0.576)	(0.544)
Bounds on the treatment effect (δ=1, Rmax=1.3*R)	(-1.743, -1.943)	(-2.204, -2.317)	(-2.185, -2.556)
Treatment effect excludes 0	Yes	Yes	Yes
Delta (Rmax=1.3*R)	12.72	21.34	12.34

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Bounds on the Exposure to Epidemic (18-25) effect are calculated using Stata code psacalc, which calculates estimates of treatment effects and relative degree of selection in linear models as proposed in Oster (2019). Delta, δ, calculates an estimate of the proportional degree of selection given a maximum value of the R-squared. Rmax specifies the maximum R-squared which would result if all unobservables were included in the regression. We define Rmax upper bound as 1.3 times the R-squared from the main specification that controls for all observables. Oster's delta indicates the degree of selection on unobservables relative to observables that would be needed to fully explain our results by omitted variable bias. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.9: Placebo Outcomes

Outcome ➔	(1) Have confidence in the military	(2) Have confidence in banks	(3) Have confidence in media	(4) Have relatives or friends to count on	(5) Have helped to a stranger
Exposure to epidemic (18-25)	-0.542	0.147	-0.652	0.290	0.021
	(0.442)	(0.193)	(0.610)	(0.851)	(0.281)
The number of people affected $_{t-1}$	2.210	0.118	-10.208**	-1.134**	-1.390
	(3.284)	(2.038)	(4.817)	(0.456)	(1.796)
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
Individual income	Yes	Yes	Yes	Yes	Yes
Demographic characteristics	Yes	Yes	Yes	Yes	Yes
Income decile fixed effects	Yes	Yes	Yes	Yes	Yes
Labor market controls	Yes	Yes	Yes	Yes	Yes
Country*Age trends	Yes	Yes	Yes	Yes	Yes
Cohort fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	730156	809972	190167	902066	889981
R^2	0.141	0.136	0.104	0.122	0.074

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is a dummy variable indicating that the respondent has confidence in "military"; "banks and financial institutions"; "media freedom". The specification is Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.10: The Impact of Exposure to Epidemic (Ages 18-25) on the Average of All Three Outcome Variables

Outcome ➔	(1) Average of all three outcome variables	(2) Average of all three outcome variables	(3) Average of all three outcome variables	(4) Average of all three outcome variables	(5) Average of all three outcome variables
Exposure to Epidemic (18-25)	-1.365**	-1.248**	-1.855***	-1.867***	-0.705***
	(0.565)	(0.539)	(0.264)	(0.264)	(0.155)
The number of people affected $_{t-1}$	-0.854	-0.779	-0.801	-0.803	--
	(3.086)	(3.065)	(3.056)	(3.051)	
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
Individual income	No	Yes	Yes	Yes	Yes
Demographic characteristics	No	Yes	Yes	Yes	Yes
Income decile fixed effects	No	Yes	Yes	Yes	Yes
Labor market controls	No	Yes	Yes	Yes	Yes
Country*Age trends	No	No	Yes	Yes	Yes
Cohort fixed effects	No	No	No	Yes	Yes
Country*Year fixed effects	No	No	No	No	Yes
Observations	636156	636156	636156	636156	636156
R^2	0.169	0.178	0.180	0.180	0.230

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is a n average of all three main dependent variables: "honesty of elections"; "confidence in national government"; "approval of the leader". *Exposure to epidemic (18-25)* defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). *The number of people affected* refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.11: The Impact of Exposure to Epidemic (Ages 18-25) on the 1st Principal Component of Responses

Outcome ➔	(1) the 1st Principal Component of Responses	(2) the 1st Principal Component of Responses	(3) the 1st Principal Component of Responses	(4) the 1st Principal Component of Responses	(5) the 1st Principal Component of Responses
Exposure to Epidemic (18-25)	-4.672**	-4.269**	-6.361***	-6.400***	-2.378***
	(1.932)	(1.841)	(0.914)	(0.913)	(0.531)
The number of people affected $_{t-1}$	-2.619	-2.353	-2.424	-2.431	--
	(10.804)	(10.730)	(10.694)	(10.677)	
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
Individual income	No	Yes	Yes	Yes	Yes
Demographic characteristics	No	Yes	Yes	Yes	Yes
Income decile fixed effects	No	Yes	Yes	Yes	Yes
Labor market controls	No	Yes	Yes	Yes	Yes
Country*Age trends	No	No	Yes	Yes	Yes
Cohort fixed effects	No	No	No	Yes	Yes
Country*Year fixed effects	No	No	No	No	Yes
Observations	636156	636156	636156	636156	636156
R^2	0.169	0.178	0.180	0.180	0.230

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Outcome is the 1st Principal Component of responses to the main dependent variables: "honesty of elections"; "confidence in national government"; "approval of the leader". *Exposure to epidemic (18-25)* defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). *The number of people affected* refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.12: Robustness to Using Comparable Samples (i.e. sample of individuals who have responded to all 7 questions)

Outcome ➔	(1) Have confidence in national government	(2) Approval of the Leader	(3) Have confidence in honesty of elections	(4) Have confidence in the military	(5) Have confidence in the banks	(6) Have relatives or friends to count on	(7) Have helped to a stranger
The number of people affected (18-25)	-0.570**	-0.420***	-1.282***	-0.374	0.598**	0.454	-0.095
	(0.242)	(0.112)	(0.224)	(0.291)	(0.249)	(0.577)	(0.239)
Observations	558299	558299	558299	558299	558299	558299	558299
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual income	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income decile fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labor market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country*Age trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country*Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.13: Robustness to Alternative Epidemic Exposure Measure - Exposure to SARS, H1N1, MERS, Ebola, or Zika

	(1)	(2)	(3)	(4)	(5)
	Coefficient on Exposure to Epidemic (18-25) (standard error)	Coefficient on Exposure to Epidemic (18-25) (standard error)	Coefficient on Exposure to Epidemic (18-25) (standard error)	Coefficient on Exposure to Epidemic (18-25) (standard error)	Coefficient on Exposure to Epidemic (18-25) (standard error)
Outcome ➔	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections	Average of all three outcome variables	the 1st Principal Component of Responses
Sample: Democratic countries	-0.022	-0.044^{*A}	-0.041^{**A}	-0.038**	-0.132^{**A}
	(0.020)	(0.024)	(0.017)	(0.019)	(0.066)
Observations	106530	102838	103551	94695	94695
R^2	0.137	0.108	0.135	0.171	0.171
Sample: Non-democratic countries	0.029	0.029*	0.022	0.030*	0.104*
	(0.021)	(0.016)	(0.022)	(0.016)	(0.056)
Observations	47796	44273	45566	37849	37849
R^2	0.187	0.183	0.192	0.254	0.253

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Exposure to epidemic (18-25) takes a value of 1 if the respondent experienced SARS, H1N1, MERS, Ebola, or Zika when the respondent was in their impressionable years (18-25 years). Specification is Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. ^{A} indicates statistically significant difference in each pair of means at p<.05. Source: Gallup World Polls, 2006-2018 and Ma et al., 2020.

Appendix Table B.14: Contemporaneous Effects of Pandemic on Political Trust

	(1)	(2)	(3)
Outcome ➔	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections
Lagged pandemic	-0.028*	-0.037**	-0.015
	(0.016)	(0.018)	(0.018)
Country fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes
Individual income	Yes	Yes	Yes
Demographic characteristics	Yes	Yes	Yes
Income decile fixed effects	Yes	Yes	Yes
Labor market controls	Yes	Yes	Yes
Country*Age trends	Yes	Yes	Yes
Cohort fixed effects	Yes	Yes	Yes
Country*Year fixed effects	Yes	Yes	Yes
Observations	987864	931469	950827
R^2	0.142	0.131	0.147

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Equation 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and Ma et al., 2020.

Appendix Table B.15: Impact of Communicable and Non-Communicable Diseases on the Political Trust

	(1)	(2)	(3)
Sample ➔	Full-sample	Democratic countries	Non-democratic counties
Outcome ➔	Have confidence in national government	Have confidence in national government	Have confidence in national government
Exposure to communicable dis. (18-25)	-0.368**	-0.426**	-0.054
	(0.152)	(0.213)	(0.209)
Exposure to non-communicable dis. (18-25)	0.175	0.132	0.037
	(0.303)	(0.407)	(0.373)
Observations	389882	267544	109651
R^2	0.157	0.125	0.182
Outcome ➔	Approval of the leader	Approval of the leader	Approval of the leader
Exposure to communicable dis. (18-25)	-0.111	-0.152	-0.043
	(0.179)	(0.263)	(0.252)
Exposure to non-communicable dis. (18-25)	0.123	0.125	0.184
	(0.336)	(0.545)	(0.369)
Observations	370749	256154	100751
R^2	0.140	0.099	0.177
Outcome ➔	Have confidence in honesty of elections	Have confidence in honesty of elections	Have confidence in honesty of elections
Exposure to communicable dis. (18-25)	-0.515***	-0.533**	-0.032
	(0.176)	(0.243)	(0.207)
Exposure to non-communicable dis. (18-25)	0.553*	0.525	0.191
	(0.305)	(0.379)	(0.373)
Observations	377838	259328	106387
R^2	0.147	0.130	0.194

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. *Exposure to communicable diseases (18-25)* takes a value of 1 if the respondent experienced communicable diseases (diarrhea, lower respiratory, other common infectious diseases, malaria & neglected tropical diseases, HIV/AIDS, tuberculosis, other communicable diseases). *Exposure to non-communicable diseases* (18-25) takes a value of 1 if the respondent experienced non-communicable diseases (cardiovascular diseases, cancers, respiratory disease, diabetes, blood and endocrine diseases, mental and substance use disorders, liver diseases, digestive diseases, musculoskeletal disorders, neurological disorders, other non-communicable diseases). Both measures are population-adjusted and expressed in terms of *Disability Adjusted Life Years Lost (DALYs),* which is a standardized metric allowing for direct comparison and summing of burdens of different diseases. Conceptually, one DALY is the equivalent of one year in good health lost due to premature mortality or disability. Specification is Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. [A] indicates statistically significant difference in each pair of means at $p<.05$. Source: Gallup World Polls, 2006-2018 and Institute for Health Metrics and Evaluation, 1990-2016

Appendix Table B.16: The Impact of Exposure to Epidemic (Ages 18-25) on Political Trust by Exposure Thresholds

	(1)	(2)	(3)
	Coefficient on Dummy Variable (standard error)	Coefficient on Dummy Variable (standard error)	Coefficient on Dummy Variable (standard error)
Outcome ➔	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections
Baseline - Exposure to Epidemic (18-25)	-1.592***	-1.957***	-2.258***
	(0.262)	(0.330)	(0.339)
Top 0.5 percent (*exposure to epidemic, 18-25*)	-0.144***	-0.131***	-0.147***
	(0.041)	(0.038)	(0.054)
Top 1 percent (*exposure to epidemic, 18-25*)	-0.097**	-0.084**	-0.112***
	(0.038)	(0.040)	(0.034)
Top 2 percent (*exposure to epidemic, 18-25*)	-0.054**	-0.051**	-0.061***
	(0.024)	(0.023)	(0.023)
Top 5 percent (*exposure to epidemic, 18-25*)	0.001	-0.007	-0.014
	(0.016)	(0.021)	(0.014)

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. Results reported in each panel come from separate models. Threshold dummies in each row are defined based on the continuous treatment variable (Exposure to Epidemic, 18-25). See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Table B.17: The Role of Democracy at the Time of the Epidemic

Outcome ➔	(1) Have confidence in national government	(2) Approval of the leader	(3) Have confidence in honesty of elections
Exposure to epidemic (18-25) * Democracy (18-25)	-4.199**	-3.624	-3.379**
	(1.685)	(3.143)	(1.592)
Exposure to epidemic (18-25)	-1.504***	-2.112***	-2.110***
	(0.420)	(0.419)	(0.406)
Democracy (18-25)	0.007	-0.003	0.015
	(0.010)	(0.011)	(0.010)
Observations	523072	489155	504686
*R*2	0.140	0.127	0.154

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. The specification is Equation 3. See Tables 2 -3-4 for variable definitions. Results reported in each column come from separate models. Results use the Gallup sampling weights and robust standard errors are clustered at the country level.
Source: Gallup World Polls, 2006-2018, EM-DAT International Disaster Database, 1970-2017, and the Polity5 dataset.

Appendix Table B.18: Impact of Exposure to Epidemics (Ages 18-25) on Political Trust – Intensive and Extensive Margins

	(1)	(2)	(3)	(4)	(5)	(6)
	Intensive margin	Intensive margin	Intensive margin	Extensive margin	Extensive margin	Extensive margin
Outcome ➔	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections
Exposure to Epidemic (18-25)	-2.779***	-3.241***	-3.329***	-0.001	-0.009***	0.001
	(0.519)	(0.735)	(0.505)	(0.003)	(0.003)	(0.003)
The number of people affected $_{t-1}$	-0.004	-0.450	-3.463	0.773	0.138	-3.574
	(4.959)	(4.043)	(2.779)	(3.457)	(2.718)	(2.182)
Observations	351733	340226	342209	760099	719742	736679
R^2	0.138	0.119	0.133	0.145	0.133	0.146

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. For intensive margin, the sample is restricted to respondents with any epidemic experience in their impressionable years, and models are re-estimated as in Column 4 of Table 2. For extensive margin, *Exposure to Epidemic (18-25)* is re-defined as a dummy taking the value of 1 when the continuous version is positive and zero otherwise; and models are re-estimated over the full sample as in Column 4 of Table 2. See notes to Table 2. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.19: Impact of "Made-up" Exposure on Immigrants' Political Trust

	(1)	(2)	(3)	(4)	(5)
Outcome ➔	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections	Average of all three outcome variables	the 1st Principal Component of Responses
Exposure to epidemic (18-25)	-0.919	-5.915	-0.205	-1.475	-5.229
	(2.100)	(3.601)	(2.639)	(1.688)	(5.994)
The number of people affected $_{t-1}$	-10.238	-13.867	-13.788	-6.929	-24.679
	(15.302)	(15.535)	(16.258)	(11.686)	(41.658)
Observations	4639	4306	4118	3611	3611
R^2	0.229	0.229	0.282	0.322	0.321

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. Exposure to epidemic (18-25) defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). The number of people affected refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.20: Impact of "Randomly-Assigned" Exposure on Political Trust

	(1)	(2)	(3)	(4)	(5)
Outcome ➔	Have confidence in national government	Approval of the leader	Have confidence in honesty of elections	Average of all three outcome variables	the 1st Principal Component of Responses
Exposure to epidemic (18-25)	0.210	-0.250	-0.238	-0.040	-0.109
	(0.390)	(0.488)	(0.439)	(0.389)	(1.348)
The number of people affected $_{t-1}$	0.734	0.320	-3.609*	-0.625	-1.802
	(3.450)	(2.660)	(2.157)	(2.996)	(10.483)
Observations	668022	632661	647417	559274	559274
R^2	0.146	0.133	0.145	0.180	0.180

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Specification is Column 4 of Table 2. Exposure to epidemic (18-25) defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). The number of people affected refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Individual income includes all wages and salaries in the household, remittances from family members living elsewhere, and all other sources before taxes. Gallup converts local income to International Dollars using the World Bank's individual consumption PPP conversion factor, which makes it comparable across all countries. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.21: Multiple Hypothesis Testing

Outcome ➔	(1) Have confidence in national government	(2) Approval of the leader	(3) Have confidence in honesty of elections	
Exposure to epidemic (18-25)	-1.592***	-1.957***	-2.258***	
	(0.262)	(0.330)	(0.339)	
The number of people affected $_{t-1}$	0.740	0.120	-3.625*	
	(3.452)	(2.712)	(2.182)	
Country fixed effects	Yes	Yes	Yes	
Year fixed effects	Yes	Yes	Yes	
Age group fixed effects	Yes	Yes	Yes	
Individual income	Yes	Yes	Yes	
Demographic characteristics	Yes	Yes	Yes	
Income decile fixed effects	Yes	Yes	Yes	
Labor market controls	Yes	Yes	Yes	
Country*Age trends	Yes	Yes	Yes	
Cohort fixed effects	Yes	Yes	Yes	
Observations	760099	719742	736679	
R^2	0.145	0.133	0.146	
Mean of outcome	0.50	0.51	0.51	
Randomization-c p-values	0.020**	0.007***	0.007***	
Randomization-t p-values	0.006***	0.007***	0.007***	
Randomization-c p-values (joint test of treatment significance)				0.008***
Randomization-t p-values (joint test of treatment significance)				N/A
Randomization-c p-values (Westfall-Young multiple testing of treatment significance)				0.013**
Randomization-t p-values (Westfall-Young multiple testing of treatment significance)				0.003***

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Randomization-t technique does not produce p-values for the joint test of treatment significance. Results are derived from 100 iterations. Specification is Column 4 of Tables 2 -3-4. Results use the Gallup sampling weights and robust standard errors are clustered at the country level.
Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017

Appendix Table B.22: Robustness to Excluding Potentially Bad Controls

Outcome ➔	(1) Have confidence in national government	(2) Have confidence in national government	(3) Have confidence in national government	(4) Have confidence in national government
Exposure to epidemic (18-25)	-1.073*	-1.733***	-1.728***	-0.506**
	(0.594)	(0.262)	(0.258)	(0.223)
The number of people affected $_{t-1}$	0.548	0.576	0.581	--
	(3.478)	(3.453)	(3.450)	
Observations	760099	760099	760099	760099
Outcome ➔	Approval of the Leader	Approval of the Leader	Approval of the Leader	Approval of the Leader
Exposure to epidemic (18-25)	-1.521***	-1.933***	-1.991***	-0.580***
	(0.380)	(0.313)	(0.316)	(0.123)
The number of people affected $_{t-1}$	0.201	0.177	0.151	--
	(2.696)	(2.675)	(2.679)	
Observations	719742	719742	719742	719742
Outcome ➔	Have confidence in honesty of elections	Have confidence in honesty of elections	Have confidence in honesty of elections	Have confidence in honesty of elections
Exposure to epidemic (18-25)	-1.643**	-2.322***	-2.367***	-1.117***
	(0.794)	(0.362)	(0.355)	(0.255)
The number of people affected $_{t-1}$	-3.734*	-3.775*	-3.754*	--
	(2.203)	(2.211)	(2.198)	
Observations	736679	736679	736679	736679
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes
Country*Age trends	No	Yes	Yes	Yes
Cohort fixed effects	No	No	Yes	Yes
Country*Year fixed effects	No	No	No	Yes

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.23: Robustness to Alternative Treatment (i.e., Population *Unadjusted* Number of Affected People)

Outcome ➔	(1) Have confidence in the government	(2) Approval of the Leader	(3) Have confidence in honesty of elections	(4) Average of all three outcome variables	(5) the 1st Principal Component of Responses
Exposure to epidemic (18-25)	-0.081***	-0.100**	-0.090***	-0.091***	-0.313***
	(0.029)	(0.043)	(0.014)	(0.030)	(0.105)
The number of people affected $_{t-1}$	0.139**	0.223***	0.035	0.136***	0.479***
	(0.060)	(0.068)	(0.039)	(0.048)	(0.170)
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
Individual income	Yes	Yes	Yes	Yes	Yes
Demographic characteristics	Yes	Yes	Yes	Yes	Yes
Income decile fixed effects	Yes	Yes	Yes	Yes	Yes
Labor market controls	Yes	Yes	Yes	Yes	Yes
Country*Age trends	Yes	Yes	Yes	Yes	Yes
Cohort fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	770836	731758	746610	644795	644795
R^2	0.149	0.135	0.146	0.184	0.184

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Results use the Gallup sampling weights and robust standard errors are clustered at the country level. Source: Gallup World Polls, 2006-2018 and EM-DAT International Disaster Database, 1970-2017.

Appendix Table B.24: Evidence on Political Behaviour

	(1)	(2)	(3)	(4)
Outcome is ➔	WWS - Attending lawful/peaceful demonstrations	WWS – Never voted in national elections	ESS - Taken part in a lawful public demonstration	ESS - Voted in recent national elections
Exposure to epidemic (18-25)	16.412*	5.488	53.041**	-134.497**
	(9.736)	(7.014)	(12.811)	(59.276)
The number of people affected t-1	-14.926	-0.005	10.109	-270.948**
	(19.588)	(0.011)	(127.553)	(116.562)
Observations	103681	32448	171889	128836
R^2	0.127	0.101	0.051	0.110

Outcome is ➔	WWS - Signed a petition	WWS - Joined in boycotts	WWS – Occupied buildings or factories	WWS - Joined unofficial strikes
Exposure to epidemic (18-25)	18.944**	19.322**	-2.481	-4.982
	(7.811)	(9.176)	(5.330)	(8.972)
The number of people affected t-1	-16.000	-1.362	-7.416	21.980
	(25.386)	(18.196)	(13.027)	(15.969)
Observations	103851	101088	39440	71851
R^2	0.226	0.198	0.081	0.132

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%.. Exposure to epidemic (18-25) defined as the average per capita number of people affected by an epidemic when the respondent was in their impressionable years (18-25 years). The number of people affected refers to people requiring immediate assistance during a period of emergency (that is, requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance). Demographic characteristics include: a male dummy, a dummy for each age group, dummy variables for marital status (single, married), educational attainment (tertiary education, secondary education), religion dummies (Christian, Muslim, and other religions), employment status (full-time employed, part-time employed, unemployed), a dummy variable for living in an urban area and presence of children in the household (any child under 15). Income decile fixed-effects are constructed by grouping individuals into deciles based on their income relative to other individuals within the same country and year. Results use the sampling weights and robust standard errors are clustered at the country-wave level. Source: World Values Survey (WVS), 1981-2014; European Social Survey (ESS), 2002-2018); and EM-DAT International Disaster Database, 1970-2017.

Appendix C: Case Studies on the Association of Government Strength with Policy Interventions in the Context of COVID-19

Appendix Figures C.1-C.3 show COVID-19 related developments in South Korea, France, and the United Kingdom. We choose these countries because they followed very different trajectories in terms of public attention, policy interventions, and the spread of the virus. South Korea, France, and the United Kingdom are broadly similar in terms of their GDP per capita, urbanization, and population age structure (median age in all three countries is roughly 41). But they differ in terms of government strength: the ICRG score is 8.25 for South Korea, 7.5 for France, and 6 for the United Kingdom.[69]

The figures show the number of confirmed COVID-19 cases and deaths, public attention to COVID-19 as measured by Google Trends, and the date of the first non-pharmaceutical intervention (school closure, workplace closure, public event cancellation, public transport closure, or restrictions on within-country movement in the own country). We also report the number of days between the date of the first confirmed case and the date of the first COVID-19 non-pharmaceutical intervention.

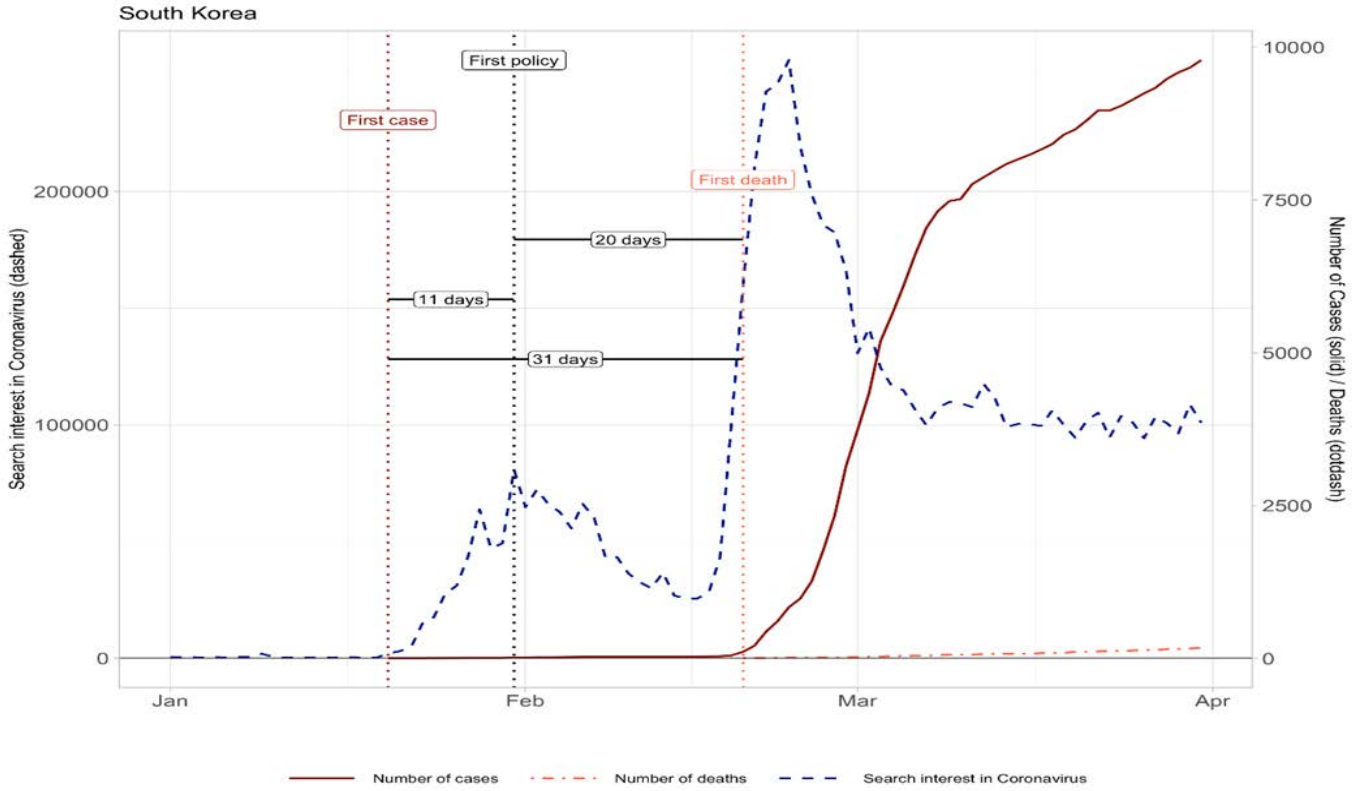
In South Korea, public attention rose rapidly after the first domestic case. The government responded within 11 days of the first case with domestic interventions aimed at curbing the epidemic. In France and the UK, in contrast, public attention remained low for several weeks after the first reported case. In France, domestic restrictions were imposed only after 36 days, while the UK government waited 45 days before imposing the first restrictions. These slow reactions were associated with rapid growth in confirmed cases and deaths in both countries. Simple comparisons among countries are complicated by the existence of other influences, such as past exposure to epidemics.[70] Still, these comparisons are suggestive of the idea that government strength is positively associated with the speed of response to the outbreak.

[69] The relatively low score for the UK may come as a surprise to readers but it is worth noting that: (i) it registered a significant fall since the Brexit Referendum (8.46 was the 2015 score); (ii) ICRG's government strength score include points for government unity, legislative strength and popular support. That the UK has had minority and coalition governments may therefore account for its ranking. Recent anecdotal evidence also reflects the low government strength score of the UK. For example, As the *Economist* wrote in June, 2020: "The painful conclusion is that Britain has the wrong sort of government for a pandemic—and, in Boris Johnson, the wrong sort of prime minister. Beating the coronavirus calls for attention to detail, consistency and implementation, but they are not his forte." See:
https://www.economist.com/leaders/2020/06/18/britain-has-the-wrong-government-for-the-covid-crisis

[70] Thus, it has been suggested that Asian countries responded quickly because of their past experience with Avian flu.

Appendix Figure C.1: COVID-19 Related Developments in South Korea

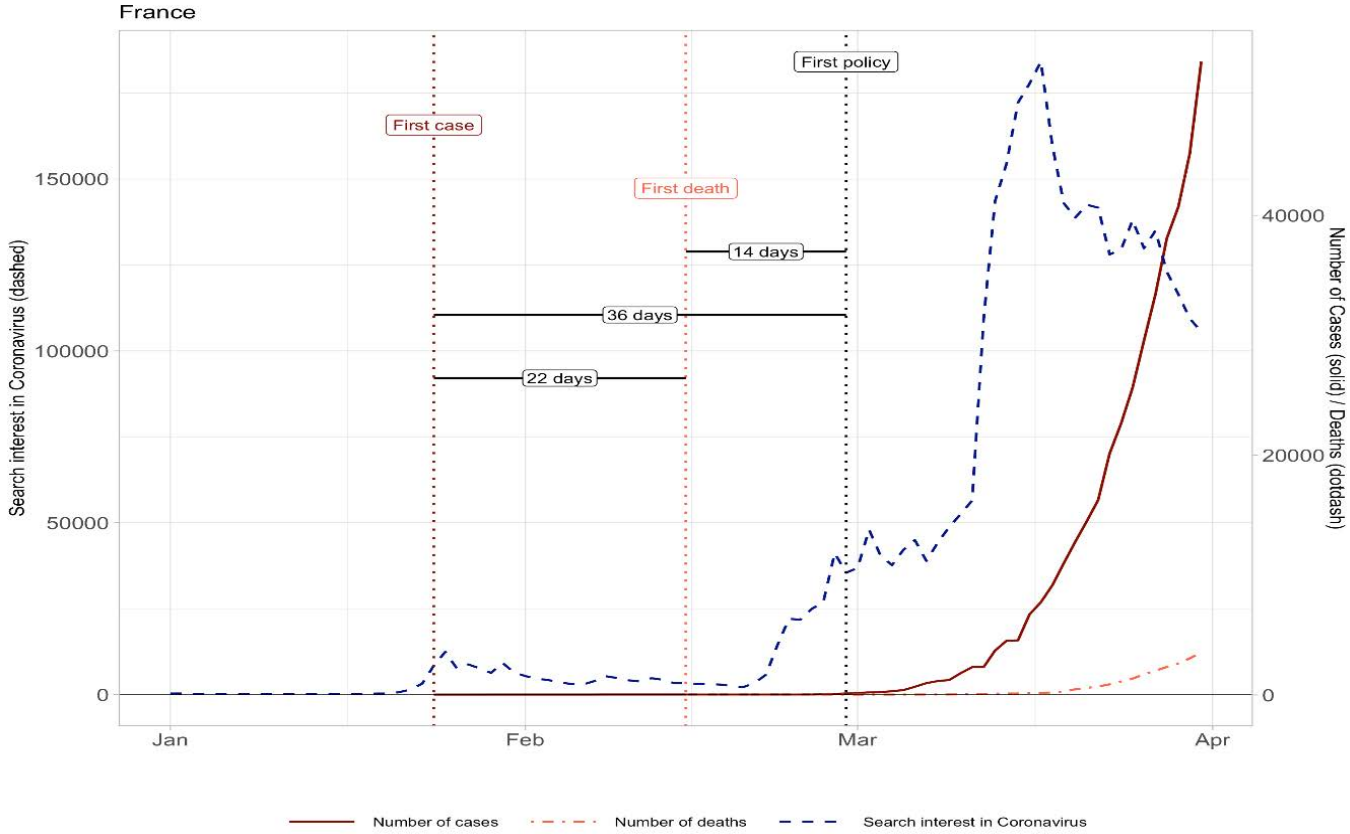
ICRG Government Strength score: 8.25



Note: This figure shows daily measures of public attention to COVID-19 measured as the share of Google searchers (left axis) and the number of COVID-19 cases and deaths (right axis), as well as the dates of the first case, first death, and first policy in South Korea. Source: Google Trends (1/1/2020-31/3/2010), JHCRC (1/1/2020-31/3/2010), and ICRG (2018).

Appendix Figure C.2: COVID-19 Related Developments in France

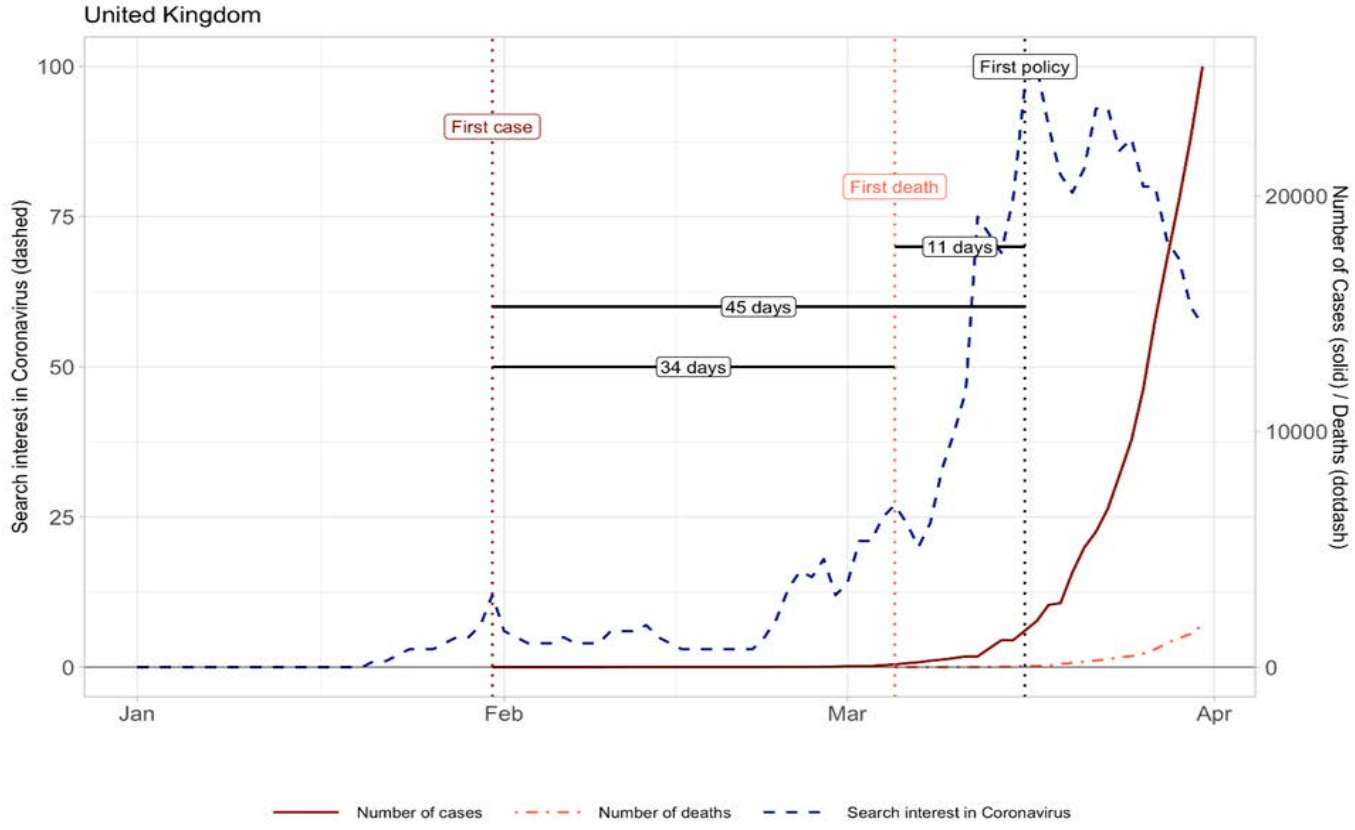
ICRG Government Strength score: 7.5



Note: This figure shows daily measures of public attention to COVID-19 measured as the share of Google searchers (left axis) and the number of COVID-19 cases and deaths (right axis), as well as the dates of the first case, first death, and first policy in France. Source: Google Trends (1/1/2020-31/3/2010), JHCRC (1/1/2020-31/3/2010), and ICRG (2018).

Appendix Figure C.3: COVID-19 Related Developments in the United Kingdom

ICRG Government Strength score: 6



Note: This figure shows daily measures of public attention to COVID-19 measured as the share of Google searchers (left axis) and the number of COVID-19 cases and deaths (right axis), as well as the dates of the first case, first death, and first policy in the United Kingdom. Source: Google Trends (1/1/2020-31/3/2010), JHCRC (1/1/2020-31/3/2010), and ICRG (2018).