

Liberté, Égalité, Crédibilité¹: An Experimental Study of Citizens' Perceptions of Government Responses to COVID-19 in Eight Countries

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¹ Liberty, equality, credibility (French).

Introduction

The 2019 novel coronavirus disease (COVID-19) spread to over 200 countries around the world resulting, thus far, in over 900,000 deaths (CDC, 2020; WHO, 2020a). With the vast health, economic, and social impacts of COVID-19 widely observed and acknowledged (Haleem, Javaid, and Vaishya, 2020), public administration scholars are asking whether this pandemic will be a key factor in forming a new governance paradigm – one that treats the government as the ultimate bearer of the societal risks (Roberts, 2020). In this paper, we ask whether the current global pandemic is also posing a threat to the ideas of democracy and liberalism. The effectiveness of slowing and stopping the spread of infection is tied to limiting (or self-limiting) freedom of movement, assembly, expression, worship, and other civil liberties. The evidence we reference below suggests that this pandemic has already created opportunities for some governments to centralize and expand state control, censorship and surveillance, and further suppress individual freedoms. The immediate dangers posed by COVID-19 and the apparent success² of some non-democratic regimes in containing the infection are likely to affect individual propensity to resist autocratic state policies.

Rather than investigating organizational and managerial choices related to COVID-19 responses, the focus of this study is on citizens' preferences and assessments of governance approaches used to combat the COVID-19 pandemic. Specifically, this study (1) explores the effect of governance response (“democratic” vs. “autocratic”) to the COVID-19 crisis on individual assessments of effectiveness, equity, democracy, and overall comfort with and

² Although we are skeptical of the data from China, particularly relevant here is China's alleged effectiveness in containing COVID-19, with under 5,000 reported total deaths or 0.33 deaths per 100,000 population (compared to over 120,000 U.S. deaths and 36.67 deaths per 100,000 population as of April 2020) (Statista, 2020; Johns Hopkins University & Medicine, 2020).

approval of the government response; (2) examines the role of unambiguous objective³ performance information as well as information on the socio-economic gap in COVID-19 morbidity and mortality on citizens' assessments of the government response; and (3) investigates the role of objective performance information and data on the socio-economic gaps as moderators of the relationship between the "democratic" vs. "autocratic" government response model and citizens' assessments.

Citizens' perceptions of government have been linked to their willingness to pay taxes, seek and retain jobs in the public sector, as well as to cooperate and co-produce in the implementation of public policies (Christensen and Læg Reid, 2005; Marvel, 2015). The latter is especially important at the time of a global pandemic when each citizen's actions can influence its course. Without citizen cooperation and co-production, anti-pandemic efforts such as social distancing, the use of masks, and the willingness to allow contact tracing will lose efficacy as policy instruments. The experimental research design of this study, by virtue of randomizing government's response, permits causal interpretations of relationships between response strategies and individual assessments of governments' performance. Additionally, this study will conduct an evaluation of respondents' sensitivity to information from a reputable source and its moderating effect on the relationship between national strategies and individual assessments. The severity of the COVID-19 pandemic has varied greatly across countries and has been connected to the demographic factors – population structure and prevalence of multigenerational families, cultural differences and capacity of health care systems (Rozell & Wilcox, 2020). To achieve greater generalizability, our study examines citizens' perceptions of government responses in a multi-national context, by surveying residents in eight democratic nations affected by the

³ In the context of this study, we use the term "objective" as a synonym for third-party assessments presented to the study participants.

pandemic: Canada, Denmark, Germany, Italy, Spain, South Korea, the United Kingdom, and the United States.

The Tradeoffs between Liberty and Security during Pivotal Events

In modern times, the United States and other countries around the world have frequently faced the tradeoff between democracy and security (“Ben Franklin’s Famous,” 2015). The fragile balance between these two fundamental values has been frequently recalibrated under the pressure of “pivotal events” – historic events that redefine and change the way people live their lives (Lewis, 2005). The terrorist attacks in New York City and Washington, D.C. on September 11, 2001, the 2007-2008 global financial crisis, natural disasters, the inflow of foreign migrant groups from war-torn regions of the world, or the cyber-attacks undermining the electoral systems are just a few of such events that occurred in recent history (Hendricks & Moghaddam, 2019; Roberts, 2020; Lewis, 2005). Government responses to these events have often involved restricting individual freedoms, tightening security and increasing state’s control. The terrorist attacks that took place on and after 9/11/01 were followed by greater surveillance, ethnic profiling, travel bans, increased law enforcement presence, use of torture, and other measures in countries around the world, and as Dragu (2011) notes, “almost without exception, these policies increased governmental power at the expense of individuals’ civil liberties” - right to privacy, free speech and others (Dragu, 2011: 64; Lewis, 2005). Both the developed and developing countries, mature and young democracies, have had to balance these competing values in the face of major events (Kritz, 2019), most of which thus far have been somewhat localized.

The global COVID-19 pandemic has a rightful place on the list of “pivotal events,” affecting where people can travel, whether they can assemble, how they can run their businesses,

express themselves or practice their religion. It is an *evolving* event: the scientific and medical communities, the governments, the media and the general public are all learning about the nature of the problem and adjusting their views and behavior. Much like the effectiveness of anti-terrorist efforts, the effectiveness of government efforts to lower the spread of a virus can be hard to document.⁴ “Good” performance may be associated with the absence of undesirable outcomes rather than presence of tangible positive results. The evidence on COVID-19 trends and impacts can also be ambiguous and involve value laden judgements, and the changes may not always be easily attributable to specific policies (Dragu, 2011; Radin, 2006; Favero, 2020).

The government policies guiding individual behavioral changes have ranged from draconian prohibitions in some countries to more moderate or very limited restrictions in others. A brief review of the countries positioned at the far end of the autocratic spectrum – China, Nigeria, Russia, Turkmenistan and others – reveals a range of severe measures. While the most prevalent approaches include mobility restrictions and curfews, many of these strategies are combined with disproportionately harsh enforcement. These strategies include the use of physical barriers to seal in residents in buildings with minimal supplies, forced separation of parents and children, opening fire at those in violation of restrictions, control over information flow and over-censorship, suspension of freedom of information requests, and silencing of medical professionals, journalists and ordinary citizens sharing information about COVID-19 (Zhong & Mozur, 2020; Wu, 2020; Hjelmggaard, Lyman & Shesgreen, 2020; Mirror Online, 2020; “Nigerian Security,” 2020; Loveluck, Dixon & Taylor, 2020). While some regimes have banned the wearing of masks and the use of the word “coronavirus” by the public, others passed laws or issued verbal threats involving jail terms and death to those who break the quarantine or

⁴ As an example, some research on restrictions of radical speech and reductions of privacy suggested no strong evidence of security benefits (Dragu, 2011).

spread fake news about the pandemic (Committee to Protect Journalists, 2020; Prothero, 2020; Rainsford, 2020; Lucero, 2020; Berkowitz, 2020; Frey, Presidente, and Chen, 2020; Kakissis, 2020; “Americans Warned,” 2020; “Hungary Passes,” 2020). The use of cell phones for mobility and contact tracking has been used in many democratic nations,⁵ however, some countries relied on mandatory phone apps, facial recognition software, and enhanced phone surveillance to further control the information flow (Hjelmgaard, Lyman, and Shesgreen, 2020; Maynes, 2020). Some regimes seized the moment to solidify or expand their own rule: in Hungary, a state of emergency with no time limit allowed its Prime Minister Viktor Orbán to rule by decree (Robins-Early, 2020; “Hungary Passes,” 2020), while in Russia, new constitutional amendments were voted on making it possible for President Vladimir Putin to seek two more 6-year terms and if re-elected, to stay in power⁶ for the total of 36 years (since 2000).

By contrast, the democratic systems have generally relied on a somewhat different set of tools while implementing the restrictions minimizing the spread of the virus. Operating under accountability pressures, the elected and appointed officials must justify any restrictions – travel bans and others – by framing these changes as temporary; by presenting and relying on the scientific evidence about the necessity and the benefits of the proposed policies; and by promoting transparency and information sharing (Rozell & Wilcox, 2020). The latter ensures the “surplus of trust” that results in citizens’ cooperation with social distancing, quarantining and other safety guidelines (Moon, 2020). In a democracy, strong business interests challenge government’s efforts that might undermine the health of the economy; and the partisan divisions promote questioning of new policies and energizing the courts to act (Pozo, 2020) and individual

⁵ Other nations, Austria, Belgium, Germany, Israel, Italy, Iran, Singapore, and South Korea, also passed new laws allowing governments to collaborate with phone operators to collect and track citizen location data (Business Insider, 2020).

⁶ As a Russian President or Prime-Minister.

citizens to provide feedback including protests to federal, state or local authorities (Friedersdorf, 2020). The latter is also facilitated by a more individualistic culture – one that is less prone to over-conformity and obedience to restrictive government policies (Frey, Presidente, and Chen, 2020).

While the restrictions of individual liberties reflecting the movement from a more democratic to a more autocratic society (or a dictatorship) are often presented as temporary, many in fact are not. Across borders, governments have been found to lack incentives to give up the powers they had gained, and there are strong institutional interests to protect these powers after the “pivotal event” is no longer relevant (Hendricks & Moghaddam, 2019; Dragu, 2011). Combined with the “tribal identification” forces or ultra-right/patriotic movements, which attempt to counter-balance the technological and economic pressures for globalization (Moghaddam, 2019), some of today’s government policies, designed as remedies to a major public health crisis, can in fact push societies around the world towards authoritarianism.

The discipline of public administration has largely concerned itself with organizational and managerial attributes, interests, behavior and tools and their impact on public policy and program outcomes. The current pandemic demonstrates just how important – beyond voting – citizens’ choices and behavior are in achieving desirable social outcomes. Public opinion of government is regarded as a key indicator of any shifts in the balance between fundamental values in a democratic society (Lewis, 2005). Citizens’ views are complex: when citizens feel threatened they may be less supportive of human rights and advocate for a more closed society; they may also be concerned about liberties in the abstract, but endorse specific security proposals; also, citizens often have to derive, from the data available to them, conclusions about the efficacy of government strategies (Lewis, 2005; Moghaddam, 2019).

While we expect citizens to be generally interested in minimizing and ending the spread of the COVID-19 virus, our study will test whether the manner in which governments go about combating the disease influences citizens' views of government performance. This study randomly assigns two generic scenarios of a hypothetical government's response to its participants: one that includes more severe restrictions and harsher punishments for its citizens, and one that is more measured and relies more on citizen and private-sector cooperation and voluntary action. After being given additional background information, respondents are then asked to evaluate numerous aspects of government's performance: whether it is effective, equitable, and democratic. Additionally, respondents share their approval and comfort with government's response to the pandemic. We hypothesize that, across national contexts, citizens will rate country's performance higher and will show higher levels of approval and comfort with the scenario that includes fewer restrictions on individual liberties. Given the choice, citizens are likely to prefer a combination of transparency about the state of the pandemic and less punitive, less restrictive, more cooperation-based policies controlling the spread of the virus.

H₁: Citizens will rate the "democratic" response to the COVID-19 pandemic higher in terms of effectiveness, equity, democracy, and their overall comfort and approval.

With the current levels of global connectivity – linking people, organizations and governments around the world – the COVID-19 pandemic is unique. It is accompanied by an extraordinary amount of constantly-updated quantitative and qualitative information involving both the trends and assessments of various efforts to combat the pandemic. Whether citizens draw conclusions and make assessments based on that information is an interesting question. In particular, this study explores the effect of positive, neutral, and negative objective assessments of a government's actions supplied by recognized credible global institutions. Despite the rapid

spread and social media presence of groups⁷ denying the value of scientific evidence, we expect that the average respondent will incorporate objective data supplied by leading public-health agencies into their individual assessments of a government's response to the pandemic. While not being completely free of political and other biases, assessments provided by these agencies are more likely to be based on systematic data analysis conducted by experts. Therefore, they may be perceived as less biased compared to other sources.

H₂: Citizens' assessments of effectiveness, equity, democracy, and their overall comfort and approval will increase with positive ratings from a credible source and decrease with negative ratings from a credible source.

COVID-19 does not discriminate, but it does affect people differently. While more research is needed to examine the effects of race, gender, income, and other factors on the negative effects of the current pandemic, some preliminary evidence suggests that people of color and persons with lower income and lower education are disproportionately affected by COVID-19 hospitalizations, morbidity and mortality (Beth Israel Deaconess Medical Center, 2020; Abedi et al, 2020; Washington State Department of Health, 2020; "States with the Highest," 2020). In this study, we explore if citizens' assessments of governments' response are influenced by the objective information about a significant gap in health outcomes across income groups in a given context. Economic inequality is a global phenomenon and it has increased dramatically during the past 25 years (OECD, 2020a). We expect that respondents, who were exposed to the information that low-income groups were in fact disproportionately affected by the adverse health effects of the pandemic, will provide more negative assessments of government's response. (An alternative hypothesis might be consistent with the deep-seated assumptions about the "deserved" nature of adversities experienced by those in poverty shared

⁷ These movements and groups include the flat Earth societies, the anti-vaxxers, the QAnon and others.

by some population groups. If these assumptions and views are prevalent, respondents may in fact be assessing information independently of any information on unequal effects).

H3: Receiving information about the disproportionate effect of the COVID-19 pandemic on low-income residents will be associated with lower assignments of country's response (including effectiveness, equity, democracy, and overall comfort and approval).

Finally, individual assessments of “democratic” and “autocratic” government responses might vary depending on the objective data about the overall performance of these efforts and the information about the socio-economic gap in prevalence of negative health outcomes. For instance, in the context of a prolonged and evolving historic pandemic, when scientists and governments are still learning about the best strategies to minimize its duration and costs, an autocratic response could become a lot more attractive if it is assessed as effective by international public health agencies. Thus, we expect that objective performance information from a credible source will moderate the relationship between the response and citizens' assessments.

H4: The effect of government response model on citizens assessments of effectiveness, equity, democracy, and overall comfort and approval will change with objective information about government's response success and the socio-economic gaps in the COVID-19 health outcomes.

We elaborate on our data and methods in the next section. As mentioned above, this research was conducted based on data collected from residents of eight nations: Canada, Denmark, Germany, Italy, Spain, South Korea, the United Kingdom, and the United States. Online Appendix A presents eight brief vignettes summarizing country statistics and key facts/experiences associated with the COVID-19 pandemic in 2020.

Methods

Research Design

We conducted online randomized survey experiments across eight countries. The experiments employ a $2 \times 3 \times 2$ factor design, in which:

- a. Two COVID-19 response models are: (a1) autocratic, and (a2) democratic. (Note, that these terms are used mainly for general labeling purposes; a democratic system can use the approaches we describe as “autocratic” and vice versa).
- b. Three objective performance cues are: (b1) 2-stars performance ratings by international public health agencies (on a scale from 1 to 5 stars), (b2) 3-stars performance ratings, and (b3) 4-stars performance ratings; and
- c. Two equity cues are: (c1) disproportionately large impact of COVID-19 on morbidity and mortality on low-income groups and (c2) no information about the disproportionate adverse impact on low-income groups.

Respondents were randomly assigned to one of 12 possible combinations of experimental conditions.

First, all respondents were presented with an introductory description of a fictitious country, “Country A”:

*“In January 2020, the first case of COVID-19 infection was diagnosed in **Country A** after a tourist tested positive for the virus. Since then, the number of coronavirus cases in **Country A** has been growing exponentially, reaching 5,000 cases within one month. By mid-February, the President of **Country A** declared the COVID-19 pandemic a national emergency.*

*The national and local governments in **Country A** prepared and implemented a response plan that included numerous strategies.*

- ***Country's A's** National Institute for Infection Control issued guidelines on the use of masks, hand-sanitizing and social distancing.*
- *New dedicated health facilities were constructed to meet the growing demand for hospitalizations.*
- *National and local governments jointly worked on a testing strategy to help identify and quarantine COVID-19 cases and their contacts.*

- *Resources and local government personnel were dedicated to sterilizing public spaces during the pandemic.”*

Respondents were then randomly assigned to one of two possible scenarios reflecting a model of Country A’s response to the pandemic. Half of all respondents were assigned to the “autocratic” scenario:

“Additionally,

- *The government implemented a stay-at-home order throughout **Country A**.*
- *In two cities with the highest rate of COVID-19, a lock-down was implemented. Local government installed physical barriers restricting resident mobility. Food and medications were delivered by law enforcement authorities. Public transportation was suspended.*
- *All residents were required to install a mandatory electronic system Cov19App on their private mobile phones. The government used the system to remind citizens of restrictions and serve as contact tracking device in case anyone became infected. Residents submitted requests to leave home through Cov19App reporting the purpose and duration of their trips.*
- *Enhanced police surveillance of streets to monitor the compliance with the stay-at-home order was implemented nationally. Penalties (fines and jail time) were instituted for violating the restrictions.*
- *To minimize the panic and protect the public from misinformation about the pandemic, the government implemented increased monitoring of mass media outlets and individual social media accounts. New laws were passed involving penalties for spreading false information.”*

The other half was assigned to a “democratic” scenario, as follows:

“Additionally,

- *Partnering with community organizations and private companies, government agencies actively promoted voluntary, responsible social distancing and self-isolation.*
- *A stay-at-home order was implemented in two cities with the highest rate of COVID-19.*
- *To enhance citizen cooperation and compliance, government agencies were open and transparent. They promoted and encouraged information sharing through constant disclosure of real-time data on COVID-19 to the general public, as well as the media and major private public health agencies.*
- *Through the partnership with the largest internet provider in **Country A**, a free 3-months broadband subscription was offered to all interested users to promote access to information and online public education.*
- *An electronic system Cov19App was created for citizens to access up-to-date information, public health recommendations and regional statistics about new cases and deaths. Residents were encouraged to install Cov19App on their private mobile phones.”*

The distinctions between these scenarios stress (1) the rigidity versus leniency of restrictions to movement, (2) harsh punishment for violations versus more voluntary self-isolation, and (3) mandatory electronic citizen surveillance and punitive approach to

“misinformation” versus public-NPO cooperation to encourage openness and transparency, data sharing, and citizen education.

Next, we randomly manipulated Country A’s performance in terms of their success in combatting COVID-19. Respondents were randomly assigned to one of three groups, where the country’s efforts were rated by a joint report issued by the World Health Organization, the World Bank, and the United Nations as 2 stars, 3 stars, or 4 stars on a scale of 1 to 5 (with 5 stars representing the best rating).

***2-stars:** “On June 30, 2020, the World Health Organization, the World Bank and the United Nations issued a joint report describing and evaluating governments’ responses to the COVID-19 pandemic in all affected countries. According to this report, **Country A** government’s response to COVID-19 was rated 2 stars (☆☆) on a scale of 1 to 5 (with 5 stars being the best rating).”*

***3-stars:** “On June 30, 2020, the World Health Organization, the World Bank and the United Nations issued a joint report describing and evaluating governments’ responses to the COVID-19 pandemic in all affected countries. According to this report, **Country A** government’s response to COVID-19 was rated 3 stars (☆☆☆) on a scale of 1 to 5 (with 5 stars being the best rating).”*

***4-stars:** “On June 30, 2020, the World Health Organization, the World Bank and the United Nations issued a joint report describing and evaluating governments’ responses to the COVID-19 pandemic in all affected countries. According to this report, **Country A** government’s response to COVID-19 was rated 4 stars (☆☆☆☆) on a scale of 1 to 5 (with 5 stars being the best rating).”*

We use star ratings as an objective and unambiguous measure of government performance, as the index has been widely used in government evaluations and is intuitive and easily understandable by the general public. For the source of performance information, we chose three major public health agencies rather than a single organization for strengthening perceived source credibility.

Finally, to examine the moderating effect of unequal impacts of COVID-19 across income groups on the relationship between individual assessments of government efforts and the governance model, we randomly assigned all participants into two groups. One group received no additional descriptive information, while the second group received information that the

morbidity and mortality rates were significantly higher among low income persons compared to high income persons in Country A:

*“The report also noted that COVID-19 cases and deaths in **Country A** were not equally distributed across income groups. Specifically, COVID-19 cases and deaths were significantly higher among low-income persons compared to high-income persons.”*

This study involves no deception. Informed consent was obtained from all respondents prior to the survey. The consent form detailed the objectives of the study and emphasized the fictitious nature of the country and the response scenario that respondents would be presented with. At the end of the survey, respondents were once again informed of the objectives of the study as well as the fictitious nature of the country and the scenarios they reviewed. We have obtained approval from the authors’ Institutional Review Board prior to commencing the survey; consent forms were designed to accommodate specific restrictions on human subjects required in individual countries. All the surveys were conducted at the same time between late June and early July of 2020. Surveys in the U.S., Canada, and the U.K. were conducted in English, and surveys in other countries were translated into local languages by native-speaking co-authors.

The selection of countries was driven by three factors. First, we limited the study to democracies. Our research questions focus on the tradeoff between government action and individual freedom and liberty; these are choices that become most relevant in democracies where political freedoms allow individuals to act on such choices. Second, access to subjects via the internet survey portals was necessary to conduct the experiments at a reasonable cost. The absence of both internet penetration and a reliable survey portal eliminated many countries in Latin America, Africa, and Asia. The need to have collaborators with survey experience who were native speakers placed a second limit on our choices. Third, given the two constraints we opted to select countries that varied both in response to COVID-19, the severity of the pandemic

in the country, and the variation in institutional structures. A survey experiment of this nature falls between a pure lab experiment where extraneous factors can be eliminated and an observational study where the confounding factors might be extensive. Given the world-wide reach of the pandemic, the individuals would all have likely had some exposure to their government's response to the COVID-19 and thus did not come to the experiment with a blank slate. This experience would suggest that national context would provide a lens through which individuals would evaluate either a more authoritarian or a more democratic approach. The final set of eight countries provides us substantial range in government responses and the severity of the pandemic in the country (see online Appendix A) as well the centralization of policy decision-making (Denmark, the United Kingdom, South Korea, and Italy are unitary countries; Germany, Canada, and the United States are federal systems; Spain is a mixed system that combines both centralization and local autonomous regions).

Data

Our sample includes over 7,000 adults recruited from Canada, Germany, Italy, South Korea, Spain, Denmark, the U.K. and U.S. From each of these countries, we recruited 1,000 adults through Amazon Mechanical Turk (United States), Prolific (Canada, Germany, Italy, Spain, and the U.K.), and dataSpring (South Korea). We also attempted to recruit a sample of 1000 via Prolific in Denmark but were able to complete only 117 adults; we retained the Denmark sample in the analysis despite its lack of statistical power. The survey was designed in and administered through Qualtrics. Power analysis helped determine the sample size needed per country: more specifically, we set the parameters to have a statistical power of 0.80 and a significance level of 0.05 (Walker et al, 2019). For the effect size, since no previous studies have been conducted to examine the relationship between governance models and citizens'

evaluations of government performance in responding to COVID-19, we chose the small effect sizes for conservative estimates (Perugini, Gallucci, & Costantini, 2018). The results of the power analysis suggest that our sample size is sufficient to make reasonable inferences.

The survey platforms we used in this study are commonly used in social science research in the U.S., Asia, and Europe. Prolific is owned by Prolific Academic Ltd based in England and Wales⁸ and has a large number of respondents from European countries, where Amazon Mechanical Turk is not as widely known and used. Participants from South Korea were recruited through dataSpring, an online survey engine with access to large samples from Asian countries.⁹ MTurk was used for the U.S. participants only. Each respondent received compensation upon completing the survey.

For survey experiments conducted via MTurk or other online survey engines, data quality is a top concern (Stritch, Pendersen, and Taggart, 2017). We have utilized several strategies to enhance our survey quality. First, since this study involves multi-country comparisons, it is critical to ensure that the respondents we recruited are actually residing in those countries rather than using Virtual Private Server (VPS), Virtual Private Networks (VPN), or a proxy to hide their country location, which poses threats to validity of the study. To address this issue in MTurk, we required participants to deactivate any software on their machines that met the listed criteria before the survey commences, and those who failed to do so were prohibited from participating in the survey. We then utilized a protocol developed by Winter, Burleigh, Kennedy, and Clifford (2019) to screen out respondents who do not currently reside in the U.S. (using

⁸ For more information about Prolific, please visit <https://www.prolific.co>.

⁹ For more information about dataSpring, please visit <https://www.d8aspring.com>

IPhub) or those who were using VPNs to hide their location. This tool was used in addition to imposing country residence criteria in MTurk.

Prolific and dataSpring offer in-house rigorous prescreening based on respondents' current country of residence, and as researchers, we applied the "current country of residence" screening criterion to recruit participants from designated countries on Prolific and dataSpring. Prolific and dataSpring also block low quality ISPs to prevent participants from using VPN/VPS to hide their location. For dataSpring, the system checks respondents' IP addresses to ensure the sample is indeed from the users claimed country location. Both platforms implemented a protocol to reduce duplicated responses through strategies such as IP address detection. Per Prolific instructions, we included screener validation questions in Qualtrics that replicate Prolific's prescreening criterion we applied, and the survey was discontinued when inconsistencies were identified.

The second strategy we used to ensure data quality involved enabling one response per client option to prevent ballot stuffing in Qualtrics for all surveys. A reCaptcha question was included at the start of the survey to prevent bots from taking the survey. We also included an open-ended question requiring participants to type in their answer to screen out nonsensical responses of those participants who are rushing through the survey. Furthermore, we controlled how long each participant would spend on the two longest descriptive pages (20 and 30 seconds, respectively) before the "Next" button would appear and they would be able to proceed to the next question.

Finally, an important part of survey experiment is to ensure that respondents are paying attention and reading the survey carefully (Mutz and Pemantle, 2015). To address this issue, we conducted manipulation checks on the treatment variables by asking three questions regarding

the governance model, star rating assigned by public health agencies, and whether impacts of COVID-19 varied across income groups to ascertain that respondents were able to recall and understand the survey scenarios. The manipulation checks (see online Appendix B, Tables B1 through B17) varied somewhat by country and internet platform but were generally fairly high for on-line experiments (cf. Kane and Barabas 2019). The average manipulation check for countries using the Prolific platform was consistently high: Germany (93.2%), Italy (91.6%), Spain (86.3%), Canada (93.0%), United Kingdom (92.1%), Denmark (88.3%). The results for South Korea (73.9%) on dataSpring and the United States (81.3%) on MTurk were also high for internet experiments. All cases show that the treatment groups clearly see the treatment and Chi-square tests between the experimental groups and these manipulation checks are highly significant, thus indicating the treatment effect should be sufficient to assess a response (Mutz and Pemantle, 2015).

For additional sensitivity analysis, demographic information collected on study respondents included age, gender, political affiliation, urban vs. rural area of residence, country region, income, education, as well as information about prior personal exposure to COVID-19.

Findings

Balance Tests

We conducted balance tests to determine if the three experimental conditions – response (democratic or authoritarian), evaluation (star rating), and inequality (low income impact) were random with respect to six respondent characteristics – age, gender, urban/rural, education, income, and ideology/partisanship. Of the 144 F-tests for balance (3 experimental conditions x 6

characteristics x 8 countries), only eight were statistically significant at the .05 level (7.02%) indicating overall random assignment (see online Appendix C, Tables C-1 through C-8). Two of the eight significant cases occurred in Denmark with its very small sample.

Measurement

We examine the public's assessment of our experimental conditions using five dependent variables – effectiveness, equity, democracy, comfort, and approval. Our experiments take place in eight different countries that vary a great deal in context and response to the COVID-19 crisis. To be able to make comparisons across the countries, it is important to establish some degree of measurement equivalence (Jilke et al. 2017). Table 1 reports summary statistics from a principal components factor analysis run on the measures of effectiveness, equity, and democracy for each of the eight experiments (online Appendix D, Tables D-1 through D-8 report the full results of these analyses by country).

[Table 1 here]

Effectiveness is measured by a series of eight Likert scales that range from 1 (does not fit at all) to 7 (fits very well) in response to general effectiveness of the hypothetical country in dealing with the COVID-19 crisis. The first factor from the principal components analysis shows a measure that is both highly reliable and appears to be consistently measured across the countries. All Cronbach's alphas are equal to 0.90+, an indicator of excellent internal reliability. In addition, the individual items all load strongly and positively, most at 0.80 and above with the exception of three items in Germany and three in Denmark.

Equity is measured by the first factor of a principal components' analysis of three similarly anchored Likert scale items focused on equal treatment of all individuals in the country

(see online Appendix D Tables). The resulting measure shows good measurement reliability in all countries with measures at 0.79 and above. None of the individual loadings are less than 0.81 in any of the eight countries suggesting strong internal reliability of the measure and one that is relatively consistent across countries.

Democracy, or how democratic the respondents rate country A's actions in regard to COVID-19 uses four similarly anchored Likert scale items. The first factor again demonstrates high levels of reliability in all eight countries with Cronbach's alphas ranging from 0.84 to 0.91. The individual loadings for the four items on the first factor are generally high with only two items loading as less than 0.80, both in Spain. Overall, all three measures are characterized by high internal reliability and consistent loadings across countries indicating a set of measures that are likely to be comparable.

Hypotheses Tests

The strategy of presentation will be to present the findings by pooling all eight country experiments and then note differences that appear among the individual countries. The presentation will show that individuals responded in very similar ways to the experimental conditions in all the countries; the differences were often of degree and then only in some of the more complex analyses involving interactions among the experimental conditions.

[Table 2 here]

Table 2 presents the results for the general approach to COVID-19 (democratic vs. authoritarian), the outside evaluators' rating, and inequity. The approach variable is coded 1 if the democratic approach is presented to survey participants, and 0 for the authoritarian approach presented; the inequality variable is coded 1 if the respondent received information about the

greater impact on low income individuals (versus 0 for those who received no such information), and the outside evaluators or star rating was treated as an interval variable with values of 2, 3, and 4 stars. Both the rows and the columns of Table 2 present valuable information. In terms of effectiveness, individuals rate the democratic approach to COVID-19 higher than the authoritarian approach (approximately two-tenths of a standard deviation) and rate government's response to COVID-19 as less effective when informed of greater impact on the poor (about one-fourth of a standard deviation). Performance information by the outside evaluators appears to be given substantial credibility with each additional star given in regard to performance associated with slightly more than a one-fourth standard deviation increase in assessed effectiveness of government's response. Because the star ratings have more range than either the approach or the equity cue, it has the greatest impact on the respondents' assessments of effectiveness.

The findings for effectiveness are replicated in terms of significance for the other four dependent variables (see columns "Equity," "Democracy," "Comfort," and "Approval"). No matter what the dependent variable, the respondents prefer a democratic response, one that is rated high by leading public health agencies, and one that is not inequitable. These results provide support for hypothesis 1 (democracy vs. authoritarian response), hypothesis 2 (the ratings of the outside evaluators), and hypothesis 3 (inequity).

Equally interesting to the overall results are the differences in the association of the independent variables with the different dependent variables, a set of results that provides some indication that the respondents are able to make some clear distinctions among the various concepts. The relative influence of the democratic approach is significantly greater on the democracy dependent variable than on effectiveness or equity, suggesting that respondents linked the greater openness, transparency, collaboration and lower level of restrictions and

surveillance in the COVID-19 response with the more democratic governance model. Similarly the star ratings, provided by the leading public health agencies as their stamp of approval for the overall success of Country A government's response, have their greatest influence on the effectiveness rating compared to other dimensions of performance (although the differences are much smaller). Finally, the cue on the inequitable effect of COVID-19 on low-income populations has significantly more negative effect on respondents' assessment of equity in Country A than on the other dependent variables. These patterns suggest that the measures have good external validity.

The comfort and the approval dependent variables provide some additional insight as to how much value the respondents place on the democratic approach, the ratings and presence of inequity. Since the democratic approach and inequity are dummy variables, their effect size is comparable; the star ratings have a range of 2 (from 2 to 4 stars) and thus could be made comparable by multiplying the coefficient by 2. In terms of comfort this suggests that the respondents are most sensitive to the star rating information (0.596) followed by a democratic approach (0.490) and then inequity (-0.192). The same rank order holds for approval: star rating (0.522), democratic approach (0.335), and inequity (-0.120). None of the presented findings are affected by inclusion of a set of dummy variables for the individual countries. In fact, of the 35 coefficients (with the US as the excluded category), only six are significant at the 0.05 level, four for the comfort equation and two for the approval equation (see online Appendix E, Table E-9).

[Table 3 here]

The experimental results for the individual countries are very consistent with those presented in Table 2. In terms of hypothesis 1 linking democratic approaches to higher evaluations in each country, the findings are summarized in Table 3. Dependent variables for all

regressions are listed in the first column, while the remaining columns show the effect of the democratic response to COVID-19 on five dependent variables in each of the eight countries. As Table 3 shows, 38 of the 40 relationships (five dependent variables times eight countries) are statistically significant in the predicted direction. The two exceptions are for the effectiveness equation for the US and the UK where democratic approaches are not seen as more effective than authoritarian ones. Also note, in both the US and UK, the positive effect of the democratic approach on equity is statistically significant at 0.10 level. One advantage of dependent variables measured the same way across the countries with similar means and standard deviations is that the individual country regressions provide some indication of what respondents in each country value more. Particularly interesting patterns are shown in regard to democratic approaches. If one examines the regression coefficient for a democratic approach by country in Table 3, they find that the U.S. places the lowest value on a democratic response to COVID-19 in terms of effectiveness, the second lowest in terms of equity, and the lowest in terms of democracy. Germany and Denmark, in contrast, place the highest values on a democratic response to COVID-19 on all three assessment criteria.

[Table 4 here]

For hypothesis 2, Table 4 shows the effect of leading public health agencies' ratings on respondents' evaluations of effectiveness, equity, democracy, comfort and approval. As in Table 3, in Table 4, we list all dependent variables in the first column, and each of the eight columns shows the effect of star ratings on the dependent variables in eight countries. All 40 of the relationships are statistically significant in the predicted direction. This table shows a much more uniform pattern across the countries in response to outside expert assessments of performance.

There is still variation, however, with South Korean respondents being the least responsive to the star ratings on all five dependent variables.

[Table 5 here]

Finally, hypothesis 3 testing in eight countries is shown in Table 5. This hypothesis has the least support with 28 relationships supporting the hypothesis and 12 rejecting the null. Five of the null hypotheses results are for Denmark and might be discounted due to the small sample size. However, four of the others are for the United States (for all cases except the equity dependent variable). This pattern might reflect the lack of political salience of income inequality in the United States despite the fact that it has the greatest income inequality of any of the eight countries in the current study (see OECD, 2020b). The other exceptions are for South Korea with the democracy dependent variable and Germany and Spain with the approval dependent variable. Similar to Table 3, in this table, again the U.S. stands out for its generally low responsiveness to inequity especially in contrast to the European countries other than Denmark with its small sample.¹⁰

Hypothesis 4 proposes that the evaluation of the nation's response (democratic vs. autocratic) will change depending on performance (indicated by the outside evaluation of the nation's response) and the extent of inequity. Specifically, respondents will be less favorable to democratic approaches if they do not perform well (that is, will trade off democracy for effectiveness) and will also be less favorable to democratic approaches if they generate more inequity. This hypothesis, therefore, predicts that the interaction effect of democracy and performance will be positive and significant and that the interaction between democracy and

¹⁰ Detailed findings for all regressions presented in Tables 3-5 are shown in online Appendix E, Tables E-1 through E-9.

inequity will be negative and significant. Because the interaction effects with the star ratings can generate some collinearity and because the interaction hypothesis of performance and democratic approaches is concerned specifically about low performance, we convert the performance variable to two dummy variables (one for two stars and one for four stars with three stars being the omitted category). That conversion means that we are now looking for a negative coefficient for the interaction of a 2-star rating with democracy indicating democracy is less valued when it performs poorly.

[Table 6 here]

The pooled results for the interaction models testing the two parts of hypothesis 4 are shown in Table 6. The first hypothesis on the interaction of democratic approaches with performance is best illustrated by examining the interaction coefficient for Democratic×2 star signifying a democratic approach but low performance. Although all five coefficients are negative, only the coefficient for comfortable is statistically significant at conventional levels (note none of the interaction coefficients for the 4 star variable are significant). Although rejecting a hypothesis in nine of ten cases is fairly compelling evidence, interpreting the results for feeling comfortable should be informative. If we ignore the coefficients for inequity and its interaction with democracy, we can calculate the mean value for various combinations. When this is done, a democratic approach with 2 stars is rated 3.462 on average compared to an autocratic approach with 2 stars as 3.033; for 4 stars the respective coefficients are 4.128 and 3.560. In effect, the significant interaction narrows the difference between the two approaches a bit but in all cases democratic approaches are preferred to autocratic ones regardless of the effectiveness. The hypothesis should be rejected for the entire pool.

Two interesting country cases involving the interaction of democratic approaches and performance involve the U.S. and the U.K. From online Appendix F, Model F-1 we can calculate the mean rating for the different approaches for both two and four star ratings. For poor performance (2 star), U.S. respondents rate democratic approaches at -0.231 and autocratic as -0.233 all other things being equal (we ignore the coefficients for inequity and its interaction with democracy). For 4 star performance the respective coefficients are +0.409 and +0.357. The differences are not statistically significant in either pair but it indicates that unlike other countries (with the exception of the U.K.) in terms of rating effectiveness, U.S. respondents do not place a higher value on a more democratic approach.

The second part of hypothesis 4 is tested by the interaction coefficient between a democratic approach and inequity with a predicted negative relationship in Table 6. All five coefficients are negative, but only three are statistically significant. The size of the interaction coefficient is relatively small compared the size of the democracy coefficient suggesting that while democracies are penalized somewhat for generating inequity, the overall penalty is modest.

An examination of the results for individual countries, however, suggests even these modest finding might be overstated and might be the result only of the large sample size. Tables F-1 through F-9 in online Appendix F show the individual country results. In only three of 40 cases of the interaction of 2 stars with democratic approaches is there a significant negative relationship, all for the comfort variable for Germany, the UK, and South Korea. For the interaction of democratic approaches and inequity, six of the 40 relationships are statistically significant; three of these are for the equality dependent variable for the US, Germany, and South Korea. South Korea also has significant relationships for effectiveness and democracy and Denmark for comfort.

Discussion (to be revised/expanded)

The COVID-19 crisis is posing significant challenges for the governments across the world. While many countries worldwide experience the same problem, they show clearly divergent patterns in response to the pandemic (Rozell & Wilcox, 2020). Some have adopted strategies that limit individual freedom and civil liberties, whereas others have used approaches relying on individuals' voluntary compliance and cooperation. Different government responses affect not only the COVID-19 outcomes, such as the transmission or death rates, but also the way in which citizens see government legitimacy and power. To explore the latter, this study conducts a survey experiment in eight democratic countries—Canada, Denmark, Germany, Italy, Spain, South Korea, the United Kingdom, and the United States. The findings show that citizens (1) prefer a “democratic” approach to the COVID-19 crisis to an “autocratic” approach, (2) give more positive evaluations when the country receives positive ratings from a credible source, and (3) give more negative evaluations when low-income groups are disproportionately affected by the adverse health effects of the pandemic.

Tables

Table 1. Measurement Reliability by Country for Effectiveness, Equity, and Democracy

Effectiveness (Seven Items)				
	Alpha	Eigenvalue	Loading	
			Low	High
US	.95	5.30	.82	.89
Germany	.90	4.45	.72	.83
Italy	.94	5.08	.80	.88
Spain	.95	5.27	.85	.88
Canada	.94	5.15	.81	.89
UK	.93	5.04	.83	.87
South Korea	.94	5.10	.83	.88
Denmark	.90	4.39	.65	.87

Equity (Three Items)				
	Alpha	Eigenvalue	Loading	
			Low	High
US	.87	2.40	.87	.91
Germany	.80	2.16	.82	.86
Italy	.85	2.33	.88	.89
Spain	.81	2.18	.85	.86
Canada	.87	2.36	.86	.90
UK	.84	2.28	.84	.89
South Korea	.85	2.32	.87	.89
Denmark	.79	2.12	.81	.90

Democracy (Four Items)				
	Alpha	Eigenvalue	Loading	
			Low	High
US	.90	3.11	.86	.90
Germany	.90	3.11	.87	.90
Italy	.85	2.33	.88	.89
Spain	.84	2.73	.79	.88
Canada	.89	3.04	.85	.89
UK	.84	2.69	.80	.85
South Korea	.87	2.92	.82	.87
Denmark	.91	3.15	.88	.89

Table 2. The Impact of Covid-19 Approach, Evaluation Ratings, and Inequity on Public Assessments of Performance: Hypotheses 1, 2, and 3

	Effectiveness	Equity	Democracy	Comfort	Approval
Democratic	0.186*** (0.023)	0.241*** (0.023)	0.634*** (0.022)	0.490*** (0.026)	0.335*** (0.024)
Star Ratings	0.283*** (0.014)	0.190*** (0.014)	0.167*** (0.014)	0.298*** (0.016)	0.261*** (0.015)
Inequity	-0.229*** (0.023)	-0.499*** (0.023)	-0.134*** (0.022)	-0.192*** (0.026)	-0.120*** (0.024)
Constant	-0.826*** (0.047)	-0.441*** (0.046)	-0.752*** (0.046)	2.388*** (0.053)	2.707*** (0.049)
R-squared	0.076	0.103	0.125	0.098	0.070
N	6,889	7,021	6,972	7,074	6,998

Note: Standard errors are shown in parentheses. Two-tailed tests, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3. The Impact of Democratic COVID-19 Policy Cue on the Dependent Variables by Country Controlling for Other Cues

DVs	U.S.	Germany	Italy	Spain	Canada	U.K.	South Korea	Denmark
Effective	0.002 (0.063)	0.398*** (0.061)	0.161** (0.061)	0.234*** (0.061)	0.133* (0.061)	0.004 (0.062)	0.317*** (0.063)	0.606*** (0.165)
Equity	0.104+ (0.061)	0.487*** (0.058)	0.158** (0.060)	0.221*** (0.061)	0.269*** (0.058)	0.110+ (0.061)	0.323*** (0.062)	0.359* (0.178)
Democracy	0.456*** (0.062)	1.033*** (0.054)	0.514*** (0.061)	0.557*** (0.061)	0.784*** (0.057)	0.572*** (0.061)	0.481*** (0.062)	0.943*** (0.152)
Comfortable	0.420*** (0.077)	0.872*** (0.067)	0.176** (0.057)	0.536*** (0.071)	0.687*** (0.072)	0.330*** (0.073)	0.414*** (0.063)	0.564** (0.180)
Approval	0.290*** (0.073)	0.706*** (0.058)	0.266*** (0.059)	0.324*** (0.065)	0.474*** (0.065)	0.143* (0.069)	0.119* (0.059)	0.476* (0.191)

Note: Regression coefficients taken from Appendix E. Standard errors are shown in parentheses. Two-tailed tests, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Table 4. The Impact of Star Ratings Cue on the Dependent Variables by Country Controlling for Other Cues

DVs	U.S.	Germany	Italy	Spain	Canada	U.K.	South Korea	Denmark
Effective	0.307*** (0.038)	0.275*** (0.037)	0.236*** (0.038)	0.348*** (0.038)	0.317*** (0.037)	0.310*** (0.038)	0.165*** (0.039)	0.442*** (0.101)
Equity	0.246*** (0.038)	0.203*** (0.035)	0.173*** (0.037)	0.218*** (0.037)	0.194*** (0.035)	0.164*** (0.037)	0.126*** (0.038)	0.324** (0.109)
Democracy	0.206*** (0.038)	0.127*** (0.033)	0.117** (0.037)	0.207*** (0.037)	0.187*** (0.035)	0.194*** (0.037)	0.110** (0.038)	0.362*** (0.094)
Comfortable	0.325*** (0.047)	0.225*** (0.041)	0.254*** (0.035)	0.354*** (0.044)	0.375*** (0.044)	0.354*** (0.044)	0.182*** (0.039)	0.492*** (0.111)
Approval	0.285*** (0.045)	0.175*** (0.036)	0.238*** (0.036)	0.322*** (0.040)	0.291*** (0.039)	0.353*** (0.043)	0.130*** (0.036)	0.511*** (0.118)

Note: Regression coefficients taken from tables 3.1 through 3.8. Standard errors are shown in parentheses. Two-tailed tests, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Table 5. The Impact of Inequity Cue on the Dependent Variables by Country Controlling for Other Cues

DVs	U.S.	Germany	Italy	Spain	Canada	U.K.	South Korea	Denmark
Effective	-0.083 (0.063)	-0.239*** (0.061)	-0.404*** (0.061)	-0.218*** (0.062)	-0.302*** (0.061)	-0.252*** (0.062)	-0.153* (0.063)	0.097 (0.164)
Equity	-0.379*** (0.062)	-0.608*** (0.058)	-0.622*** (0.060)	-0.428*** (0.061)	-0.693*** (0.058)	-0.555*** (0.060)	-0.241*** (0.062)	-0.246 (0.177)
Democracy	-0.065 (0.062)	-0.135* (0.054)	-0.267*** (0.061)	-0.147* (0.061)	-0.170** (0.057)	-0.109+ (0.061)	-0.100 (0.062)	0.231 (0.151)
Comfortable	-0.024 (0.077)	-0.183** (0.067)	-0.324*** (0.057)	-0.175* (0.071)	-0.212** (0.072)	-0.244*** (0.072)	-0.235*** (0.064)	0.203 (0.179)
Approval	0.000 (0.073)	-0.072 (0.058)	-0.223*** (0.059)	-0.095 (0.065)	-0.154* (0.065)	-0.120+ (0.069)	-0.216*** (0.059)	0.125 (0.190)

Note: Regression coefficients taken from tables 3.1 through 3.8. Standard errors are shown in parentheses. Two-tailed tests, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Table 6. Interaction Models to Test Hypothesis 4: Democratic Approaches Moderated by Performance and Inequality

	Effectiveness	Equity	Democracy	Comfort	Approval
Democratic	0.270*** (0.046)	0.282*** (0.045)	0.702*** (0.045)	0.598*** (0.052)	0.416*** (0.048)
2 Star	-0.215*** (0.040)	-0.144*** (0.039)	-0.110** (0.039)	-0.163*** (0.045)	-0.195*** (0.042)
Democratic × 2 Star	-0.077 (0.057)	-0.007 (0.055)	-0.057 (0.055)	-0.169** (0.064)	-0.077 (0.059)
4 Star	0.328*** (0.040)	0.245*** (0.039)	0.213*** (0.039)	0.364*** (0.045)	0.276*** (0.042)
Democratic × 4 Star	-0.033 (0.057)	-0.025 (0.055)	-0.032 (0.055)	-0.030 (0.064)	0.022 (0.059)
Inequity	-0.182*** (0.033)	-0.469*** (0.032)	-0.097** (0.032)	-0.150*** (0.037)	-0.058+ (0.034)
Democratic × Inequity	-0.095* (0.046)	-0.061 (0.045)	-0.075+ (0.045)	-0.084 (0.052)	-0.125* (0.048)
Constant	-0.040 (0.033)	0.080* (0.032)	-0.303*** (0.032)	3.196*** (0.037)	3.430*** (0.034)
R-squared	0.077	0.104	0.126	0.100	0.072
N	6,889	7,021	6,972	7,074	6,998

Note: Standard errors are shown in parentheses. Two-tailed tests, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

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