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Abstract

We estimate the impact of U.S. political identity on COVID-19 safety behaviors, cases, and deaths. Our data set merges U.S. county-level data on mask-wearing, cell-phone mobility, vaccination rates, county characteristics, and variables reflecting conservative political identity with COVID-19 cases and deaths from the first 12, 20, and 28 months of the pandemic in the United States. State-level fixed-effect estimations controlling for county characteristics indicate every 10 percentage point increase in the county popular vote for President Trump in the 2020 election to be associated with a 0.36σ reduction in a COVID-safety index, 1,798 additional COVID cases, and 31.9 COVID deaths per 100,000 county residents in the initial 28 months of the pandemic. Further, we ask whether differential behavioral responses during the pandemic can be explained by traditional strains of American conservatism, or are associated with a more specific Trumpian identity. We create state-level indices of traditional libertarian and social conservatism, finding that these indices display little systematic explanatory power over COVID-safety behaviors, cases, and deaths relative to 2020 Trump voter support.

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1 Introduction

Political identity, defined as the inner narrative of one's political self (Gentry, 2018), increasingly prescribes social behavior. This is particularly true in the United States, where levels of social and political polarization have magnified the importance of how one identifies politically (West and Iyengar, 2020). Recent work has found political identity to influence social behavior in unprecedented ways, frequently dictating choices of one's personal and online social networks (Van Bavel et al., 2018), whom one would consider dating (Huber and Malhotra, 2017), and even prompting many Americans to relocate to regions more aligned with their political sympathies (Hui, 2013). Political identity is shaped by a multiplicity of factors including age, ethnicity, demography, culture, and increasingly, information sources across both traditional and social media. Our research builds on this literature to study how political identity in the United States shaped behavioral responses to the COVID-19 pandemic and the resulting differences in COVID-19 cases and deaths.

There is mounting evidence that political identity in the United States has impacted safety responses to the pandemic (Allcott et al., 2020; Gollwitzer et al., 2020; Goodman and Pepinsky, 2020; Druckman et al., 2020; Grossman et al., 2020; Painter and Qiu, 2020; He et al., 2021; Wallace et al., 2022; Wolaver and Doces, 2022; Young et al., 2022; Dow et al., 2023) as well as how that risk pertains to group versus individual identity (Kyung et al., 2021). A Pew Research survey during the early and most dangerous phase of the pandemic found that 35% of Republicans (compared to 64% of Democrats) were "very" or "somewhat" concerned that they would become infected with COVID-19 (Van Kessel and Quinn, 2020). In the same survey, 29% of Republicans (compared to 63% of Democrats) said that people in their community should "always wear a mask" in public.

In this research, we (1) present empirical estimates showing how political identity shaped COVID-safety responses during the heart of the COVID-19 pandemic; (2) estimate the health costs of political identity in terms of COVID cases and deaths; and (3) test the extent to which these COVID behavioral responses and outcomes are associated with a

political identity specifically tied to support for former president Donald Trump relative to more traditional strains of American conservatism.

Our research is rooted in the intersection of behavioral public health and the vast and growing literature in identity economics and political identity. This literature includes earlier work (Mackenzie, 1978; Mouffe, 1992; Cole and Stewart, 1996; Huddy, 2001) and seminal work by Akerlof and Kranton (2000, 2010) on the economics of identity, as well as recent work that highlights the sharpening and polarization of U.S. political identity under the Trump Administration (Sclafani, 2017; Lee, 2017; Smith, 2020; Mason et al., 2021).

A new and rich body of literature explores how social identities, group norms, and ideological stances shape the relationship between identity and health behaviors. Neville et al. (2021) draw attention to the potent influence of social identities that inform group norms and in turn influence group behaviors. Kyung et al. (2022) posit that in the context of a pandemic, individual and group identities can direct attention either to *personal* safety or existential threats to one's *group*. This dichotomy suggests that the onset of the COVID-19 virus could have been framed either as an individual threat–making personal safety salient–or as a group threat, heightening concern for the society's well-being and thus perhaps placing a greater emphasis on health-safety behaviors as lying in the group interest.

The evidence indicates reveals the powerful impact of U.S. political identity on health-safety behavior during the pandemic. Collins et al. (2021) find that political identity more strongly influences emotional stress and threat perception from the pandemic than even personal impacts from the pandemic itself. Heiman et al. (2022) find conservative political orientation to be a strong predictor of vaccine hesitancy across racial identities, and trust in government information about vaccines significantly predicts early vaccination.

Despite the strong influence of identity on health behaviors, the effectiveness of communication strategies tailored to identity yields mixed results. Reddinger et al. (2022) find inconsistent evidence supporting the effectiveness of public health communication

tailored to political identity. Levin and Bradshaw (2022) stress the ideological nature of vaccination resistance, particularly among the political and religious right, suggesting traditional public education approaches to be inadequate.

This new literature reveals a complex interplay between identities, group norms, ideological positions, and political affiliations in shaping responses to the COVID-19 pandemic. Especially in the modern context of social media, actions and statements based on identity ripple outwards, influencing health behaviors among peers and peers-of-peers, determining the pandemic responses of large groups of individuals sharing a common identity.

But what are the fundamental characteristics of an American conservative identity that might lead to a hesitancy to adopt health-safety behaviors during a pandemic? At least historically, an aversion to health-safety behaviors has never strongly characterized either side of the American liberal-conservative spectrum. Indeed, some, such as Berezow and Campbell (2012), trace the origins of the anti-vaccination movement to the political *left* rather than the political right. Yet there is evidence that over the last two decades, anti-vaccination stances have steadily migrated from the libertarian left toward the libertarian right (Rabinowitz et al., 2016).

Some of the recent research has suggested communication by conservative leaders early in the pandemic as the origin of the alignment between conservative political identity and low levels of COVID-safety behavior. Stroebe et al. (2022), for example, see the relationship in the early phases of the pandemic stemming from conservative U.S. politicians and media jointly downplaying the risk of both contracting COVID-19 and the effectiveness of recommended health behaviors.

However, a growing body of research has suggested that the origins of this relationship lie in a more prevalent belief in conspiracy theories among conservatives today in the United States. Skepticism about disease-related information has been empirically correlated with belief in conspiracy theories, a mistrust in formal institutions generally, and

in government-sourced information specifically (Sunstein and Vermeule, 2009; Jolley and Douglas, 2014; Hornsey et al., 2018; Goldberg et al., 2020; Cowan et al., 2021; Romer and Jamieson, 2022; Levin and Bradshaw, 2022). Conspiracy theories related to the COVID-19 virus have not waned and may have even grown as the pandemic progressed. Using a national U.S. panel survey, Romer and Jamieson (2022) find that as vaccines became available, a conspiratorial mindset was one of the strongest predictors of COVID-vaccination hesitancy.

Many have argued that distrust in the scientific evidence surrounding the pandemic may have been crystallized by social media communication from Republican leaders (Green et al., 2020) and President Trump himself. There is statistical evidence that the President's social media posts reduced COVID-safety behavior among his supporters, and that have amplified differences in safety behaviors between liberals and conservatives in the U.S. over time (Hornsey et al. 2020). Cowan et al. (2021) show that the divide between Democrats and Republicans in their initial response to vaccines (when they initially became available in December 2020) was only 10 percentage points, but that this grew quickly to 25 percentage points as the issue over whether to receive the vaccine became absorbed into polarized political identity in the U.S.

Taken as a whole, this body of recent evidence suggests that the union of conservative political identity to non-compliance with COVID-19 safety behaviors was likely a product of 1) a higher disposition toward conspiracy theories among some conservatives that 2) became activated and magnified by Republican leaders (including the President himself) in the context of highly polarized media.

In our analysis, we merge U.S. county-level socioeconomic, demographic, and political data to estimate the effect of conservative political identity on COVID-safety behaviors, reported COVID cases, and deaths attributed to the virus in the first 12, 20, and 28 months of the pandemic. After controlling for a host of county-level characteristics, employment, and demographic variables, we estimate that a 10 percentage point increase in the county

popular vote for President Trump during the 2020 election to be associated with a 3.9 percentage point decrease ($p < 0.01$) in the number of people stating that they wear masks "all of the time" in public, a 7.8 percentage point decrease in the COVID vaccination rate, and a 0.36σ ($p < 0.01$) decline in a COVID-safety behavior index.

Estimates show differences in political identity significantly related to differences in COVID cases and deaths. We find a 10 percentage point increase in the county Trump vote to be associated with 1,798 ($p < 0.01$) additional COVID cases and 31.9 ($p < 0.01$) COVID-related deaths per 100,000 county residents in the first 28 months of the pandemic. Moreover, the statistical relationship that we find between decreased mask-wearing and elevated COVID cases from differences in political identity is remarkably close to estimates of the average treatment effects of mask-wearing on symptomatic COVID infection obtained in the most extensive randomized controlled trial on the effects of mask-wearing (Abaluck et al., 2021).

We test whether observed differences in COVID-safety behaviors, cases, and deaths can be better explained by either of two strains of traditional conservatism in the United States: (1) American social conservatism (created by an equally weighted index we construct consisting of state-level abortions per 1000 births, pre-2015 same-sex marriage restrictions, the legality of the death penalty, a state-level Sunday alcohol ban, and restrictions on cannabis); and (2) American libertarian conservatism (created in a similarly constructed index of state-level firearm ownership, low state taxes, state implementation of Religious Freedom Restoration Act, and the absence of union membership in public and private sectors. We find that these indices of traditional strains of American conservatism have little systematic explanatory power over COVID-safety behaviors, cases, and deaths relative to 2020 Trump voter support, which retains very strong significance ($p < 0.01$) over these outcomes.

Our estimates on the impact of political identity on COVID-safety behaviors, cases, and deaths are robust to inclusions of different sets of control variables, demeaning and

interactions of controls to address the potential for fixed-effects bias under heterogeneous effects (Suárez Serrato et al., 2019), regularization of controls through a machine-learning (LASSO) algorithm, substituting 2016 for 2020 election results, the use of Conley (1999) spatially correlated errors across states, and Oster (2018) bounds tests for endogeneity.

2 Materials and Methods

2.1 Data

We report COVID-19 cases and deaths data from 12, 20, and 28 months after the initial onset of the COVID-19 pandemic in the United States in early March 2020. County-level cases, deaths, and mask-wearing data are taken from the New York Times COVID-19 database. Cases and deaths are reported from state and county-level health jurisdictions and generally taken from a person's residence rather than where a person was tested or died (exceptions are in Hawaii and Vermont). Mask-wearing data in the database originate from online interviews that the global data and survey firm Dynata conducted. The survey comprised 250,000 responses between July 2, 2020, and July 14, 2020, after the politicization of mask-wearing responses to the pandemic had taken root. Each survey participant was asked: "How often do you wear a mask in public when you expect to be within six feet of another person?" and our data reflect the percentage of respondents by county who responded "all of the time."

We also incorporate GPS location data from a large number of mobile devices collected by the company SafeGraph to calculate the median number of devices that remained "at home" (within a Geohash-7 granularity, 153m $\times$ 153m square area) in each county from March 1, 2020, to February 15, 2021 (during the first year of the pandemic when calls for sheltering in place were most common) relative to the median that remained "at home" during the year 2019. The mobility data provides daily observations for the total percent of devices always at home in a given census block group during the first year of the

pandemic, in which citizens in many regions were often requested or required to shelter at home. We first consider each county's median percent of devices at home by day. Based on the daily median, we calculate the median percent of devices at home by month. To get the change in devices between the pandemic and pre-pandemic time, we subtract the median percent of devices at home between the pandemic and pre-pandemic periods by month. We then use this difference to obtain the change in the median percent of devices remaining at home during the pandemic months compared to pre-pandemic 2019.

Our county-level vaccination data comes from the Centers for Disease Control (CDC), where the variable we use for vaccination indicates the percent of the population in a county that has received at least one dose of any COVID-19 vaccine. (Results differ only slightly when using other metrics such as completed vaccine protocols or limiting the sample to only adults within the county.) We also use CDC data for the percentage of people in a county that received a booster shot by June 30, 2022. We use the CDC's guide for understanding COVID transmission to establish our vector of control variables that are associated with heightened levels of risk for COVID infection. This county-level data is taken from the U.S. Census Bureau and includes median age, median income, population density, and percent Latino, African-American, and Asian-American in the county population. We also use the percent of county-level employment in manufacturing, services (including education and healthcare), and retail to control for occupations of essential workers. It is important to control for co-morbidities in our analysis, and to do this, we use the University of Wisconsin Population Health Institute county health rankings data, where each county receives a percentile score for baseline health.

The data sources for our index of American libertarian conservatism originate from the following sources: estimates of firearms per household by state are from the Rand Corporation's TL-354 firearms database. Data on each state's highest marginal tax rate is taken from the Tax Foundation. Data on state-by-state implementation of the Religious

Freedom Restoration Act was compiled by Sorens et al. (2006), and state-level data on private union (Jansa, 2020) and public union (Hertel-Fernandez, 2018) membership that enter negatively into the index.

The data for our index of American social conservatism includes CDC/Guttmacher Institute data on the number of abortions per live birth by state. Data on pre-Obergefell restrictions on same-sex marriage are from the Public Religion Research Institute. The degree of state-level implementation of the Religious Freedom Restoration Act data is taken from Sorens (2006). State death penalty data is from Caughey and Warshaw (2016), and data from the National Council of State Legislatures is used to guage the stringency of state laws regulating the private use of cannabis.

2.2 Empirical Methods

A Directed Acyclic Graph (DAG) illustrating our empirical research framework is given in Figure 1. Political identity can affect cases and deaths through mask-wearing, sheltering at home, and potentially other behaviors (such as person-to-person proximity and contact) not captured in our data. A host of controls affects political identity as well as COVID cases and deaths. Our estimations with fixed effects at the state level take the following form:

$$Y_{ij} = \alpha + \tau T_i + X_i'\gamma + \theta_j + \epsilon_{ij} \tag{1}$$

where Y_{ij} represents outcomes that include COVID-safety behaviors, cases, and deaths, T_i is the county-level popular vote for President Donald Trump in the 2020 general election, X_i is a vector of county-level controls, and ϵ_{ij} is the error term. Where we include two state-level indices of libertarian and social conservatism, we necessarily omit state-level fixed effects in these estimations. Because fixed-effect estimation may involve bias in the presence of heterogeneous treatment effects (Suárez Serrato et al., 2019), we also interact our county Trump vote variable with (demeaned) controls and state fixed effects in

these estimations. Estimations are weighted by county population, and standard errors are clustered at the state level.

We include state-level fixed effects because policy responses during the pandemic are frequently established at the level of the governor's office, which means that counties within states are subject to many of the same policy responses. Counties clustered within the same state also potentially share some common characteristics such as weather, hospital quality, economic shocks, or other unobserved factors not included in our controls, but are absorbed within a state fixed-effect. The state-level fixed-effects estimations thus implicitly generate counterfactuals from counties with lower levels of Trump voter support within the same state.

3 Results

3.1 Political Identity and COVID Safety-Behaviors

Table 1 presents summary statistics of our variables, showing raw differences in characteristics and COVID-safety behaviors, cases, and deaths between counties above and below a 50% county-level Trump vote in the 2020 election. On average, counties with a majority Trump vote are 3.6 years older, have $5,473 lower median household income lower income, have a smaller percentage of Black, Latino, and Asian residents, have economies that are more oriented toward manufacturing and less toward services, and have slightly poorer baseline health, ranking about 2.7 percentile points below the mean of non-Trump counties.

Raw differences in mask-wearing show a 17.2 percentage point difference in means for mask-wearing between Trump and non-Trump counties, 0.50σ lower rate of sheltering at home, 12.0 percentage point lower rate of COVID vaccination by October 2021 (growing to 20.8 percentage points lower by June 2022), 9.3 percentage point lower COVID booster-shot rate, and a 1.30σ lower COVID-safety index, all significant at $p < 0.001$. Raw differ-

ences in health outcomes showed 1,040 higher COVID cases per 100,000 county residents in Trump-supporting counties, swelling to 2,300 by October 2021 but then narrowing again to 525 higher by June 2022. This narrowing is likely due to both the easing of restrictions across all counties due to higher vaccination rates that made the virus less dangerous to the vaccinated as well as increasing noise in the CDC data on COVID cases from the increasing use of home testing kits, where many positive results remain unreported (CDC, 2022). However, any narrowing of the differences in reported cases between Trump and non-Trump counties was not matched by a narrowing of the difference in COVID-related deaths, which grew from 22 additional deaths per 100,000 residents in February 2020 to 53 in October 2021 and then to 103 in June 2022, differences all significant at $p < 0.001$.

Figure 2 provides a series of plots by state that show self-reported mask-wearing by county-level Trump voter support. In nearly every map, the blue dots lie to the northwest of the red dots, which show higher levels of county voter support for President Trump and lower rates of mask-wearing. Figure 3 shows spacial correlations captured through a color-blend graphic across U.S. counties by 2020 presidential voting and COVID deaths per 100,000. Concentrations of Trump voting by county are shown by increasingly pinker hues, while higher reported rates of COVID-19 deaths are shown by increasingly greener hues. Increasing correlations between these are shown across counties by increasingly browner hues.

Table 2 provides the results of our state-level fixed-effect estimations in which we regress COVID-safety behaviors on the 2020 Trump vote, controlling for county characteristics. All estimates use U.S. state-level fixed effects so that identification is of differences in the Trump vote and COVID-safety behaviors between counties within a given state. Our results examine four COVID-safety variables: county-level mask-wearing, sheltering at home when these restrictions were in place, COVID-vaccination rates, and COVID-booster rates. We aggregate these three variables into a COVID-safety index using the method of Kling et al. (2007), which is the standardized sum of each of these three individually

standardized variables.

The results in Column 1 of Table 2 suggest that a 10 percentage point increase in the county Trump vote is associated with a 3.9 percentage point decrease ($p < 0.01$) in the number of people in a county stating during the summer 2020 surge that they wear a mask "all the time" in public (the mean in non-majority Trump counties is 64.7%). Column 2 shows a tightly estimated coefficient close to zero for sheltering at home. Columns 3a and 3b indicate that a 10 percentage point increase in the county Trump vote is associated with a 4.8 percentage point lower rate of vaccination by October 2021 that grows to a 7.9 percentage point lower rate by June 2022, while Column 4 shows a 4.2 percentage point lower county rate in booster-shots, all ($p < 0.01$). Visualization of the significant mask-wearing and vaccination results are shown over the scatter plots provided in Figures 4A and 4B, respectively.

Our estimates in Column 5 suggest that a 10 percentage point increase in the county Trump vote is associated with a 0.36σ ($p < 0.01$) decline in our COVID-safety index. Estimates on control variables across columns indicate that COVID-safety behavior generally increases with county median age, median income, percent Latino, percent Asian-American, percent employed in services and health, and baseline level of county health.

In general, the controlled estimates (which also use county population weights) display COVID-safety behavior associations with the Trump vote that are lower than raw differences between Trump and non-Trump counties, but differences by the county Trump vote remain and are strongly significant. The exception is the sheltering-at-home variable, which we do not find to be significantly affected by the Trump vote once age, income, and other county-level covariates are controlled.

3.2 Political Identity, COVID Cases, and Deaths

Table 3 shows the relationship between the county-level 2020 Trump vote and COVID cases and deaths. Vaccines began to be widely available in the U.S. roughly toward the end of

February 2021, and thus Column 1 shows the pre-vaccine effect on COVID cases, while Columns 2 and 3 show the impacts 8 and 16 months post-vaccine, respectively. Here results indicate that a 10 percentage point increase in the county Trump vote was associated with 789 additional COVID cases per 100,000 residents in roughly the first (pre-vaccine) year of the pandemic in the U.S. In the eight months after widespread vaccine introduction, this figure rises to 1,394 in October 2021 and then to 1,798 by June 2022, 16 months after the vaccine (all $p < 0.01$). This latter result likely underestimates the impacts on cases simply because of the under-reporting of the total volume of U.S. cases due to the increased use of home test kits (CDC, 2022).

Columns 4, 5, and 6 of Table 3 show outcomes for COVID deaths pre- and post-vaccine, where a 10 percentage point increase in the county Trump vote was associated with 11.5 additional COVID deaths per 100,000 residents in the first (pre-vaccine) year of the pandemic ($p < 0.05$), increasing to 27.5 deaths by October 2021 and 31.9 by June 2022 (both $p < 0.01$, respectively). A visualization of these results is provided in Figures 5A, 5B, and 5C. The diagrams show the relationship between county-level Trump support and COVID deaths at 12 months, 20 months, and 28 months after the onset of the pandemic, where the relationship becomes markedly stronger over the course of the pandemic.

A comparison of the pre- and post-vaccine results in Table 3 is important for two reasons: First, February 2021 was the month during which U.S. vaccination rates became most widely available and quickly accelerated among the general U.S. public. Second, it also represents the first month after President Trump was banned from issuing public statements over Twitter and the change in U.S. presidential administrations, where the Biden administration was a more forceful advocate for COVID-safety behaviors, including vaccination. The differences across Columns 1-3 (cases) and 4-6 (deaths) show that the statistical relationship between 2020 Trump support and COVID cases and deaths not only failed to narrow after February 2021 but actually grew substantially, especially during the period from February to October 2021, where the impact of political identity on cases rose

by 76%, and deaths rose by 238%. This divergence may have occurred because the easing of public restrictions that accompanied the vaccination-availability phase of the pandemic may have actually elevated risks to the unvaccinated and those not wearing masks in public spaces, a phenomenon likely exacerbated by the deepening political polarization over COVID-safety behaviors.

3.3 COVID-Safety Behaviors, Cases, and Deaths

How confident can we be that the higher rates of COVID infection in Trump-supporting counties resulted from reduced COVID-safety behavior? The largest and most influential controlled study estimating the causal effects of mask-wearing on COVID infection to date is the extensive randomized trial carried out by Abaluck et al. (2021), who report results from a (pre-vaccine) mask-wearing intervention implemented among 342,183 adults across 600 villages in Bangladesh. The Abaluck et al. study, referenced worldwide by governments as both a motivation and guide for COVID-safety behavior, reports that the 27.9 percentage point difference in mask-wearing between treatment and control groups, created by the inducement to wear masks throughout the experiment reduced symptomatic COVID infection in the treatment population by 0.91 percentage points within a two-month time-frame, or that every single percentage point increase in mask-wearing reduced COVID cases by an average of 0.016 percentage points per month.

Our 12-month results for the United States associate a 10 percentage point increase in the county-level Trump vote with a 3.9 percentage point reduction in mask-wearing (Table 2, Column 1) and a higher level of COVID cases equal to 0.789 percentage points (Table 3, Column 1), or that every percentage point increase in mask-wearing reduced COVID cases by an average of 0.017 percentage points per month. The 20-month and 28-month results (Table 3, Columns 2 and 3) show an increase in COVID cases equal to 1.393 and 1.798 percentage points from an additional 10 percentage point support for President Trump, implying that every percentage point increase in mask-wearing reduced COVID cases by

0.018 and 0.016 percentage points per month, respectively. Thus our non-controlled U.S. results are remarkably similar to the Abaluck et al. (2021) controlled estimates of the causal effect of mask-wearing on symptomatic COVID cases, and they suggest that higher levels of COVID infection in the high Trump-vote counties are unlikely to be due to unobserved county characteristics but rather are substantially mediated by differences in COVID-safety behaviors.

3.4 COVID-Safety Behavior and Traditional American Conservatism

In this section, we ascertain to what degree the COVID-safety behaviors are tied to a political identity related to former President Donald Trump relative to two traditional strains of conservatism in the United States: American social conservatism and American libertarian conservatism, which for many decades have formed key parts of the conservative political coalition embodied within the Republican party.

Our Social Conservatism index comprises five standardized and equally weighted state-level variables representing political issues strongly tied to social-conservative concerns in the United States. They include 1) the state abortions per live birth; 2) restrictions on same-sex marriage, existing before federal legalization under the Obergefell v. Hodges, 576 U.S. 644 2015 Supreme Court ruling; 3) state legality of the death penalty; 4) state bans on Sunday alcohol sales; and 5) the stringency of state laws regulating the private use of Cannabis.

Our Libertarian Conservatism index also consists of five standardized and equally weighted variables, representing issues of concern to libertarian conservatives, which embody a preference for minimal taxation, regulation, and interference in personal freedoms and private life by the government: 1) low state taxes at the highest income brackets; 2) estimated per-capita firearms ownership; 3) the degree of state implementation of the Religious Freedom Restoration Act; 4) state-level private union membership; and 5) state-level data on public-sector union membership, the latter two variables receiving negative

weights in the index.

Both the Social Conservatism Index and the Libertarian Conservatism indices show a strong level of internal consistency (Cronbach's $\alpha = 0.738$ and 0.714, respectively), where a correlation matrix between the variables within each index can be found in Table 4.

Consistent with the procedure of Kling et al. (2007), after summing each standardized variable within the index, each index itself is then subsequently standardized. (Because these indices are generated at the state level, we omit state-level fixed effects in these estimations.)

Table 5 shows our estimates in which we compare associations of our Libertarian Conservatism index, Social Conservatism index, and Trump voter support with COVID-safety behaviors, cases, and deaths. To facilitate comparisons with these indices, we also standardize our Trump-vote variable in this table.

Overall, results show that once the Trump 2020 vote is considered, the Social Conservatism index and Libertarian Conservatism indices have much less systematic explanatory power over COVID-safety behaviors, cases, and deaths. In these estimations, a one-standard-deviation increase in Trump support decreases mask-wearing by 5.1 percentage points ($p < 0.01$). For mask-wearing, a one-standard-deviation increase in the Social Conservatism index decreases mask-wearing by 5.0 percentage points ($p < 0.01$), but it is the only COVID-safety behavior that appears to be significantly related to social conservatism. A one-standard-deviation difference in the Social Libertarian index is statistically insignificant.

In column (2), the standardized Trump support variable is negatively associated with sheltering at home during the early months of the pandemic ($p < 0.10$), whereas the Social Conservatism and Libertarian Conservatism indices are statistically significant. For vaccination rates, shown in column (3), a one-standard-deviation increase in Trump support reduces the percent of adults vaccinated by 10.1 percentage points, while the Social Conservatism index is insignificant and the Libertarian Conservatism index actually has

an unexpected *positive* sign of 3.6 percentage points ($p < 0.01$) on the vaccination rate.

A one-standard-deviation increase in Trump support reduces COVID-booster shots by 7.8 percentage points, whereas the Libertarian Conservatism index shows no significant effects and the Social Conservatism index is marginally significantly *positive* at 1.7 percentage points ($p < 0.10$). The aggregated COVID-safety index shows that a one-standard-deviation increase in Trump support decreases COVID-safety behavior by 0.68σ ($p < 0.01$) and Social and Libertarian Conservatism indices are insignificant.

As is the COVID-safety index, COVID cases and deaths are strongly associated with the 2020 Trump vote. COVID-19 cases increase in the first 28 months of the pandemic by 1,099 per thousand residents for every standard deviation increase in the 2020 Trump vote ($p < 0.05$), and deaths increase by 61.3 per 100,000 residents ($p < 0.01$). COVID-19 cases and deaths are insignificantly associated with the Social Conservatism and Libertarian Conservatism indices.

These results are consistent with the fact that there are relatively weak historical ties between American conservatism and non-compliance with health safety behaviors. While this link may have grown stronger in the years before the pandemic, numerous papers have linked reduced levels of COVID-safety behaviors to communication from the Trump presidency itself (Hornsey et al., 2020; Grunawalt, 2021; Iwai, 2021; Editorial, *The Lancet: Infectious Diseases*, 2021). Hornsey et al. (2020) study the effect of presidential tweets on vaccine hesitancy in the U.S. and found that there was a significant increase in vaccine concern among Trump voters who read the President's anti-vaccination tweets. Thus rather than originating from a particular strain of traditional American conservatism, this body of evidence, taken together with our results in Table 5, strongly suggests an identity more specifically related to Trump's political support to have principally driven differences in COVID-safety behaviors and the accompanying COVID infections and deaths.

3.5 Checks for Robustness

We conduct a series of robustness checks on the stability and consistency of our estimates. We first vary our vector of control variables and find the county Trump vote to retain significance, and even in some cases sharpen, as we add additional controls that would likely affect COVID-safety behaviors, cases, and deaths.

Even with state-level fixed effects and standard errors clustered at the state level in our key estimations, there may exist significant spatial correlations of COVID cases and deaths that bleed across state lines. As a robustness check, we estimate our models in Tables 2, 3, and 4 with Conley's (1999) standard errors that account for large spatial correlations in COVID cases and deaths. Using longitudinal and latitudinal coordinates, we employ a Bartlett linear decay of the spatial error correlation to a distance of 500 kilometers from the center of each county. In estimations without state-fixed effects, we account for spatially correlated errors 500 km from the center of each state. Standard errors increase slightly in some estimations and decrease slightly in others, where our estimates in Tables 2, 3, and 4 that are significant at $p < 0.01$ remain so in every instance and are robust to variation in the distance of spatial correlation and the decay structure. (Because the procedure precludes the use of analytical weights, we favor the estimates with state-clustered standard errors presented here; estimates accounting for 500 km spatial correlation are available upon request.)

As a check on our controls, we also employ k-fold LASSO (Least Absolute Shrinkage and Selection Operator), a machine-learning regularization technique to select controls based on a penalty function that, along with minimizing the sum of the squared errors in the regression, penalizes the sum of the absolute values of the coefficients on variables in the estimation. All our controls are retained under k=10 LASSO.

The November 2020 presidential election occurred approximately eight months after the outbreak of the COVID-19 epidemic in the United States. Could it be that voters reacted to existing COVID safety behaviors, cases, or deaths within their county in the Presidential

vote? We believe the 2020 vote to represent the most current measure of Trumpian political identity, but to rule out the possibility of endogeneity of our Trump 2020 vote variable influencing our results, we re-ran all of our estimations in Tables 2, 3, and 5 using the county Trump vote in the 2016 election, which took place more than three years before the outbreak in the U.S. Our 2016-vote estimations yield essentially identical results and retain the same levels of statistical significance as our 2020-vote estimations, presenting no evidence of vote endogeneity to country COVID conditions. The single difference is that the county Trump 2016 vote is significantly negatively associated with early-pandemic sheltering at home in Table 5 ($p = 0.014$), whereas the variable was significant at only the 10% level when regressed on the Trump 2020 vote.

In an additional check for possible endogeneity, we run Oster (2019) bounds tests to estimate the likelihood that endogeneity problems could affect our estimated relationships between COVID outcomes and political identity. Oster's δ reflects the ratio of influence from unobserved variables relative to observed controls that would have to hold true to render the independent variable of concern statistically insignificant. We consistently find high and even negative deltas in our estimates, with δ >1 holding for all results even at the stringent $R_{max} = 1$ standard, indicating endogeneity is highly unlikely to affect the statistical significance of the independent Trump voting variable.

4 Discussion

We highlight three important conclusions from the empirical estimations in our research:

First, our results suggest that the health costs of political identity in the United States during the COVID-19 pandemic have been high. Using U.S. county-level data, we estimate that a 10 percentage point increase in the county Trump vote to be associated with a 3.9 percentage point decrease in public mask-wearing, a 7.9 percentage point decrease in COVID vaccination rates, and a 0.36σ reduction in a COVID-safety index.

Second, our results suggest that these differences in safety behavior across political identities have had large and statistically significant impacts on COVID cases and deaths. For every additional 10 percentage points in the county Trump vote, our 28-month estimates show an increase of 1,798 COVID cases per 100,000 county residents (mean in non-majority Trump counties = 25,545) and 31.9 COVID deaths (mean in non-majority Trump counties= 296.5). Thus, our results show a 10 percentage point increase in county-level Trump voter support in the 2020 Presidential election linked to roughly 1,798 additional COVID cases and 31.9 COVID deaths per 100,000 county residents during the heart of the pandemic.

Third, we find indices of more traditional strains of American political conservatism–specifically social conservatism and libertarian conservatism–to exhibit low and generally insignificant levels of explanatory power over COVID-safety behaviors, cases, and deaths after controlling for Trump voter support in the 2020 general election.

Because our U.S. county data are observational rather than experimental, it is important to consider whether other factors that characterize high-Trump-support counties–apart from differences in COVID-safety behaviors–could be responsible for elevated COVID cases. The possibility of such unobservable confounders is included in our directed acyclic graph in Figure 1. To bias the present results, these unobservable confounders would have to 1) vary at the county level with Trump support (and hence remain uncaptured by the state-level fixed effects), 2) fall outside of demographic, ethnic, economic, and co-morbidity controls in the estimations, and 3) result in higher levels of COVID infection.

By the nature of COVID transmission, this unobserved confounder would almost certainly have to be related to higher levels of human contact. A leading possibility would be that those living in Trump-voting counties have more frequent social contact with others in their communities, for example, through a higher frequency of church attendance or social gatherings than those in non-Trump counties in their state.

We view the possibility of our results being driven by this kind of unobservable confounder as unlikely for several reasons. One is that our estimates control for differences in county population density, which naturally affects the frequency of human interaction. The second is that church attendance is strongly correlated with the Social Conservatism index we include in Table 5, but we find here that the Social Conservatism index is insignificantly related to COVID cases. Our estimates of Oster bounds also appear to preclude results being driven by an unobserved confounder, where results on Oster's delta make endogeneity-driven results very unlikely. Finally, the decline in mask-wearing and a corresponding increase in COVID cases that we observe in the U.S., based on differences in political identity, very closely replicates the estimated causal effect of mask-wearing on symptomatic COVID infection found in the most substantive (Abaluck et al., 2021) randomized trial on the effects of the mask-wearing intervention. Put simply, there is little variation in U.S. COVID infections left to explain once one accounts for differences in COVID-safety behaviors.

Other research has suggested that conservative identity came to be linked with non-adherence to COVID-safety behaviors via two distinct channels. The first is a greater prevalence among conservatives to adopt conspiracy theories (Romer and Jamieson, 2022) related to the pandemic. The second relates to early communication by conservative politicians that framed COVID-safety behaviors as an impingement on personal freedom, downplayed the danger of the pandemic, and questioned the effectiveness of COVID-safety behaviors. This includes research directly linking messaging from Republican leaders and the Trump administration itself to a lack of adherence to COVID-safe behaviors (Green et al., 2020; Hornsey et al. 2020) and information from conservative television outlets (Allcott et al., 2020).

Engagement with different sources of social and traditional media across the political spectrum may reinforce *identities* (Democrats, but not Republicans, wear masks), influence *beliefs* (whether COVID vaccines are harmful or effective), and shift *preferences* (devel-

opment of disdain for a particular safety behavior via peer effects). All of this has occurred during the present social and political era in which issues that in the past might have been viewed as non-partisan quickly manifest polarizing stances. Indeed the climate of extreme U.S. political polarization has created a tendency for views about how to address an array of new global challenges (apart from strategies for addressing the pandemic, issues such as climate change and the rise of authoritarianism) to become politically polarized, both legislatively and socially, in ways they otherwise might not have been (Van Boven et al., 2018; McCoy et al., 2018).

Identity formation over the issue of COVID-safety behaviors has inflicted a tremendous aggregate cost to American health and lives. The fact that per capita COVID death rates in the U.S. lie 65% above the OECD average (Data Source: Johns Hopkins Coronavirus Resource Center) suggests that U.S. death rates during the pandemic have been abnormally high relative to peer countries.

Our estimates in Table 3 suggest that a difference in political identity (with corresponding COVID-safety behaviors) consistent with a 10 percentage-point-higher Trump vote projects over the U.S. population of 330 million people to an increase in approximately 5.9 million COVID cases (95% CI=[2.9m, 8.9m]) and 105,000 COVID-related deaths (95% CI=[54,900, 155,700]) in the first 28 months of the pandemic. Table 1 shows an average Trump voting percentage of 71.1% in Trump-majority counties compared to 38.6% in Trump-minority counties, implying 122,500 additional COVID-related deaths (95% CI=[64,100, 180,100]) that occurred in Trump-majority counties relative to Trump-minority counties stemming from differences in COVID-safety behaviors.

These added infections and deaths would appear particularly tragic as non-adherence to health-safety behaviors does not appear to contravene deeply rooted values nested within traditional American conservatism. Indeed, there are examples of issues in which conservative mores would advocate sacrificing individual liberty for the benefit of the

larger community or nation, including restrictions on personal behaviors or speech that cross a moral line, military service, and adherence to law and order more generally.

Most critical may be how a particular issue is framed within the scope of an existing set of political values. Normative prescriptions for individual behavior serving the public interest may be equally vilified as an affront to liberty or commended as an act of patriotism. In this research, we do not find differences in COVID-19 safety behaviors as originating from a political identity rooted in libertarian or social conservatism but rather in the manner of their politicization by political leadership.

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Figures and Tables

Table 1: Descriptive Statistics

	County Trump Vote > 50%		County Trump Vote < 50%		
	n = 2,523 *total population* = 118,151,830		*n* = 584 *total population* = 198,357,761		Difference in means
Variable	Mean	Std. Dev.	Mean	Std. Dev.	*t-value*
Independent Variables:					
Percent Trump Vote 2020	71.188	9.987	38.585	9.251	-72.2
Median County Age	41.599	4.974	37.941	5.41	-15.4
Median County Income	45.619	10.18	51.092	17.57	9.55
County Pop Density (1000/sq. mile)	0.084	0.15	0.824	2.014	18.8
Percent Latino	7.802	11.893	18.279	18.415	9.0
Percent African American	6.736	10.511	19.118	22.771	19.9
Percent Asian	0.72	0.95	3.353	4.776	23.1
Percent Manufacturing	12.856	7.263	9.574	5.172	-10.05
Percent Service & Health	22.657	4.111	25.121	5.722	11.9
Percent Retail	11.469	2.44	11.372	2.169	-0.70
County Health Ranking (percentile)	48.646	27.867	51.316	32.74	2.01
Libertarian Conservative Index[1]	0.097	0.916	-0.427	1.021	-6.05
Social Conservative Index[2]	0.137	0.949	-0.599	0.996	-13.85
Outcomes:					
Percent Wearing Mask	47.584	13.784	64.756	13.095	27.45
Sheltering at Home (Std.)	-0.095	0.88	0.408	1.332	11.15
Percent Population Vaccinated, 10/21	41.27	10.76	53.25	14.38	22.66
Percent Population Vaccinated, 06/22	56.25	13.91	77.07	24.88	22.32
Percent Boosted	22.21	7.41	31.52	12.45	23.17
Standardized C19 Safety Index[3]	-0.244	0.782	1.051	1.14	28.4
COVID Cases Per 100,000, 2/21	3,995.19	2,866.93	7,955.18	3,223.98	-7.72
COVID Cases Per 100,000, 10/21	15,220.5	3,533.50	12,920.06	4,052.49	-13.79
COVID Cases Per 100,000, 6/22	26,071.3	5,361.54	25,545.9	5,896.65	-2.02
COVID Deaths Per 100,000, 2/21	168.74	104.47	146.65	104.47	-4.74
COVID Deaths Per 100,000, 10/21	271.72	125.01	218.297	136.82	-9.14
COVID Deaths Per 100,000, 6/22	399.43	150.11	296.52	159.95	-14.75

[1] Equally weighted and standardized index consisting of five standardized variables: 1) low state taxes at the highest income brackets; 2) estimated per-capita firearms ownership; 3) the degree of state implementation of the Religious Freedom Restoration Act; 4) state-level private union membership; and 5) state-level data on public-sector union membership.

[2] Equally weighted and standardized index consisting of five standardized variables: 1) the state abortions per live birth; 2) restrictions on same-sex marriage, existing before federal legalization under the 2015 Obergefell v. Hodges U.S. Supreme Court ruling; 3) state legality of the death penalty; 4) state bans on Sunday alcohol sales; and 5) the stringency of state laws regulating the private use of Cannabis.

[3] Equally weighted and standardized index consisting of mask wearing, sheltering at home, percent of population vaccinated by 6/22, and percent receiving COVID-19 booster shots.

Table 2: Relationship Between Political Identity and COVID Safety Behaviors

VARIABLES	(1) Percent Wearing Mask	(2) Sheltering At Home Index (Standardized)	(3a) Percent Vaccinated in County 10/21	(3b) Percent Vaccinated in County 6/22	(4) Percent Boosters in County	(5) COVID-19 Safety Index (Standardized)
Percent Trump Vote 2020	-0.390***	0.011	-0.479***	-0.785***	-0.422***	-0.036***
	(0.056)	(0.006)	(0.061)	(0.125)	(0.058)	(0.007)
Median County Age	0.081	0.050**	0.322	0.152	0.436**	0.039**
	(0.227)	(0.024)	(0.434)	(0.325)	(0.170)	(0.015)
Median County Income	0.009	0.029***	0.297**	0.464**	0.173	0.025***
	(0.091)	(0.011)	(0.128)	(0.174)	(0.109)	(0.008)
County Pop Density	0.080	-0.063	0.060	1.088**	0.407*	0.015
	(0.286)	(0.045)	(0.283)	(0.449)	(0.240)	(0.025)
Percent Latino	-0.000	0.038***	0.130	0.583	-0.138	0.019
	(0.085)	(0.006)	(0.107)	(0.357)	(0.094)	(0.012)
Percent African American	-0.132**	0.021**	-0.294***	-0.383***	-0.291***	-0.014**
	(0.066)	(0.008)	(0.082)	(0.124)	(0.081)	(0.006)
Percent Asian	-0.241**	0.089***	-0.001	-0.138	0.322***	0.035***
	(0.115)	(0.019)	(0.157)	(0.285)	(0.081)	(0.013)
Percent Manufacturing	0.246	0.040**	0.345	-0.814**	0.098	0.007
	(0.201)	(0.015)	(0.275)	(0.315)	(0.136)	(0.015)
Percent Service & Health	0.465***	0.066***	0.599***	0.433	0.333	0.053***
	(0.169)	(0.016)	(0.210)	(0.428)	(0.223)	(0.017)
Percent Retail	0.942**	0.054	0.010	1.207	0.264	0.072
	(0.450)	(0.045)	(0.508)	(1.179)	(0.444)	(0.048)
County Health Rank	0.056*	0.017***	-0.015	-0.050	0.011	0.007*
	(0.031)	(0.005)	(0.040)	(0.090)	(0.028)	(0.004)
Observations	3,051	3,051	3,051	3,035	3,035	3,035
R-squared	0.865	0.920	0.855	0.853	0.913	0.935

Robust standard errors clustered at the state level in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Regressions use state-level fixed effects. All control variables demeaned and centered. Regressions include interaction of Trump Vote treatment variable with demeaned controls and state-level fixed effects.

Table 3: Relationship Between Political Identity and COVID Cases and Deaths

VARIABLES	(1) COVID Cases/100K to 02/2021	(2) COVID Cases/100K to 10/2021	(3) COVID Cases/100K to 06/2022	(4) COVID Deaths/100K to 02/2021	(5) COVID Deaths/100K to 10/2021	(6) COVID Deaths/100K to 06/2022
Percent Trump 2020	78.889***	139.360***	179.797***	1.154**	2.758***	3.186***
	(15.964)	(21.945)	(46.235)	(0.537)	(0.692)	(0.779)
Median County Age	-148.377**	-199.200**	-304.085	3.817	3.383	4.287
	(67.877)	(84.036)	(184.183)	(2.481)	(2.699)	(2.898)
Median County Income	-22.798	-70.510*	-134.896	1.561	1.112	1.101
	(25.094)	(39.319)	(101.422)	(1.327)	(1.295)	(1.450)
County Pop Density	-126.276	-184.214	-163.449	-5.391**	-7.012*	-7.586
	(101.789)	(115.248)	(222.820)	(2.495)	(3.899)	(4.598)
Percent Latino	166.658***	143.527***	228.047**	4.962***	5.867***	6.389***
	(54.988)	(47.778)	(90.837)	(0.810)	(1.136)	(1.249)
Percent African American	58.360***	78.431***	94.167	1.359*	1.859*	2.542**
	(21.312)	(27.399)	(59.800)	(0.725)	(0.932)	(1.046)
Percent Asian	-59.853	-0.015	-91.267	0.434	0.899	1.382
	(57.402)	(99.151)	(249.498)	(0.753)	(1.090)	(1.108)
Percent Manufacturing	-28.907	-129.761**	-225.306**	2.297**	1.994	2.787*
	(53.525)	(54.393)	(92.694)	(1.099)	(1.402)	(1.635)
Percent Service & Health	-144.313	-247.151***	-326.300**	3.312**	3.779**	2.860
	(87.826)	(86.537)	(139.462)	(1.550)	(1.817)	(2.028)
Percent Retail	-144.817	-89.943	-458.084**	1.068	3.167	3.109
	(142.496)	(104.226)	(197.436)	(3.367)	(3.397)	(3.644)
County Health Rank	3.748	6.649	34.018	-0.679	-0.790*	-1.164**
	(10.459)	(17.184)	(43.315)	(0.447)	(0.430)	(0.459)
Observations	3,051	3,051	3,050	3,051	3,051	3,050
R-squared	0.713	0.777	0.645	0.661	0.728	0.773

Robust standard errors clustered at the state level in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Regressions use state-level fixed effects. All control variables demeaned and centered. Regressions include interaction of Trump Vote treatment variable with demeaned controls and state-level fixed effects.

Table 4: Correlation Matrices for Index Variables

---------- Libertarian Conservative Variables ----------

	Gun ownershp	State Taxes	Freedom Act	Priv Union Mem	Pub Union Mem
Gun Ownershp	1.000				
Level of State Taxes*	-0.128	1.000			
Restoration of Freedom Act	0.209	-0.259	1.000		
Private Union Membership*	-0.239	0.309	-0.233	1.000	
Public Union Membership*	-0.468	0.327	-0.358	0.795	1.000

Cronbach's Alpha = 0.714

---------- Social Conservative Variables ----------

	Cannibus Legality	Abortion Prev	SSex Marr Restr	Death Penalty	Sunday Alc Prohib
Cannibus Legality*	1.000				
Abortion Prevalence*	0.438	1.000			
Same-Sex Marriage Restrictions	-0.500	-0.436	1.000		
Death Penalty Legal	0.335	0.250	-0.538	1.000	
Sunday Alcohol Sales Prohibited	-0.467	-0.215	0.158	-0.269	1.000

Cronbach's Alpha = 0.738

* Negatively Weighted in Index

Table 5: Relationship Between Alternative Conservative Political Identities and COVID Safety Behaviors, Cases, and Deaths

VARIABLES	(1) Percent Wearing Mask	(2) Sheltering at Home Index (Std.)	(3) Percent in County Vaccinated	(4) Percent in County Boosted	(5) COVID Safety Index (Std.)	(6) COVID Cases Per 100,000	(7) COVID Deaths Per 100,000
Percent Trump Index	-5.063***	-0.250*	-10.067***	-7.763***	-0.680***	1,099.233**	61.277***
	(0.642)	(0.127)	(0.632)	(0.566)	(0.047)	(453.133)	(7.983)
Libertarian Cons. Index[1]	1.156	0.238	3.558***	-1.294	0.127	-161.598	12.683
	(0.892)	(0.184)	(1.234)	(0.919)	(0.104)	(497.952)	(9.069)
Social Cons. Index[2]	-5.002***	0.001	-1.243	1.703*	-0.070	290.573	1.436
	(1.087)	(0.141)	(1.554)	(0.988)	(0.084)	(652.519)	(9.729)
Median County Age	0.438***	0.047***	0.578***	0.506***	0.057***	-166.362*	8.657***
	(0.107)	(0.016)	(0.148)	(0.111)	(0.008)	(83.081)	(1.084)
Median County Income	0.240***	0.051***	0.369***	0.097*	0.034***	-9.003	-0.696
	(0.059)	(0.008)	(0.067)	(0.056)	(0.005)	(39.639)	(0.546)
County Pop Density	0.073	0.128***	0.401	-0.357	0.040***	175.555	6.672**
	(0.296)	(0.029)	(0.449)	(0.219)	(0.012)	(149.167)	(2.700)
Percent Latino	0.336***	-0.003	0.281***	-0.054	0.010*	107.369	3.045***
	(0.054)	(0.010)	(0.064)	(0.035)	(0.006)	(64.306)	(0.331)
Percent African Amer.	0.095**	0.007	-0.268***	-0.354***	-0.014***	33.999	2.600***
	(0.047)	(0.011)	(0.062)	(0.044)	(0.004)	(44.226)	(0.702)
Percent Asian	-0.148*	0.001	-0.157	0.242**	0.003	-175.273***	0.976
	(0.085)	(0.015)	(0.111)	(0.104)	(0.006)	(57.734)	(0.962)
Percent Manufact.	0.049	0.034**	-0.307**	-0.071	0.004	31.490	1.891
	(0.108)	(0.016)	(0.117)	(0.061)	(0.006)	(43.513)	(1.202)
Percent Serv. & Health	0.544***	0.058**	0.571***	0.076	0.046***	35.636	4.033***
	(0.114)	(0.026)	(0.159)	(0.098)	(0.012)	(72.998)	(1.265)
Percent Retail	0.699***	0.042	1.012***	0.142	0.055***	462.388***	4.994***
	(0.224)	(0.026)	(0.247)	(0.165)	(0.013)	(126.670)	(1.459)
County Health Rank	0.025	0.007**	0.063*	0.017	0.005***	29.005*	-0.996***
	(0.016)	(0.003)	(0.034)	(0.020)	(0.002)	(16.834)	(0.170)
Observations	3,023	3,023	2,956	3,011	2,956	3,022	3,022
R-squared	0.706	0.540	0.680	0.783	0.822	0.238	0.584

[1] Equally weighted and standardized index of firearm ownership, state tax rate (-), implementation of Religious Freedom Restoration Act, percent of population member of public union (-), percent of population member of private union (-). (Cronbach's alpha = 0.714.)

[2] Equally weighted and standardized index consisting of abortions per 1000 live births, pre-2015 same-sex marriage restrictions, legality of cannabis (-), legality of death penalty, and Sunday alcohol ban. (Cronbach's alpha = 0.738.) Percent Trump Vote in 2020 Election is standardized for comparison with other conservative political identities. Regressions are on demeaned controls. Robust standard errors clustered at the state level in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Figure 1: DAG of COVID Safety Behavior and Political Identity

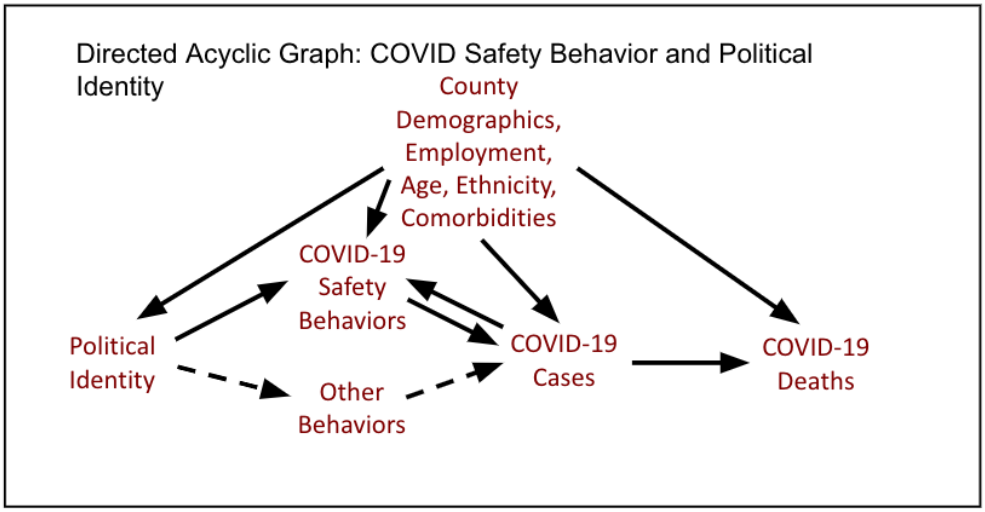

Figure 2: Counties with Higher Trump Support Less Like to Always Wear A Mask

Figure 3: Spatial Relationship Between Political Identity and COVID-19 Deaths

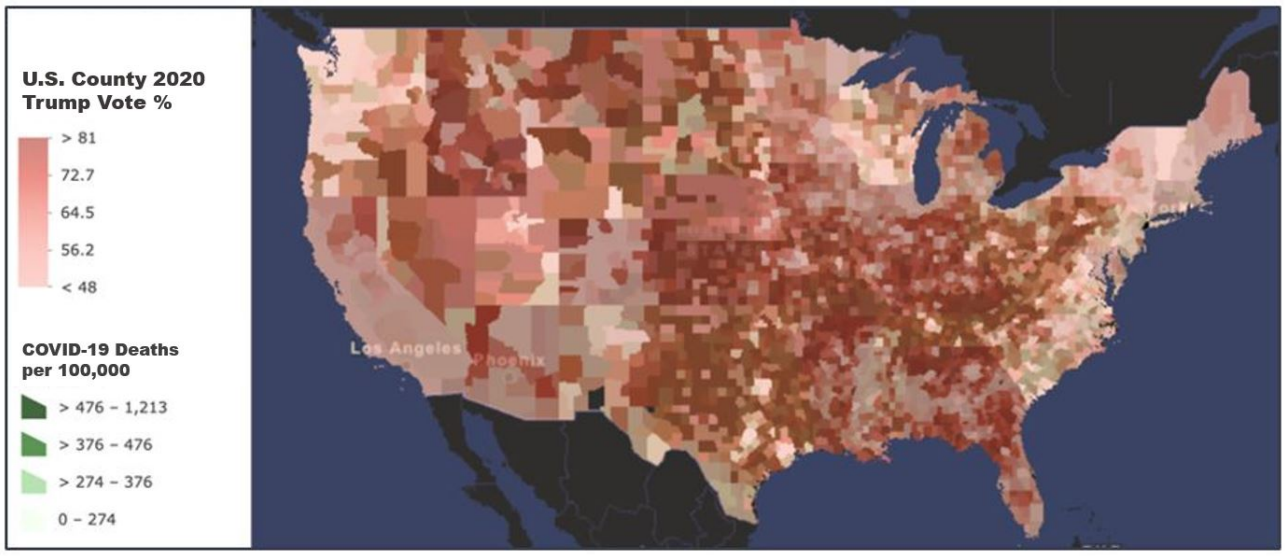

Figure 4: Panel A - Relationship Between 2020 Trump Vote and Mask Wearing

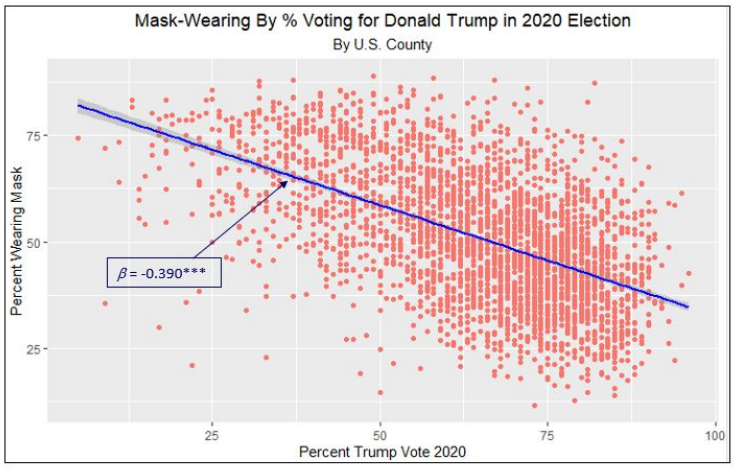

Figure 4: Panel B - Relationship Between 2020 Trump Vote and COVID-Vaccination Rate

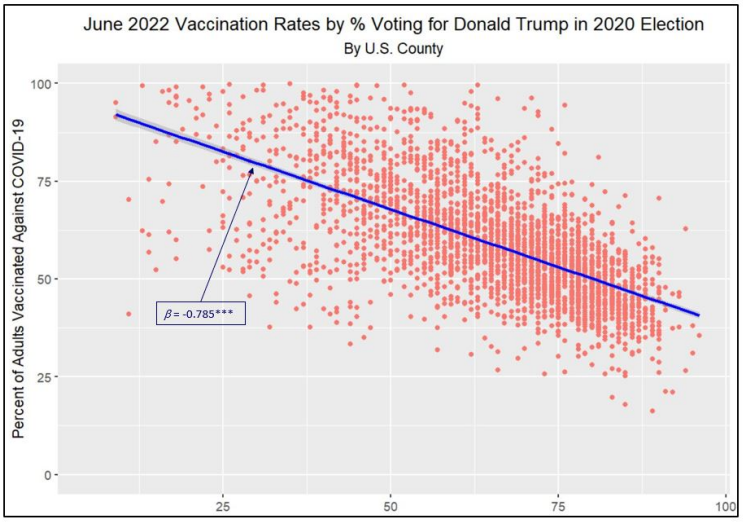

Figure 5: Panel A - County Trump Vote and COVID-19 Deaths–February 2021

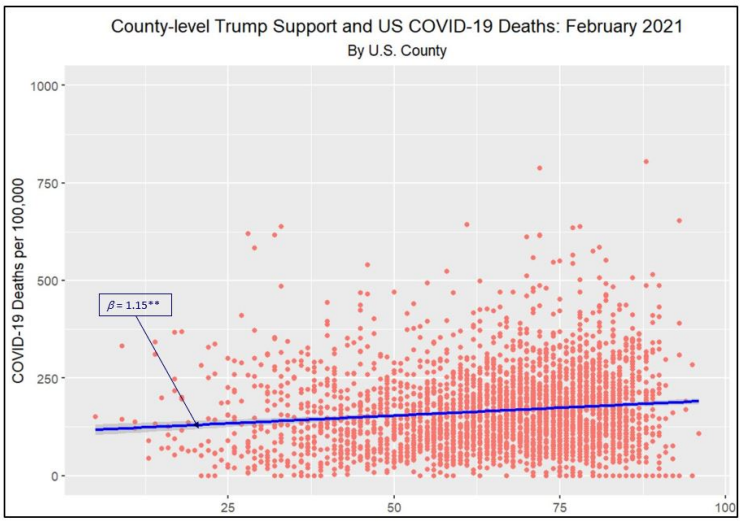

Figure 5: Panel B - County Trump Vote and COVID-19 Deaths–October 2021

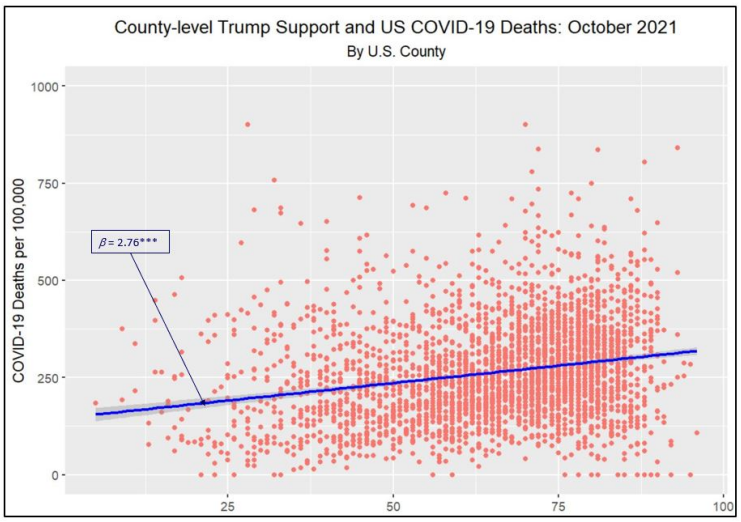

Figure 5: Panel C - County Trump Vote and COVID-19 Deaths–June 2022

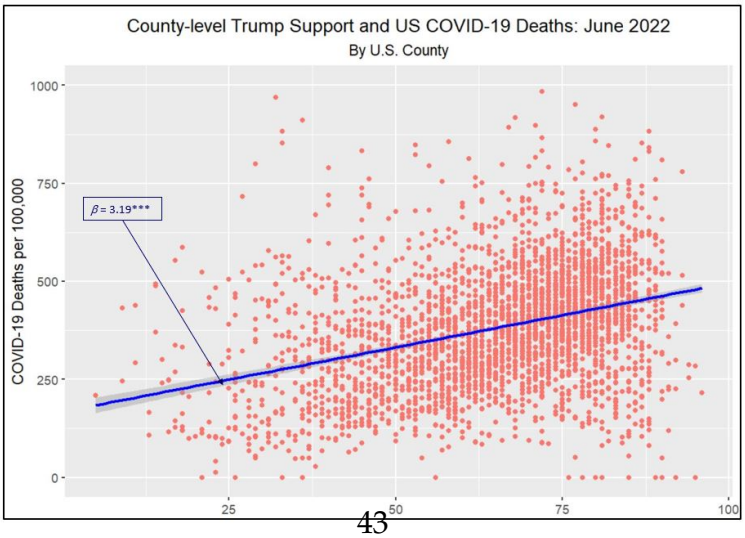

Figure List: