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Public perceptions of the role of government and nonstate actors in responding to COVID-19

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Abstract

In this article, we examine public perceptions of the importance of different levels of government and of nongovernmental entities in responding to the COVID-19 pandemic. By analyzing the case of COVID-19, we illuminate patterns that may be helpful for understanding public perceptions of the response to a broader range of crises, including the impacts of hurricanes, tornadoes, earthquakes, wildfires, and other hazards. We contribute to the public policy literature on public perceptions of government response to crises and expand it to include consideration of the role of nonstate actors. Drawing on a representative survey of 1200 registered voters in Texas, we find that individuals are more likely to view government as extremely important to respond to the pandemic than nonstate actors. We find that perceptions of the role of state and nonstate actors are shaped by risk perception, political ideology and religion, gender, and race/ethnicity. We do not find evidence that direct impacts from the COVID-19 pandemic consistently shape perceptions of the role of state and nonstate actors.

KEYWORDS
COVID-19, disaster response, nonstate actors, risk perception

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INTRODUCTION

The COVID-19 pandemic has placed substantial stress on governments and on public resources. In the United States, where states and localities possess most coercive public health authority, policymakers across political jurisdictions have responded to the pandemic by implementing varying public health interventions at different times (Gostin & Wiley, 2020; Huberfeld et al., 2020). During March 2020, social distancing measures and shelter-in-place orders rapidly emerged as central features of state and local responses to COVID-19. The goal of these interventions was to reduce the virus's reproduction number, allowing time for the expansion of testing capacity and the development of pharmaceutical interventions while reducing strain on healthcare systems (Bertozzi et al., 2020). As the pandemic continued, a number of states and localities began experimenting with less stringent measures in the hopes of reinvigorating economic activity (Barnes & Sax, 2020; Mohler et al., 2020).

The federal government, meanwhile, has attempted to play a coordinating role through the Centers for Disease Control and Prevention, offering guidance to state and local governments and to the public as a whole (Haffajee & Mello, 2020). The federal government has also supported research through agencies such as the National Institutes of Health (NIH) and has shaped the regulatory environment in critical ways through agencies such as the Food and Drug Administration (FDA) (Rome & Avorn, 2020; Thomson & Nachlis, 2020). National-level fiscal policies, such as the 2020 CARES Act, have sought to complement existing social safety net programs and ameliorate the financial impacts of shelter-in-place orders, decreased economic activity, and business closures (Rocco et al., 2020).

During public health crises, as during the response to disasters, information, expertise, and formal and informal capacities to respond are distributed across jurisdictions and communication networks (Keller et al., 2012; Kenis et al., 2019). Importantly, nonstate actors play a critical role in supplementing the capacity of governments to provide needed services (Maher et al., 2020; Sledge & Thomas, 2019; Walsh et al., 2015). Nonprofit organizations, such as the American Red Cross, food banks, businesses, and religious groups, provide basic social services for those impacted and are formally included in the Federal Emergency Response Agency (FEMA)'s National Response Framework (Egan & Tischler, 2012; Gerber & Robinson, 2007; US Department of Homeland Security, 2016).

In addition, pandemic response is heavily reliant on businesses that produce medical devices and equipment (Gereffi, 2020; Jester et al., 2018; Livingston et al., 2020). Businesses may also assist in the provision of social services through corporate philanthropy, in-kind donations of needed supplies, and sponsored volunteer efforts (McKnight & Linnenluecke, 2016). In this sense, the disaster state embodies Elisabeth Clemens's description of American government as a "Rube Goldberg State" (Clemens, 2006; Morgan & Campbell, 2011). Rather than directly providing services, the disaster state often delegates authority and encourages nonstate service provision. Like Goldberg's complex and whimsical machines, the disaster state is a composite of different institutions and actors with often-divergent mandates, motivations, and goals.

In this article, we examine public perceptions of the importance of different levels of government and of nongovernmental entities in responding to the COVID-19 pandemic. Analyzing the case of COVID-19, we illuminate patterns that may be helpful for understanding public perceptions of the response to a broader range of crises, including hurricanes, tornadoes, earthquakes, wildfires, and other

hazards. We contribute to the public policy literature on public perceptions of government response to crises and expand it to include consideration of the role of nonstate actors.

We draw on a poll of 1200 registered Texas voters conducted in conjunction with the University of Texas/Texas Politics Project in June, 2020. We utilize logistic regression to estimate the effects of ideology and religion, direct impacts from COVID-19, threat perception, and social and economic vulnerability on public perceptions. We model the extent to which each of these factors shapes whether respondents view federal, state, and local governments as well as businesses, nonprofits, and religious organizations as important in response to the COVID-19 pandemic.

Across almost all of the groups and factors that we examine, individuals are more likely to view government actors as critical to responding to the pandemic than nonstate actors. In the case of ideology, however, we find that more conservative respondents tend to view the importance of government and nonstate actors as broadly comparable, while liberals view governments as substantially more important than do conservatives.

Risk perception also plays an important role in shaping public thought around pandemic response. Increasing levels of concern that an individual or someone they know might be impacted by COVID-19 led respondents to attribute more importance to the role of both government and nonstate actors in responding to the pandemic. Although there is some research suggesting that increased risk perception may lead to support for federal responses to potential risks and more uniform policies, we do not find that increased concern affects perceptions about the importance of different levels of government. In terms of social and economic vulnerability, our analysis suggests that women view both state and nonstate actors as significantly more important in responding to the pandemic than do men. Among black respondents, as among very conservative respondents, perceived differences in the importance of state and nonstate actors were not statistically significant. We do not find substantial independent impacts from age or income in terms of perceptions of the importance of different levels of government and different nonstate actors in responding to COVID-19.

COVID-19, PUBLIC PERCEPTIONS, AND DISASTER RESPONSE

For scholars of public policy, public perception of the role of government in attempting to respond to hazards crises has emerged as an important avenue of research. Public perceptions of government are critical because they help shape interactions between state and society. Perceptions may influence preferences for government action, the willingness of vulnerable groups to engage in actions such as evacuating when threatened with a hurricane, and levels of trust in government agencies tasked with confronting crises. Understanding these perceptions is important to designing, implementing, and reconsidering public policies aimed at addressing threats such as the COVID-19 pandemic. In addition, public perceptions may help to underpin the strength of existing policy subsystems or, in some instances, to foster a context in which policy change might occur (Baumgartner & Jones, 2010; Birkland, 1997; Ono, 2017).

Research in this arena has emphasized the individual-level characteristics that might drive public conceptions of the role of government. The concept of risk

perception, grounded in the pioneering work of Paul Slovic, has played an important role in influencing this aspect of the scholarly agenda. The perception of risk, which is in many cases subjective and detached from material conditions, may play an important role in fueling public interest in government responses to a perceived problem (Kahneman, 2011; Slovic, 1987, 1993). In an important study of the relationship between risk perception and public policy-making, Brian Gerber and Grant Neeley examined the role of citizen risk perception in shaping citizen preferences for government intervention against potential hazards. Risk perception, they found, significantly increased the support for government action (Gerber & Neeley, 2005).

Another notable study, by Scott Robinson, Xinsheng Liu, James Stoutenborough, and Arnold Vedlitz, modeled public approval of the Department of Homeland Security. The authors considered how various demographic characteristics and political preferences might impact the way that individuals perceived the department. In a finding that further supported the conclusions of Gerber and Neeley's work on the importance of risk perception, this analysis found particularly strong support for the hypothesis that attention to the issue of homeland security drove assessments of the Department of Homeland Security (Robinson et al., 2013).

This line of inquiry has been complemented by work on preferences about what level of government responds to crisis and on the impacts of gender and race. Research by Cherie Maestas, Jacqueline Chattopadhyay, Suzanne Leland, and Jaclyn Piatak has suggested that increases in threat perception might influence preferences for what level of government should respond. As perceived threats increase, they find that individuals support a more uniform response to threats and response from the federal government rather than variable responses from state and local governments (Maestas et al., 2020). Darrell West and Marion Orr, meanwhile, have found that gender and race are key factors in determining the extent to which individuals may perceive themselves as vulnerable to the negative impacts of a disaster (West & Orr, 2007).

These studies have helped to illuminate key aspects of the relationship between government and the public when communities are confronted with potential or in-progress crises. They have helped to extend the literature on risk governance, citizen engagement, and risk perception (Kuipers & Welsh, 2017; Kuipers et al., 2018). Nonetheless, little is known about how the public perceives the role of nongovernmental entities, such as nonprofits, businesses, and religious organizations, in filling gaps in government capacity to respond to disasters. More fully understanding disaster response requires considering how public perceptions of the efforts of nonprofits, businesses, and religious organizations relate to ideas about the role of different levels of government during crises.

Public perceptions of the role of nonstate actors might shape how the public responds to efforts by such groups to ameliorate the impacts of the pandemic, in turn influencing the nature and extent of service provision by nongovernmental entities. As Melani Cammett and Lauren MacLean have pointed out, nonstate service provision may have substantial public policy and political consequences, potentially impacting "equitable and sustainable access to welfare, accountability for citizens, and state capacity" (Cammett & MacLean, 2014). More broadly, integrating research on nonstate actors into policy studies is critical to building a fuller understanding of the contours of the American state, public policy, and of the politics surrounding important issue areas (Bushouse, 2017; Hacker, 2002; Hackett, 2017; Mettler, 2011; Weible & Carter, 2017).

ANALYZING PUBLIC PERCEPTIONS: DATA AND MEASUREMENT

To understand public perceptions of the role of governmental and nonstate actors in responding to the COVID-19 pandemic, we analyze data collected as part of the June 2020 University of Texas/Texas Politics Project Poll, administered by YouGov. This state-wide survey of registered voters in Texas included 1444 respondents and spanned June 19–29, 2020. As of this period, Texas had relaxed its initial wave of public health regulations. The public conversation revolved around an ongoing surge in cases and the possibility of implementing new restrictions. Through a process of weighted matching to the characteristics of Texan voters from the 2018 Current Population Survey and 2014 Pew Religious Landscape Survey—such as gender, age, race, and education—the final YouGov sample includes 1200 respondents and reports a margin of error of 3.28%.[1] Respondents were recruited by YouGov through established panel membership and the survey was conducted online.[2]

Perceptions of governmental and nongovernmental actors

Our analysis focuses on public perceptions of the response of different levels of government to the pandemic as well as perceptions of the responses of nonstate actors. We draw on answers to a multipart question that asks respondents: "How important are each of the following to the efforts in your community to respond to the effects of the coronavirus pandemic …" across a 5-item Likert scale ranging from "extremely important" to "not at all important." We generate six dependent variables of perceptions—coded 3 for "extremely important," coded 2 for "very important," coded 1 for "somewhat important," and coded 0 for "not very important" or "not at all important."[3] Each ordinal variable corresponds to a governmental or nongovernmental actor, including the federal government, Texas state government, local government, businesses (not insurance companies), nonprofits, and religious groups and organizations. Table 1 reports the occurrence of these perceptions in the category of "extremely important" across the different state and nonstate actors.

Among those indicating perceptions of government and nongovernmental actors, between 43.7% and 44.8% of respondents indicated that government actors are "extremely important" in response to the coronavirus pandemic. For nongovernmental actors, businesses are viewed as "extremely important" by 34.0% of respondents. Religious organizations and groups as well as nonprofits are perceived by 33.4% and 29.5% of respondents, respectively, as "extremely important." At the individual level, we expect that these evaluations of importance are driven by a variety of factors. In our statistical analysis, we include independent variables for political ideology and religiosity, direct impacts of the COVID-19 pandemic, risk perception, and measures of social and economic vulnerability.

Ideology and religion

There are strong reasons to believe that both ideology and religiosity might influence perceptions of the role of government and of nonstate actors in responding to the pandemic (Choma et al., 2013; Wildavsky & Dake, 1990). In the United States, conservative ideology is often associated with skepticism about government interventions, and conservatives might be expected to be less favorable to government action.

TABLE 1 Perceptions of government and nonstate actors

Actor	N	"Extremely important," N (%)
Federal government	1131	494 (43.7)
Texas state government	1144	512 (44.8)
Local government	1141	510 (44.7)
Businesses (not insurance companies)	1110	377 (34.0)
Nonprofits	1065	314 (29.5)
Religious groups and organizations	1104	369 (33.4)

Note: N's vary as responses of "Don't know/Not sure" are excluded.

At the same time, research in the field of psychology suggests that political conservatives may be more fearful of threat and loss, an orientation that might lead them to favor expanded government against threats (Jost et al., 2003). The stances of conservative-identifying political figures, such as then-President Donald J. Trump and Texas Governor Greg Abbott, meanwhile, add an additional layer of complexity to this particular case. Here, self-reported political ideology is measured on a 7-point scale (from "extremely liberal" to "extremely conservative"). In the survey sample, 1187 respondents identified their political ideology on this scale, with 12.9% and 14.6% indicating that they were extremely liberal or somewhat liberal. Another 24.2% identified as moderate, and 16.8% identified as either leaning liberal or conservative. Lastly, 15.0% listed somewhat conservative and 16.6% identified themselves as extremely conservative. The modal category for political ideology is moderate, with 287 respondents choosing this self-identification, and we report additional descriptive information in Supporting Information Appendix Table A1.

More religious respondents might be more likely to favor action by religious groups, providing a boost in the perceived importance of this category of a nonstate actor. We measured religiosity using respondents' assessment of the importance of religion. Asked "How important is religion in your life?," respondents answered on a 4-point scale. Across the sample, 22.4% indicated "not at all important," 12.7% indicated "not very important," 25.5% indicated "somewhat important," and 39.4% indicated "extremely important."

Direct impacts of pandemic

The disruptive impacts of the COVID-19 pandemic and associated public health interventions have been substantial. Individuals who have been unable to pay bills or who have lost their jobs might have different perceptions of the importance of different levels of government or of nonstate actors than those who have not experienced direct impacts. Perceptions might also change as a result of the cumulative effects of different impacts. Research on the relationship between material damage suffered in a disaster and perceptions of political leadership has suggested that those most impacted by events are likelier to negatively evaluate the performance of political leaders (Akbar & Aldrich, 2015). In our analysis, we include an adjusted scale for the number of direct impacts affecting an individual. When asked the question: "Thinking about your own situation, which of the following have you experienced since the beginning of the coronavirus/COVID-19 pandemic? ("Unable to pay your

utility bills," "Lost your job," "Interruption of education for you or a family member," "Loss of your savings or retirement funds," "Unable to pay your rent or house payment," "Unable to find or maintain childcare you can afford)," respondents indicated substantial economic impact. Over 15.8% of individuals reported three or more of these impacts, 12.5% reported two impacts, 27.3% reported one impact, and 44.3% reported none of the listed impacts.

Risk perception

Research on public perceptions has consistently pointed to risk perception as one of the primary factors in shaping how individuals feel about the role of government in addressing potential threats (Gerber & Neeley, 2005; Maestas et al., 2020; Robinson et al., 2013; West & Orr, 2007). As individuals become increasingly worried about a particular issue, there are strong reasons to believe that they will support action to address it. We include a measure of personal risk perception, based on response to the question "How concerned are you about you or someone you know getting infected with the coronavirus?" On a 5-point Likert scale, ranging from "extremely concerned" to "not at all concerned," more than half of respondents indicated very high or extreme concern for themselves or personal social circle (22.9% and 28.6%), while approximately one-quarter of respondents indicated no or little concern (8.2% and 16.0%).

Social and economic vulnerability

COVID-19 has had disparate impacts across populations, both in terms of mortality and in terms of the social and economic consequences of public health regulations. Deaths from COVID-19 are concentrated among individuals age 65 and older, blacks, and Hispanics (Bailey & Moon, 2020; Gaynor & Wilson, 2020; Gold et al., 2020; Hooper et al., 2020). The disparate impacts of policies intended to combat COVID-19 stem from the sectoral distribution of workers in the labor force, from disparities in wealth across racial/ethnic groups, and from prepandemic social vulnerabilities (Fothergill & Peek, 2004; Pollack, 2020; Stevenson, 2020). Mandated closures of nonessential businesses have heavily impacted black and Hispanic workers, who comprise a disproportionately large population of service industry workers. While men have faced a greater risk of death from COVID-19, women have been more prone to losing their jobs and to taking on expanded caregiver roles flowing from the mandated closure of schools (Stevenson, 2020).

We incorporate a set of variables to measure the social and economic vulnerability of respondents, spanning race/ethnicity, age, gender, whether the respondent has a school-aged child, education level, and income. Included in Supporting Information Appendix Table A1, 60.3% of the survey sample identify race/ethnicity as non-Hispanic White, 10.8% as Black, 22.9% as Hispanic, 2.9% as Asian, 1.1% as native American, and 2.2% other/mixed. Given the relationship between age and risk of severe COVID-19 symptoms and complications, we recode respondent age as a dichotomous variable for whether the respondent is 65 years or older. Across the sample, 21.3% of respondents fall into this category.

In terms of gender, 54.8% identify as female and 25.2% of all respondents report having at least one child of school age (either in public school, private school, or both). With widespread school closures beginning in March 2020, this variable measures a

potentially strong source of social vulnerability for working parents during the pandemic. We also control for the level of education on a 6-point scale (no high school diploma to a postgraduate degree) and income on a 12-point scale (<$10,000 to more than $150,000). The modal education level is "4-year college" and the most frequent income categories listed are "$80k–99k" (10.9%) and "$20k–$29k" (11.2%).

We employ ordered logistic regression to estimate the effects of each of these factors on the extent to which individual respondents view governmental or nongovernmental actors as important in response to the COVID-19 pandemic. We estimate six identical models, with dependent variables for each governmental or nonstate actor: federal government, Texas government, local government, businesses, nonprofits, and religious groups and organizations.

RESULTS

Our analysis shows an independent effect for political ideology, in the direction of increasingly conservative, with governments at all levels perceived as less important (odds ratios = 0.895–0.930). For Texas government and local government, this relationship is statistically significant at the 95% level of confidence and indicates that a one-unit shift in ideology yields a decrease in odds of viewing government as "extremely important" versus the combination of all lower response categories ("very important," "somewhat important," and "not very important/not at all important"). This relationship falls outside of statistical significance for the federal government. An ideological impact is not present for models of nonstate actors; however, suggesting that political ideology does not shape perceptions of businesses, nonprofits, and religious organizations and groups. The importance of religion to respondents has a positive and statistically significant impact only on perceptions of Texas government and religious organizations and groups. This relationship is strongest in support of religious organizations and groups (odds ratio = 1.720).[4] We report the full results of our analysis in Table 2 and Supporting Information Appendix Tables A2 and A3.

We find limited statistically significant relationships between reported direct impacts from COVID-19 and perceptions of importance across our set of models. For only the Texas government model, increases in the number of impacts yield statistically significant shifts in the odds of "extremely important" perceptions (0.881) compared with lower categories. In contrast, for all six models, respondent levels of concern for oneself and those whom the respondent knows is a consistently positive and statistically significant predictor of perceptions. Odds ratios above one (1.390–1.852) indicate that as respondent concern increases, perceptions of "extremely important" for all state and nonstate actors become more likely to occur.

Our results indicate that there are mixed direct effects of respondents' race/ethnicity on whether actors are perceived as "extremely important." Hispanic is statistically associated with decreasing odds of perceiving business actors as important (odds ratio = 0.713), while Black is associated with increasing odds for both business and nonprofit actors (odds ratios = 1.622, 1.926). Gender (female) is statistically associated with increasing odds of "extremely important" perceptions in all six models (odds ratios = 1.299–1.511), while education and the presence of a school-aged child appear to decrease the likelihood of viewing some government and nonstate actors as extremely important responders to the pandemic. Education is statistically significant in only the nonprofit model (odds ratio = 0.892) and the presence of a school-aged

**TABLE 2** Results of ordered logistic regressions, odds ratios

	Fed. Gov.	TX Gov.	Local Gov.	Business	Nonprofits	Religious
Liberal-conservative	0.930*	0.919**	0.895***	1.004	1.004	1.058
	(0.038)	(0.037)	(0.037)	(0.041)	(0.041)	(0.042)
Importance of religion	1.093	1.131**	1.088	1.031	1.115*	1.720***
	(0.067)	(0.069)	(0.067)	(0.062)	(0.068)	(0.108)
Number of impacts	0.917	0.881**	0.981	1.009	0.990	0.991
	(0.057)	(0.055)	(0.062)	(0.063)	(0.061)	(0.060)
Concern (scale)	1.686***	1.572***	1.735***	1.608***	1.852***	1.390***
	(0.099)	(0.092)	(0.104)	(0.095)	(0.111)	(0.079)
Black	1.114	1.197	1.259	1.619**	1.888***	1.486*
	(0.251)	(0.275)	(0.292)	(0.358)	(0.431)	(0.329)
Hispanic	0.828	0.874	0.818	0.713**	0.832	0.975
	(0.129)	(0.136)	(0.129)	(0.112)	(0.131)	(0.149)
Asian	1.128	0.725	0.703	0.631	0.731	0.879
	(0.411)	(0.263)	(0.252)	(0.220)	(0.268)	(0.296)
Native Amer.	1.092	1.882	0.916	0.763	0.950	0.795
	(0.590)	(1.067)	(0.477)	(0.410)	(0.523)	(0.462)
Mixed/Other	0.911	0.703	0.600	0.535	0.807	0.541
	(0.466)	(0.305)	(0.241)	(0.237)	(0.388)	(0.237)
Age 65+	0.956	0.865	0.914	1.089	1.309*	1.114
	(0.153)	(0.139)	(0.147)	(0.174)	(0.210)	(0.176)
Female	1.404***	1.532***	1.319**	1.548***	1.314**	1.412***
	(0.176)	(0.193)	(0.167)	(0.193)	(0.165)	(0.175)
Child in school	0.827	0.884	0.735**	0.725**	0.764*	0.696**
	(0.125)	(0.133)	(0.112)	(0.108)	(0.114)	(0.102)
Education level	0.943	0.954	0.971	0.929	0.899**	0.944
	(0.044)	(0.044)	(0.045)	(0.043)	(0.042)	(0.043)
Income	0.979	0.998	1.007	1.029	1.023	0.998
	(0.021)	(0.021)	(0.022)	(0.022)	(0.022)	(0.021)
/cut1	0.393***	0.279***	0.262***	0.413***	1.451	1.762*
	(0.130)	(0.095)	(0.090)	(0.138)	(0.481)	(0.570)
/cut2	1.572	1.109	1.469	2.294**	6.830***	6.549***
	(0.513)	(0.366)	(0.490)	(0.747)	(2.291)	(2.149)
/cut3	5.797***	5.083***	6.728***	13.124***	28.344***	22.631***
	(1.925)	(1.702)	(2.284)	(4.405)	(9.837)	(7.642)
N	969	979	977	954	920	949

Note: Odds ratios with standard errors are given in parentheses. Non-Hispanic White is the reference category for race/ethnicity variables.

***$p < 0.01$.

**$p < 0.05$.

*$p < 0.1$.
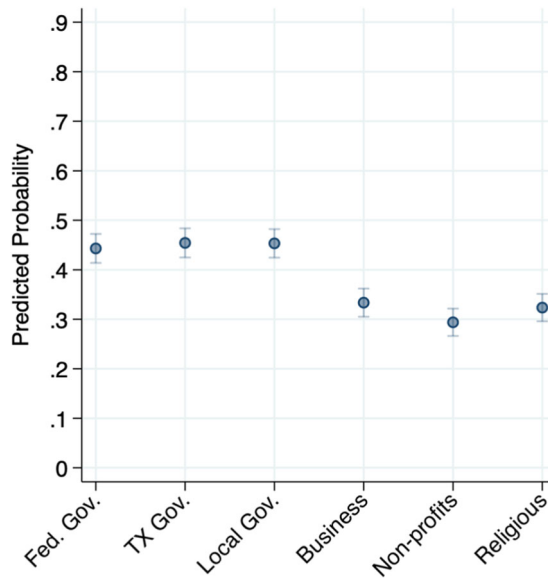
FIGURE 1 Predicted probability of perceiving actors as extremely important. *N*'s vary across models (925–981) due to variation in missing observations of variables within respondent questionnaires

child is statistically significant for the models of local government, business, and religious groups (odds ratios = 0.697–0.739).

In Figure 1, we plot the predicted probability of viewing each actor type as "extremely important" across all respondents using average marginal effects (Torres-Reyna, 2014). When accounting for the full set of independent variables, we find a clear divergence in public perceptions of government and nonstate actors. The predicted probabilities of extremely important perceptions for the federal government, Texas government, and local government show no statistically significant difference among one another. The contrast between perceptions of government and nonstate actors, meanwhile, is clear. While the probability of "extremely important" views of government actors range between 0.443 and 0.454, those for nonstate actors range from 0.294 to 0.324.

To substantively interpret our results, we plot predicted probabilities across the range of five selected independent variables. These include political ideology, direct personal impacts from COVID-19, risk perception, gender, and race/ethnicity. Figure 2 first plots the predicted probability of perceiving actors as important across the 7-point scale of political ideology. Liberals, we note, are more significantly more likely than conservatives to view government actors as critical to responding to the impacts of the COVID-19 pandemic. For more conservative respondents, perceptions of the role of government actors and of nongovernmental entities tend toward convergence. Within each model, increases in conservative ideology yield statistically significant and negative average marginal effects for state and local government actors (Texas government, $\Delta = -0.019$, $p = 0.035$; local government, $\Delta = -0.024$, $p = 0.006$), but no statistically significant impact on the perception of the federal government or of nonstate actors (federal government, $\Delta = -0.016$; $p = 0.072$).

In Figure 2, we also plot the predicted probability of "extremely important" perceptions by the number of direct personal impacts from the COVID-19 pandemic. Our analysis shows that those who have not experienced any direct impacts perceive government actors as "extremely important" to the response with between 0.46 and
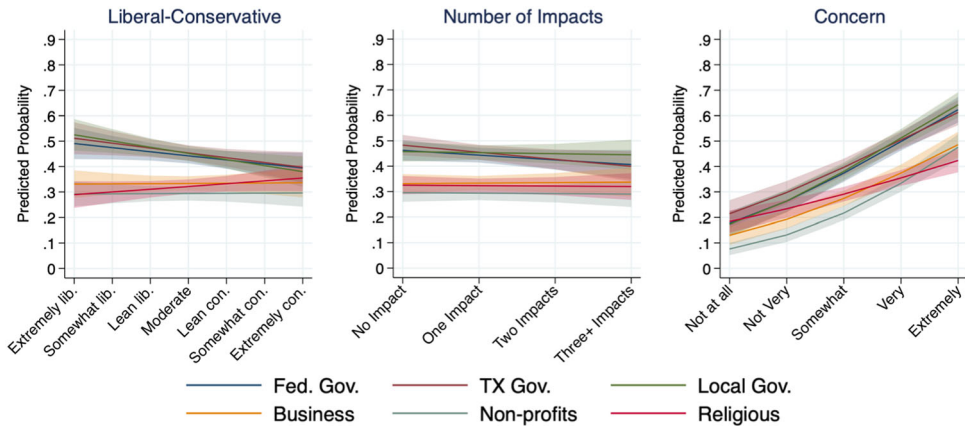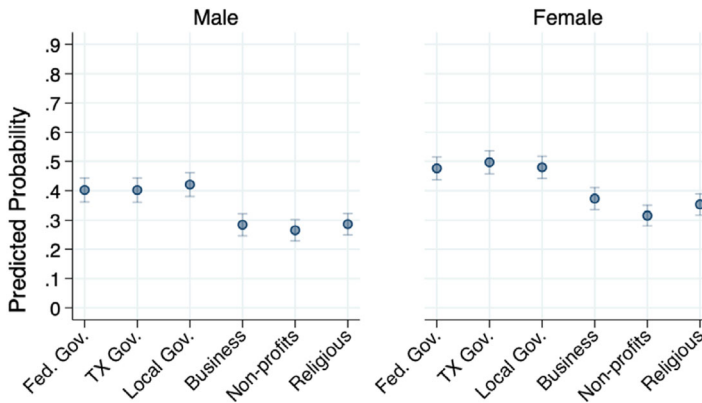
FIGURE 2 Predicted probability of perceiving actors as important, by liberal-conservative ideology, number of impacts, and concern. Liberal-Conservative measured on a 7-point scale from "extremely liberal" to "extremely conservative," self-identified by respondents. Impacts are measured as the count of the number of direct impacts, including loss of job, interruption of education, and inability to pay rent or house payment, among others. Concern measured on a 5-point scale from "Not at all concerned" to "extremely concerned," in response to "How concerned are you about you or someone you know getting infected with the coronavirus?"

0.48 probability and non-state actors with between 0.30 and 0.33 probability. Surprisingly, within our models, there are no substantive or statistically significant relationships between an increased number of direct impacts and perceptions of either state or nonstate actors. Increases in the number of impacts does not affect perceptions in a statistically significant manner for any models (e.g., federal government, $\Delta = -0.012$ $p = 0.159$; nonprofits, $\Delta = -0.002$, $p = 0.869$). As we report in Supporting Information Appendix Table A2F, we also find that increases in household income do not have a statistically significant change on perceptions across the set of models.

Figure 2 also illustrates the predicted probability of perceived importance by an individual's level of concern that they or those that they know might be impacted by COVID-19. Here, we find that risk perception has a substantively large and statistically significant effect on the perceived importance of both state and nonstate actors. Average marginal effects for each model indicate positive increases in the likelihood of viewing actors as "extremely important" with rises in concern. Perceptions of the local government ($\Delta = 0.113$, $p = 0.000$), federal government ($\Delta = 0.113$; $p = 0.000$), and nonprofits ($\Delta = 0.113$; $p = 0.000$) are subject to the largest shifts. These results are consistent with the existing literature on risk perception, suggesting that as risk perception increases, individuals tend to view government as increasingly important. Higher levels of perceived risk also led to a greater perception of the importance of nonstate actors in responding, though nonstate actors were perceived as less important than government.

Previous research has suggested that increased threat perception may lead individuals to place greater value on the importance of the federal government, which might implement a more uniform response to a threat relative to state and local governments (Maestas et al., 2020). Our results suggest that, in the case of COVID-19, those with high levels of risk perception view federal, state, and local officials as equally important. This may be a consequence of the prominence of state and local governments in responding to the COVID-19 pandemic. Direct public health authority is constitutionally placed in the hands of state and local officials, who have made critical decisions about the timing and nature of public health interventions. Over the

FIGURE 3 Predicted probability of perceiving actors as important, by gender

course of the pandemic, meanwhile, national officials have often encouraged local action and deferred to local officials. As a result, the public has observed local officials making critical policy choices about facial coverings, school closures, business closures, and shelter-in-place orders. These highly visible decisions may impact public perceptions of the importance of state and local officials.

In Figure 3, we plot the predicted probabilities of perceiving actors as extremely important by self-identified gender. Previous research suggests that gender plays an important role in risk perception generally and in how individuals perceive the threat of disaster (Gustafsod, 1998; West & Orr, 2007). Here, we find that gender plays an important role in perceptions of state and nonstate actors. Differences across genders are statistically significant for all levels of government and all three types of non-governmental actors. As shown in Supporting Information Appendix Table A2E, positive differences between respondents are largest for the Texas government ($\Delta = 0.095$, $p = 0.001$), followed by the federal government ($\Delta = 0.074$, $p = 0.007$). For business ($\Delta = 0.008$, $p = 0.000$) and nonprofits ($\Delta = 0.050$, $p = 0.029$), differences are comparatively smaller in magnitude across gender.

In Figure 4, we plot the predicted probability of perceiving state and nonstate actors as extremely important by race/ethnicity. Black and Hispanic communities have been disproportionately impacted by the COVID-19 pandemic, and previous research has suggested that nonstate actors may be particularly well-suited to reach marginalized communities. As shown in Figure 4, black respondents appear to have high predicted probabilities, relative to other racial/ethnic categories, for perceiving the role of nonstate actors as "extremely important." Indeed, among black respondents, differences in perceptions of state and nonstate actors were not statistically significant. As compared with non-Hispanic Whites, discrete changes on average marginal effects show statistical significance for the black category for two actors types: business ($\Delta = 0.105$, $p = 0.035$) and nonprofits ($\Delta = 0.128$, $p = 0.008$). Hispanics, meanwhile, were somewhat less likely than non-Hispanic whites to perceive the role of business as important ($\Delta = -0.067$, $p = 0.026$).

DISCUSSION

In this article, we examine public perceptions of the role of different levels of government and of nonstate actors in responding to the COVID-19 pandemic. We identify several instances where individual-level characteristics shape perceptions of the role
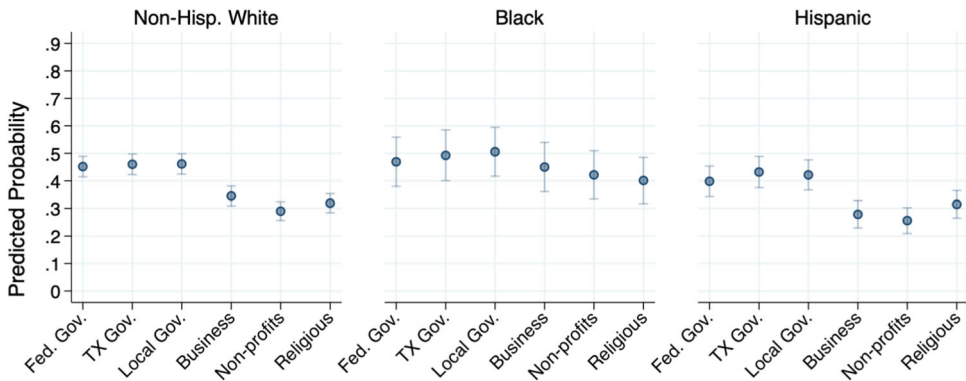
FIGURE 4 Predicted probability of perceiving actors as important by race/ethnicity. In the full sample (*N* = 1200), non-Hispanic White *N* = 723 (60.3%); Black *N* = 129 (10.8%); Hispanic *N* = 275 (22.9%)

of government and of nonstate actors. In the case of ideology, we find that conceptions of the importance of state and nonstate actors tend toward convergence among the most conservative respondents. Notably, perceptions of the importance of nonstate actors are essentially the same across the ideological spectrum, and we do not find that conservatives view nonstate actors as any more important than do liberals. Conservatives do not, in other words, simply replace positive perceptions of the importance of state provision of services with positive perceptions of provision by nonstate actors. Liberals, meanwhile, view government as substantially more important in responding to the COVID-19 pandemic than do conservatives.

Surprisingly, we find that direct impacts from COVID-19 have a negligible impact on perceptions of the importance of state and nonstate actors. Risk perception, however, plays a major role in shaping how individuals viewed the importance of state and nonstate actors. Those who have high levels of concern, we find, view government and nonstate responses as far more important than those who expressed little concern. Although previous research suggests that heightened risk perception may lead individuals to favor responses by the federal government and a more uniform policy approach, we do not find that increased concern leads to increases in the perceived importance of the federal government relative to other levels of government. This finding may be a result of the high level of salience of state and local officials and policy decisions during the COVID-19 pandemic.

Our findings in terms of gender and race highlight the complexities of public perceptions. Although men are at a greater risk of dying from COVID-19 than are women, women view both state and non-state actors as more important in responding to the pandemic. This is consistent with previous findings on the importance of gender in risk perception. It may also result from the disproportionate impacts in terms of job loss and expanded caregiving responsibilities that women have faced during the pandemic. Black and Hispanic communities have been hit heavily by COVID-19 and individuals from these racial/ethnic categories are more likely to die from the disease than non-Hispanic Whites. Among black respondents, we found that nonstate actors (business and nonprofits, in particular) were viewed as relatively important. Hispanics, meanwhile, were less likely, relative to non-Hispanic whites, to view business as having an important role to play in responding to the pandemic.

For most respondents, governments are viewed as substantially more important in responding to COVID-19 than nonstate actors. This gap may be indicative of how

individuals view the roles of government and of nonstate actors in responding to crises more generally. It may also, however, reflect the high level of salience of public policy decisions for the population as a whole during the pandemic. In this case, public policies have impacted day-to-day life across society in a manner that may be more visible than in other cases. Local officials, the Governor, and then-President Trump consistently made highly visible pronouncements about policies intended to address the pandemic. In addition, the impacts of state and local policies on public health, the economy, and the routines of life have been particularly visceral for individuals. Notably, the gap in perceptions of state and nonstate actors was not statistically significant for those who identified as very conservative or for black respondents. The gap is also not statistically significant for Hispanic respondents when comparing the federal government to religious organizations and groups, though it is significant for other comparisons between state and nonstate actors.

The relative importance of government in public perceptions of the response to COVID-19 may also be a consequence of the impacts of the pandemic on the ability of non-state actors to operate in the manner that they would following other disasters. The unique challenge presented by COVID-19 has meant that the nonstate actors that typically play such a prominent role in responding to disasters may, in many cases, be unable to deliver services. Public health concerns and regulations have ensured that non-profits and other groups face new obstacles in terms of identifying and reaching out to the vulnerable. Nonstate actors have found their resources strained, while their own employees and volunteers are burdened by a new set of social and economic challenges.

ENDNOTES

[1]Full details of the YouGov sampling and weighting methodology can be found at https://texaspolitics. utexas.edu/research-data-archive. See Mercer et al. (2018) and Vavreck and Rivers (2008) for discussions of weighted matching for opt-in Internet panels to reduce sampling bias.

[2]See Collingwood and O'Brien Gonzalez (2019) and Hinich et al. (2010) for previous studies drawing on similar UT-Austin/YouGov polling data.

[3]We draw on a Likert item scale to construct our dependent variable. See Slimak and Dietz (2006) for an example of the use of Likert scales in the study of risk perception using public opinion surveys. Additional independent variables, including concern about COVID-19 and the importance of religion, are similar scales.

[4]See Supporting Information Appendix Tables A2E for average marginal effects of the importance of religion on perceptions across actor types. Change associated with the increasing importance of religion for the "extremely important" perception of religious organizations and groups is 0.104, $p = 0.000$.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the supporting information tab for this article.

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