AN EMPIRICAL ANALYSIS OF RACE AND POLITICAL PARTISANSHIP EFFECTS ON WORKPLACE MOBILITY PATTERNS DURING LOCKDOWN, REOPENING, AND ENDEMIC COVID-19

J. Ryan Lamare
Reuben G. Soderstrom Professor of International Labor Relations
University of Illinois at Urbana-Champaign
rlamare@illinois.edu

Richard A. Benton
Associate Professor
University of Illinois at Urbana-Champaign
rabenton@illinois.edu

Patricia Michel Tabarani
Ph.D. Student
University of Illinois at Urbana-Champaign
pt8@illinois.edu

Abstract

We investigate how race and political partisanship affected variations in workplace and non-workplace mobility at three COVID-19 phases—lockdown (2020), reopening (2021), and endemic COVID (2022). We theorize that structural racism compelled relatively greater workplace mobility rates in Black communities during lockdown, and reduced Black workplace mobility during reopening and endemic COVID. In contrast, we posit elite-level anti-science skepticism and its amplification resulted in Trump-voting communities experiencing relatively higher workplace and non-workplace mobility rates than non-Trump voting areas throughout the pandemic. Regressions primarily using county-level Google Mobility Reports data support the hypotheses, conditioning on state-level fixed-effects and county-level urbanity, COVID job-type sorting, demographics, and socioeconomics. The county-level results are complemented by outcomes from novel individual-level COVID lockdown survey data, helping connect the proposed individual-level mechanisms to the county-level findings. We conclude that work mobility during COVID was racialized and politicized, offering empirical insights into longstanding racial disparities illuminated by the pandemic.

Keywords: race and ethnicity; political polarization; COVID; work mobility; economic inequality

Acknowledgements: We thank the participants of the Warwick University Industrial Relations Research Unit Seminar Series for their helpful comments on earlier drafts of the paper.

The COVID-19 pandemic and its associated policies had profound effects on labor markets, communities, businesses, and workers, starting with lockdown in 2020 and continuing for several years. It was immediately apparent these policies would impact employees by forcing some workers to stay home during lockdown while others felt compelled to continue travelling to work, potentially exposing themselves to health risks. The disparate impact of the pandemic also exposed longstanding social inequalities, particularly in the U.S. Concurrently, responses to the pandemic and its associated policies quickly became polarized on political lines, with many partisan supporters of President Trump downplaying the severity of the disease and indicating they should be allowed to continue travelling both to their jobs and to non-workplaces. These disparate impacts of and responses to the pandemic persisted in various ways as the country reopened from lockdown and, eventually, elected to live with the disease.

The pandemic highlighted longstanding racialized and politicized fissures in U.S. economic and social life. Uneven experiences during the pandemic coincided with a renewed call for industrial relations theory to grapple with these fissures, particularly structural racism, and racialized experiences at work (Lee and Tapia 2021). By investigating racialized experiences during the pandemic, we use the crisis as a lens to integrate current industrial relations theory with theories of structural racism, explicating how economic and workplace precarity are racialized during both settled and unsettled times.

Empirically, we investigate racialized patterns in mobility to work and non-work locations at three discrete points throughout the pandemic, each with distinct policy and social responses. The first, Spring 2020, constitutes the height of mobility restrictions, which we term the lockdown phase of COVID. In the second period, a year later, many workers began returning to physical jobs following initial vaccine rollouts. We term this the reopening phase of COVID. In the third period, two years from the start of the pandemic, many workplaces and communities

had removed mobility restrictions, returning to more normal routines. We term this the endemic phase of COVID. We argue during lockdown, while absolute mobility declined across all groups, Black communities and the workers in them were compelled to experience higher relative workplace mobility (but not non-workplace mobility) vis-à-vis those in white areas. We also enrich our analysis of racialized work by empirically contrasting these patterns with politically polarized responses to the pandemic. In contrast to Black communities, Trump-voting communities and the voters in them elected to remain relatively more mobile to *both* work and non-work locations, vis-à-vis non-Trump voting areas. We propose during reopening and endemic COVID, Black communities and workers experienced lower relative workplace mobility (but not non-workplace mobility), while again in contrast, Trump-voting areas remained relatively more mobile to workplaces and non-workplaces at these phases. Together, our theory considers how racial and political fissures shaped the economic, social, and potential health impacts of the pandemic, and speaks to broader efforts to integrate theories of structural racism with industrial relations scholarship.

We primarily use county-level U.S. data to examine these variations empirically. Specifically, we rely on Google Mobility Reports data from February-April 2020 (lockdown), February-April 2021 (reopening), and February-April 2022 (endemic). Google tracked individual mobile phone users' movements to work and non-workplaces (aggregated to the county level), which we link with county-level Census and other data. In so doing, we provide a unique, objective, and empirical picture of actual travel patterns at key points during the pandemic. However, given privacy concerns, the county-level data cannot be disaggregated to the individual level, limiting our ability to infer individual-level mechanisms. To address this, we support the county-level data with novel individual-level survey data drawn from workers in two states. Employees were asked various questions about their experiences with COVID from

March-July 2020. We examine several items from this survey that correlate with the underlying mechanisms we propose to predict work mobility variations, as well as non-compliance indicators, by race and political partisanship along with various individual-level controls.

Our results allow us to better understand why we saw such dramatic differences in how COVID affected communities of color and the individuals within them. We specifically speak to wider concerns around the unequal treatment of Black workers in the U.S. We argue that systems of structural racism and racial inequality resulted in Black communities feeling more compelled to put their health at risk during lockdown and may have resulted in Black communities being left behind during the recovery. As an empirical and theoretical contrast, we argue that anti-science skepticism among many GOP voters, amplified by President Trump, led those in partisan Trump counties to downplay the severity of the disease and thus continue their normal work and non-work routines at relatively greater rates. We therefore contribute to issues surrounding the narrow causes and consequences of the crisis, including its disparate impact across racial groups, and to the effects of broader societal and institutional inequalities on behaviors during the pandemic. And, in focusing on the nuanced experiences of Black workers and their communities during COVID, we respond to calls for more industrial relations scholarship highlighting how racial injustices shape work.

Social Science of the COVID Pandemic

Before presenting our theory of unequal work mobility during COVID, we contextualize our study with relevant strands of social science research on the pandemic. Many scholars quickly observed that the pandemic had disparate impacts across social groups, particularly affecting those in historically disadvantaged social positions. Health disparity researchers noted that COVID mortality disproportionately impacted communities of color, including Black, Latinx, and American Indian communities (Hooper, Napoles, and Perez-Stable 2020).

Researchers also noted disparate patterns of social distancing, including work related distancing, reflecting social position—working from home, telecommuting, and accepting work furloughs were issues of privilege, not accessible to all communities or individuals (Yancy 2020).

An emerging literature also uncovered substantial heterogeneity in the pandemic's labor market impacts, including across U.S. states (e.g., Forsythe et al. 2020), in cross-national comparisons (e.g., Dobbins et al. 2023), and across racial and ethnic groups. For instance, Cortes and Forsythe (2023) report higher rates of job displacement among non-white workers, including relative to white workers in the same occupation and industry. These racial gaps were not due to local variations in pandemic severity or lock-down policies. Moreover, racial gaps in job displacement widened as the pandemic wore on into mid-2020, as white workers began returning to work but Black unemployment remained high (Couch, Fairlie, and Xu 2020). Black workers may have been particularly vulnerable to pandemic related job disturbances because they were under-represented in occupations that could redeploy to telework and work-from-home formats (Mongey, Pilossoph, and Weinberg 2021; Dey, Frazis, Loewenstein, and Huggette 2020).

A small literature also noted how the pandemic and its policy responses were politicized. Individuals' partisan positioning and political ideology influenced perceptions of the pandemic and associated health behaviors such that politically conservative individuals tended to minimize perceived health risk and were less likely to adopt health-protective behaviors (Stroebe et al 2021). Individual partisan responses reflected polarization in news media coverage (Hart Chinn, and Soroka 2020), social media (Scoville et al 2022), and especially discourse from political elites (Flores et al 2022). Political ideology and positioning affected responses to the pandemic for both individuals (Clinton et al 2021) and organizations (Benton et al 2022).

Race and Unequal COVID Work Mobility Patterns

Why might those in Black communities experience greater relative mobility to workplaces than white areas during lockdown, and lower relative workplace mobility during reopening and endemic COVID? Theories of structural racism and its impacts in workplaces, health outcomes, and residential segregation shed light on the vulnerability facing those in Black communities throughout COVID (Egede and Walker 2020). Structural racism describes the systematic and broad political and social disadvantages of Black individuals and communities, which shape racial inequality in life outcomes, well-being, and economic security (Feagin 2006). Theories of structural racism acknowledge that racial inequality is not solely the result of individual-level discrimination or racial malice, but rather results from systemic and seemingly neutral barriers and routines built into institutions and organizations (Ray 2019). Detailed empirical studies in many institutional domains, such as workplaces (Mason 2023), healthcare settings (Phelan and Link 2015), and residential housing markets (Wassmer 2023), demonstrate how structural racism affects the unequal distribution of resources and opportunities.

Theories of structural racism underscore our expectations that overt and structural pressures compelled Black communities and individuals to engage in higher rates of workplace mobility than white communities and individuals during lockdown. Applying a theory of structural racism to Black experiences during COVID, Pinto (2022) shows, in the early days of the pandemic, Black respondents were more likely than whites to experience difficulty paying their bills and meeting basic needs. Black respondents were also more likely to face threats of eviction and foreclosure, compelling them to continue working to keep their homes (see also NCLC 2020). Black workers reported greater fear they would be unable to maintain work during lockdown, and if they were terminated, their unemployment insurance claims would be denied.

Finally, Black workers expressed greater retaliation concerns if they refused to work under unsafe conditions or for reporting safety issues during lockdown.

Lockdown policies also disproportionately affected Black-owned businesses and the (mostly Black) workers they employ. Black-owned small businesses were almost twice as likely as white-owned businesses to fail during lockdown (Mills and Battisto 2020). They also experienced significantly larger drops in sales compared to similar white-owned businesses (Bloom, Fletcher, and Yeh 2021). Structural racism helps explain these patterns—Black-owned businesses are systematically disadvantaged in the competitive environment (Ray 2019), particularly due to patterns of residential and economic segregation. These systematic disadvantages made Black-owned businesses, and their largely Black workforces, more vulnerable to the economic fallout from the pandemic (Mills and Battisto 2020).

The pandemic heightened perceptions of economic uncertainty and vulnerability for many workers. But patterns of structural racism possibly caused Black workers to experience especially acute feelings of economic insecurity. COVID lockdowns negatively impacted Black individuals' psychological well-being, including perceived economic well-being, more than whites (Le and Nguyen 2020). Black workers were also particularly likely to cite job security as a top priority during the pandemic (Cech and Hiltner 2022). Given these differences in actual and perceived precarity, it is likely that Black workers who remained employed felt especially compelled to continue reporting to work in order to overcome both perceived and material job loss threats during lockdown.

We argue relatively higher lockdown mobility to workplaces in Black communities stems from economic vulnerability and feeling compelled to continue working. However, we have no reason to expect that those in Black communities would be more or less likely to visit non-work locations, like grocery stores or retail establishments, at different rates from their white

counterparts. Therefore, while we anticipate Black areas will experience more work mobility during lockdown, we argue that these differences are due to economic precarity reflecting structural racism, not differences in individual preferences or compliance with lockdown policies. As such, we do not expect Black communities to experience relatively more non-work mobility than other racial / ethnic groups during lockdown.

Structural racism theory also suggests diverging experiences during reopening and endemic COVID, including why those in Black communities might be less able to find work. During recessionary periods in general, Black employees are often the first fired and slowest to be rehired during recoveries (Freeman 1973; Couch and Fairlie 2010). Researchers have found similar racial gaps in layoffs and unemployment during early phases of COVID and the recovery (Dias 2021; Gezici and Ozay 2020; Cortes and Forsythe 2023). The common "last hired, first fired" policy disproportionately affected Black workers and continued through endemic COVID (Couch, Fairlie, & Xu 2020). We therefore expect Black communities experienced relatively lower mobility to workplaces than white areas during reopening and endemic COVID.

Theorizing Partisan COVID Responses

In our discussion above, we argue Black workers' experiences during COVID reflected patterns of structural racism manifest in unequal economic precarity, rather than differences in individual preferences or compliance rates with lockdown policies. To further substantiate this point, we develop a theoretical and empirical contrast between workers in Black communities and workers in politically conservative Trump-voting communities. In contrast to Black experiences during COVID, we posit that Trump-voting communities would exhibit more relative mobility to workplaces *as well as non-workplaces* as compared to non-Trump areas, and this mobility should persist across all three COVID phases. Why might those in Trump-supporting areas exhibit greater relative entitlement to travel to both work and non-work

locations during lockdown, and why might that persist into reopening and endemic COVID? Here, we turn to theories of political polarization and the politicization of science along partisan lines, coupled with the amplification of scientific skepticism by President Trump.

There is broad political science consensus that those who identify as ideologically conservative and/or partisan Republican-voting have become increasingly distrustful of science since the 1970s (Mooney 2005). During the mid-20th century, ideological conservatives (a bloc who regularly vote Republican) were *more* trustful of science than other groups, but by the start of the 21st century they had become the group least likely to trust science (Gauchat 2012). The reasons for this shift are multifaceted but largely involve two changes. First, the emergence of the New Right political movement in the 1970s elevated religiosity and traditional values over scientific inquiry and associated institutions (Blee and Creasap 2010). Second, conservative political elites, particularly two GOP presidents, Ronald Reagan and George W. Bush, emphasized anti-intellectual stances (Mooney 2005).

Against this ideological and partisan backdrop, elites emerged to shape expectations regarding voters' responses to the pandemic. Dr. Anthony Fauci, who represented both mainstream scientific institutions and the broad scientific consensus regarding early COVID, emphasized that the virus was both highly contagious and life-threatening, imploring the public to stay home (Fauci, Lane, and Redfield 2020). President Trump, who publicly sparred with Fauci, posting to Twitter, "Time to #FireFauci," at the height of lockdown, and consistently amplified anti-science COVID skepticism during all phases of the pandemic (Baker 2020).

The interplay of conservative science skepticism and President Trump's amplified COVID skepticism led to highly politically polarized views of the pandemic and associated policy responses. Considerable evidence confirms how the politicization of the pandemic affected diverging partisan perceptions and behaviors (Benton et al. 2022), with conservatives

exhibiting less concern about COVID than non-conservatives (Conway et al. 2021). Moreover, McLamore et al. (2022) find scientific distrust explains associations between Trump support and non-compliance with COVID policies, including not avoiding social gatherings and not avoiding non-essential travel.

Trump's science skepticism and downplaying the severity of COVID inform our expectations that Trump-voting areas, and the voters within them, would be likely to remain relatively more mobile to *both work and non-work locations* throughout the pandemic. We thus argue partisan distrust of science, amplified by President Trump, is key to the expectation that Trump-voting areas would experience greater relative rates of travel to both work and non-work locations across all COVID phases. Taken together, our analysis of Trump-voting county mobility serves as a useful comparison for Black community mobility, helping us identify theoretical mechanisms driving racial disparities in pandemic experience and economic precarity. We use these two groups to isolate theoretical mechanisms about how racialization affected different forms of mobility.

Using Linked Google Mobility Reports Data to Track COVID Travel Patterns

We primarily use Google Mobility Reports Data to examine mobility variations during the three phases of COVID. As the pandemic unfolded, Google took advantage of the data it collects on users' mobile devices to track changes in mobility patterns relative to a pre-pandemic baseline. According to Google, the goal was "to provide insights into what has changed in response to work from home, shelter in place, and other policies aimed at flattening the curve of this pandemic" (Fitzpatrick and DeSalvo 2020). Google states that as the pandemic unfolded, "we heard from public health officials that the same type of aggregated, anonymized insights we use in products such as Google Maps would be helpful as they made critical decisions"

(Fitzpatrick and DeSalvo 2020). It remains possible that these technologies were used for other purposes, including potentially as part of the company's wider business ambitions.

Google collected the data from millions of individual mobile phone users whose Location History setting had been switched on prior to the pandemic (this setting is off by default but Google asks users to opt in whenever they first activate their phones or use Google Maps). Google anonymized and aggregated these data from the individual to the county level to ensure no personal information was revealed. The aggregated and anonymized mobility reports are derived from the same data used in the Google Maps product and other mobility and mapping tools on Google's mobile platform. Although Google provides detailed instructions for users who wish to turn off location tracking, the company has invested considerable technical capacity and expertise in actively tracking and geo-locating mobile users, using this capacity in their mobile app services and product functions.[1]

These Google mobility reports emerged as a key source of data for academic research on how policy interventions and other social factors affected mobility patterns during the pandemic (Drake et al 2020). For example, researchers used these data to estimate the economic impacts of mobility policies, based on changes in work commuting patterns (Spelta and Pagnottoni 2021).

There are two main advantages to using these data. First, they provide a near real-time cataloging of actual mobility patterns within a community, rather than relying on individuals' recollections of their mobility behaviors, which may introduce bias. This gives what is probably the most objective data on how communities (and the individuals in them) actually responded to the pandemic in terms of their mobility patterns. However, an important tradeoff is that it does not allow for individual-level analytical granularity, which raises ecological fallacy concerns

[1] We also draw from the Google Community Mobility Reports help website to understand how it tracked users: https://support.google.com/covid19-mobility/answer/9824897?hl=en&ref_topic=9822927 (accessed August 2023).

when connecting the aforementioned mechanisms to the aggregate outcomes. We will address these concerns using complementary individual-level data to support our county-level findings.

A second advantage is that Google provides data on mobility changes to specific place categories. Crucially for our purposes, Google includes a discrete identifier of mobility changes to workplaces, which tracks the number of individuals who "spent more than 1 hour at their places of work" relative to their pre-COVID patterns (Aktay et al. 2020: 4). Workplaces are identified in various ways, including Google Maps users declaring an address as their place of work or Google tracking common individual movement patterns at certain hours to identify their workplace, irrespective of whether the individual is using Maps functionality (Haselton 2017). Non-workplace categories include visitors to: grocery stores and pharmacies; places of retail, recreation, and eateries; and transit hubs, like airports and train stations.[2] Each user could contribute at most once to each category each day, and to a maximum of four daily non-work locations based on location and category pairs. The collection process provides accurate daily user mobility patterns for over 99% of all users, including those that crossed county lines to visit work or non-work locations. Google also tracked the amount of hours individuals spent at their homes; a negative coefficient indicates more time spent away from home. These categories are not exhaustive in capturing the full extent of mobility but are designed to show mobility changes to key locations throughout the pandemic.

Also crucially, Google location tracking can distinguish an individual's place of work and residence from other locations where an individual may travel (Haselton 2017).[3] The service can document when users travel to the same location throughout the week, time of day, and

[2] Transit mobility and workplace mobility are moderately correlated, possibly because in some counties transit stations are used for work commutes. As a robustness test for our workplace mobility regression analysis, we control for transit mobility and find similar findings to those reported in the paper (results available on request).
[3] We also draw from the Google location help website to understand how it differentiates work from other locations: https://support.google.com/websearch/answer/179386?hl=en-IR#zippy=%2Cyour-home-or-work-address-from-your-labeled-places (accessed August 2023).

hours spent, and can categorize these locations. Using this functionality, Google can distinguish whether a user is traveling to a retail establishment as a worker or as a shopper – if the user commutes to that location regularly throughout the week at certain hours, Google can identify it as a place of work. Google uses this information to provide users with estimated work commute times and shoppers with estimated traffic, or "busyness," at retail and dining locations. Although there may be some measurement error at the individual level (which again we will address using complementary data at that level), Google builds and successfully sells its products based on the premise that it can accurately identify patterns in aggregated mobility data.

The data are recorded daily per county. We limit the date range to begin on February 28/29 and end on April 23 each year. These represent important milestones in the pandemic. February 29, 2020 was the date of the first COVID death in the United States and the first declaration of a state of emergency, while April 23 was the date the first state reopened following lockdown. We believe this period best captures the essence of lockdown. February-April 2021 (reopening) was a key period in which hiring began to pick up for some following vaccine rollouts; for instance, on March 1, Johnson & Johnson began publicly administering their vaccine. By February-April 2022 (endemic), many county- and state-level COVID restrictions had been officially removed; for example, in Illinois, indoor mask requirements ended on February 28, 2022. Also, empirically, using identical time periods across the three years is key to ensuring an apples-to-apples comparison of mobility trends. This avoids the possibility that exogenous events in one period, like a nationwide holiday, would artificially inflate or depress mobility patterns relative to another period.

Each data point compares daily mobility against a county-specific pre-pandemic baseline: the five-weeks from January 3 through February 6, 2020. Days are compared against comparable baseline days; for instance, mobility patterns on a Sunday are compared against the county's pre-

pandemic Sunday baseline. This generates a per-day number showing the county's percentage point change in the total number of visitors each day for all categories, relative to its pre-pandemic values. This number is akin to a difference score calculated daily, comparing mobility against a pre-baseline value. As our key questions examine time-invariant county characteristics (race composition and political partisanship) between (not within) counties, we collapse the data to give one county-level number at each pandemic phase. This number is the average mobility change within the county relative to its pre-pandemic baseline, for each mobility place category.[4]

Linking Google Mobility Reports Data with Census and Other Data

The Google data include county identifiers (FIPS codes), and we link these to several county-level datasets. We link to recent Census data to obtain racial/ethnic composition, which includes percent white, Black, American-Indian, Asian, Hawaii-Pacific Islander, and Hispanic. We also use Census data to capture several county-level control variables, including demographics (gender, age, education) and socioeconomics (unemployment rate, household income). We add a county urban-rural continuum code, taken from the USDA, which ranges from 1 ("metro – counties in metro areas of 1 million population or more") to 9 ("nonmetro – completely rural or less than 2,500 urban population, not adjacent to a metro area"). We control for various state-level differences (including, for instance, variations in statewide mobility restriction mandates) by incorporating state fixed-effects. To obtain county-level Trump vote, we use data collected by the MIT Election Data and Science Lab (https://electionlab.mit.edu), which

[4] For example, in Wayne County, Michigan, Google's workplace mobility difference score was 7 on February 29, 2020. By March 29, 2020, the number was -45, and by April 23, the number was -62. These numbers are the percentage point change in the total number of unique visitors to workplaces each day relative to the county's comparable pre-COVID baseline day. Daily numbers are averaged for each mobility category to produce a single category- and county-specific number at each pandemic phase, and decimalized. In Wayne County, that number is -0.378 for mobility to workplaces during lockdown, meaning on average, Wayne County had reduced workplace visits by 37.8 percentage points, relative to its own pre-pandemic baseline. In our empirical analysis, that number is compared against the same indicator of workplace mobility taken from all other counties within Michigan.

tracks county-level presidential election returns. Our Trump vote measure comes from 2016. Using 2020 Trump vote produces materially equivalent results.

We link the mobility report data to county-level industry data to incorporate the extent to which the county would have a higher or lower proportion of jobs classified as essential. Such counties would see increased mobility to work as a result of predominant industry structures. This is important to account for since an explanation for Black mobility in particular during lockdown is that more highly Black counties were those where more essential jobs were located. This can also help account for patterns of racial sorting into different types of jobs. To capture this, we link to data gathered by the Illinois Economic Policy Institute (ILEPI), which classified NAICS categories into essential and non-essential industries, using a methodology similar to that found in other COVID essential industry classification systems (Parrott and Moe 2020; Kane and Tomer 2021; Blau, Koebe, and Meyerhofer 2021). Our data indicate, on average, 44% of industries in a county were essential, which is nearly identical to that found by Blau, Koebe, and Meyerhofer (2021) although they call these "frontline" jobs. Our essential worker measures also fall within the expected range suggested by Kane and Tomer (2021).

Summarizing Our Empirical Workplace Mobility Expectations

Figure 1 presents a stylized representation of our empirical expectations for mobility to workplaces across three-phases of the COVID-19 pandemic. In the Figure, the horizontal axis represents change over time, with each of the three phases labeled and demarcated using the dashed lines. The vertical axis represents county-level workplace mobility, plotted as relative to the time matched pre-COVID mobility trend. The pre-COVID trend is represented by the blue horizontal line—this pre-trend is not time varying (does not vary vertically over time) because it is adjusted based on mobility from the pre-COVID period. The plotted lines represent our

expected mobility levels, plotted as relative to the pre-COVID trend, for counties with different characteristics and are labeled accordingly.

[Figure 1 about here]

The top panel compares counties with greater and lesser Black populations. As the plot illustrates, we expect that lockdown corresponds with a decline in workplace mobility within all counties, including those with greater (dotted line) or lower (solid line) Black populations. However, this decline should be smaller in counties with greater Black populations (dotted line). As we have argued, structural racism caused Black workers to continue reporting to work as higher levels, which should be reflected in workplace mobility rates in counties with larger Black populations. During reopening and endemic COVID, workplace mobility remained low within all counties, relative to the pre-COVID trend. However, counties with larger Black populations saw weaker economic and labor force participation recovery, leaving a delayed effect on Black communities. In the top panel, counties with lower Black populations (solid line) approach pre-COVID levels more quickly. Taken together, the theory and empirical predictions suggest that interplay of work, pandemic, and structural racism caused Black workers greater health risk during lockdown but weaker economic recovery during reopening and endemic COVID.

The bottom panel compares counties with greater and less Trump-voting percentages, which we present as an empirical and theoretical counterpoint to contextualize the structural racism mechanisms discussed above. As above, we expect that workplace mobility declined in all counties during the lockdown phase, including those with greater (solid line) and lesser (dotted line) Trump-voting percentages. However, we anticipate that this decline was less pronounced in Trump-voting counties (solid line), where ideology and political partisanship led residents to question and sometimes reject lockdown guidance. However, during the reopening and endemic phases of the pandemic, we expect workplace to mobility to recover at a similar

rate for both Trump and non-Trump voting counties—there is no theoretical reason to expect Trump or non-Trump voting counties have been left behind in the post-pandemic recovery.

Analyzing County-Level Mobility Variations

Descriptive Statistics

The primary data cover over 2,700 counties, which represents nearly 90% of all U.S. counties (Google does not include mobility data for counties less than 3 square kilometers, sparsely populated areas with little to no mobility records or cellular data coverage, nor does it include the District of Columbia). The number of counties included in the non-workplace comparison categories varies, ranging from just over 1000 counties (for visits to transit hubs) to over 2,500 counties (for visits to retail). This variation is the result of mobility tracking limitations for some categories in certain counties – for instance, in some areas, transit hubs may not exist, leading to missing transit mobility data.

Table 1 provides county-level descriptive statistics at the three pandemic phases. During lockdown, workplace mobility declined by 24.5% compared against the pre-pandemic baseline. This represents the largest average decline of all Google mobility categories. During reopening, workplace mobility remained on average 18% below pre-pandemic levels. By endemic COVID, workplace mobility remained below pre-pandemic levels, but at only 10.9% below the baseline. These descriptive details correspond well with our theorized expectations from Figure 1.

[Table 1 about here]

Mobility patterns to non-workplaces also varied. During lockdown, visits to grocery stores and pharmacies increased by 1.3% relative to their baselines, while visits to retail and transit declined by 18.3% and 19.9%, respectively. The average number of hours spent at home increased by 9% when compared to the pre-COVID baseline. During the reopening and endemic phases, grocery store visits remained 1-2% higher than the baseline. Yet visits to retail,

recreation, and restaurants rose sharply from what was seen during lockdown, to the point that at both reopening and endemic COVID phases, mobility patterns looked practically identical to the pre-COVID reference. Transit visits followed a similar pattern to retail visits, though mobility to transit remained slightly lower than its pre-pandemic base in both 2021 and 2022. Finally, people spent more time at home during reopening and endemic COVID than they had prior to COVID, but the difference was smaller in 2021 and 2022 than it had been in 2020.

Regarding key independent variables, for the average county, 10% of the population was Black. This percent ranged from a low of 0.1% (Ouray County, Colorado) to a high of 86% (Claiborne County, Mississippi). The percent of white residents in a county averaged 84% across all counties. Turning to political partisanship, for the average county, 62% of voters supported Trump in 2016 (county-level Trump support is expectedly higher than individual-level support since pro-Trump counties are relatively less populated). County-level Trump support ranged from a low of under 9% (Prince George's County, Maryland) to a high of over 92% (Wheeler County, Texas). Our demographic and socioeconomic controls were distributed as expected.[5]

Empirical Analysis

We begin by analyzing workplace mobility patterns during lockdown (February-April 2020). The full county-level regression model can be written as:

$$Y_i = \beta_0 + \beta_1 Race\%_i + \beta_2 Trump\%_i + \beta_g Controls_i + \varepsilon$$

Y expresses the set of outcome variables (percentage point differences from the county's pre-COVID baseline in average number of visitors to: workplaces; grocery stores; retail establishments; transit hubs; hours spent at home) for county *i* at one of three discrete time points (lockdown, reopening, endemic COVID). Since we want to present results showing all three

[5] We use standard regression diagnostics to ensure that our results are not affected by the distribution of the variables. For instance, VIF tests show no multicollinearity concerns, and our residuals have few if any outliers, depending on the model, none of which affect the results.

pandemic phases, the outcome variables are measured separately at each time point. In supplemental robustness tests discussed below, we pool the data and interact the independent variables with pandemic phase, using lockdown as a reference category. Phase-specific outcomes are materially equivalent if the data are treated as discrete periods or are pooled and interacted.

The first key independent variable, $\beta_{1,}$ is the proportion of Black residents in county *i*, compared against the white reference point. The second key independent variable, β_2, is the countywide percent vote for Trump in the 2016 election. β_g incorporates a series of controls added in four stages. The first regression model includes controls for geography and state fixed effects. The second model adds a measure of the percent of jobs in the county classified as essential during COVID. The third model adds county-level demographic information. The fourth model is the full regression model for the given period, and adds socioeconomic controls. Because our dependent variable is a continuous item measuring the average county-level percent change in total visitors to a given mobility category relative to its pre-pandemic baseline for a given year, and since this item is normally distributed, we use a standard OLS regression.

Table 2 provides the regression results. Column 1 (the first regression model) shows both higher proportions of Black residents (relative to the proportion white base) and higher proportions of Trump voters in a county positively correlate with relatively greater degrees of workplace mobility ($p<0.01$ for both). After accounting for the extent to which a county had higher or lower proportions of jobs deemed as "essential" during lockdown (column 2), the race and partisanship results remain strong. When adding county-level demographic information (column 3), Black population and Trump vote effects are cut roughly in half, but both remain statistically significant ($p<0.01$). Finally, in the full model (column 4) we see a slight drop for the Black county population effect but again both results hold their significance.

[Table 2 about here]

One way of interpreting these full-model workplace mobility regression results is to consider the patterns in counties with the lowest proportion of Black residents (like Ouray County) versus those with the highest proportion of Black residents (like Jefferson County). Our model predicts that, all else equal, moving from the lowest to the highest proportion of Black residents results in an increase in relative workplace mobility rates of 7.4 percentage points. In absolute terms, controlling for geographic, job sorting, demographic, and socioeconomic factors, workplace mobility during lockdown declined by 25.4% relative to the pre-pandemic base in counties with the fewest Black residents, but dropped by only 18% in counties with the most Black residents. Similarly, moving from the lowest-voting Trump counties to the highest-voting Trump counties results in a relative increase in workplace mobility of 9.9 percentage points, from an absolute drop of 31% in the lowest Trump-vote area to a drop of 21.1% in the highest Trump-vote area.

The final columns in Table 2 (columns 4-8) examine mobility patterns to four discrete non-workplace locations: grocery stores; retail, recreation, and eateries; transit hubs; and hours spent at home. These are important comparison points for workplace mobility to identify whether the results above are unique to the workplace or are part of wider mobility patterns. All else equal, we cannot reject the null hypothesis that counties with higher proportions of Black residents were not more likely to exhibit increased mobility patterns to non-workplace locations, or to spend fewer hours at their homes, relative to counties with lower proportions of Black residents. In contrast, more highly Trump-voting counties showed statistically significant mobility to all non-workplace locations during lockdown relative to low Trump-voting counties ($p<0.10$ for grocery and retail; $p<0.01$ for transit). High Trump-voting counties were also significantly ($p<0.05$) less likely to stay at home than were low Trump-voting counties (recall the negative coefficient indicates more relative hours spent *away* from home).

Did the race and partisanship effects on mobility patterns that we saw during lockdown shift during the reopening (February-April 2021) and endemic (February-April 2022) phases? To answer this question, we regress workplace and non-workplace mobility data on our full models. Table 3 provides the results. Column 1 in each phase shows the workplace mobility results, and we see that the Black population effect on workplace mobility is in fact reversed during both reopening and endemic COVID ($p<0.05$). This implies counties with greater proportions of Black residents were relatively *less* likely to be mobile to workplaces at the latter two pandemic phases. In contrast, high Trump-voting counties remained relatively more mobile to workplaces at both the re-opening and endemic phases ($p<0.01$).

[Table 3 about here]

Finally, how do workplace mobility patterns compare against non-workplace mobility during the reopening and endemic phases? Columns 2-4 for each panel in Table 3 provide the outcomes. Counties with higher proportions of Black residents were relatively *less* likely to visit grocery stores and pharmacies ($p<0.01$) during both phases, and were also relatively less likely to visit retail establishments ($p<0.10$ in reopening, $p<0.01$ in endemic). Again, we cannot reject the null hypothesis that counties with higher proportions of Black residents were not more likely to travel to non-workplace locations (though note the statistically significance decrease in hours spent at home for these counties at both phases). In contrast, higher Trump voting counties remained relatively more likely to travel to non-workplace locations at greater rates than lower Trump voting counties. During reopening and endemic COVID, individuals in these counties were relatively more likely to visit retail and transit locations ($p<0.01$), and were relatively less likely to stay home ($p<0.01$). Overall, counties with greater proportions of Black residents did not visit non-workplace locations at higher rates than other counties, while we can reject the null hypothesis regarding non-workplace mobility in counties with greater Trump support.

Two questions emerge from these results. One concerns the degree to which the decrease in workplace mobility for counties with relatively higher proportions of Black residents between lockdown and reopening/endemic COVID was statistically significant. To answer this, in the online appendix (Supplemental Table 1), we pool the data for the three periods to create a single dataset including over 8,000 county-year observations. We create year dummies and run a regression that interacts each phase with the proportion Black variable, and each phase with Trump vote. The results show workplace mobility was significantly ($p<0.01$) higher in counties with greater proportions of Black residents during the lockdown phase than during the reopening or endemic phases. And, as expected, mobility to workplaces in counties with higher Trump vote was unaffected by period – relative workplace mobility remained equally high irrespective of whether the data were collected during lockdown, reopening, or endemic COVID.

The second concerns the degree to which expanding the analysis window beyond the selected months (February-April) each year affects the outcomes and our interpretations. To answer this, in the online appendix (Supplemental Tables 2-4), we analyze the entire Google mobility dataset from start (February 15, 2020) to end (October 15, 2022). We create a series of monthly regressions where we examine the effects of race and partisanship on average county-level workplace mobility changes each month (or half-month in the cases of February 2020 and October 2022 specifically). The results show prior to lockdown, but as the pandemic began spreading (February 15-29, 2020), workplace mobility in Black counties was lower than it was in white areas ($p<0.01$), and mobility in Trump-voting areas was not statistically different from mobility patterns in other areas. From February through May 2020 (peak lockdown), workplace mobility in Black counties became significantly greater than it was in white areas. However, from June onward (as lockdown ended), workplace mobility for Black areas was no longer higher than it was in white areas. Finally, starting in February 2021 (as reopening began), Black

workplace mobility was significantly lower than white workplace mobility, a pattern that persisted throughout 2021 and 2022 (endemic COVID). In contrast, mobility to workplaces in Trump counties increased in February 2020 and remained consistently higher than workplace mobility in non-Trump counties each month for the remainder of the Google pandemic data.

Overall, these results support our hypothesis that in counties with larger Black populations, residents would travel to work at relatively higher rates during lockdown but would behave no differently from white counties regarding non-work travel. And, again supporting our hypothesis, counties with more Trump voters travelled to work at relatively higher rates, *but also* travelled to non-work locations. As the country emerged from lockdown, our expectations are supported that residents in counties with larger Black populations would *decrease* traveling to work relative to whiter counties, while continuing to show no relative statistical difference when traveling to non-workplaces. And, our expectation is supported that in counties with greater Trump support, residents would travel to work and non-work locations at relatively higher rates than non-Trump supporting counties during both reopening and endemic COVID.

Individual-Level Lockdown Data and Analysis

As noted, a core benefit of using Google mobility data to analyze work and non-work mobility changes is that it presents an objective picture of actual mobility patterns compared against pre-pandemic baselines, which is impossible to replicate at the individual-level without accessing raw Google data. Because of privacy concerns at the individual level, Google does not release its raw data. This raises a significant concern when connecting the findings to our theory, as the theory implies individual-level mechanisms at least partly drive the expected county-level differences. The ecological fallacy warns against making such inferences absent a reasonable way to test that individual-level variations do in fact operate in the same manner as those shown at the macro level (Kramer 1983; Russo 2017).

We address this issue by supplementing the county-level results with original individual-level survey data. In July 2020, we conducted the Civic Engagement and Voice Survey (CVES), which covers individual workers aged 18 to 65 in Illinois and Michigan (citation redacted). Ipsos administered the survey via online questionnaires distributed to Ipsos KnowledgePanel, the nation's largest probability-based online panel. Members were recruited into the panel using address-based sampling, and were assigned the survey by email and sent follow-up reminders three and five days later. Our response rate was 57%. Ipsos produced post-stratified weights incorporating various geodemographic benchmarks, which we use in our analysis. The final sample totals 666 individuals in Illinois and Michigan who worked in any capacity for pay from March-July 2020, though the effective sample is lower for some items due to random missing data. The demographic and financial characteristics within our survey sample are highly similar to both CPS data for each state from March-July 2020 and are also broadly similar to the U.S. population as a whole, albeit slightly more educated, liberal, and whiter than the U.S. average.

Recall our theory partly argues Black workers may have felt compelled to travel to work during lockdown at higher relative rates as a result of structural racism, while Trump voters would travel to work and non-work locations at relatively higher rates primarily because of distrust in COVID science, amplified by President Trump. While individual-level data cannot ascertain actual mobility patterns for Black workers and Trump voters during COVID, it can be used to examine whether items correlated with the theorized mechanisms underlying the proposed county-level effects were present at the individual level.

The survey asks several questions regarding employment experiences during lockdown as well as general COVID perceptions. In our first set of dependent variables, respondents are asked, "Thinking about your current or most recent main job since March 1, do you think your employer should do a better job with the following measures in response to COVID-19?" They

answer yes or no to five key items: (1) permit employees to work from home; (2) provide reassurance of job security in the event that an employee needs to stay at home due to COVID symptoms or a positive COVID test; (3) provide paid sick leave to employees who have COVID symptoms, who have tested positive for COVID, or who need to self-quarantine; (4) provide additional pay (in the form of hazard pay or disaster relief pay); and (5) provide appropriate safety guidelines (e.g., social-distancing protocols).

These responses should correlate with individual-level perceptions of employer pressure to continue working during lockdown, helping provide an underlying mechanism for the county-level results. For instance, if Black respondents affirm their employer should do a better job providing reassurances of job security if employees needed to stay home during lockdown, or to provide workers with paid sick leave, this supports the mechanisms underlying our expectations of higher relative Black mobility during lockdown when extrapolated to the county-level. And, if Trump voters do not affirm these concerns, it suggests that, in contrast to Black mobility, relatively higher county-level Trump work mobility may be explained by factors unrelated to perceived employer pressures.[6]

We also include five other dependent variables in our analysis. These questions ask: (1) whether the employee has been allowed to work from home; (2) whether the respondent's employer provides any reassurance of job security in the event that an employee needs to stay at home due to COVID symptoms or a positive COVID test; (3) the respondent's perception of how severe they believe their symptoms would be if they were to contract COVID (excluding those who already tested positive); (4) the respondent's overall degree of confidence in President

[6] While the individual-level data are not necessarily nationally representative, we presume that the mechanisms are broadly applicable to COVID responses in other state contexts since respondents in Illinois and Michigan experienced significant divergence in how they approached the pandemic, with variations in statewide policies and individual-level responses to those policies mirroring national behaviors. For instance, many individuals in both states were broadly compliant with lockdown policies, but at least some were non-compliant with these policies.

Trump; and (5) the respondent's confidence in the CDC to handle COVID well. The first two items examine the respondent's actual, not perceived, employment experiences. Items three, four, and five help identify mechanisms for our argument that, in contrast to Black workers, Trump voters would be more likely to downplay the severity of COVID and continue going about their normal daily routines. These items may support the argument that Black individuals should be skeptical of science too, but are less likely to act on that skepticism than Trump voters because key Black community leaders emphasized taking precautions against the disease.

Similar to our county-level analysis, we control for the individual's age (continuous, 18-65), gender (dummy), income level (continuous, low to high), and education level (continuous, low to high). We include an item indicating the probability the individual would be sorted into an "essential" COVID job based on their industry classification. We also add controls for the individual's overall physical health assessment (ordinal, 1=poor to 5=excellent), union status (dummy), job satisfaction (ordinal, 1=very unsatisfied to 4=very satisfied), job security (ordinal, 1=very insecure to 4=very secure), and opposition or support for racial injustice protests (ordinal, 1=strongly oppose to 5=strongly support). Each of these items may be correlated with both race and partisanship as well as COVID lockdown employment experience perceptions.

Individual-Level Analysis

Table 4 provides descriptive statistics, and Table 5 provides individual-level regression results. When asked if they felt their employer should do a better job with permitting employees to work from home, providing job security if employees needed to stay home, and providing paid sick leave, Black workers were significantly more likely than other ethnic groups to affirm these perceptions ($p<0.05$ for work from home; $p<0.01$ for the others). Black workers also indicated their employers were less likely to provide actual job security assurances if employees needed to stay home during lockdown ($p<0.05$). Each of these items could correlate with the individual's

perception that staying home during lockdown at least was not something their employer supported, which connects to the mechanisms for mobility argued earlier in the paper. We also find Black workers felt their employers should have done a better job in their general handling of COVID around issues like pay and workplace safety. Yet, in results available on request, we found no ethnicity variations on perceptions that employers should do better at providing personal protective equipment (PPE) or clear guidelines for communication and work responsibilities. And, we do not see racial differences in responses to whether the employee was actually allowed to work from home. Together, these results may indicate employers' formal practices, like work-from-home policy and PPE availability, did not vary by race, but, more informally, Black employees felt considerably less support from their employers and more pressure to continue showing up to work irrespective of the company's formal policies.

In contrast, Trump voters showed no indication they felt their employers should be doing a better job with various aspects of the pandemic. Indeed, Trump voters were *less* likely than non-Trump voters to suggest their employers should provide additional pay to employees who continued coming to work during lockdown. Yet Trump voters stand out in two respects. First, they were substantially less concerned about the severity of their symptoms if they were to contract COVID during lockdown ($p<0.01$), whereas Black workers showed no difference from other racial/ethnic groups in this regard. Second, unsurprisingly Trump voters were far more confident in President Trump than were any other voter types ($p<0.01$), whereas again Black voters were not any more or less confident in Trump than were other racial/ethnic groups. Finally, both Black workers and Trump voters indicated a skepticism that the CDC would be able to handle the disease well during lockdown. This provides support for the aforementioned mechanisms proposing both groups of individuals would be likely to express distrust of scientific

institutions during the pandemic, but that Trump voters would be expected to act on that skepticism by remaining mobile to both work and non-work locations.

Implications and Conclusions

In this paper, we anticipated workplace mobility responses to the COVID pandemic would be highly unequal. Specifically, we used theories of structural racism and unequal economic precarity to predict Black communities and the workers in them would have relatively greater rates of workplace mobility than white communities and workers during lockdown, while the reverse mobility effect would emerge during reopening and endemic COVID. As an empirical and theoretical contrast, we predicted Trump partisan areas and the voters in them would have greater relative mobility to workplaces throughout the pandemic vis-à-vis less-Trump voting areas, and these communities and voters would *also* demonstrate relatively greater non-work mobility, due to GOP voters' scientific skepticism and the amplification of this skepticism by Trump. Using county-level Google mobile phone tracking data, we found support for all proposed effects, which held after accounting for COVID job sorting, state-level policy variations, geographic differences, and county-level demographic and socioeconomic variations. Our findings are buttressed by complementary individual-level analyses that, while limited to two states and one COVID phase (lockdown), provides empirical support connecting the proposed individual-level mechanisms with the county-level results.

We use Trump-voting counties as a theoretical and empirical contrast, helping us highlight theoretical mechanisms of structural racism and their effects on unequal economic precarity during the pandemic and recovery. However, the historical, institutional, and structural antecedents of a counties racial demography and political composition may be very different but also related. Structural racism may be related to variation in political support for Trump in ways that affect the constitution of labor force participation and mobility. Although our empirical

models account for both Trump-support and racial composition in all estimations, we acknowledge that these mechanisms may not be entirely separate and independent. Future research should further theorize how political polarization and structural racism are mutually constituted in local communities.

An implication of these findings is that compelled mobility to workplaces among Black workers during lockdown may have contributed to uneven health outcomes, especially early in the pandemic. As COVID spread in 2020, reports quickly emerged that Black populations were anywhere from two to three times more likely to catch the virus (Mundasad 2020; National Urban League 2020). Black counties also suffered from far greater mortality rates during lockdown than did other racial groups, with several reporting Black individuals accounted for 60% to 70% of all COVID deaths (Evelyn 2020). The higher Black morbidity rate has been attributed to various factors, including health disparities and structural conditions like job sorting (Ray 2020). Our results imply compelled mobility to work may have placed Black workers at greater risk of both catching COVID and of subsequently dying from it, above and beyond job sorting. Additionally, Trump-voting areas faced significantly higher morbidity rates throughout the pandemic (Seghan et al. 2022). In contrast to the compelled mobility findings for Black workers, our results imply this health outcome may have been the result of individuals in Trump-voting communities persisting with more relatively normal mobility patterns as a result of COVID skepticism and its amplification by Trump.

A second implication is Black workers may have been left out of the COVID recovery. The lower rates of workplace mobility in Black counties during reopening and endemic COVID may indicate these workers were discriminated against when companies began rehiring or quit their jobs and could not find additional work, as opposed to Black workers choosing to work from home during these periods. Although this interpretation is speculative, we find support for

it from our results on Black mobility to non-work locations post-lockdown. While Black areas were no more or less likely than other areas to travel to non-work locations during lockdown, they showed significantly lower mobility to grocery, retail, and homes during reopening and endemic COVID. Arguably, this may have been the result of higher rates of Black job losses and housing evictions during these periods. If a choice-driven argument explained the negative workplace mobility findings in 2021 and 2022, it is unlikely we would also see such spillover effects into non-work mobility choices (i.e., Black workers choosing to avoid microagressions by staying home during reopening would still go to grocery stores at equivalent rates to whites). It is important to emphasize that we cannot rule out alternative explanations for these findings, and we encourage future research to engage more fully with these questions, perhaps using a qualitative approach or other direct evidence of worker experiences.

Our results also have implications for efforts to integrate industrial relations theory with extant theories of structural racism (Lee and Tapia 2021). Structural racism describes systematic political and social disadvantages of Black individuals and communities—these disadvantages shape racial inequality in life outcomes, well-being, and economic security (Feagin 2006). Our analysis demonstrates how these systematic disadvantages can lead to increased and unequal precarity during periods of acute economic or social crisis. Importantly, our analysis of geographic mobility demonstrates the *structural* component of racial inequality, which exposes Black workers to increased vulnerability and feelings of economic insecurity. Theorizing these structural forces, and their impacts on workers, allows industrial relations scholarship to go beyond an emphasis on individual-level discrimination or racial animus that has animated most prior IR research on race.

More can be done to examine the relationship between individual-level mechanisms and county-level data, and to rule out alternative explanations. We may be underrepresenting the

effects of partisanship if Trump voters are more likely to be concerned about data privacy and opted out of Google location tracking. The difference between "work" and "home" categories may have been less clear later in the pandemic than during lockdown, and the short pre-pandemic window used as the data baseline may result in some error, especially when extending the analysis to compare lockdown against reopening and endemic COVID. And, our key racial questions focus on Black communities and workers. While we control for other racial/ethnic group outcomes, an examination of the unique experiences of other racial/ethnic groups is still needed. Finally, we can only speculate regarding the health outcome effects of our mobility results given the lack of valid health data during lockdown.

Yet taken together, using both objective county-level mobility data and individual-level COVID experience data, we have empirically shown that the effects of the pandemic on workers were deeply uneven. The decision to travel to work at various points during the crisis was racialized, politicized, and shaped by key actors. We hope these results contribute to calls within industrial relations to weigh racial concerns when explaining observed social phenomena, along with ongoing concerns around the effects of partisan political polarization on work outcomes.

References

Aktay, Ahmet, Shailesh Bavadekar, Gwen Cossoul, John Davis, Damien Desfontaines, … , and Royce J. Wilson. 2020. *Google COVID-19 Community Mobility Reports: Anonymization Process Description (Version 1.1).* Accessed at https://arxiv.org/abs/2004.04145 (February 2023).

Baker, Peter. 2020. Trump lashes out at Fauci amid criticism of slow virus response. *New York Times*, April 12. Accessed at https://www.nytimes.com/2020/04/12/us/politics/trump-fauci-coronavirus.html (February 2023).

Benton, Richard A., J. Adam Cobb, and Timothy Werner. 2022. Firm partisan positioning, polarization, and risk communication: Examining voluntary disclosures on COVID-19. *Strategic Management Journal* 43(4): 697-723.

Blau, Francine D., Josefine Koebe, and Pamela A. Meyerhofer. 2021. Who are the essential and frontline workers? *Business Economics* 56(3): 168-178.

Blee, Kathleen M., and Kimberly A. Creasap. 2010. Conservative and right-wing movements. *Annual Review of Sociology* 36(1): 269-286.

Bloom, Nicholas, Robert S. Fletcher, and Ethan Yeh. 2021. The impact of COVID-19 on US firms NBER Working Paper No. 28314. Cambridge, MA: National Bureau of Economic Research.

Cech, Erin A., and Sofia Hiltner. 2022. Unsettled employment, reshuffled priorities? Career prioritization among college-educated workers facing employment instability during COVID-19. *Socius: Sociological Research for a Dynamic World* 8: 1-13.

Clinton, Joshua D., Jon Cohen, John Lapinski, and Marc Trussler. 2021. Partisan pandemic: How partisanship and public health concerns affect individuals' social mobility during COVID-19. *Science Advances*7(2): 1-7.

Conway, Lucian Gideon III, Shailee R. Woodard, Alivia Zubrod, and Linus Chan. 2021. Why are conservatives less concerned about the coronavirus (COVID-19) than liberals? Comparing political, experiental, and partisan messaging explanations. *Personality and Individual Differences* 183:111124.

Cortes, Guido Matias, and Eliza Forsythe. 2023. Heterogeneous labor market impacts of the COVID-19 pandemic. *ILR Review* 76(1): 30-55.

Couch, Kenneth A., and Robert Fairlie. 2010. Last hired, first fired? Black-white unemployment and the business cycle. *Demography* 47(1): 227-247.

Couch, Kenneth, Robert W., Fairlie, and Huanan Xu. 2020. Early evidence of the impacts of COVID-19 on minority unemployment. *Journal of Public Economics*192: 104287.

Dey, Matthew, Harley Frazis, Mark A. Loewenstein, and Hugette Sun. 2020. Ability to work from home: Evidence from two surveys and implications for the labor market in the COVID-19 pandemic. *Monthly Labor Review,* US Bureau of Labor Statistics, June.

Dias, Felipe A. 2021. The racial gap in employment and layoffs during COVID-19 in the United States: A visualization. *Socius: Sociological Research for a Dynamic World* 8: 1-3.

Dobbins, Tony, Stewart Johnstone, Marta Kahancova, J. Ryan Lamare, and Adrian Wilkinson. 2023. Comparative impacts of the COVID-19 pandemic on work and employment—Why industrial relations institutions matter. *Industrial Relations* (early view).

Drake, Thomas M., Annemarie B. Docherty, Thomas G. Weiser, Steven Yule, Aziz Sheikh, and Ewan M. Harrison. 2020. The effects of physical distancing on population mobility during the COVID-19 pandemic in the UK. *The Lancet* 2(8): E385-E387.

Egede, Leonard E., and Rebekah J. Walker. "Structural racism, social risk factors, and Covid 19—a dangerous convergence for Black Americans." *New England Journal of Medicine* 383, no. 12 (2020): e77.

Evelyn, Kenya. 2020. 'It's a racial justice issue': Black Americans are dying in greater numbers from Covid-19. *The Guardian*, April 8. Accessed at https://www.theguardian.com/world/2020/apr/08/its-a-racial-justice-issue-black-americans-are-dying-in-greater-numbers-from-covid-19 (February 2023).
Fauci, Anthony S., H. Clifford Lane, and Robert R. Redfield. 2020. Covid-19 – navigating the uncharted. *New England Journal of Medicine* 382: 1268-1269.
Feagin, Joe. *Systemic racism: A theory of oppression*. Routledge, 2013.
Fitzpatrick, Jen, and Karen DeSalvo. 2020. *Helping Public Health Officials Combat COVID-19*. April 3. Accessed at https://blog.google/technology/health/covid-19-community-mobility-reports/ (February 2023).
Flores, Alexandra, Jennifer C. Cole, Sttephan Dickert, …, and Leaf Van Boven. 2022. Politicians polarize and experts depolarize public support for COVID-19 management policies across countries. *PNAS* 119(3): 1-7.
Forsythe, Eliza, Lisa B. Kahn, Fabian Lange, and David Wiczer. 2020. Labor demand in the time of COVID-19: Evidence from vacancy postings and UI claims. *Journal of Public Economics* 189: 104238.
Freeman, Richard B. 1973. Changes in the Labor Market for Black Americans, 1948–1972. *Brookings Papers on Economic Activity* 1(1973): 67–131.
Gauchat, Gordon. 2012. Politicization of science in the public sphere: A study of public trust in the United States, 1974 to 2010. *American Sociological Review* 77(2): 167-187.
Gezici, Armagan, and Ozge Ozay. 2020. An intersectional analysis of COVID-19 unemployment. *Journal of Economics, Race, and Policy* 3(4): 270-281.
Hart, P. Sol, Sedona Chinn, and Stuart Soroka. 2020. Politicization and polarization in COVID 19 news coverage. *Science Communication* 42(5): 679-697.
Haselton, Todd. 2017. How to find out what Google knows about you and limit the data it collects. CNBC, December 6. Accessed at https://www.cnbc.com/2017/11/20/what-does-google-know-about-me.html (February 2023).
Hooper, Monica Webb, Anna Maria Napoles, and Eliseo J. Perez-Stable. 2020. COVID-19 and racial/ethnic disparities. *JAMA* 323(24): 2466-2467.
Kane, Joseph W., and Adie Tomer. 2021. Valuing human infrastructure: Protecting and investing in essential workers during the COVID-19 era. *Public Works Management & Policy* 26(1): 34-46.
Kramer, Gerald H. 1983. The ecological fallacy revisited: Aggregate- versus individual-level findings on economics and elections, and sociotropic voting. *American Political Science Review* 77(1): 92-111.
Le, Kien, and My Nguyen. 2021. The psychological consequences of COVID-19 lockdowns. *International Review of Applied Economics* 35(2): 147-163.
Lee, Tamara L., and Maite Tapia. 2021. Confronting race and other social identity erasures: The case for critical industrial relations theory. *ILR Review* 74(3): 637-662.
Mason, Patrick L. *The Economics of Structural Racism: Stratification Economics and US Labor Markets*. Cambridge University Press, 2023.
McLamore, Quinnehtukqut, Stylianos Syropoulos, Bernhard Leidner, Gilad Hirschberger, Kevin Young, … , and B. Burrows. 2022. Trust in scientific information mediates associations between conservatism and coronavirus responses in the US, but few other nations. *Scientific Reports* 12(1): 1-15.
Mills, Claire Kramer, and Jessica Battisto. 2020. Double jeopardy: COVID-19's concentrated health and wealth effects in Black communities. *Federal Reserve Bank of New York*, August. Accessed at

https://www.newyorkfed.org/medialibrary/media/smallbusiness/DoubleJeopardy_COVID19andBlackOwnedBusinesses (February 2023).
Mongey, Simon, Laura Pilossoph, and Alexander Weinberg. 2021. Which workers bear the burden of social distancing? *The Journal of Economic Inequality.* 19:509-526.
Mooney, Chris. 2005. *The Republican War on Science*. New York: Basic Books.
Mundasad, Smitha. 2020. Black people 'twice as likely to catch coronavirus'. *BBC News*, November 12. Accessed at https://www.bbc.com/news/health-54907473 (February 2023).
National Consumer Law Center (NCLC). 2020. A looming crisis: Black communities at greatest risk of COVID-19 foreclosure. July. Accessed at https://www.nclc.org/news-archive/issue briefs.html (February 2023).
National Urban League. 2020. *State of Black America: Unmasked*. Accessed at http://soba.iamempowered.com/2020-report (February 2023).
Parrott, James, and Lina Moe. 2020. The new strain of inequality: The economic impact of Covid-19 in New York City. *The New School Center for New York City Affairs*, April 15. Accessed at http://www.centernyc.org/reports-briefs/2020/4/15/the-new-strain-of-inequality-the-economic-impact-of-covid-19-in-new-york-city (February 2023).
Phelan, Jo C., and Bruce G. Link. "Is racism a fundamental cause of inequalities in health?." *Annual Review of Sociology* 41 (2015): 311-330.
Pinto, Sanjay. 2022. "Racial capitalism at work: Evidence from a COVID-era survey." In Lee, Tamara L., Sheri Davis-Faulkner, Naomi R. Williams, and Maite Tapia, eds., *A Racial Reckoning in Industrial Relations: Storytelling as Revolution from Within*, Ch. 6.
Ray, Rashawn. 2020. Why are Blacks dying at higher rates from COVID-19? *Brookings*, April 9. Accessed at https://www.brookings.edu/blog/fixgov/2020/04/09/why-are-blacks-dying-at-higher-rates-from-covid-19/ (February 2023).
Ray, Victor. 2019. A theory of racialized organizations. *American Sociological Review* 84(1): 26-53.
Russo, Luana. 2017. The use of aggregate data in the study of voting behaviour: ecological inference, ecological fallacy and other applications. In Fisher, Justin, et al. *The Routledge Handbook of Eelections, Voting Behavior and Poblic Opinion*. London: Routledge, Ch. 38.
Scoville, Caleb, Andrew McCumber, Razvan Amironesei, and June Jeon. 2022. Mask refusal backlash: The politicization of face masks in the American public sphere during the early stages of the COVID-19 pandemic. *Socius* 8: 1-22.
Seghan, Neil J., Dahai Yue, Elle Pope, Ren Hao Wang, and Dylan H. Roby. 2022. The association between COVID-19 and the county-level partisan divide in the United States. *Health Affairs* 41(6): 853-863.
Spelta, Allesandro, and Paolo Pagnottoni. 2021. Mobility-based real-time economic monitoring amid the COVID-19 pandemic. Scientific Reports 11: 13069.
Stroebe, Wolfgang, Michelle R., vanDellen, Georgios Abakoumkin, …., and N. Pontus Leander. 2021. Politicization of COVID-19 health-protective behaviors in the United States: Longitudinal and cross-national evidence. PLoS ONE 16(10): 1-22.
Wassmer, Robert W. "Past structural racism and present home prices." *Journal of urban affairs* (2023): 1-24.
Yancy, Clyde W. 2020. COVID-19 and African Americans. *JAMA* 323(19): 1891-1892.

Table 1: County-Level Descriptive Statistics

	Lockdown (Feb-Apr 2020)	Reopening (Feb-Apr 2021)	Endemic (Feb-Apr 2022)
	Mean (Std. Dev.)	Mean (Std. Dev.)	Mean (Std. Dev.)
DEPENDENT VARIABLES: COVID MOBILITY PATTERNS			
Workplaces (% change from pre-COVID baseline)	-0.245	-0.180	-0.109
	(0.064)	(0.069)	(0.091)
Grocery stores, pharmacies (% change from pre-COVID baseline)	0.013	0.021	0.012
	(0.102)	(0.102)	(0.118)
Retail, recreation, restaurants (% change from pre-COVID baseline)	-0.183	0.015	-0.004
	(0.122)	(0.125)	(0.116)
Transit stations (% change from pre-COVID baseline)	-0.199	-0.038	-0.025
	(0.160)	(0.276)	(0.334)
Hours at home (% change from pre-COVID baseline)	0.090	0.048	0.032
	(0.047)	(0.026)	(0.015)
INDEPENDENT VARIABLES			
Race/Ethnicity: Proportion white	0.842	0.842	0.841
	(0.158)	(0.158)	(0.158)
Race/Ethnicity: Proportion Black	0.100	0.101	0.101
	(0.147)	(0.148)	(0.148)
Race/Ethnicity: Proportion American-Indian	0.019	0.019	0.019
	(0.056)	(0.057)	(0.057)
Race/Ethnicity: Proportion Asian	0.016	0.016	0.016
	(0.029)	(0.029)	(0.029)
Race/Ethnicity: Proportion Hawaii-Pacific Islander	0.001	0.001	0.001
	(0.004)	(0.004)	(0.004)
Race/Ethnicity: Proportion Hispanic	0.094	0.094	0.094
	(0.134)	(0.135)	(0.134)
Partisanship: Proportion 2016 Trump vote	0.621	0.619	0.619
	(0.154)	(0.153)	(0.153)
COVID job sorting: Proportion classified as essential jobs	0.443	0.443	0.444
	(0.134)	(0.133)	(0.134)
Gender: Proportion female	0.501	0.501	0.501
	(0.020)	(0.020)	(0.020)
Age: Proportion 0 to 17	0.221	0.221	0.221
	(0.033)	(0.033)	(0.033)
Age: Proportion 18 to 64	0.590	0.591	0.591
	(0.035)	(0.035)	(0.035)
Age: Proportion 65-plus	0.189	0.188	0.188
	(0.044)	(0.043)	(0.043)
Education: Proportion with less than high school degree	0.134	0.134	0.134
	(0.061)	(0.061)	(0.061)
Education: Proportion with high school degree	0.343	0.342	0.342
	(0.073)	(0.073)	(0.073)
Education: Proportion with some college	0.305	0.305	0.305
	(0.049)	(0.049)	(0.049)
Education: Proportion with Bachelor's degree or higher	0.218	0.219	0.219
	(0.097)	(0.097)	(0.097)
Socioeconomics: Unemployment rate	0.041	0.041	0.041
	(0.014)	(0.013)	(0.013)
Socioeconomics: Median household income	0.533	0.534	0.534
	(0.142)	(0.142)	(0.142)
Geography: Urban-rural continuum (1=urban; 9=rural)	4.574	4.542	4.532
	(2.527)	(2.511)	(2.508)
Number of states included (state fixed-effects)	50	50	50
N	2,773	2,749	2,741

Table 2: County-Level Workplace and Non-Workplace Mobility during COVID Lockdown

	Lockdown (Feb-Apr 2020)							
	Workplace Mobility				Non-Workplace Mobility			
					Grocery	Retail	Transit	Home
Race/Ethnicity: Proportion Black	0.195***	0.185***	0.089***	0.085***	0.026	-0.003	0.070	-0.009
	(0.011)	(0.011)	(0.012)	(0.012)	(0.029)	(0.033)	(0.063)	(0.015)
Partisanship: Proportion 2016 Trump vote	0.243***	0.232***	0.119***	0.120***	0.050*	0.057*	0.255***	-0.039***
	(0.010)	(0.010)	(0.013)	(0.013)	(0.029)	(0.033)	(0.064)	(0.015)
CONTROLS								
Geography (state FE, urban-rural)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
COVID job sorting (essential v. non-essential)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics (gender, age, education)	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomics (unemployment, income)	No	No	No	Yes	Yes	Yes	Yes	Yes
Constant	-0.446***	-0.451***	-0.544***	-0.352***	-0.237	-0.159	0.092	-0.029
	(0.011)	(0.011)	(0.059)	(0.070)	(0.165)	(0.189)	(0.397)	(0.088)
N	2,773	2,773	2,773	2,773	2,471	2,568	1,150	1,565
Adjusted R^2	0.575	0.579	0.630	0.634	0.312	0.377	0.363	0.551
F	60.47***	60.63***	68.51***	67.82***	16.59***	22.56***	10.10***	27.68***

Workplace mobility is more than one hour spent at the individual's place of work. Grocery mobility includes visits to grocery stores and pharmacies. Retail mobility includes visits to places of retail, recreation, and eateries. Transit is visits to transit centers like airports and train stations. Home is the amount of hours spent at the individual's place of residence (a negative coefficient indicates more time spent away from home). Full tables including coefficients and standard errors for all controls are available in Online Appendix Table 1.

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: County-Level Workplace and Non-Workplace Mobility during Reopening & Endemic COVID

	Reopening (Feb-Apr 2021)					Endemic (Feb-Apr 2022)				
	Workplace Mobility	Non-Workplace Mobility				Workplace Mobility	Non-Workplace Mobility			
		Grocery	Retail	Transit	Home		Grocery	Retail	Transit	Home
Race/Ethnicity:	-0.029**	-0.145***	-0.055*	0.140	-0.023***	-0.055**	-0.211***	-0.118***	0.021	-0.011***
Proportion Black	(0.014)	(0.039)	(0.033)	(0.112)	(0.004)	(0.024)	(0.045)	(0.034)	(0.147)	(0.004)
Partisanship:	0.099***	0.064	0.227***	0.462***	-0.053***	0.084***	0.008	0.134***	0.394***	-0.029***
Proportion 2016 Trump vote	(0.014)	(0.040)	(0.033)	(0.114)	(0.004)	(0.024)	(0.046)	(0.035)	(0.148)	(0.004)
CONTROLS										
Geography (state FE, rural-urban)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
COVID job sorting (essential v. non-essential)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics (gender, age, education)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomics (unemployment, income)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.335***	0.068	-0.348*	0.156	-0.022	-0.327**	-0.004	-0.218	0.081	-0.029
	(0.079)	(0.228)	(0.194)	(0.701)	(0.026)	(0.134)	(0.261)	(0.202)	(0.909)	(0.024)
N	2,749	1,618	1,779	1,074	1,779	2,741	1,626	1,790	1,056	1,789
Adjusted R^2	0.613	0.287	0.603	0.383	0.855	0.353	0.275	0.492	0.295	0.602
F	61.51***	10.02***	38.50***	10.26***	146.19***	21.73***	9.55***	25.05***	7.13***	38.61***

Workplace mobility is more than one hour spent at the individual's place of work. Grocery mobility includes visits to grocery stores and pharmacies. Retail mobility includes visits to places of retail, recreation, and eateries. Transit is visits to transit centers like airports and train stations. Home is the amount of hours spent at the individual's place of residence (a negative coefficient indicates more time spent away from home). Full tables including coefficients and standard errors for all controls are available in Online Appendix Table 2.

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Individual-Level Descriptive Statistics

	Mean (Std. Dev.)
DEPENDENT VARIABLES	
In response to COVID, should your employer do a better job with:	
- Permitting employees to work from home (dichotomous)	0.329
	(0.470)
- Job security if employees need to stay home (dichotomous)	0.478
	(0.500)
- Paid sick leave if employees test positive (dichotomous)	0.449
	(0.498)
- Providing additional pay (dichotomous)	0.459
	(0.499)
- Social distancing and safety (dichotomous)	0.392
	(0.489)
Employee is allowed to work from home (dichotomous)	0.577
	(0.494)
Employer provides job security if employees need to stay home (dichotomous)	0.778
	(0.416)
Perceived severity of COVID symptoms (ordinal, 1=not at all severe; 7=extremely severe)	3.774
	(1.469)
Overall confidence in President Trump (ordinal, 1=none; 5=complete)	2.139
	(1.406)
Confidence in the CDC to handle COVID well (ordinal, 1=none; 5=complete)	3.239
INDEPENDENT VARIABLES	
	(0.957)
Race/ethnicity: Black (dichotomous)	0.098
	(0.297)
2016 Trump voter (dichotomous)	0.378
	(0.485)
Union member (dichotomous)	0.191
	(0.393)
Female (dichotomous)	1.462
	(0.499)
Income (continuous, low to high)	14.365
	(3.821)
Age (continuous, 18-65)	48.108
	(11.867)
Education (continuous, low to high)	11.441
	(1.519)
Essential COVID job (dichotomous)	0.353
	(0.478)
Overall perceived health (ordinal, 1=poor; 5=excellent)	3.671
	(0.811)
Overall job satisfaction (ordinal, 1=not at all satisfied; 4=very satisfied)	3.260
	(0.783)
Overall job security (ordinal, 1=very insecure; 4=very secure)	3.287
	(0.819)
Support racial justice protests during lockdown (ordinal, 1=strongly oppose; 5=strongly support)	3.380
	(1.401)
State (Michigan)	0.470
	(0.499)
N	666

Table 5: Individual-Level Analysis

	In response to COVID, should your employer do a better job with:					EE is allowed to work from home	ER provides job security if EEs need to stay home	Perceived severity of COVID symptoms	Overall confidence in President Trump	Confidence in the CDC to handle COVID well
	Permitting EEs to work from home	Job security if EEs need to stay home	Paid sick leave if EEs test positive	Providing additional pay	Social distancing and safety					
Race/Ethnicity: Black	0.192**	0.185***	0.224***	0.183***	0.179***	0.077	-0.133**	-0.049	0.133	-0.319***
	(0.081)	(0.069)	(0.069)	(0.067)	(0.069)	(0.049)	(0.056)	(0.159)	(0.106)	(0.105)
2016 Trump voter	0.070	-0.014	0.038	-0.131**	-0.037	-0.010	0.043	-0.397***	1.503***	-0.278***
	(0.062)	(0.056)	(0.057)	(0.055)	(0.055)	(0.042)	(0.045)	(0.135)	(0.090)	(0.089)
ALL CONTROLS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.007	0.468**	0.701***	0.991***	0.265	-0.186	1.395***	6.985***	0.082	3.765***
	(0.283)	(0.236)	(0.239)	(0.229)	(0.236)	(0.167)	(0.182)	(0.544)	(0.359)	(0.355)
N	426	536	517	510	530	665	550	643	663	661
Adjusted R^2	0.058	0.102	0.089	0.166	0.109	0.363	0.208	0.250	0.628	0.113
F	3.00***	5.65***	4.86***	8.77***	5.93***	30.02***	12.07***	17.45***	86.80***	7.47***

EE = employee; ER = employer. Results include controls for geography (state FE), COVID job sorting (essential vs. nonessential), demographics (age, gender), socioeconomics (income, education), job characteristics (union membership, job satisfaction, job security), and personal characteristics (individual health perceptions, degree of support for racial justice protests). Full tables including coefficients and standard errors for all controls are available in Online Appendix Table 3.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Expected Workplace Mobility During Three Phrases of the COVID-19 Pandemic

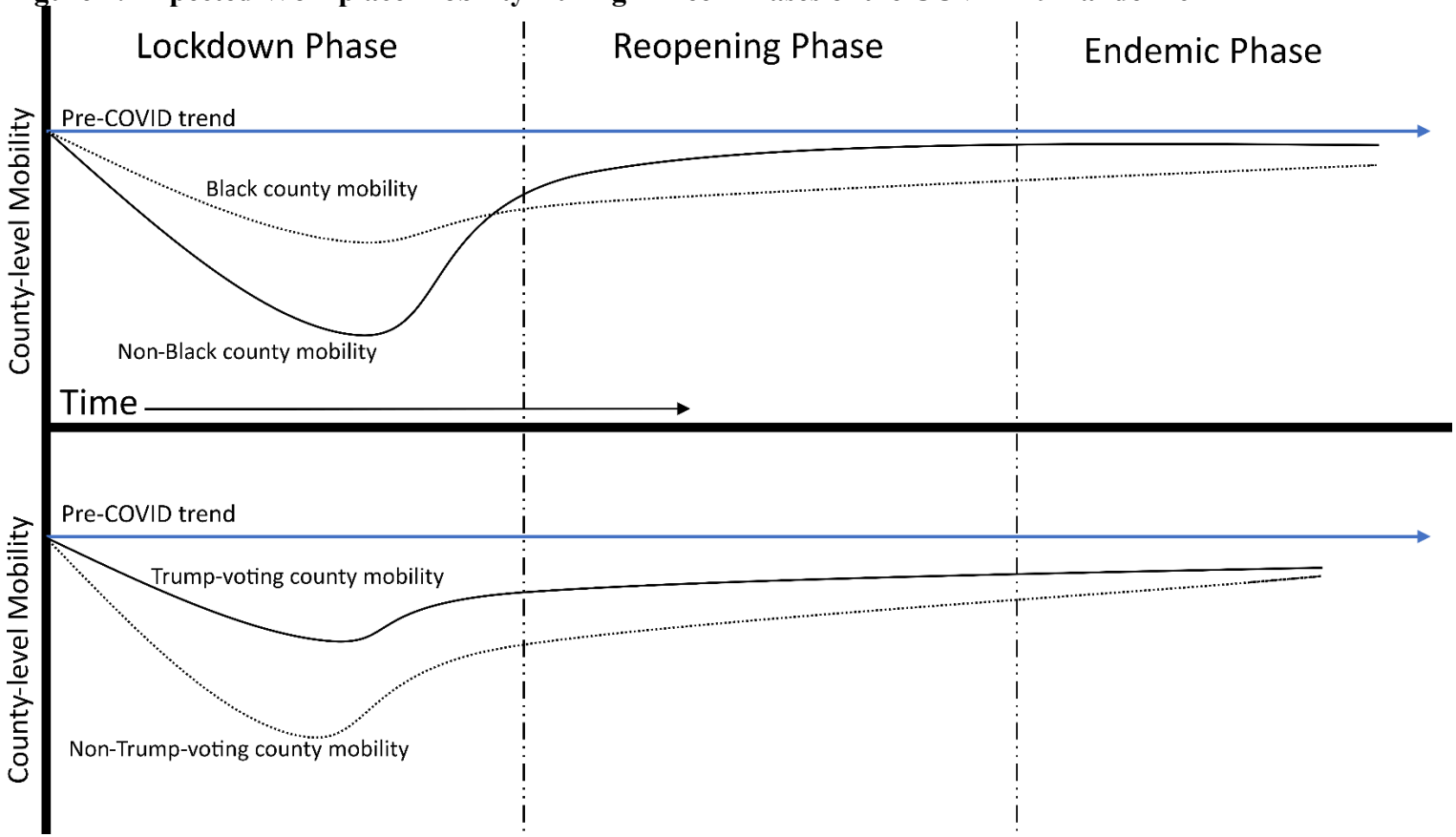

Figure 1 presents a stylized representation of our empirical expectations for mobility to workplaces across three phases of the pandemic and two county-level variables. The horizontal axis represents change over time while the vertical axis plots county-level mobility to workplaces, plotted as relative to the pre-COVID trend. Note that the blue horizontal lines denote the pre-COVID mobility trend, which is not time varying because it is adjusted based on expected mobility from the pre-COVID period. The plotted lines represent expected mobility levels, plotted as relative to the pre-COVID trend, for counties with different characteristics. The top panel compares counties with greater and lesser Black populations. The bottom panel compares counties with greater and less Trump-voting percentages.