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Public Perceptions on Federal and State Governments' Response to the COVID-19 Pandemic and Compliance with Precautionary measures against COVID-19 in the United States.

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Abstract

Public Perceptions on Federal and State Governments' Response to the COVID-19 Pandemic and Compliance with Precautionary measures against COVID-19 in the United States.

By Pooja Naik

Background: The American public's trust in the federal and state government has been declining over years. In a pandemic as severe as COVID-19, it is important that federal and state governments have the right place in eyes and hearts of general public to ensure that the public health messages are relayed well. Through this study, we aim to understand whether the public perception of federal and state government response has association with the willingness to comply with precautionary measures against COVID-19 pandemic.

Methods: During August – September 2020, 1647 adults were recruited to participate in an online survey assessing public perceptions on government response and compliance with precautionary measures. Trust in government was measured using five domains – Commitment, Honesty, Openness, Competency, and Care and Concern. Descriptive statistics and multivariate analyses were conducted using SAS; concordance analysis was conducted for understanding agreement in the study population and paired t-test was conducted for continuous outcomes.

Results: Overall, positive-leaning perception of state government response in terms of Commitment, Honesty, Openness, Competency, and Care and concern during COVID-19 was seen among the participants. Perceptions of federal government response during COVID-19 were largely leaning towards the negative side in all domains of trust. On average, the response score was lower for state government overall (Mean = 12.33, SD = 4.21) and higher for the federal government (Mean = 13.62, SD = 4.79) indicating a more positive perception of state government response. The Mean response scores across all five domains of trust i.e., Openness, Honesty, Competency, Commitment, and Care and concern also indicated more positive perception of state government than federal government. The log-binomial regression showed association between perceived quality of response at different levels of government and willingness to adopt precautionary measures for COVID-19.

Discussion: A higher probability/prevalence of mask wearing, hand washing, hand sanitizing is seen among individuals who perceived only state government as committed, honest, open, competent and caring and concerned during COVID-19 pandemic as opposed to those who had positive perception of only federal government or both governments. Compliance of precautionary measures was higher in individuals with a positive perception of both state and federal governments compared to individuals with positive perception of federal government only. These findings suggest the significance of trust in local or state level government as well as central government combined.

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Chapter 1: Introduction

Background

The COVID-19 pandemic has taken millions of lives all around the world evolving as a rapid and massive global challenge to all countries worldwide (Dong et al., 2020). Much was unknown about the cause of this pneumonia-like illness in December 2019, including whether it is transmitted from one human to another human. In such a crisis, citizens look to their governments for information, guidance, and safety. The human-to-human transmission of the coronavirus was confirmed only on January 19 – January 20, 2020 by China and World Health Organization (WHO, 2020). By this time, the virus had arrived in the U.S. and first case was detected on January 21, 2020 (CDC, 2020). The trump administration escalated its response towards the pandemic by the end of the month by limiting entry of travelers into the U.S coming from China's Hubei province. However, only few actions were taken notwithstanding clear indications that the outbreak was serious, and it was silently spreading in America. Each state government's response was distinct as was the impact of pandemic on these states. The effective implementation of these government responses, however, depended highly on compliance and support from the general public. Several studies suggest that trust in government in terms of Commitment, Openness, Honesty, Competency, and Care and concern is a crucial factor in public's compliance with the recommended policies that rely on their behavioral responses (Rudolph, & Rahn, 2000; OECD, 2017).

Trust in government represents confidence of citizens in the actions of a "government to do what is right and perceived fair" (Easton, 1965). How citizens perceive the quality of their government's response - their interpretation of what is right and fair to do in certain circumstances - play an important role in building trust towards the government (Bouckaert and van de Walle,

2003). Trust in government has been identified as a cornerstone of the political system, particularly in any economic crises, disasters or pandemics (Rodriguez, Donner & Trainer, 2018). The Biden administration's first step, therefore, in controlling the pandemic is to restore public trust in government through scientific integrity and evidence-based policymaking (The White House, 2021).

Levels of public trust in federal government differs from the trust level in state or local governments. Several studies have shown that Americans consider state government in higher esteem than federal government (Wolak, 2020; Wolak & Palus, 2010). The origins of trust lie from the belief that state governments are better suited to deal with local issues because of their local control than the federal government. State governments tend to be closer to the people, more aware of the needs of the state residents and responsive to their needs. However, federal government still has some responsibilities in a pandemic response, one of which is helping build the capacity of local public-health authorities to detect and respond to outbreaks. One crucial responsibility that the federal government has in a pandemic response is "coordination". While states hold the strong power and responsibility to an outbreak response, in phase of a serious pandemic such as COVID-19, the citizens look to the U.S. government for coordinating a "unified" national response that includes multiple federal agencies as well as state and local health departments, the private sector and academia.

Problem Statement

Given many evidences suggesting importance of maintaining public trust during the crisis times such as COVID-19 pandemic, there is an urgent need to understand general public's perceived quality of state and federal government responses to the COVID-19 pandemic. An insight into public perception of state and federal government response can help us understand

public's trust in government during the crisis times and identify key drivers of declined or enhanced trust in both state and federal government. The perceived quality of government response can greatly affect the trust in government and hence, the course of the pandemic, especially as COVID-19 vaccine acceptance in the U.S. is still in research (Lazarus et al., 2020).

Purpose Statement

The goal of this study is to identify the perceptions and attitudes towards federal and state government response and assess the correlation between trust in government and citizens' willingness to accept adopt the protective measures as suggested by the government and health experts. We aim to answer the following research questions through this study -

- How is the federal and state government's response to COVID-19 in terms of Commitment, Openness, Honesty, Competency, and Care and concern perceived by the American public?
- How is the perceived response of government at state and federal level associated with general public's willingness to comply with the recommended COVID-19 precautionary measures?

Significance Statement

This study will address significant gaps in understanding the importance of gaining Americans' trust in both state and federal government, especially during the times of crisis such as the COVID-19 pandemic. Understanding importance of gaining public trust will help encourage improved public cooperation and implement relevant public policies targeting to improve public trust through evidence-based policymaking in fighting not just the COVID-19 pandemic but also any crisis of any magnitude and dealing with their secondary consequences.

Chapter 2: Literature Review

Federalism in the United States

The U.S. federal system has allowed states, "laboratories of democracy" - as popularized by Supreme Court Justice Louis Brandeis, to take different approaches to similar problems (Blakeman, 2020). Due to this, the states can experiment with innovative policies for solving the state's issues and learn from the experiences of their own and other states about what works best. There are limits, however, to what individual state governments can achieve while working independently on different approaches. That is why the federal government has historically coordinated efforts to address problems affecting the entire nation. However, the lack of interjurisdictional coordination between the states is making each state's efforts only as effective as those of its least successful neighboring state (Gordon SH et al., 2019).

In the absence of effective federal leadership, the U.S. states are working individually to bring their infection rates under control by utilizing their own resources. As a result of which, on the surface, there are two groups in the U.S. responding to one virus. We see a federal response as well as states' responses. However, in the beginning of the pandemic, the federal response mainly included downplaying the virus. But, owing to the U.S.'s federalized public health system, certain states have acted taking into consideration the advice of health experts and such states have been able to control the burgeoning infection rates. On the other hand, states that followed the federal government's footsteps, infection rates have peaked out of control. The divergence of the U.S. and 50 states' responses reveals the strengths as well as the weaknesses of the U.S. federal system amidst the deadliest pandemic of the century (Jha, 2020).

Role of federal government in a pandemic response

In response to the pandemics in the past, federal government had the role of enhancing the United States' pandemic preparedness – at the global, federal and local level. With an aim of improving international capacity for identifying quickly and fighting emerging infectious diseases, federal government has the responsibility to join hands with other nations, international organizations and private-sector actors around the world so as to stop the spread of disease in United States even before they cross the boundaries of United States. Thus, in the phase of a pandemic as deadly as the COVID-19, the federal government of the United States has the role of partnering with other nations to help improve their infectious disease detection, prevention, and response capacity. The federal government has two roles in pandemic preparedness – to help build the capacity of the state and local public-health authorities that are primarily responsible for responding to the outbreaks; and not only ensuring supplies of vaccines, diagnostic kits, treatment drugs, medical equipments but also funding research for vaccines and antivirals, diagnosis and innovations in medical equipments, etc required to contain the pandemic (Berman, 2020).

Role of state government in a pandemic response

Most public health responsibilities in case of outbreaks or pandemic of any magnitude reside with the state governments making them the front-line or primary responders. In the United States, state and local health departments are primarily responsible for detecting an outbreak and implementing the public health response (Berman, 2020). Because state health departments are autonomous of federal control, their approaches to surveillance and containment are likely to vary. States regularly enforce mandatory screening and vaccination rules, be it during a pandemic or not (Berman, 2020). It is state governments' responsibility to mandate mask use, business closures, ban social gatherings, engage in surveillance and contact tracing in times of communicable disease

outbreak. The state governments' powers are not unrestricted. But in the state of public health emergencies, state authorities are responsible to take aggressive measures that may impose constraints on individual liberties (Berman, 2020). A pandemic as severe as COVID-19 which has affected lives within and outside the nation can overwhelm the resources available at state level and therefore, there is a need for a unified response where the state and federal government work together to contain the spread of pandemic.

Trust in government

Trust is a subjective phenomenon that reflects a positive perception about the actions of an individual or an organization (OECD, 2013). Trust in government represents confidence of citizens in the actions of a "government to do what is right and perceived fair" (Easton, 1965). Whether the government has the ability to do its job, the kindness to care about its people, and the integrity to generally do the right thing; helps lead an individual to trust in the government. How citizens perceive the quality of their government's response - their interpretation of what is right and fair to do in certain circumstances - play an important role in building trust towards the government (Bouckaert and van de Walle, 2003). As citizens' preferences are diverse, they use a criterion to evaluate trust in government. The Trust Determination Model (Covello et al., 2001) identified elements such as competency, honesty, openness, commitment, and care and concern as the key components of trust (Figure. 2). Trust can affect perceptions of risk communications during an emergency crisis. In the same way, inaccurate communication can either strengthen or damage trust (Meredith et al., 2007). Furthermore, this trust may influence their willingness to comply with the suggested preventative measures. Previous public health emergencies such as the 2009 H1N1 pandemic (Freimuth et al., 2014) and the 2014-2016 West African Ebola epidemic (Blair et al., 2017) have proven the correlation between trust and willingness to adopt preventative measures.

A recent cross-sectional study on Australians' perceptions of COVID-19 highlighted that individuals with higher trust in the government and authorities were more likely to comply with recommended hygienic practices and to follow social distancing (Seale et al., 2020). Association between trust and vaccination was found in a study on trust during early stages of H1N1 pandemic (Freimuth et al., 2014). Additional studies suggested that the mistrust in health experts and government, and conspiracy theories spread by local media and some social media sources were responsible for H1N1 immunization disparities in African Americans during the H1N1 pandemic in the United States (Bish et al., 2011).

Chapter 3: Methods

Study Design and Sample

English speaking non-institutionalized participants aged 18 and older from across the United states (U.S.) were recruited through an online survey using the Qualtrics (Qualtrics, Provo, UT) online panel survey platform from August 25 to September 2, 2020. To avoid the demographic skew, Qualtrics employs methodologies to create an overall panel which approximates the adult U.S. population to capture a representative sample. Respondents' identities were verified using IP addresses to ensure that each participant was unique upon initial registration. After panel members were recruited based on inclusion criteria, an email invitation for participation was sent by Qualtrics. Of the 5,561 surveys initiated, 15 participants were excluded due to screen out based on quotas created by our research team to ensure adequate representation of the U.S. population and data quality measures (e.g., quality failure checks, logic checks), ensuring high quality data for our research. 5,546 potential survey respondents were sent an email invitation with details on the survey and research purposes, how long the survey was expected to take, and what incentives were available for survey completion. Participants were not provided any specific information on the

research project. Respondents received an incentive, determined by Qualtrics, based on the length of the survey, the respondents' specific panelist profile, and difficulty of recruitment.

The survey instrument was designed to assess a wide variety of measures related to knowledge, attitudes, and practices related to the COVID-19 pandemic, including questions pertaining to numerous content areas including demographics, general health seeking behaviors, SARS-CoV-2 awareness, mental health impacts of the Coronavirus pandemic, physical distancing measures, overall vaccine confidence, willingness to receive a SARS-CoV-2 vaccination when available, and decision-making psychological constructs (Flynn et al., 1994). Respondents who chose to participate were first directed to the informed consent form which was embedded within the online survey. Respondents were asked to review the consent form which presented them the expectations of participation, informed them that participation was completely voluntary and that they could choose not to answer any question they were uncomfortable with, and that no identifying information they provided would be collected or linked back to them individually. They were required to provide an informed consent in order to continue the survey. Of 5,546 survey respondents post screen out, 511 did not provide a consent and 2,151 did not complete the survey. 2,884 survey respondents completed the survey, out of which 26 participants were over quota and 1211 were excluded due to poor data quality – leaving 1,647 complete surveys which were included in the analysis. The participation flow is described in **Figure 1**. This study was determined to be exempt from human subjects' research by the Emory University Institutional Review Board.

Survey Instrument and Measures

We used a quantitative trust scale which was developed by Sandra Quinn and team using elements from the Trust Determination Model and Meredith et al to identify individual's trust level towards the government in handling the H1N1 pandemic (Quinn et al., 2009). The scale that we used included questions to assess respondents' level of trust in government in terms of openness, honesty, commitment, caring and concern, and competence in addressing COVID-19 (see Table 2). Each item was selected to assess perceptions of quality of government response during the COVID-19 pandemic in terms of competency, honesty, commitment, openness and care and concern. Responses to each item ranged from "strongly agree" for a minimum score of 1 to "strongly disagree" for a maximum score of 4. There was also another option "Prefer not to answer" to allow respondents to skip the question if they're not willing to share their view.

The questionnaire items are:

- **Commitment**

1. I think that my state government is very committed in protecting me and others from coronavirus.
2. I think that the U.S. government is very committed in protecting me and others from coronavirus.

- **Honesty**

1. I think that my state government is very honest with information regarding coronavirus.
2. I think that the U.S. government is very honest with information regarding coronavirus.

- **Care and concern**

1. I think that my state government is very caring and concerned about people who might be affected by coronavirus.
2. I think that the U.S. government is very caring and concerned about people who might be affected by coronavirus.

- **Openness**

1. I think that my state government is very open with information regarding coronavirus.
2. I think that the U.S. government is very open with information regarding coronavirus.

- **Competency**

1. I think that my state government is very competent in handling coronavirus.
2. I think that the U.S. government is very competent in handling coronavirus.

Demographics

Seven variables were used in the analysis: region, age, gender, education, ethnicity, race, income. U.S. Census regions were obtained from the U.S. state of residence provided by respondents in the survey. Respondents who identified as transgender or non-binary/non-conforming were included in "Others" category in gender. Age was categorized into 5 groups as '18 – 25 years', '26 – 35 years', '36 – 45 years', '46 – 55 years' and '56 – 65 years'; and income was categorized into 4 groups as 'Less than $60,000', '$60,001 - $1,00,000', '$1,00,001 - $2,00,000' and 'More than $2,00,000'; with roughly equal proportions in each level. We collapsed education into 5 categories: 'Less than high school', 'High school graduate', 'Some college', 'Bachelor's degree' and 'Master's degree or higher'. The demographic characteristics of the study population are shown in Table 1.

Chapter 4: Analysis Plan

Descriptive Analysis

The survey data were cleaned and analyzed using SAS 9.4 (The SAS Institute, Cary NC), by using descriptive statistical methods to understand the distribution of the demographic characteristics in the study population as well as the distribution of perceived quality of government response and trust towards both state and federal government.

Concordance Analysis

For the purpose of concordance analysis, we created a binary variable for the each of the items assessing perceived government response - "Strongly agree", "Agree" and "Somewhat agree" as "Agree" and "Strongly Disagree" as "Disagree". Agreement was calculated for perceived quality of state and federal government's COVID-19 pandemic response based on the government's competency, honesty, commitment, openness and care and concern. Overall percent agreement and Cohen's kappa statistics were calculated, with associated 95% confidence intervals (CI). We assess concordance using a 4-level variable; as an example, in the case of commitment, individuals were classified as "Concordant, committed", "Concordant, not committed", "Discordant, state committed", "Discordant, U.S. committed". Similar data groupings were used for the other four domains of trust.

COVID-19 Mean Government Response Score

The 4-level variables for assessing perceived quality of government response were utilized to calculate the COVID-19 government response scores for each respondent. To calculate an overall response score, we calculated the mean state and federal response score and the associated standard deviation for each respondent to produce an individual level COVID-19 response score. The response scores for state and U.S. government were then compared across the region, age, gender, education, ethnicity, race and income strata to identify the population groups with a more positive perception of state government's response during the COVID-19 pandemic over that of U.S. government. This was estimated by obtaining the mean of difference between the response scores for state government and U.S. government by each stratum and p-values were obtained using a paired t-test. A lower negative difference score indicated wide gap between trust towards state and federal government.

Log-Binomial Regression

To understand the association between perceived quality of government response and the respondent's willingness to adopt non-pharmaceutical interventions such as wearing a mask, washing hands, and sanitizing hands during the COVID-19 pandemic, we fit a Log-Binomial regression model for each of the five items assessing perceived government response with the non-pharmaceutical interventions as the dependent variable and report the estimates with 95% confidence intervals. For the purpose of this analysis, we used the binary variable created for each of the five items assessing perceived quality of government response coded as 1 and 0 for "Agree" and "Disagree" respectively. We adjusted these models with covariates - respondent's age, gender, income, education level, race and ethnicity to produce accurate estimates. In these models, dummy variables were created for all the covariates and treated people with income below $60,000, adults between 65 – 75 years, males, non-Hispanics and white Americans as the reference groups for respective covariates' categories. For perception of government response in terms of commitment, openness, honesty, competency, and care and concern at state, federal and both government levels; the negative perception of state government, federal government and both governments are considered as the reference respectively. **Model 1** shows an example of the crude and adjusted model equations used for finding association between willingness to adopt mask wearing and perceived responsiveness of the state and federal government (commitment). Similarly, we fit crude and adjusted models for commitment with hand washing and hand sanitizing; and other four items - honesty, commitment, openness and care and concern with wearing a mask, washing hands, and sanitizing hands.

Model 1: Model equation for finding association between willingness to adopt mask wearing and perceived responsiveness of the state and federal government (commitment).

Crude model:

Mask wearing = $ß_1$*(state commitment) + $ß_2$*(federal commitment) + $ß_3$*(state commitment* federal commitment)

Adjusted model:

Mask wearing = $ß_1$*(state commitment) + $ß_2$*(federal commitment) + $ß_3$*(state commitment*federal commitment) + $ß_4$*(income 60 to 100K) + $ß_5$*(income 100 to 120K) + $ß_6$*(income more than 200K) + $ß_7$*(18to25years) + $ß_8$*(26to35years) + $ß_9$*(36to45years) + $ß_{10}$*(46to55years) + $ß_{11}$*female + $ß_{12}$*(other sex) + $ß_{13}$*Hispanic + $ß_{14}$*(some college) + $ß_{15}$*(high school) + $ß_{16}$*bachelors + $ß_{17}$*(less than high school)

Chapter 5: Results

Distribution of demographics in the sample

Demographic characteristics of 1,647 respondents are presented in Table 1. A fair gender distribution in our sample was seen with 48.9% males and 49.7% females, while 0.8% selected transgender and 0.2% selected "Others" when asked about their gender. Hispanics were underrepresented constituting only 17.4% of the sample, while 81.8% participants were of non-Hispanic origin. More than half of the participants (69.99 %) were white Americans while 16.32% were African Americans and Asians, American Indian/ Alaskan Native, Native Hawaiian/Pacific Islander and other races constituted only 10.94% of the sample. The item non-response rate was the highest for the question about annual income (6.6%) and ranged between 0 – 1% for other items gathering demographic characteristics.

Perceived Quality of Government Response during COVID-19 Pandemic

Across all the five items assessing perceived quality of government response stratified by government level, we see a similar trend of inclination towards more positive perception of response for state government compared to federal government (see Table 2). It is noteworthy that majority of the participants strongly disagreed upon federal government being very committed, honest, caring and concerned and competent. Even though 31.45% of survey participants somewhat agreed that federal government being very open with information regarding coronavirus, nearly equal proportion of participants i.e., 29.20% also strongly disagreed with this statement; while 10% fewer proportion of participants stated that they strongly agree or even agree that the federal government is open. It is seen that the least proportion of participants strongly agreed or agreed that federal government is very committed, honest, open, caring and concerned and competent, while we see quite the opposite for perceived quality of state government's response in terms of commitment towards handling the pandemic and care and concern towards their people.

Concordance Analysis

Tables 3A-3E show distribution of perceptions of state and federal governments' responses during the COVID-19 pandemic in terms of commitment, openness, honesty, competency, and care and concern stratified by the demographic characteristics of participants. We found that while approximately around 50-60% participants had positive perception of both state and federal government, approximately 18-20% (second next majority) had positive perception of only state government in all domains of trust, approximately 8 – 12% had negatively perception of both state and federal government response and, approximately 6 – 8% (the least proportion of participants) agreed that only federal government was great at responding to the COVID-19 pandemic in terms

of commitment, honesty, openness, competency, and care and concern. Similar findings are seen when stratified by demographic characteristics of the respondents except some population groups that demonstrated different views. For example, in Northeast region, very few participants stated that only federal government was committed, competent, and caring and concerned but even fewer stated that both state and federal government were not committed, competent, and caring and concerned at all. Among age categories, we found higher proportion of participants (approximately 12-20%) in the youngest age group agreeing that only federal government was committed, open, honest, competent, and caring and concerned compared to the proportion of participants thinking that only state government was committed, open, honest, competent, and caring and concerned. It is also worth noting that among the oldest age group with age ranging from 56 to 65 years, approximately 29 – 36 % reported positive perception of their state government's response only which is close to the highest while very few i.e., 4 – 7 % reported positive perception of only federal government response. Across all domains of trust, more Hispanics than Non-Hispanics reported positive perception of federal government alone. When stratified by race, we found that participants belonging to all races had a positive perception of both state and federal government and state government alone. But also more participants belonging to African Americans race than any other race category had a positive perception of federal government alone across all domains of trust.

COVID-19 Mean Government Response Score

Table 4A and Table 4B shows the mean government response score for both state and the U.S. stratified by the five items and demographic characteristics respectively. Lower the score, more positive is the perceived quality of government response. The mean response scores across all five domains of trust i.e., Openness, Honesty, Competency, Commitment, and Care and concern

indicated more positive perception of state government (mean=2.51, SD=0.97; mean=2.54, SD=0.98; mean=2.59, SD=1.01; mean=2.40, SD=1.01; and mean=2.40, SD=0.99 respectively) than federal government (mean=2.73, SD=1.08; mean=2.80, SD=1.07; mean=2.78, SD=1.11; mean=2.66, SD=1.08; and mean=2.67, SD=1.08 respectively). That is reflected not only in the overall mean score but also when stratified by demographic characteristics, we found a similar scenario. Table 4B also shows the difference between the U.S. government response score and state government response score. A negative difference in mean scores indicates that the perceived quality of response of the U.S. government is better than that of state government. The mean difference hints that adults between the age of 18 to 25 years and 36 to 45 years and/or of Native Hawaiian/Pacific Islanders origin perceive federal government's response as better than state government's response. Not just the sign but also magnitude of the score difference helps identify the demographic groups which are heavily inclined towards either state or federal government. It is evident from the difference scores shown in the table that the oldest age group of participants between 56 to 65 years of age have a more positive perception of state government response (response score: 12.17) as opposed to federal government (response score: 15.18). The same is the case with participants with annual income of more than $200,000 (state response score: 12.97 vs U.S. response score: 15.45) and those from states in the west region of the U.S. (state response score: 12.29 vs U.S. response score: 14.63). On average, the difference in mean response score between federal and state government was significantly higher with a more positive perception of state government response among individuals from the West region, age group of 56 – 65 years, females, Non-Hispanics, American Indian and Alaskan Native, and those that fall in the category of highest income (more than $200,001 annually).

Log-Binomial Regression

The log-binomial regression model for each of the five items assessing perceived government response with the non-pharmaceutical interventions (NPIs) as the dependent variable depicted a common trend across all five items and the NPIs – wearing mask, washing hands and sanitizing hands (Table 5). Prevalence ratios are presented for three levels – 1) impact of positive perception of only state government's response, 2) impact of positive perception of only federal government's response and 3) impact of positive perception of both state and federal government's response towards the COVID-19 pandemic. Data are presented as crude and adjusted prevalence ratios (adjusted for respondent's age, gender, income, education level, race and ethnicity) with 95% confidence intervals. Compliance with non-pharmaceutical interventions (NPIs) was higher in individuals that perceived only state government as committed, open, honest, competent and caring and concerned during the pandemic. Individuals with a positive perception of both state and federal government had lower compliance than those with a positive perception of state government but still higher than individuals that perceived federal government alone as committed, open, honest, competent and caring and concerned during the pandemic.

Chapter 6: Discussion

Findings from this cross-sectional study echoed some of the previous studies on American public's trust in state and federal government and its association with the self-reported preventive behavior. **Table 2** highlighted more positive-leaning perception of American public towards the state government than the federal government in terms of commitment, openness, honesty, competency and care and concern during the COVID-19 pandemic. This result is consistent with the previous findings that American public has more trust in state government than the federal government because of its local control over things (Wolak, 2020; Wolak & Palus, 2010). At the

national level, public is more likely to develop trust towards the government when the economy and international reputation is strong. At the state level, however, public trust is believed to be unassociated with the state's performance and rather tends to follow from the perception of federal government response (Chong, 2001; Hetherington, Nugent, Hibbing, & Theiss-Morse, 2001). But a recent study argues that public trust in their respective states also reflects the political and economic conditions of the states as well as the performance of the state (Wolak, 2020). It is not deniable, however, that both federal and state governments' failed in responding to the COVID-19 pandemic owing to their ineffective pandemic prevention, preparedness and coordination efforts (Gerstein, 2020). A comparison of mean response scores of federal and state governments overall and across the demographic characteristics of our study population as seen in Table 4B showcases some interesting findings. Our findings confirmed results from a pew research that have shown that Hispanics trust federal government more than the Non-Hispanic individuals. We found a robust relationship between difference in perceived quality of federal and state governments' response to COVID-19 pandemic and willingness to adopt precautionary measures recommended for controlling the spread of COVID-19. This is in line with previous findings that public trust in government was associated with adherence to public health interventions (Goold, 2002; Meredith et al., 2007; Mohseni & Lindstrom, 2007; O'Malley, Sheppard, Schwartz, & Mandelblatt, 2004; Salmon, Dudley, Glanz & Omer, 2015). Moreover, a higher level of trust in state government in terms of commitment, openness, honesty, competency and care and concern during the COVID-19 pandemic was significantly associated with higher compliance with mask wearing, hand washing and hand sanitizing during the pandemic. This is in agreement with a combination of findings that showed higher trust in state government over federal government and that higher trust

in government is associated with higher compliance with precautionary measures (Wolak, 2020; Wolak & Palus, 2010).

It is of utmost importance that there exists cooperation between the governments and people so as to stop the spread of the coronavirus. Both scientific policy implementations from government as well as compliance with preventative health behavior from general public play an equal role in fighting against the pandemic. In this regard, building public trust in government through scientific integrity and evidence-based decision making could serve as an effective strategy to achieve better cooperation and compliance with COVID-19 related policies and interventions, and ultimately improve the unified response to the pandemic.

This study found that the surveyed participants had mixed opinions about the government response with majority leaning towards a more positive perception of state government response. The strength of this study lies in its ability to assess the perception of government response in terms of all five components of trust and understand the component that the government is lacking in according to the American public.

This study has several limitations. First, participants were recruited through an online survey platform - Qualtrics. Although it is a widely accepted survey platform, it does not a produce nationally representative data and therefore, results cannot be generalized to any specific population without further study. Second, since this study included participants only from United States and questions were specifically targeted towards the federal and state governments of United States, the results would potentially look different outside of the US. Third, we cannot assert any causality for impact of trust in government on compliance with COVID-19 precautionary measures. Fourth, since this was a cross sectional study, it only allowed for testing associations between perceived quality of government response and compliance with precautionary measures

at one point in time which was in the August 2020 during Trump administration, but the results cannot be generalized to period when Biden administration came to power.

Despite these limitations, this study fills an important gap in the existing literature specific to trust in state and federal government during the COVID-19 pandemic, the worst pandemic in last 100 years. These findings, in combination with existing evidence documenting the importance of building public trust in government will encourage the governments to implement policies that will target re-gaining public trust.

Chapter 7: Conclusion

In conclusion, our study highlights that understanding of trust in government through public perception of government response is of paramount importance, especially in the context of worldwide emergency such as COVID-19 pandemic. Emergency situations as severe as the COVID-19 pandemic necessitates different communication activities than in typical public health situations. High unpredictability, time and resource constraints, and anxiety in public are some challenges to effective communication during crises. Our work provides evidence that higher levels of trust towards the state or federal government are associated with higher compliance with the COVID-19 precautionary measures recommended by CDC such as mask wearing, hand washing and hand sanitizing. This relays an important message to the public health experts and the governments aiming to increase the efficacy of their policies implemented to control emergency situations. Dissemination of accurate information in a timely and transparent manner and providing recommendations for hygienic behavior as suggested by health experts can help gain trust from the public and reduce the negative impacts of the pandemic. Furthermore, it will be important for future studies to determine whether our study findings can be replicated and are generalizable. Longitudinal studies could be conducted to understand the changing trust levels in government,

especially after the change of administration in January 2021 and enable causal inferences from the study results. Future interventions to improve adherence to COVID-19 precautionary measures should couple local-level strategies targeting key barriers to adherence to non-pharmaceutical interventions identified, with effective measures and interventions which also aims on rebuilding trust in government.

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Supplementary Materials

Tables

Table 1: Demographic characteristics of the study participants responding to a national survey regarding COVID-19 pandemic (August 2020 – September 2020)

Demographic characteristics	N	%
Region		
Midwest	264	16.03
Northeast	373	22.65
South	683	41.47
West	327	19.85
Age		
18 to 25 years	243	14.75
26 to 35 years	295	17.91
36 to 45 years	296	17.97
46 to 55 years	259	15.73
56 to 65 years	554	33.64
Sex		
Male	806	48.94
Female	818	49.67
Other	17	0.93
Education		
Less than High School	40	2.45
High school/GED	307	18.78
Some College	479	29.3
Bachelors	412	25.2
Masters/Doctorate	397	24.28
Ethnicity		
Hispanic	287	17.43
Non-Hispanic	1347	81.79
Race		
White	1145	69.99
African American	267	16.32
Asian	102	6.23
American Natives	26	1.59
NHPI	17	1.04
Multiracial	34	2.08
Income		
Less than $60,000	814	52.89
$60,001 - $100,000	359	23.33
$100,001 - $200,000	331	21.51
More than $200,001	35	2.27
Overall	1647	100

Table 2: Perceived quality of government response at state and federal level.

Domain of trust		Public perception of government response				
		N	Strongly agree	Agree	Somewhat agree	Strongly Disagree
Commitment	I think that my state government is very committed in protecting me and others from coronavirus.	1601	354 (22.11%)	510 (31.86%)	474 (29.61%)	263 (16.43%)
	I think that the US government is very committed in protecting me and others from coronavirus.	1617	305 (18.86%)	400 (24.74%)	447 (27.64%)	465 (28.76%)
Honesty	I think that my state government is very honest with information regarding coronavirus.	1604	266 (16.15%)	508 (30.84%)	522 (31.69%)	308 (18.70%)
	I think that the US government is very honest with information regarding coronavirus.	1620	263 (15.97%)	332 (20.16%)	494 (29.99%)	531 (32.24%)
Care and concern	I think that my state government is very caring and concerned about people who might be affected by coronavirus.	1620	329 (20.31%)	574 (35.43%)	454 (28.02%)	263 (16.23%)
	I think that the US government is very caring and concerned about people who might be affected by coronavirus.	1618	293 (18.11%)	432 (26.70%)	408 (25.22%)	485 (29.98%)
Openness	I think that my state government is very open with information regarding coronavirus.	1612	261 (15.85%)	553 (33.58%)	510 (30.97%)	288 (17.49%)
	I think that the US government is very open with information regarding coronavirus.	1627	300 (18.21%)	328 (19.91%)	518 (31.45%)	481 (29.20%)
Competency	I think that my state government is very competent in handling coronavirus.	1604	275 (16.70%)	458 (27.81%)	518 (31.45%)	353 (21.43%)
	I think that the US government is very competent in handling coronavirus.	1610	283 (17.18%)	355 (21.55%)	407 (24.71%)	565 (34.30%)

Table 3A: Analysis of concordance and discordance of perceptions of US and state commitment to the population during the COVID-19 pandemic.

Demographic characteristics	Concordant, committed		Concordant, not committed		Discordant, state committed		Discordant, U.S. committed	
	N	%	N	%	N	%	N	%
Overall	1022	64.56	142	8.97	307	19.39	112	7.08
Region								
Midwest	159	61.87	23	8.95	56	21.79	19	7.39
Northeast	248	68.13	17	4.67	75	20.6	24	6.59
South	441	68.58	79	12.29	78	12.13	45	7
West	174	54.55	23	7.21	98	30.72	24	7.52
Age								
18 to 25 years	134	62.62	13	6.07	25	11.68	42	19.63
26 to 35 years	188	67.63	30	10.79	39	14.03	21	7.55
36 to 45 years	237	81.72	23	7.93	19	6.55	11	3.79
46 to 55 years	153	60.96	30	11.95	55	21.91	13	5.18
56 to 65 years	310	56.36	46	8.36	169	30.73	25	4.55
Sex								
Male	574	72.94	57	7.24	119	15.12	37	4.7
Female	434	56.07	84	10.85	183	23.64	73	9.43
Other	10	62.5	1	6.25	3	18.75	2	12.50
Education								
Less than High School	22	64.71	4	11.76	5	14.71	3	8.82
High school/GED	191	64.53	35	11.82	47	15.88	23	7.77
Some College	253	55.48	55	12.06	107	23.46	41	8.99
Bachelors	255	63.59	29	7.23	91	22.69	26	6.48
Masters/Doctorate	296	76.49	18	4.65	55	14.21	18	4.65
Ethnicity								
Hispanic	171	64.04	26	9.74	39	14.61	31	11.61
Non-Hispanic	843	64.5	116	8.88	267	20.43	81	6.2
Race								
White	748	66.61	91	8.1	231	20.57	53	4.72
African American	149	61.32	23	9.47	36	14.81	35	14.4
Asian	62	62.63	6	6.06	18	18.18	13	13.13
American Natives	12	48	3	12	8	32	2	8
NHPI	11	73.33	1	6.67	1	6.67	2	13.33
Multiracial	17	60.71	5	17.86	3	10.71	3	10.71
Income								
Less than $60,000	457	59.2	87	11.27	162	20.98	66	8.55
$60,001 - $100,000	218	61.76	40	11.33	77	21.81	18	5.1
$100,001 - $200,000	258	80.12	10	3.11	35	10.87	19	5.9
More than $200,001	17	54.84	2	6.45	10	32.26	2	6.45

† ***Concordant, committed*** includes participants that agreed on both state and federal government being committed
† ***Concordant, not committed*** includes participants that agreed on both state and federal government not being committed
† ***Discordant, state committed*** includes participants that agreed on only state government being committed
† ***Discordant, U.S. committed*** includes participants that agreed on only US federal government being committed

Table 3B: Analysis of concordance and discordance of perceptions of US and state openness to the population during the COVID-19 pandemic.

Demographic characteristics	Concordant, open		Concordant, not open		Discordant, state open		Discordant, U.S. open	
	N	%	N	%	N	%	N	%
Overall	1015	63.36	174	10.86	302	18.85	111	6.93
Region								
Midwest	162	62.07	29	11.11	48	18.39	22	8.43
Northeast	241	66.21	27	7.42	72	19.78	24	6.59
South	432	65.06	91	13.7	98	14.76	43	6.48
West	180	57.51	27	8.63	84	26.84	22	7.03
Age								
18 to 25 years	141	63.8	16	7.24	27	12.22	37	16.74
26 to 35 years	196	69.5	37	13.12	32	11.35	17	6.03
36 to 45 years	235	80.48	25	8.56	22	7.53	10	3.42
46 to 55 years	141	55.08	42	16.41	59	23.05	14	5.47
56 to 65 years	302	54.81	54	9.8	162	29.4	33	5.99
Sex								
Male	566	71.65	52	6.58	132	16.71	40	5.06
Female	433	54.88	121	15.34	167	21.17	68	8.62
Other	11	64.71	1	5.88	2	11.76	3	17.65
Education								
Less than High School	21	58.33	7	19.44	3	8.33	5	13.89
High school/GED	182	62.12	43	14.68	44	15.02	24	8.19
Some College	264	56.17	66	14.04	108	22.98	32	6.81
Bachelors	248	61.39	40	9.9	86	21.29	30	7.43
Masters/Doctorate	292	75.26	17	4.38	60	15.46	19	4.9
Ethnicity								
Hispanic	184	68.15	28	10.37	37	13.7	21	7.78
Non-Hispanic	823	62.25	145	10.97	264	19.97	90	6.81
Race								
White	733	64.64	118	10.41	227	20.02	56	4.94
African American	155	62.75	27	10.93	33	13.36	32	12.96
Asian	60	60.61	12	12.12	18	18.18	9	9.09
American Natives	11	44	2	8	7	28	5	20
NHPI	10	66.67	2	13.33	2	13.33	1	6.67
Multiracial	19	63.33	3	10	4	13.33	4	13.33
Income								
Less than $60,000	460	58.45	108	13.72	158	20.08	61	7.75
$60,001 - $100,000	217	61.82	42	11.97	73	20.8	19	5.41
$100,001 - $200,000	253	78.09	11	3.4	40	12.35	20	6.17
More than $200,001	17	51.52	7	21.21	6	18.18	3	9.09

† ***Concordant, open*** includes participants that agreed on both state and federal government being open
† ***Concordant, not open*** includes participants that agreed on both state and federal government not being open
† ***Discordant, state open*** includes participants that agreed on only state government being open
† ***Discordant, U.S. open*** includes participants that agreed on only US federal government being open

Table 3C: Analysis of concordance and discordance of perceptions of US and state honesty to the population during the COVID-19 pandemic.

Demographic characteristics	Concordant, honest		Concordant, not honest		Discordant, state honest		Discordant, U.S. honest	
	N	%	N	%	N	%	N	%
Overall	958	60.21	193	12.13	330	20.74	110	6.91
Region								
Midwest	143	55.21	34	13.13	62	23.94	20	7.72
Northeast	237	65.29	28	7.71	72	19.83	26	7.16
South	417	63.47	101	15.37	101	15.37	38	5.78
West	161	51.6	30	9.62	95	30.45	26	8.33
Age								
18 to 25 years	139	63.76	25	11.47	26	11.93	28	12.84
26 to 35 years	181	64.87	45	16.13	36	12.9	17	6.09
36 to 45 years	228	78.08	24	8.22	24	8.22	16	5.48
46 to 55 years	133	52.57	45	17.79	60	23.72	15	5.93
56 to 65 years	277	50.46	54	9.84	184	33.52	34	6.19
Sex								
Male	539	68.49	58	7.37	147	18.68	43	5.46
Female	409	52.17	132	16.84	181	23.09	62	7.91
Other	8	50	2	12.50	2	12.5	4	25
Education								
Less than High School	20	57.14	9	25.71	4	11.43	2	5.71
High school/GED	174	58.98	40	13.56	54	18.31	27	9.15
Some College	243	52.37	78	16.81	114	24.57	29	6.25
Bachelors	230	57.36	44	10.97	96	23.94	31	7.73
Masters/Doctorate	286	74.29	20	5.19	61	15.84	18	4.68
Ethnicity								
Hispanic	171	64.77	34	12.88	41	15.53	18	6.82
Non-Hispanic	781	59.35	157	11.93	288	21.88	90	6.84
Race								
White	689	61.19	124	11.01	250	22.2	63	5.6
African American	146	59.84	30	12.3	38	15.57	30	12.3
Asian	60	61.22	11	11.22	21	21.43	6	6.12
American Natives	14	58.33	3	12.5	4	16.67	3	12.5
NHPI	7	46.67	4	26.67	2	13.33	2	13.33
Multiracial	16	51.61	8	25.81	3	9.68	4	12.9
Income								
Less than $60,000	426	54.83	127	16.34	167	21.49	57	7.34
$60,001 - $100,000	202	57.39	44	12.5	83	23.58	23	6.53
$100,001 - $200,000	249	76.85	13	4.01	45	13.89	17	5.25
More than $200,001	16	48.48	3	9.09	11	33.33	3	9.09

† ***Concordant, honest*** includes participants that agreed on both state and federal government being honest
† ***Concordant, not honest*** includes participants that agreed on both state and federal government not being honest
† ***Discordant, state honest*** includes participants that agreed on only state government being honest
† ***Discordant, U.S. honest*** includes participants that agreed on only US federal government being honest

Table 3D: Analysis of concordance and discordance of perceptions of US and state competency in handling the COVID-19 pandemic.

Demographic characteristics	Concordant, competent		Concordant, not competent		Discordant, state competent		Discordant, U.S. competent	
	N	%	N	%	N	%	N	%
Overall	891	56.25	200	12.63	352	22.22	141	8.90
Region								
Midwest	141	54.65	31	12.02	61	23.64	25	9.69
Northeast	210	58.66	28	7.82	90	25.14	30	8.38
South	391	60.34	104	16.05	96	14.81	57	8.8
West	149	46.56	37	11.56	105	32.81	29	9.06
Age								
18 to 25 years	120	55.81	27	12.56	29	13.49	39	18.14
26 to 35 years	172	61.65	39	13.98	37	13.26	31	11.11
36 to 45 years	224	77.78	25	8.68	29	10.07	10	3.47
46 to 55 years	133	52.99	45	17.93	58	23.11	15	5.98
56 to 65 years	242	43.92	64	11.62	199	36.12	46	8.35
Sex								
Male	502	64.19	67	8.57	161	20.59	52	6.65
Female	378	48.46	130	16.67	188	24.1	84	10.77
Other	9	52.94	2	11.76	3	17.65	3	17.65
Education								
Less than High School	15	44.12	3	8.82	7	20.59	9	26.47
High school/GED	162	55.67	49	16.84	48	16.49	32	11
Some College	224	48.38	72	15.55	124	26.78	43	9.29
Bachelors	199	49.87	49	12.28	110	27.57	41	10.28
Masters/Doctorate	284	73.58	24	6.22	63	16.32	15	3.89
Ethnicity								
Hispanic	168	62.69	34	12.69	41	15.3	25	9.33
Non-Hispanic	718	54.93	165	12.62	309	23.64	115	8.8
Race								
White	645	57.44	128	11.4	262	23.33	88	7.84
African American	135	56.72	35	14.71	42	17.65	26	10.92
Asian	54	53.47	14	13.86	26	25.74	7	6.93
American Natives	14	56	3	12	7	28	1	4
NHPI	9	56.25	3	18.75	0	0	4	25
Multiracial	16	53.33	4	13.33	4	13.33	6	20
Income								
Less than $60,000	390	50.58	120	15.56	174	22.57	87	11.28
$60,001 - $100,000	183	52.44	57	16.33	88	25.21	21	6.02
$100,001 - $200,000	245	75.15	13	3.99	48	14.72	20	6.13
More than $200,001	18	54.55	2	6.06	11	33.33	2	6.06

† ***Concordant, competent*** includes participants that agreed on both state and federal government being competent
† ***Concordant, not competent*** includes participants that agreed on both state and federal government not being competent
† ***Discordant, state competent*** includes participants that agreed on only state government being competent
† ***Discordant, U.S. competent*** includes participants that agreed on only US federal government being competent

Table 3E: Analysis of concordance and discordance of perceptions of US and state care and concern towards the population during the COVID-19 pandemic.

Demographic characteristics	Concordant, caring and concerned		Concordant, not caring and concerned		Discordant, state caring and concerned		Discordant, U.S. caring and concerned	
	N	%	N	%	N	%	N	%
Overall	1012	63.01	146	9.09	335	20.86	113	7.04
Region								
Midwest	163	61.98	19	7.22	62	23.57	19	7.22
Northeast	239	64.95	18	4.89	85	23.1	26	7.07
South	427	65.09	87	13.26	94	14.33	48	7.32
West	183	57.37	22	6.99	94	29.47	20	6.27
Age								
18 to 25 years	162	71.68	7	3.1	27	11.95	30	13.27
26 to 35 years	209	73.59	26	9.15	30	10.56	19	6.69
36 to 45 years	233	80.34	23	7.93	21	7.24	13	4.48
46 to 55 years	148	57.59	37	14.4	57	22.18	15	5.84
56 to 65 years	260	47.36	53	9.65	200	36.43	36	6.56
Sex								
Male	559	70.23	54	6.78	141	17.71	42	5.28
Female	439	55.71	92	11.68	188	23.86	69	8.76
Other	12	75	0	0	3	18.75	1	6.25
Education								
Less than High School	24	63.16	4	10.53	5	13.16	5	13.16
High school/GED	193	64.33	31	10.33	46	15.33	30	10
Some College	247	52.89	61	13.06	124	26.55	35	7.49
Bachelors	253	63.25	30	7.5	93	23.25	24	6
Masters/Doctorate	288	73.85	18	4.62	67	17.18	17	4.36
Ethnicity								
Hispanic	195	71.17	20	7.3	37	13.5	22	8.03
Non-Hispanic	812	61.38	126	9.52	296	22.37	89	6.73
Race								
White	708	62.43	99	8.73	257	22.66	70	6.17
African American	165	65.74	23	9.16	39	15.54	24	9.56
Asian	64	67.37	8	8.42	15	15.79	8	8.42
American Natives	16	64	1	4	7	28	1	4
NHPI	11	64.71	1	5.88	4	23.53	1	5.88
Multiracial	24	77.42	4	12.9	2	6.45	1	3.23
Income								
Less than $60,000	455	57.89	94	11.96	176	22.39	61	7.76
$60,001 - $100,000	214	60.8	37	10.51	76	21.59	25	7.1
$100,001 - $200,000	254	77.91	8	2.45	47	14.42	17	5.21
More than $200,001	21	61.76	2	5.88	8	23.53	3	8.82

† ***Concordant, caring*** includes participants that agreed on both state and federal government being caring and concerned
† ***Concordant, not caring*** includes participants that agreed on both state and federal government not being caring and concerned
† ***Discordant, state caring*** includes participants that agreed on only state government being caring and concerned
† ***Discordant, U.S. caring*** includes participants that agreed on only US federal government being caring and concerned

Table 4A. Mean response scores for state and federal governments stratified by openness, honesty, competency, commitment, care and concern.

Perceived quality of government response	Mean response score (SD)	
	State government	Federal government
Openness	2.51 (0.97)	2.73 (1.08)
Honesty	2.54 (0.98)	2.80 (1.07)
Competency	2.59 (1.01)	2.78 (1.11)
Commitment	2.40 (1.01)	2.66 (1.08)
Caring and concerned	2.40 (0.99)	2.67 (1.08)
Overall	12.33 (4.21)	13.62 (4.79)

† A higher score indicates more negative perception of the government response.
† For each domain of trust, scores can range from 1 to 4 where 1 is a more positive perception and 4 is a more negative perception.
† For overall perceived quality of government response, scores can range from 4 to 20 where 4 is a more positive perception and 20 is a more negative perception.

Table 4B: Mean response scores for state and federal government across demographic characteristics of study population.

Demographic characteristics	State government		U.S. government		Mean difference	P-value
	N	Mean (SD)	N	Mean (SD)		
Overall	1519	12.33 (4.21)	1557	13.62 (4.79)	1.31*	<0.001
Region						
Midwest	253	12.44 (4.28)	255	14.18 (4.50)	1.75*	<0.001
Northeast	354	**11.36 (4.16)**	357	**12.93 (5.08)**	1.53*	<0.001
South	611	12.86 (4.16)	634	13.29 (4.76)	0.43*	0.0045
West	301	12.29 (4.14)	311	14.63 (4.54)	**2.45***	<0.001
Age						
18 to 25 years	183	13.39 (3.29)	212	13.00 (3.46)	-0.45	0.0549
26 to 35 years	266	12.68 (3.95)	267	12.98 (4.46)	0.29	0.1992
36 to 45 years	277	**11.22 (4.02)**	284	**10.90 (4.88)**	-0.41*	0.0444
46 to 55 years	247	12.75 (4.49)	247	14.51 (4.83)	1.75*	<0.001
56 to 65 years	546	12.17 (4.45)	547	15.18 (4.61)	**3.02***	<0.001
Sex						
Male	765	**11.37 (4.01)**	775	**12.39 (5.02)**	1.02*	<0.001
Female	735	13.28 (4.23)	760	14.84 (4.26)	**1.63***	<0.001
Other	16	14.25 (2.62)	16	14.31 (2.27)	0.33	0.7633
Education						
Less than High School	29	14.07 (3.87)	33	14.30 (3.57)	0.11	0.8556
High school/GED	280	13.24 (4.16)	288	14.01 (4.15)	0.83*	0.0012
Some College	443	13.09 (4.26)	451	15.11 (4.20)	**2.02***	<0.001
Bachelors	389	12.23 (4.18)	394	13.82 (4.81)	1.60*	<0.001
Masters/Doctorate	370	**10.68 (3.71)**	381	**11.29 (5.12)**	0.63*	0.0106
Ethnicity						
Hispanic	244	12.47 (3.88)	255	**12.75 (4.44)**	0.20	0.4656
Non-Hispanic	1269	12.31 (4.28)	1293	13.80 (4.84)	**1.52***	<0.001
Race						
White	1105	**11.97 (4.29)**	1115	13.53 (5.03)	1.55*	<0.001
African American	212	13.21 (3.73)	232	**13.5 (3.93)**	0.46	0.0910
Asian	93	12.96 (3.96)	96	13.71 (4.58)	0.67	0.1220
American Natives	25	12.76 (3.46)	22	14.73 (3.71)	**2.14***	0.0242
NHPI	13	14.77 (3.30)	15	14.07 (3.08)	-0.66	0.3818
Multiracial	26	13.19 (3.56)	28	14.36 (3.09)	0.71	0.3822
Income						
Less than $60,000	736	13.17 (4.14)	757	14.65 (4.15)	1.48*	<0.001
$60,001 - $100,000	340	12.43 (4.38)	341	14.23 (4.67)	1.81*	<0.001
$100,001 - $200,000	314	**10.45 (3.69)**	322	**10.52 (4.97)**	0.10	0.6958
More than $200,001	29	12.97 (3.66)	31	15.45 (4.03)	**2.54***	0.0133

† Scores can range from 4 to 20 where 4 is a more positive perception and 20 is a more negative perception. A higher score indicates more negative perception of the government response.

Table 5: Association between perceived quality of governmental response towards COVID-19 pandemic and compliance with COVID-19 precautionary measures.

Domains of Trust	Wearing a Mask		Washing hands		Sanitizing hands	
	cPR (95% CI)	aPR (95% CI)	cPR (95% CI)	aPR (95% CI)	cPR (95% CI)	aPR (95% CI)
Commitment						
Only state is committed	1.14* (1.03 - 1.26)	1.09 (0.99 - 1.21)	1.08 (0.97 - 1.19)	1.05 (0.95 - 1.16)	1.14 (0.99 - 1.31)	1.13 (0.99 - 1.29)
Only U.S. is committed	0.69* (0.56 - 0.83)	0.69* (0.56 - 0.85)	0.70* (0.58 - 0.85)	0.77* (0.63 - 0.94)	0.66* (0.52 - 0.85)	0.65* (0.50 - 0.85)
State and U.S. both committed	1.03 (0.93 - 1.13)	1.03 (0.94 - 1.13)	0.95 (0.86 - 1.05)	0.99 (0.90 - 1.09)	1.04 (0.92 - 1.18)	1.05 (0.93 - 1.19)
Openness						
Only state is open	1.18* (1.07 - 1.31)	1.2* (1.08 - 1.34)	1.05 (0.95 - 1.16)	1.08 (0.98 – 1.19)	1.11 (0.97 - 1.26)	1.10 (0.97 - 1.26)
Only U.S. is open	0.77* (0.64 - 0.93)	0.85 (0.70 - 1.04)	0.69* (0.57 - 0.84)	0.83 (0.69 – 1.00)	0.75* (0.59 - 0.94)	0.81 (0.64 - 1.02)
State and U.S. both open	1.12* (1.02 - 1.24)	1.16* (1.05 - 1.28)	0.94 (0.86 - 1.03)	1.03 (0.94 – 1.13)	1.07 (0.95 - 1.20)	1.08 (0.96 - 1.22)
Honesty						
Only state is honest	1.26* (1.14 - 1.39)	1.21* (1.09 - 1.34)	1.07 (0.97 - 1.17)	1.04 (0.95 – 1.13)	1.19* (1.05 - 1.36)	1.15* (1.01 - 1.31)
Only U.S. is honest	0.86 (0.72 - 1.03)	0.82* (0.67 - 0.99)	0.75* (0.62 - 0.89)	0.80* (0.67 – 0.97)	0.75* (0.59 - 0.94)	0.73* (0.57 - 0.95)
State and U.S. both honest	1.15* (1.04 - 1.27)	1.14* (1.03 - 1.26)	0.95 (0.87 - 1.03)	0.99 (0.91 – 1.07)	1.14* (1.01 - 1.29)	1.12 (0.99 - 1.26)
Competency						
Only state is competent	1.17* (1.07 - 1.28)	1.13* (1.03 - 1.24)	1.09 (0.99 - 1.20)	1.06 (0.97 – 1.16)	1.12 (0.99 - 1.25)	1.10 (0.98 – 1.23)
Only U.S. is competent	0.79* (0.67 – 0.93)	0.84* (0.72 – 0.98)	0.82* (0.70 – 0.95)	0.95 (0.82 – 1.09)	0.67* (0.54 – 0.82)	0.69* (0.55 – 0.86)
State and U.S. both competent	1.09 (0.99 – 1.19)	1.07 (0.98 – 1.66)	0.96 (0.88 – 1.05)	1.01 (0.92 – 1.10)	1.04 (0.93 – 1.16)	1.02 (0.91 – 1.14)
Caring and concern						
Only state is caring and concerned	1.06 (0.97 – 1.15)	1.06 (0.97 – 1.16)	1.01 (0.92 – 1.11)	1.00 (0.90 – 1.11)	1.00 (0.89 - 1.13)	1.04 (0.92 - 1.18)
Only U.S. is caring and concerned	0.79* (0.68 - 0.92)	0.82* (0.70 - 0.95)	0.75* (0.64 - 0.89)	0.85* (0.72 – 0.99)	0.66* (0.53 - 0.83)	0.72* (0.57 - 0.91)
State & U.S. both caring and concerned	0.93 (0.86 - 1.01)	0.97 (0.89 - 1.05)	0.87* (0.79 - 0.94)	0.94 (0.86 – 1.03)	0.93 (0.83 - 1.04)	0.97 (0.86 - 1.08)

† Adjusted Prevalence ratios are obtained by adjusting with covariates - respondent's age, gender, income, education level, race and ethnicity to produce accurate estimates.

† For perception of government response in terms of commitment, openness, honesty, competency, and care and concern at state, federal and both government levels; the negative perception of state government, federal government and both governments are considered as the reference respectively.

Figures

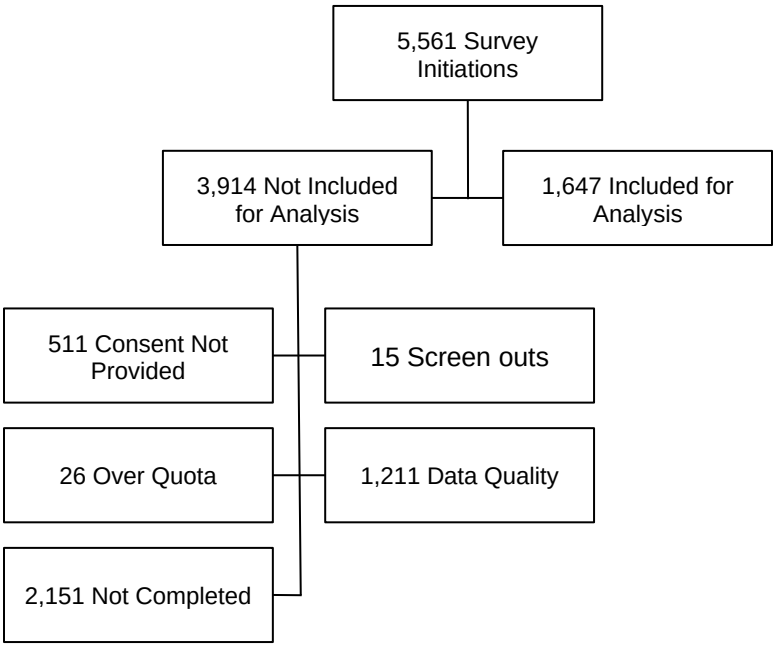


Figure 1: Survey Participation flow

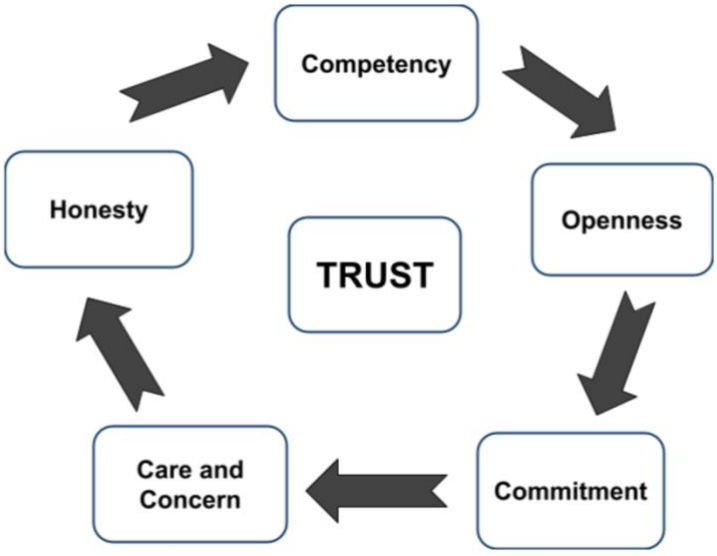
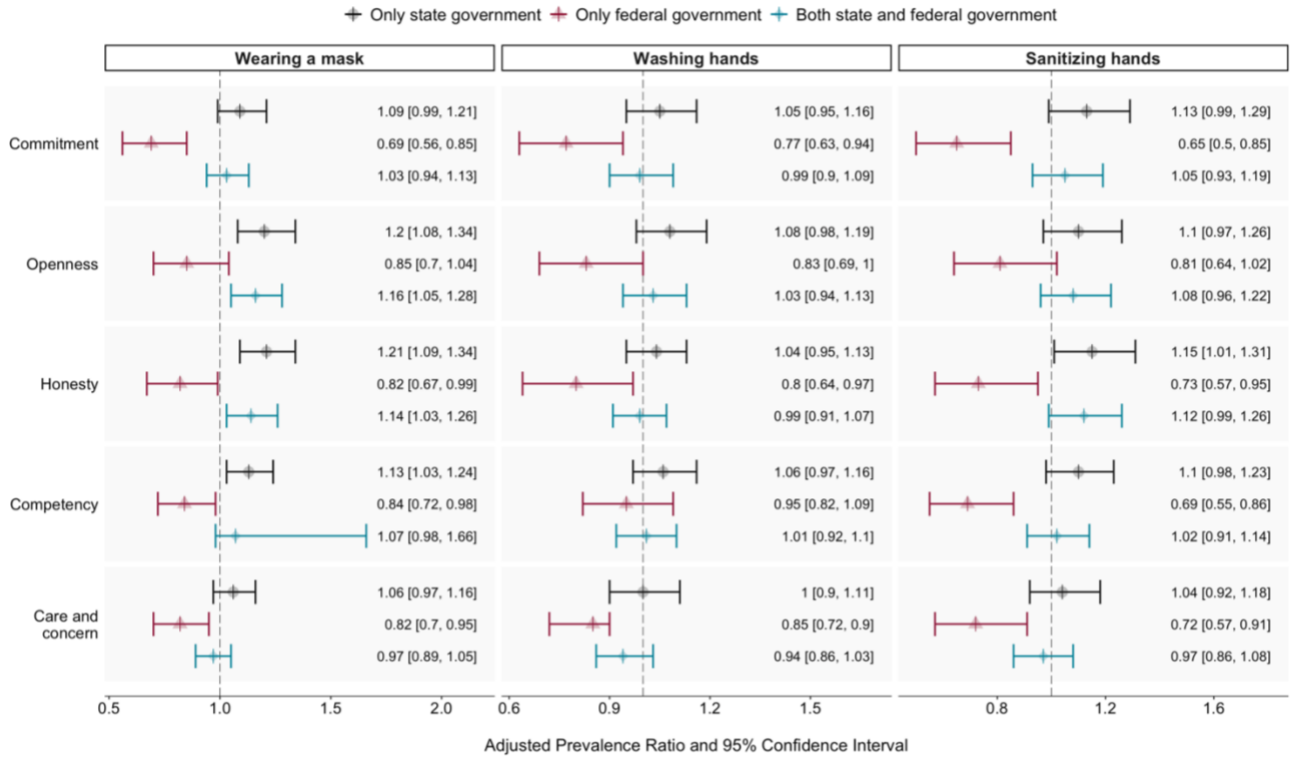


Figure 2. The five domains of Trust

Figure 3. Comparison of Adjusted Prevalence Ratio (and 95% Confidence Interval) of perceptions of government response among those who adopted mask wearing, handwashing and hand sanitizing during the COVID-19 pandemic.



† For perception of government response in terms of commitment, openness, honesty, competency, and care and concern at state, federal and both government levels; the negative perception of state government, federal government and both governments are considered as the reference respectively (indicated by a dashed line at 1).