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Political trust and government performance in the time of COVID-19

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ABSTRACT

Governments around the world have exhibited markedly different levels of effectiveness in handling the COVID-19 pandemic, and these variations have not been adequately explained by conventional correlates of good governance. This paper advances a co-production perspective, arguing that citizens' predisposition to support and comply with government policies has played a crucial role in shaping countries' pandemic performance. Analyzing a cross-country dataset that combines COVID-related cases and deaths with a new measure of political trust constructed from multiple international surveys, we show that the numbers of casualties from the pandemic are significantly lower in societies where citizens have greater trust in their governments. This relationship continues to hold even when we focus only on wealthy, democratic countries where the data quality is more reliable. Additional analyses suggest that higher political trust contributes to both greater compliance with mitigation measures by citizens and more decisive response by government. These findings underscore the importance of citizen—government collaboration for effective governance and the perils of declining political trust in advanced democracies.

1. Introduction

Governments around the world have exhibited markedly different levels of effectiveness in handling major collective challenges. As our experience with the COVID-19 pandemic has made clear, there are substantial variations in the speed, thoroughness, and decisiveness of states' response to this historic public health crisis, with profound implications for the lives and livelihood of hundreds of millions of people. As illustrated in Fig. 1, a puzzling fact about these variations is that they do not seem to align fully with many conventional predictors of public health preparedness, such as economic development, fiscal resources, or the quality of the public health infrastructure. Not all developed countries, for example, did better at containing the spread of the disease than countries in the developing world, and there is no clear evidence of whether democracies outperformed non-democracies, or vice versa (Engler et al., 2021; Neblo & Wallace, 2021; Stasavage, 2020). What explains the cross-national variations in governments' performance during the pandemic?

Conventional explanations for effective governance often put the state at the center stage. A rich body of social science theories has explored how a state's institutions, capacity, and leadership attributes influence its ability to make and implement good policies (Fukuyama, 2016; Holmberg et al., 2009; North & Weingast, 1989; World Bank, 1997). In this article, we develop and test a different perspective that emphasizes the importance of *collaboration between the state and the public*. We argue that in times of large-scale crises such as the COVID-19 pandemic, even the most powerful state often does not possess the full range of resources and capabilities necessary for an effective response. Instead, governments often have to work closely with the mass public in order to leverage the information, expertise, and manpower in society; citizens in these cases are not merely passive policy takers but active policy partners, who can help their government implement, monitor, and enforce key response measures (Ostrom, 1996; Whitaker, 1980). A successful response to COVID-19, in other words, has often not been a result of government actions alone, but rather an outcome co-produced by government and its citizens (Steen & Brandsen, 2020).

The central hypothesis that follows from this co-production perspective is that political trust, a psychological construct that captures citizens' affective disposition to political authority (Braithwaite & Levi, 1998; Hetherington, 2005; Zmerli & van der Meer, 2017), should be especially important in explaining the variation in pandemic performance across countries. Trust in political institutions is the key prerequisite for citizens to have collaborative engagement with the government. We hypothesize that political trust can contribute to

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effective pandemic responses in at least two ways. First, political trust can directly increase the effectiveness of mitigation policies by increasing public compliance and reducing the cost of enforcement and monitoring (Braithwaite & Levi, 1998; Levi & Stoker, 2000; Putnam, 2000; Tyler, 2006). Second, a high level of political trust can also have an indirect effect on government actions: When policy compliance is high, decision-makers are worried about being hamstrung by excessive opposition or resistance and can afford to be more decisive in crafting and implementing necessary policy responses (Ayres & Braithwaite, 1992; Hetherington, 2005).

To test these hypotheses, we construct a global measure of political trust by applying a new Bayesian latent variable method (Claassen, 2019) to 1534 nationally representative surveys collected from 134 countries and regions. We match our trust measure to country-level data on COVID-19 prevalence and mortality (Dong et al., 2020) and a range of additional covariates on countries' political, institutional, geographical, and socioeconomic characteristics. We estimate a series of models using both the standard linear regression and the Double-Selection Lasso (DS Lasso) method, which provides robust inference in the presence of a large number of covariates. The regression results suggest that political trust is consistently one of the strongest predictors of countries' performance during the pre-vaccine phase of the pandemic. All else equal, a one standard deviation increase in political trust is associated with a 44 percent decrease in infected cases and a 47 percent decrease in COVID-related deaths. For an average-sized country with a population of 55 million, this amounts to approximately 440,000 fewer cases and 10,000 fewer deaths.[1] This finding is highly robust to an extensive range of additional tests, including modifications of both the dependent and independent variables, different estimation strategies, and alternative sample choices. In particular, we show that our results continue to hold even when we narrow our sample to developed economies, where the data quality is relatively high, and to democratic regimes, where the pressure to falsify one's political attitude is relatively low.

In addition to showing a general association between higher political trust and better pandemic performance, we also conduct further analyses to probe the specific mechanisms that connect the two. Putting together data on individual-level behaviors during the pandemic (Fan et al., 2020) and data on governments' COVID-related policies (Hale et al., 2021), we find that a higher level of political trust contributes to both better policy compliance and more decisive policy responses: Citizens are more likely to adhere to governments' mask mandates in countries where the aggregate-level political trust is high, and governments in high-trust countries introduce mitigation policies (e.g., school closure, workplace closure, or gathering restrictions) more quickly than those in low-trust ones when faced with rising case and death numbers.

Researchers and policy practitioners have long been interested in understanding the sources of effective governance (e.g., Fukuyama, 2016; World Bank, 1992, 1997). A key empirical challenge in this endeavor, however, is that countries often have very different policy priorities and there are few policy targets that are applicable to all. The COVID-19 pandemic, by virtue of making public health a worldwide emergency, presents a unique opportunity to compare government performance across a large set of countries against a shared priority. Our results reveal that, surprisingly, many commonly used political and institutional indicators for government quality are actually not strongly predictive of desirable outcomes in this extraordinary crisis; instead, political trust stands out as the most decisive factor in explaining why some countries handled the early phase of the pandemic better than others. This finding suggests that governance is better conceptualized as a co-productive process between the government and citizens, rather than as a service delivered unilaterally from the former to the latter.

By highlighting the crucial role of political trust in inducing citizen-government collaboration, our study also contributes to a more specific body of research on the substantive consequences of political trust (Braithwaite & Levi, 1998; Hetherington, 2005; Rudolph & Evans, 2005). Studies in this literature have shown that individuals who hold a higher level of political trust tend to report stronger support for government policies (Hetherington & Husser, 2012), greater willingness to pay taxes (Levi, 1998), and better compliance with laws and regulations (Marien & Hooghe, 2011). Much of the existing research, however, draws evidence from self-reported in social surveys but has left open the question of whether and how individual attitudes may have real-world implications for governance outcomes. We take a step further by showing that a higher level of political trust not only induces greater compliance with government policies at the individual level, but also leads to better aggregate-level public health outcomes in a pandemic. These findings pose a challenge to the influential "critical citizen" thesis (Dalton, 2007; Norris, 1999; Welzel & Dalton, 2014), which views the

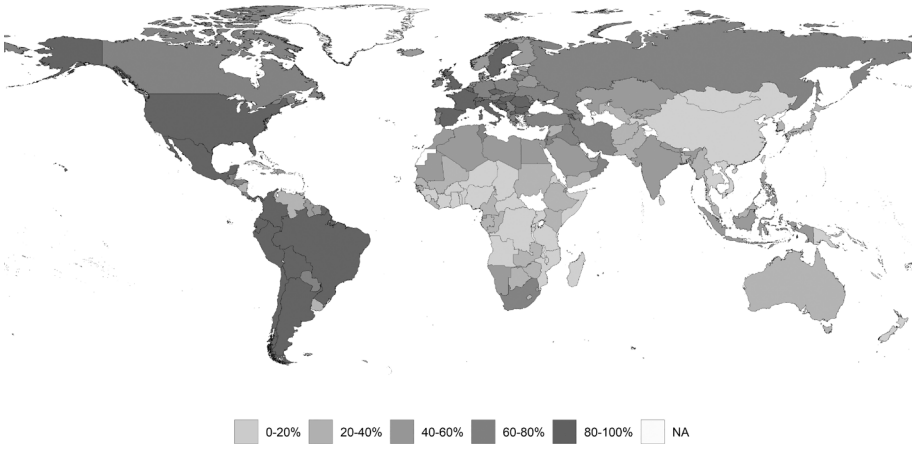

Fig. 1. COVID-19 Total Deaths per Million on January 1, 2021.
Notes: The figure presents the total number of COVID-related deaths per million (in quintiles) between the first death and January 1, 2021. Darker color represents a higher number of per capita deaths. The relatively low number of deaths in Africa might be a result of limited testing capabilities. Later in the paper, we conduct additional tests to account for this potential bias.

[1] The total number of confirmed cases and deaths was 83 million and 1.95 million, respectively, on January 1, 2021.

steady deterioration of political trust in advanced democracies over the last several decades as a largely unproblematic, or even positive, development.

2. Political trust and the co-production of government effectiveness during the pandemic

The social science scholarship has identified a multitude of factors that may contribute to effective governance, including institutional configurations (Acemoglu & Verdier, 2000; North & Weingast, 1989; Przeworski & Limongi, 1993), state capacity (Levi, 1988; Skocpol, 1979; Tilly, 1990), and leadership characteristics (J. Goldstein & Keohane, 1993; Horowitz & Stam, 2014; Jones & Olken, 2005). The primary attention in the literature has been given to the actions and attributes of the state. Although the political authority does often play a leading role in designing and implementing policies, the actual policy outcome will also likely to depend on how state actions are received and reacted upon by non-state actors (Dahl, 1961; Migdal, 1988; Pierre & Guy Peters, 2000; Torfing et al., 2012). For instance, although law enforcement is considered to be the responsibility of the police, civilians also play an important role in maintaining public safety by, among other things, participating in neighborhood watches and actively reporting suspicious activities (Putnam, 2000). Similarly, researchers have argued that in tax collection, the efficiency of revenue-collecting agencies will be enhanced if citizens voluntarily report their income and avoid fraud (Marien & Hooghe, 2011; Scholz & Lubell, 1998).

Building on this perspective, this paper advances a co-production perspective to explain government effectiveness. We argue that effective governance hinges not only on state actions but also on citizens' willingness to accept and support the state's initiatives. A key factor that underpins this mutual relationship is political trust, a psychological construct that captures citizens' affective disposition toward the political authority. We conceptualize political trust as the degree to which citizens perceive government as being able and willing to deliver outcomes consistent with their interest and expectations (Braithwaite & Levi, 1998; Hetherington, 2005, p. 9). It is typically a retrospective assessment that citizens make on the government, taking into account its performance in not just the economic, but also political, social, and even moral domains. A sizable body of research has argued that political trust serves as the affective and cognitive basis for citizens' constructive engagement with the government (Easton, 1975; Hetherington, 2005; Levi & Stoker, 2000; Ostrom, 1996; Tyler, 2010). Existing studies have provided evidence that individuals who trust the government are more open to accepting short-term material sacrifices in exchange for better provision of public goods in the long run (Marien & Hooghe, 2011; Scholz & Lubell, 1998). Citizens who trust their government may also feel a moral obligation to support and obey certain policies even when they disagree with them. For example, there is evidence that conservatives are more likely to support liberal policies such as expanding spending, redistribution, and affirmative action when they trust the authority (Davis & Silver, 2004; Hetherington & Globetti, 2002; Rudolph & Evans, 2005).

In the context of the pandemic, we argue that a higher level of political trust among the public can translate into more effective government responses to the pandemic through at least two channels: greater policy compliance and more decisive policy response. First, political trust can induce compliance with public health policies by providing citizens with a favorable predisposition toward governments' decisions and actions. Citizens with a high level of political trust may perceive a strong alignment between their own interests and the authorities' and are thus inclined to support government policies even when those policies' exact efficacy is still unknown (Hetherington, 2005; Rudolph & Evans, 2005). This favorable predisposition is especially valuable in the context of a pandemic because the initial uncertainty about the effectiveness of mitigation measures such as mask-wearing and lockdowns was substantial yet those measures could only work when a high percentage of the public chose to follow them. The externalities in individual disobedience were tremendous, but external monitoring by the state was usually inadequate or impossible because of the sheer number of people involved. In such a case, trust plays a crucial role in sustaining voluntary compliance.[2] Studies have shown that citizens tend to support and even actively demand more stringent mitigation measures when they trust the authority that issues them (Altiparmakis et al., 2021; Borisova et al., 2022; Robinson et al., 2021; Weinberg, 2020), and that higher political trust is associated with better (self-reported) compliance with social distancing (Robinson et al., 2021), mask-wearing (Seyd & Bu, 2022), testing (Ferree et al., 2021), and vaccination (Schmelz, 2021). At the aggregate level, mitigation measures such as social distancing and lockdown policies have been found to be more effective at reducing human mobility in regions where the level of political trust is high (Bargain & Aminjonov, 2020; D. A. N. Goldstein & Wiedemann, 2021).

In addition to its direct effect on mass compliance, political trust may also have a second-order effect on pandemic governance by shaping the expectations and behaviors of government: Anticipating a high level of policy compliance induced by political trust, government may be more willing to take decisive actions to curb the spread of the disease (Arnold, 1990; Mansbridge, 2003; Migdal, 1988). According to Olson's (1965) canonical study, an important obstacle to providing public goods is that politicians are reluctant to adopt policies that have widespread benefits but concentrated costs. Many mitigation measures are of this nature: While the benefit from controlling the virus spread is distributed broadly in society, the cost of these measures are disproportionately born by those who lost their income or employment due to a severely weakened economy. Recent studies show that strong mitigation measures sometimes provoke negative electoral responses that hurt the careers of political leaders who introduced them (e.g., Pulejo & Querubín, 2021). The resistance to stringent enforcement measures is likely to be lower when political trust is high, as trusting citizens may be more willing to give the government the benefit of the doubt for trying out broadly welfare-improving policies. This, in turn, can provide policymakers with greater political and policy latitude in crafting and implementing effective responses.

3. Empirical design

3.1. Outcome variables

We collect data on COVID-19 prevalence and mortality from the COVID-19 Dashboard, a data repository maintained by the Johns Hopkins Center for Systems Science and Engineering (JHU CSSE) (Dong et al., 2020).[3] As one of most commonly used sources for COVID-related statistics, the JHU CSSE COVID-19 Dashboard assembles and aggregates publicly available information from over 400 sources in over 200 countries and regions using a combination of automated web scraping and manual curation. For this study, our main outcomes of interest are the cumulative number of confirmed cases (*Cases*) and COVID-related deaths (*Deaths*) per capita between the date of a country's first reported case and January 1, 2021. We chose to focus on this pre-vaccine phase of the pandemic because introduction of vaccines would alter both governments' pandemic policies and individual behaviors and not all countries had equal access to effective vaccines due to technological or resource constraints (Andersson et al., 2021; Goldszmidt et al., 2021).

To test our hypotheses about the mechanisms, we also collect data on individual behaviors and government policies during the pandemic from other sources. For individual behaviors, we draw on the Global COVID-

[2] For reviews on the relationship between trust and public responses to COVID-19 policies, please see Devine et al., (2020), Habersaat et al., (2020), and Van Bavel et al., (2020).

[3] The data sources for main variables are listed in Table A.3.

19 Trends and Impact Survey (CTIS) (Fan et al., 2020). This survey asks a representative sample of Facebook users from over 100 countries and regions about their daily health conditions and activities throughout the pandemic.[4] We focus specifically on respondents' mask-wearing behavior because it is one of the most common mitigation measures recommended by governments in almost all countries. For government policies, we use data compiled by the Oxford COVID-19 Government Response Tracker (the Tracker) (Hale et al., 2021), which systematically records the introduction and enforcement of public health measures in more than 180 countries and regions beginning in January 1, 2020. We focus on four key mitigation measures: (1) school closure; (2) workplace closure, (3) gathering restrictions, and (4) stay-at-home orders. These policies were commonly found in governments' early pandemic responses but the implementation of them was often not free of controversy. The Tracker codes each policy in a discrete-value format, with 0 representing minimal or no restriction and larger values representing more stringent measures.[5]

3.2. Political trust

The key explanatory variable that we seek to measure is political trust. There is a long-standing tradition in social science research of using surveys to measure individual-level political trust. The standard approach is to ask respondents a battery of questions about their trust in various political institutions (e.g., central government, local government, legislature, judiciary, etc.). Such questions have been included in a number of cross-national surveys. However, since these surveys often differ considerably in their temporal and geographical coverage as well as the specific wordings of questions, it is difficult to directly compare survey responses recorded in different countries at different time.[6] To improve coverage and comparability, we employ in this article a method recently developed by Claassen (2019) to generate an aggregate-level index of political trust for a global sample of countries and regions. The basic idea behind this method is to estimate a latent variable of political trust that best fits the observed country- and item-wise variations in survey responses. The method uses a dynamic Bayesian estimation framework, which explicitly incorporates parameters that adjust for the potential biases associated with country- and item-specific heterogeneity, making the output particularly suitable for cross-country comparison.[7]

To implement this method, we put together a dataset of individual responses to political trust questions from 10 international survey projects fielded between 1990 and 2019. The full dataset encompasses over 2.61 million respondents from 1534 nationally representative surveys in 134 countries and regions. In most of the surveys, responses are coded in a four-point scale from; in a few exceptional cases, the answers were coded in 5- or 11-point scales. Although the specific set of institutions being asked varies across countries, in general, the same respondent's answers to these questions exhibit a high level of internal coherence. The average Cronbach's alpha across all country-survey spells is 0.755 and over 98 % of the surveys have an α greater than 0.6 (Fig. A.3).

To perform the estimation, we first convert all responses to a binary format of positive or negative answers (as required by the algorithm) and fit them with a beta-binomial model. A key feature of the beta-binomial model is that it allows for overdispersion in observed survey responses, which helps capture sources of errors beyond simple sampling errors—such as those associated with questionnaire translation, respondent selection, survey mode, and interview styles (Claassen, 2019, p. 4). The model converged quickly after the initial warm-up iterations and performed well on the essential diagnostic statistics.

We conduct two validation tests to evaluate the construct validity of the model's output. First, we use the model to generate a set of simulated responses and compare them with the actual survey data. There is an almost one-to-one relationship between the two, suggesting that our model fits the actual survey responses very well. Second, we benchmark our estimates against other existing cross-country public opinion measures. We find, for example, a very strong correlation (0.72) between our measure and political trust measured in the 2018 Gallup World Poll, which was not used in our model (Fig. A.7). Additional information about the survey selection, estimation procedures, and validation checks can be found in Appendix A. In most of the empirical analyses, we use the trust estimate for 2019 as the main independent variable, but our results are robust to using estimates from earlier years.

3.3. Other covariates

We include in the empirical model a host of additional political, institutional, and geographical, and socioeconomic covariates to account for other factors that may have affected a country's pandemic performance. These covariates are detailed below.

Regime type. Regime type is widely believed to have significant bearings on government performance. A large body of scholarship has argued that democratic regimes may have enjoyed a distinct advantage in achieving public health gains because competitive elections create pressure for governments to deliver essential public services (Arvate, 2013; Avelino et al., 2005; Boix, 2001). During the COVID-19 pandemic, some observers initially argued that democracies might enjoy an informational advantage in fighting the pandemic because they were better at protecting press freedom and personal liberty. However, others later pointed out that excessive protection of individual rights might have hindered the government's ability to implement effective mitigation measures in a timely fashion (Cheibub et al., 2020). To account for the effect of regime type, we use several variables from the Varieties of Democracy project (Coppedge et al., 2020).[8] We use the *Liberal Component Index* to measure the protection of liberal principles and press freedom and the *Electoral Democracy Index* to measure the quality of competitive elections.

State capacity. Another commonly discussed determinant of government effectiveness is state capacity, which can be operationalized as either a state's capability to extract resources (tax collection) or to carry out administrative tasks (Levi, 1988; Tilly, 1990). We measure the fiscal aspect of state capacity with the percentage of total tax revenue in GDP (*Tax Revenue (GDP %)*) (International Monetary Fund, 2021). To capture a state's administrative capacity, we use two composite variables from the World Bank's Worldwide Governance Indicators. One is *Government Effectiveness*, which captures the government's ability to deliver public services and formulate and implement policies as well as the overall quality of government bureaucracy; the other is *Regulatory Quality*, which measures the capacity of the political authority to design and execute policies that promote the development of private sectors. Both indicators are constructed from experts' ratings (Kaufmann & Kraay,

[4] The data can be accessed at COVIDmap.umd.edu/api.html. Facebook provides weights to reduce nonresponse and coverage biases.

[5] *School Closure* is a discrete variable ranging from no measures (0) to require closing all levels (3). *Workplace Closure* ranges from no measures (0) to policies that require closing all but essential workplaces (3). *Gathering Restrictions* varies between no restrictions (0) and restrictions on gatherings of 10 people or less (4). The value of *Stay at Home* extends from no measures (0) to require not leaving house with minimal exceptions (3).

[6] For example, within our collection of cross-country surveys, only 59 countries and regions had an active survey in 2019 that asked questions about political trust (Fig. A.1). The set of political institutions covered in questions also differed across surveys (Table A.1).

[7] Recently, this method has been used to generate a number of cross-country public opinion measures, including public support for democracy (Claassen, 2020), dissatisfaction with government (Juon, 2023), and opinion toward immigration (Claassen & McLaren, 2022).

[8] Unless otherwise noted, all information refers to country characteristics measured in 2019.

2020).

Leader attributes. Individual leaders play an important role in shaping the character and efficiency of their administrations (J. Goldstein & Keohane, 1993; Horowitz & Stam, 2014; Jones & Olken, 2005). The third set of covariates we include seeks to capture the influence of various leader-related attributes. We identify the incumbent chief executive of a country as of April 2020 and collect information about their age, gender, tenure, education level, and college major.[9] Recent studies suggest that populist leaders possess a distinct set of political visions and policy preferences that might have influenced a country's pandemic policies (Olivas Osuna & Rama, 2021; Pevehouse, 2020; Stecula & Pickup, 2021). We use data from the Tony Blair Institute for Global Change to identify leaders with populist tendencies and create a variable to control for whether a populist leader was in power.[10] A total of 17 countries had a populist leader in charge on the eve of the pandemic (Meyer, 2020).

Geographical and socioeconomic factors. In addition to politics, a country's pandemic performance is also likely to be shaped by its geographical and socioeconomic factors. We control for a host of covariates on a country's geographical and climatic characteristics, including average temperature, annual precipitation, terrain ruggedness (Nunn & Puga, 2012), and island country status, all of which may affect the virus's viability and speed of transmission. We also control for a country's total number of airline routes and the distance from its capital to Wuhan, China, and Milan, Italy, the two cities in which the virus was first discovered.[11] Moreover, we include a host of economic and demographic factors, including a country's GDP per capita, life expectancy, average years of schooling, the percentage of the population over age 65, the percentage of the urban population, and several measures for the quality of preexisting public health conditions.[12] The summary statistics and data sources of the covariates are reported in Tables A.2 and A.3 of the Appendix. Our final sample covers 128 countries and regions with non-missing values in all variables. Those regions collectively account for over 90 percent of the world's population and 96 percent of total confirmed cases.

3.4. Model specifications

We use two methods to estimate the effects of political trust on government effectiveness. We begin with ordinary least squares (OLS) regressions and then turn to DS Lasso regressions to address overfitting and multicollinearity problems. The OLS model is specified as follows:

$$Y_i = \delta Trust_i + \alpha \boldsymbol{X} + u_r + \varepsilon_i \quad (1)$$

where Y_i is country i's cumulative number of cases or deaths per million people (log) as of January 1, 2021. $Trust_i$ is the estimated country-level political trust in 2019. $\boldsymbol{X}$ includes the four sets of control variables discussed above (regime type, state capacity, leader attributes, and geographical and socioeconomic factors). All continuous variables are standardized to facilitate interpretation. u_r is a set of regional fixed effects that control for time-invariant heterogeneity across regions.[13]

Given that we have a large set of explanatory variables relative to the number of observations, the OLS estimation may suffer from the problems of overfitting and multicollinearity. To remedy these problems, we use the DS Lasso regression as an alternative estimation method. The DS Lasso method first runs two Lasso regressions to select control variables that have sufficiently strong correlations with both the outcome and the main independent variables and then include those selected controls in a second-stage regression. This method is more efficient than the OLS method and has been shown to provide better statistical inference than a simple one-stage Lasso (Belloni et al., 2013). When implementing the method, we ensure that regional fixed effects are always selected in the second stage and other control variables are chosen with a cross-validation (CV) method.

4. Empirical results

4.1. Baseline results

The baseline results are presented in Table 1. Model 1 estimates a simple bivariate relationship between country-level political trust in 2019 and the number of confirmed COVID-19 cases. Model 2 adds geographical and socioeconomic controls and Model 3 further adds political and leadership controls. Model 4 inherits the full set of control but perform estimation using the DS Lasso method.[14]

Throughout these models, political trust stands out as one of the most important variables in predicting pandemic performance. Focusing on Model 3, the numerical estimate suggests that a one standard deviation increase in political trust is associated with a roughly 44 percent decrease in the number of confirmed cases per million.[15] To provide a more substantive interpretation of the magnitude: An average country in our sample has a population of about 55 million and the average number of cases per million is about 18,000; a 44 percent reduction in per capita infection thus translates into about 435,000 fewer confirmed cases.[16]

Models 5 through 8 repeat the same analysis for COVID-related deaths. We see a largely similar pattern: Countries in which the government enjoyed a higher level of trust by the public on average had fewer deaths per capita, and political trust remains the only factor that predicts fewer deaths at the 99 percent confidence level. A one standard deviation increase in political trust is associated with a 47 percent decrease in deaths,[17] which amounts to about 9,000 fewer COVID-related deaths for an average country.[18] Taken together, these results strongly suggest that political trust is a crucial factor in predicting

[9] College major has four binary variables: Arts, Science, Medicine, and Military. Arts include theology, economics, business and management, humanities, law, psychology, social sciences, sport, painting, and piano. Science includes biology, chemistry, physics, engineering, geology, mathematics, and computer science, and other sciences. Military takes the value of 1 if the person graduated from a military academy. The main data source is the Global Leadership Project (Gerring & Oncel, 2020), and we update the dataset to 2020.

[10] A political leader is defined as a populist leader if his/her platform is consistent with the following two claims: (1) a country's 'true people' are locked in a moral conflict with 'outsiders' and (2) nothing should constrain the will of the 'true people' (Meyer, 2020).

[11] The information on airline routes is from OpenFlights (2012), updated until June 2014.

[12] Previous breakouts of communicable diseases could affect current pandemic governance, as countries may learn from history (Ru et al., 2021). We use an index to capture local exposure to communicable diseases. The index is age-standardized disability-adjusted life year (DALY), which measures the total loss of healthy life related to communicable, neonatal, maternal, and nutritional diseases. The data are obtained from the 2019 Global Burden of Disease (Institute for Health Metrics and Evaluation, 2020). In addition, sufficient health resources may enable more efficient responses to emergencies. We thus use the Global Health Security Index (2019) to measure the preparedness and capacity of national health systems.

[13] Regions include Eastern Europe and post-Soviet Union, Latin America, North Africa & the Middle East, Sub-Saharan Africa, Western Europe and North America, East Asia, South-East Asia, South Asia, the Pacific, and the Caribbean.

[14] In the interest of space, we omit geographical and socioeconomic variables when displaying the results.

[15] This is computed with the following equation: $\left(e^{-0.571}-1\right)\times\ 100 = -43.5\%$.

[16] The figure is computed with the following equation: $18000 \times 55 \times 0.44 = 435600$.

[17] This is computed by: $\left(e^{-0.626}-1\right) \times 100 = -46.5\%$.

[18] The average number of deaths from COVID-19 per million was about 370 on January 1, 2021. The figure is computed in a similar way as that for confirmed cases: $370 \times 55 \times 0.47 = 9564$.

Table 1
Pandemic Performance: Cases & Deaths.

	Cases				Deaths			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Political Trust	−0.555***	−0.500***	−0.571***	−0.442***	−0.615***	−0.600***	−0.626***	−0.549***
	(0.117)	(0.088)	(0.130)	(0.132)	(0.118)	(0.105)	(0.153)	(0.139)
Electoral Democracy Index			0.437	✓			0.473	✓
			(0.307)				(0.290)	
Liberal Component Index			−0.140	✓			−0.089	✓
			(0.255)				(0.234)	
Tax Revenue (GDP %)			0.136				0.034	
			(0.139)				(0.136)	
Government Effectiveness			0.962*	✓			0.649	✓
			(0.501)				(0.513)	
Regulatory Quality			−0.189				−0.415	
			(0.302)				(0.364)	
Age			−0.000				−0.001	
			(0.010)				(0.010)	
Female (1 = Yes)			−0.277	✓			0.037	✓
			(0.266)				(0.396)	
Tenure			0.030	✓			0.018	✓
			(0.019)				(0.021)	
College Degree (1 = Yes)			−0.066	✓			0.004	✓
			(0.344)				(0.335)	
Major: Medicine			−0.104	✓			0.543	✓
			(0.417)				(0.347)	
Major: Military			−0.099				0.077	
			(0.438)				(0.458)	
Major: Science			−0.079	✓			−0.056	✓
			(0.329)				(0.291)	
Populist (1 = Yes)			−0.005	✓			0.003	✓
			(0.309)				(0.324)	
Geog & Socioecon. Covariates		Yes	Yes	Yes		Yes	Yes	Yes
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	133	130	128	128	133	130	128	128
Adjusted R^2	0.617	0.790	0.799		0.706	0.790	0.777	

Notes: This table shows the effects of political trust on COVID-related cases and deaths. The outcome variable is the number of cases (log) (1–4) and deaths per million people (log) (5–8). Models (4) and (8) use the DS Lasso regressions. The ✓sign denotes variables that are chosen as control variables in a DS regression. Geographical and socioeconomic covariates include the distance to Wuhan, the distance to Milan, annual rainfall, average temperature, terrain ruggedness, island status, GDP per capita, total population, life expectancy, percentage of population over age 65, percentage of urban population, years of schooling, global health security index, the burden from communicable disease, and total airline routes. Standard errors are reported in parentheses. FE = fixed effects.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

countries' effectiveness in taming the pandemic.

4.2. Subgroup analysis

An important concern with our baseline analysis is that there may be considerable cross-country variations in the reliability of data for both COVID and political trust. The capacity and resources that can be devoted to monitoring COVID-related cases and deaths were vastly different for developed and developing countries; the level of political pressure that respondents faced in answering questions related to regime support might be different for democracies and non-democracies. In both cases, overlooking these heterogeneities may lead to significant biases in our results.

One strategy to address this problem is to conduct subgroup analyses that focus on countries with similar political and economic conditions. Table 2 presents regression results subset by regime type and income level. Models 1 through 4 present the estimates separately for democracies and non-democracies, using the *Regimes of the World* classification from the V-Dem dataset. We see that higher political trust consistently predicts better pandemic performance across regimes, with the numerical estimates somewhat larger for autocracies than democracies. Models 5 through 8 present results subset by whether a country's GDP per capita was above or below 10,000 US dollars in 2019. We see that political trust is associated with fewer cases and deaths in both high- and low-income countries. These patterns provide reassuring evidence that our findings are not merely driven by biases in measurements, but remain robust even when we narrow our focus to subsamples of wealthy, democratic regimes where the data-generating process is reasonably reliable and transparent.

4.3. Robustness checks

We conduct a series of additional tests to ensure the robustness of the main results. In the interest of space, we leave the numerical details to Appendix C and only briefly summarize the findings here. To begin with, we consider the possibility that political trust may be correlated with other important sociopolitical confounders that also influence the quality of pandemic response. One such confounder is cultural cohesion. A culturally more cohesive society may have stronger political trust, and influential studies have argued that such societies also tend to have better citizen-government relations (Putnam, 2000; Tsai, 2007). To account for this, we additionally control in our baseline model several proxies of cohesion, including interpersonal and social trust, which measure the level of trust respondents place in other individuals and groups (e.g., family members, neighbors, strangers, etc.), and social capital, which measures respondents' participation in civic associations. As shown in Table A.4, political trust continues to have a strong and negative relationship with both confirmed cases and deaths, but neither social trust nor social capital has a significant association with pandemic governance. Another potential confounder we consider is corruption. A corrupt government may be less trusted by citizens and less effective at handling the pandemic. In Table A.5, we test this alternative by controlling for several cross-country measures of corruption (Coppedge et al., 2020; Kaufmann et al., 2010; Teorell et al., 2021; Transparency

Table 2
Subgroup Results by Regime and Income Level.

	Autocratic Regime		Democratic Regime		High Income		Low Income	
	(1) Cases	(2) Deaths	(3) Cases	(4) Deaths	(5) Cases	(6) Deaths	(7) Cases	(8) Deaths
Political Trust	−0.920**	−0.668**	−0.417**	−0.500**	−0.789**	−0.986*	−0.689***	−0.702***
	(0.332)	(0.299)	(0.201)	(0.229)	(0.344)	(0.497)	(0.205)	(0.187)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	52	52	74	74	45	45	80	80
Adjusted R^2	0.759	0.805	0.794	0.754	0.850	0.822	0.789	0.809

Note: This table reports the effects of political trust on COVID-19 cases and deaths by regime type and national income. Regime types are based on the *Regimes of the World* classification from the V-Dem project. *Autocratic Regime* includes both "closed autocracy" and "electoral autocracy", and *Democratic Regime* includes "electoral democracy" and "liberal democracy." Countries with a GDP per capita above $10,000 (2019 current dollar) are marked as "High Income." Other covariates include regime type, state capacity, leader traits, and other demographic and geographical factors. Standard errors are reported in parentheses. FE = fixed effects.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

International, 2021). Once again, the effect of political trust remains strong, but the corruption variables themselves are not strongly correlated with governments' pandemic performance. Moreover, the presence of significant ethnic, religious, or class cleavages may negatively affect both trust in political authority and the society's ability to respond collectively to a pandemic. We address this possibility by introducing covariates for ethnic fractionalization, religious distribution, and income inequality. The main result on political trust continues to hold after controlling for these cleavage variables (Table A.6).

We also investigate whether our findings are sensitive to the specific items that we use to construct the political trust index. Since the executive institutions are primarily involved in the day-to-day management of the pandemic, it is possible that trust in those institutions mattered more for public health outcomes than individuals' attitudes toward non-executive branches. To account for this issue, we replace *Political Trust* with *Trust in Executive Branch*, which is constructed using *only* trust in the government and the presidency. The results are substantively the same (Table A.7).

Since COVID prevalence and mortality are often closely tied to the demographic structure and disease environment, which may vary country by country, a comparison based on raw infection and death figures may not fully account for the highly heterogeneous national conditions. To address this issue, we use *Total Excess Deaths Per Million* (in 2020) as the alternative outcome variable and rerun our baseline model. This excess deaths variable measures the difference between actual deaths and predicted mortality based on previous trends, taking into account a host of demographic and epidemiological factors that can affect a country's historical mortality (World Health Organization, 2022). The results shown in Table A.8 again confirm that higher political trust is associated with lower COVID mortality.

Finally, we evaluate whether our results are sensitive to the specific time periods we used in constructing the dependent and independent variables. We rerun the baseline regressions using daily case and death data for every day between March 11, 2020, and January 1, 2021. The coefficient estimate for the effect of political trust remains negative throughout this period (Fig. A.7). For the independent variable, we experiment with replacing the original trust measure with estimated political trust in years before 2019. The results are very stable and consistent (Fig. A.9). Finally, we rerun regressions that exclude certain geopolitical regions (Table A.9) or countries with extreme values (Table A.10), and assess the effect of missing data on our estimation (Table A.11). We find that the basic results hold across most regions and are not driven by outliers or missing values.

4.4. Mechanisms

The preceding analysis has shown that countries that enjoy a high level of political trust tend to cope better with the COVID-19 pandemic. Our argument suggests that this could be driven by at least two mechanisms: (1) A high level of trust in the government increases citizens' compliance with preventive policies, and (2) a government trusted by citizens can act more decisively in designing and implementing mitigation measures. In this section, we test both mechanisms using data on individual behavior and government policies.

4.5. Public compliance

To test the compliance mechanism, we focus specifically on the effect of political trust on compliance with local face-covering requirements. Face-covering requirements are widely recommended by governments around the world to fight the pandemic. Yet mask-wearing may be inconvenient or uncomfortable to some individuals and the implementation of mask mandates has been met with fierce pubic resistance in some localities. Our expectation is that trust in government should play a role in increasing individuals' propensity to comply with this policy.

We collect data on mask-wearing behavior from the Global COVID-19 Trends and Impact Survey. We compute the country-level mask-wearing compliance rate using the percentage of respondents who reported to have worn a mask all or most of the time when in public. The data on government-issued face-covering requirements are from the Oxford COVID-19 Government Response Tracker. The variable ranges from "no policy" (0) to "required outside the home at all times regardless of location or presence of other people" (4). We estimate the following regression model:

$$Compliance_{it} = \alpha Policy_{it} + \beta Trust_i + \delta Policy_{it} \times Trust_i + \theta NewCases_{it} + u_i + v_t + \varepsilon_{it} \quad (2)$$

$Compliance_{it}$ is the percentage of respondents (log) who reported to be wearing masks in country i at time t. $Policy_{it}$ represents the government policy regarding face-covering requirements in country i at time t. $Trust_i$ is the level of political trust for country i. Since both the government and individuals may adjust their behaviors in response to the evolving COVID-19 situation, we also include $NewCases_{it}$, which measures the average number of new cases per million (log) in the past 14 days for country i at time t.[19] u_i and v_t are the country and date fixed effects, respectively. We are primarily interested in δ, which estimates the moderating effect of political trust on the relationship between public policy and citizen compliance.

The results are displayed in Table 3. Throughout all models, the

[19] We use the average number of new cases over the past 14 days because most symptoms appear within this period. It was also an important metric widely used by government and media when evaluating the severity of the pandemic (Centers for Disease Control and Prevention, 2022).

Table 3
Mechanism: Policy Compliance Effect.

	(1)	(2)	(3)
Face Covering Requirements	0.139***	0.119***	
	(0.033)	(0.031)	
Face Covering Requirements × Political Trust	0.110**	0.115**	
	(0.054)	(0.052)	
Face Covering Requirements (Lag 3 Ds)			0.117***
			(0.030)
Face Covering Requirements (Lag 3 Ds) × Political Trust			0.114**
			(0.052)
New Cases (Past 14 Ds)		Yes	Yes
Country & Time FE	Yes	Yes	Yes
Observations	20,538	20,538	20,538
Adjusted R^2	0.813	0.823	0.823

Note: This table shows the impacts of political trust on the public's compliance with face-covering requirements. The outcome variable is the percentage of respondents who reported to be wearing masks (log). The main effect of political trust is absorbed by country FE. Standard errors clustered at the country level are reported in parentheses. FE = fixed effects.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

coefficient estimate for the interaction term between the stringency of face-covering requirement and the level of political trust is positive and statistically significant, suggesting that political trust helps increase citizens' responsiveness to government's mask mandate: More stringent face-covering requirement is associated with more prevalent mask-wearing among respondents, and the relationship is much stronger in countries where political trust is high. This pattern continues to hold when we control for the average number of new cases per million in the past 14 days (Model 2) or substitute current policy measures with lagged ones (Model 3).

4.6. Policy decisiveness

In addition to better policy compliance by the public, we also examine whether political trust can induce more decisive policymaking by government. To do so, we examine how quickly the stringency of mitigation measures changes in response to changes in COVID-related new cases and deaths. We focus on four common mitigation measures: school closure, workplace closure, gathering restrictions, and stay-at-home order. These policies are often controversial because they tend to cause significant disruptions in citizens' everyday life. The anticipation of public backlash was an important reason why many governments were hesitant to promulgate them even in face of rising infections (Krauss et al., 2022; Kugler et al., 2023; Mongey et al., 2021). We expect political trust to play a role in facilitating the timely implementation of those policies by assuaging government's concern about public resistance.

We collect data on the presence of mitigation policies and their levels of stringency from the Oxford COVID-19 Government Response Tracker and estimate a country-time fixed effects model with the following specification:

$$Policy_{it} = \beta COVID_{it} + \delta Trust_i + \zeta COVID_{it} \times Trust_i + u_i + v_t + \varepsilon_{it} \quad (3)$$

$Policy_{it}$ represents the stringency of a mitigation measure in country i at time t (larger value = more stringent). $COVID_{it}$ is the average number of new COVID-19 cases and deaths per million (log) over the past 14 days, and $Trust_i$ is the level of political trust in country i. Country and date fixed effects (u_i and v_t) are included to capture unobserved heterogeneity across country and over time.

Table 4 presents the results. We see that, as the pandemic spreads, governments tend to significantly escalate the stringency of all four policies. For three of the four policies (with the exception of stay-at-home order), the speed of escalation is faster in countries where they

Table 4
Mechanism: Policy Discretion Effect.

Panel A: New Cases	School Closure (1)	Workplace Closure (2)	Gathering Restrictions (3)	Stay at Home (4)
New Cases (Log, Past 14 Ds)	0.197***	0.156***	0.264***	0.137***
	(0.023)	(0.023)	(0.032)	(0.022)
New Cases (Log, Past 14 Ds) × Political Trust	0.029	0.043**	0.051	0.013
	(0.019)	(0.017)	(0.031)	(0.014)
Country & Time FE	Yes	Yes	Yes	Yes
Observations	39,700	39,691	39,699	39,699
Adjusted R^2	0.650	0.625	0.620	0.596
Panel B: New Deaths	**School Closure (1)**	**Workplace Closure (2)**	**Gathering Restrictions (3)**	**Stay at Home (4)**
New Deaths (Log, Past 14 Ds)	0.422***	0.284***	0.514***	0.326***
	(0.053)	(0.041)	(0.067)	(0.054)
New Deaths (Log, Past 14 Ds) × Political Trust	0.180***	0.087*	0.115*	−0.003
	(0.060)	(0.049)	(0.058)	(0.047)
Country & Time FE	Yes	Yes	Yes	Yes
Observations	36,108	36,099	36,107	36,107
Adjusted R^2	0.663	0.621	0.585	0.613

Notes: This table shows the effect of COVID spread on the stringency of governments' mitigation policies conditional on political trust. The outcome variable is a country or region's policies on school closure, workplace closure, gathering restrictions, and stay-at-home orders. The main effect of political trust is absorbed by country FE. Standard errors clustered at the country level are reported in parentheses. FE = fixed effects.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

enjoy a higher level of trust from the public. The pattern is especially salient when we examine governments' response to new death tolls (Panel B): For a country that has a population of 60 million and political trust at the 25th sample percentile, an increase in the number of new deaths from 1 to 60 (which is from 25th to 75th percentile of the sample) leads to approximately a 0.2-unit increase in policy stringency for school closure, a 0.16-unit increase for workplace closure, and a 0.3-unit increase for gathering restrictions. By comparison, the same increase in deaths results in 0.3-, 0.2-, and 0.4-unit increases in the three respect policies when the country's political trust is at the 75th percentile.[20] In other words, moving from the 25th to the 75th percentile in political trust accelerates government's policy response to rising new COVID deaths by about 25 to 50 percent.

5. Concluding remarks

The epic COVID-19 pandemic offers a rare opportunity for researchers to evaluate systematically the predictive power of various social scientific theories for good governance (Cheibub et al., 2020; Mittiga, 2021). In this article, we develop a co-production perspective of governance that emphasizes citizen-state collaboration and compare its

[20] The 25 percentile of new deaths is 0.016 and the 75 percentile is 1. Therefore, with political trust at the 25 percentile (-0.57), when average new death per million population increases from 25 to 75 percentile, it is associated with about $0.422 \times \log(1+1) - 0.18 \times 0.57 \times \log(1+1) - 0.422 \times \log(0.016+1) + 0.18 \times 0.57 \times \log(0.016+1) \approx 0.2$ units increase in policy stringency for school closure. When political trust is at the 75 percentile (0.53), the effect of the same increase in new deaths will result in $0.422 \times \log(1+1) + 0.18 \times 0.53 \times \log(1+1) - 0.422 \times \log(0.016+1) - 0.18 \times 0.57 \times \log(0.016+1) \approx 0.3$ units increase in the stringency.

explanatory power against other more state-centered perspectives. Our empirical results suggest that a close relationship between citizens and their government, as proxied by a high level of political trust, is one of the strongest predictors of effective pandemic response. We also provide evidence that political trust affects a country's pandemic performance by increasing both the public's compliance with government policies and the government's decisiveness in making and implementing policy responses.

While our study focuses only on the COVID-19 crisis, the general lesson that political trust matters for effective governance has broader implications in other areas. For example, studies have shown that strengthening political trust also brings benefits in the management of other public health crises, such as the Ebola epidemic (2014–2016) in West Africa (Van Bavel et al., 2020). Political trust has also been shown to help with everyday operations of government in areas such as policing and tax collection (Scholz & Lubell, 1998; Tyler, 2010). In contrast with the well-known "critical citizens" perspective, which views the decline in political trust as a positive development that may enhance accountability and responsiveness (Dalton & Welzel, 2014; Norris, 1999), these findings suggest that tangible, collective benefits can be gained from maintaining the level of political trust in society at a reasonably high level.[21]

More broadly, findings from our study have implications for thinking about how the quality of government should be measured. The fact that political trust, a variable generated from public opinion polls, turns out to be a better predictor of pandemic performance than many expert-rated indicators (e.g., regime type, government effectiveness, and regulatory quality) suggests that there may exist a troubling gap between the experts' definitions of effective government and what actually makes a government effective on the ground. While the prevailing practice today tend to privilege experts' assessments as they are more systematic and theory-based, an over-reliance on such assessments may sometimes run the risk of losing touch with concrete feelings and experiences of the mass public living in those countries. Ordinary citizens interact with their government on a daily basis and often possess much more direct and intimate knowledge about its actual quality than experts. Our idea of what constitutes a "good government" can be considerably improved by paying greater attention to the attitudes and assessments from the mass public.

CRediT authorship contribution statement

Chengyuan Ji: Conceptualization, Methodology, Formal analysis, Investigation, Visualization, Writing-original draft, Writing-review & editing. **Junyan Jiang:** Conceptualization, Methodology, Formal analysis, Investigation, Visualization, Writing-original draft, Writing-review & editing. **Yujin Zhang:** Conceptualization, Methodology, Formal analysis, Investigation, Visualization, Writing-original draft, Writing-review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

[21] It is important to acknowledge that long-term trends in political trust are not easy to alter. However, existing scholarship suggests that certain policy interventions and performance factors can and do influence the level of political trust in society. These include fostering a healthier and more vibrant economy (Hetherington & Rudolph, 2008; Stevenson & Wolfers, 2011), providing stronger social welfare protections (Lü, 2014), increasing political responsiveness to citizens (Torcal, 2014), and improving transparency on decision-making processes (Ardanaz et al., 2023; Rainie et al., 2019).

Data availability

Replication files for this article can be found at https://doi.org/10.7910/DVN/KCIAHC.

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Appendix. Supplementary data

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