Title: Rural-urban differences in the labor-force impacts of COVID-19 in the United States

Matthew M. Brooks*, J. Tom Mueller, and Brian C. Thiede,

1. Department of Agricultural Economics, Sociology, and Education, The Pennsylvania State University, ORCID:0000-0003-1606-7536. Corresponding author

2. Department of Sociology, Social Work, and Anthropology, Utah State University, ORCID:0000-0001-6223-45053

3. Department of Agricultural Economics, Sociology, and Education, The Pennsylvania State University, ORCID:0000-0002-6343-4071

Abstract

COVID-19 has had dramatic impacts on economic outcomes across the United States, yet most research on the pandemic has had a national or urban focus. We overcome this limitation using data from the U.S. Current Population Survey's COVID-19 supplement to study pandemic-related labor force outcomes from May through December of 2020 in rural and urban areas. We find the pandemic has generally had a more severe labor force impact on urban residents than their rural counterparts. Urban adults were more likely to be unable to work, not paid for missed hours, and be unable to look for work due to COVID-19. However, rural workers were less likely to be able to work remotely than urban workers. These differences persist even when adjusting estimates for demographic composition and state-level policies, suggesting rural-urban differences in the COVID-19 experience cannot be explained by well-known demographic and political differences between rural and urban America.

Keywords: COVID-19; Labor force; Employment; Rural; Urban

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Introduction

The economic disruptions associated with the COVID-19 pandemic have been unprecedented in the United States, including record-high unemployment claims (Brave, Butters, and Fogarty 2020; Brynjolfsson et al. 2020), widespread food and housing insecurity (Cowin, Martin, and Stevens 2020; Enriquez and Goldstein 2020; Morales, Morales, and Beltran 2020), and rising physical and emotional health challenges (Pfefferbaum and North 2020; Stainback, Hearne, and Trieu 2020). The majority of empirical work on the pandemic to date has focused on either the nation as a whole or the urban population, with rural areas—approximately 46 million people—remaining largely ignored (Mueller et al. 2021).¹ This evidence gap reflects an absence of high-quality secondary data on rural areas (Hauer and Santos-Lozada 2021; Mueller et al. 2021; Pender 2020). Further, the limited evidence that is available suggests the presence of considerable geographic heterogeneity between rural and urban areas in the pandemic’s impacts. Due to varying patterns of disease prevalence, local mitigation strategies (Karim and Chen 2021; Lakhani et al. 2020; Morales et al. 2020; Paul et al. 2020; Souch and Cossman 2021), and economic structure between urban and rural areas (Lichter and Brown 2011; Vias 2012), there are strong a priori reasons to expect rural-urban variation in the social and economic impacts of the pandemic. Assessing this variation advances our understanding of how the pandemic has influenced spatial and regional inequalities in the United States and has the potential to inform mitigation and recovery policies.

We address this knowledge gap by analyzing newly-released monthly data from the COVID-19 supplement of the U.S. Current Population Survey (CPS). We evaluate the pandemic’s labor force impact in rural and urban areas through three objectives. First, we estimate the monthly prevalence of four COVID-19-related employment outcomes among rural and urban adults from May through December 2020. In doing so, we assess whether or not there was a rural disadvantage—i.e., rural adults more often experienced negative outcomes—over the study period and track changes in the magnitude of rural-urban differences in these outcomes over time. Second, given well-known differences in the demographic composition and policy context of rural and urban areas (Glasgow and Brown 2012; Lee and Sharp 2017; Thiede and Slack 2017) we estimate a series of multiple regression models to evaluate whether any observed rural-urban differences can be explained by these potential confounders. Finally, we evaluate these same employment outcomes among less educated adults only, as these individuals have been shown to be at heightened risk of layoffs, furloughs, and other disruptions (Kesler and Bash 2021). The findings from this study provide substantive lessons on the immediate impacts of COVID-19 on rural and urban areas and can also inform longer-term relief and economic development policies and efforts.

COVID-19 in Rural and Urban America

Scholarly attention to the COVID-19 outbreak has been centered on epidemiology and public health, focusing on infection rates and mortality patterns. However, the socioeconomic impacts of the pandemic are also salient and merit attention given their widespread and potentially long-lasting impacts (Matthewman and Huppatz 2020; Ward 2020). In the early months of the pandemic, over 26 million unemployment insurance claims were filed and over 31 percent of families reported some form of material hardship related to COVID-19 (Karpman et al. 2020). Polyakova and colleagues (2020) found for April 2020 that employment disruptions

¹ Common to other demographic research on rural America (Brooks et al. 2020; Thiede et al. 2018), we elect to use the terms urban and rural to refer to those living in metropolitan and nonmetropolitan counties, respectively.

were severe, with employment rates 9.8 percentage points lower than traditional Bureau of Labor Statistics models would have projected. Rates of working remotely also greatly increased, with one study estimating that roughly 35 percent of employed adults switched to remote work due to COVID-19 (Brynjolfsson et al. 2020).

The risk of unemployment and other employment disruptions related to COVID-19 is significantly affected by several demographic factors, with education principal among them (Daly, Buckman, and Seitelman 2020; Kesler and Bash 2021). Kesler and Bash (2021) estimated that less educated parents were between 2 and 2.5 times more likely to experience COVID-19-related unemployment than highly educated parents. Employment rates in May 2020 differed by 8.8 percentage points between those with a Bachelor's degree and those with a high school diploma or less (Daly et al. 2020). However, these studies, as well as many other related studies, only examined nation-wide, state-level, or metropolitan area impacts (Brave et al. 2020; Cho, Lee, and Winters 2020), leaving little evidence about whether and how impacts varied between rural and urban areas. This is an important gap since rurality represents an increasingly salient axis of both health and socioeconomic inequality in the United States (Burton et al. 2013; Lichter and Ziliak 2017; Singh and Siahpush 2014).

Indeed, rural and urban areas of the United States differ in a number of important ways relevant to the impacts of the COVID-19 pandemic. First, there is a marked difference in age structure with rural areas being significantly older (Glasgow and Brown 2012; Johnson 2020). The U.S. Census Bureau (Cheeseman Day, Hays, and Smith 2016) reports a seven year difference in median age between metropolitan and nonmetropolitan counties (36.0 vs. 43.0 years). Differences in age structure are accompanied by differences in health (Burton et al. 2013), with rural populations characterized by higher prevalence of health-compromised individuals and higher mortality rates than urban populations (Brooks, Mueller, and Thiede 2020; Henning-Smith 2020; Peters 2020). This rural health disadvantage may translate into higher rates of rural adults being unable to work due to heightened fear of contracting COVID-19 (e.g., due to pre-existing conditions) or because of increased caregiving demands. Beyond these compositional differences, access to healthcare is also lower in rural areas, likely amplifying differences in COVID-19-related employment disruptions between rural and urban residents as many rural residents may not be able to be tested for COVID-19 or seek medical care upon disease contraction (Burton et al. 2013; Peters 2020; Souch and Cossman 2021). While COVID-19 rates in rural counties have generally been lower than rates in urban counties (Karim and Chen 2021; Paul et al. 2020); the exact differences in rates is difficult to estimate due to both differences in testing (Souch and Cossman 2021) and underlying data constraints affecting data quality for rural populations (Hauer and Santos-Lozada 2021).

Rural economies may also be more vulnerable to pandemic-related shocks. Many areas of the rural United States are dependent on a single industry such as agriculture or natural amenity-related tourism (Mueller 2020; Thiede and Slack 2017) and thus industry-specific shutdowns—either governmental or self-mandated—likely have significant ripple effects on employment throughout a rural labor market. Employment in rural America is also more precarious than employment in urban areas as measured by rates of underemployment, labor force nonparticipation, and working poverty (McLaughlin and Coleman-Jensen 2014; Thiede, Lichter, and Slack 2018). For example, Slack and colleagues (2019) find that for 2013-2017, 19.1 percent of rural adults were underemployed to some extent compared to 17.4 percent of comparable urban adults. Rural workers are also more likely to be self-employed or work at small businesses, which have been disproportionately impacted by the pandemic (Headd 2010; Vias 2012). Lin et

al. (2021) find that individuals employed at small firms—firms with less than 10 employees—experienced COVID-19-related increases in unemployment that were nearly 7.5 percent higher than for individuals employed at firms with over a 1000 employees. Compounding these vulnerabilities, urban adults are more likely to have a college education than rural adults—rates of 34.7 and 20.2 percent, respectively (Farrigan 2020). These rural disadvantages in employment and education structure may make rural adults more prone to COVID-19-related layoffs or furloughs and may make them less likely to be compensated for hours not worked.

Importantly, there are also reasons to expect that rural labor markets fared better during the pandemic. Rural areas, while not as overwhelmingly white as often portrayed, are still home to a higher proportion of white residents than urban areas (Lee and Sharp 2017; Lichter 2012). Given significant inequalities in COVID-19 mortality, infection rates, wealth, and economic hardships between white and non-white Americans due to deep-seated structural inequalities (Cheng, Sun, and Monnat 2020; Dias 2021; Enriquez and Goldstein 2020; Henning-Smith, Tuttle, and Kozhimannil 2021; Morales et al. 2020; Wrigley-Field et al. 2020), it is likely that rural-urban differences in racial composition may create a relative rural advantage in labor force impacts. Additionally, rural-urban differences in government mandates and shutdowns may also suggest a rural advantage in labor force impacts (Pender 2020). For example, Adolph et al. (2020) find that governors of primarily rural states were 31.3 percent less likely to implement social distancing mandates in the early weeks of the pandemic than governors of more urban states.² This less aggressive implementation of COVID-19 policy in rural states may have led to less dramatic labor force impacts during the pandemic. Further, many industries primarily located in rural areas (e.g., meatpacking) were deemed essential by the federal government, and thus many rural workers were mandated to remain at work despite high infection rates of COVID-19 (Graff Zivin and Sanders 2020; Taylor, Boulos, and Almond 2020). Somewhat perversely, such policies may manifest as a rural advantage in labor market outcomes. Finally, COVID-19 has also been shown to have had less employment impacts on firms whose business cannot be done remotely—such as agriculture and manufacturing (Lin et al. 2021)—further suggesting a rural worker advantage.

Despite the presence of factors suggesting both a rural advantage and disadvantage, we conduct our analysis under the hypothesis that rural adults faced more severe labor force impacts than urban adults. Further, we expect that this rural disadvantage will be at least partially mitigated when we control for differences in demographic composition and state-level policy.

Current Study

Our overall goal is to evaluate whether and how rural adults were disadvantaged relative to their urban counterparts in the labor force impacts of COVID-19. Using newly-available data from the U.S. Census Bureau, we focus on COVID-19-related disruptions to (a) work, (b) receipt of COVID-19-related wage support, (c) employment seeking, and (d) ability to work remotely. We assess the prevalence of these four outcomes among rural and urban adults by producing unadjusted estimates of monthly trends and regression-adjusted estimates that control for key demographic and state-level factors.

Data and Measures

² Due to relative recency of research on COVID-19, adequate data on the effects of county-level mandate is not generally available.

We analyze microdata from the COVID-19 supplement of the Current Population Survey (CPS), which we extracted via IPUMS-CPS (Flood et al. 2020). Our data cover each month from May through December of 2020, which is the entire period that the supplemental COVID-19 questions were available at the time of writing. Our analytic sample includes only working-age civilian adults ages 18 to 65 ($n = 491,651$) to avoid biases associated with selective differences in work among younger and older adults. Throughout this study we define rural and urban people as those who live in counties which are defined by the U.S. Office of Management and Budget as nonmetropolitan and metropolitan, respectively (Office of Management and Budget 2010).³ We also stratify adults based on their education to assess whether low-education adults were particularly hard-hit by the pandemic's economic impacts. For that part of our analysis, individuals are classified as less educated if they have a high school education or less ($n = 178,563$).⁴

The four labor force outcomes of interest were all asked in reference to the four weeks preceding survey administration. Importantly, the universes of the questions varied. For whether or not a person was unable to work due to their place of work closing or losing business due to the COVID-19 pandemic (i.e. unable to work), the universe included all adults within the sample ($n = 491,651$). Those who were employed or unemployed could report they were unable to work due to the pandemic, thus allowing for temporary bouts of being unable to work, as well as more permanent employment impacts. For whether or not an individual received pay for hours not worked due to COVID-19 (paid for missed hours), the universe included those who were unable to work because their employer closed or lost business due to COVID-19 ($n = 53,228$). For whether or not an individual was unable to look for work due to the COVID-19 pandemic (unable to look for work), the universe included anyone not in the labor force ($n = 124,858$). Finally, for whether or not a person worked remotely due to COVID-19 (worked remotely), the universe included all currently employed adults ($n = 338,409$).

Analytical Strategy

This study contains two sets of analysis. First, we estimate the monthly prevalence of each outcomes of interest among rural and urban adults from May through December 2020.⁵ These estimates allow us to evaluate whether and how rural individuals were, overall, advantaged or disadvantaged compared to urban adults and to evaluate if these differentials changed over time. Second, we repeat this analysis for less educated individuals only.

Within both of the analyses defined above, we produce unadjusted estimates of monthly trends and two sets of regression-adjusted estimates.⁶ We produce adjusted estimates of COVID-19 outcomes produced from a series of binary logistic regression models by estimating predicted probabilities of each outcome for both rural and urban with all other demographic and state-level variables held at their means.

³ According to the U.S. Office of Management and Budget, a county is considered metropolitan if it has either an urban center population of at least 50,000 or is connected to another metropolitan county by at least 25% of commuting. All counties that do not mean these criteria are classified as nonmetropolitan (Office of Management and Budget 2010). Note that metropolitan and nonmetropolitan status is provided within the CPS, but the actual county of residence is not. Thus, we could not include any county-level variables in our analysis.

⁴ Although an income stratification may be more desirable for this secondary analysis, we elect to use education instead as within the CPS income is collected each month and is directly affected by to the outcomes being studied.

⁵ Monthly estimates refer to the month in which the survey was taken, as indicated by IPUMS.

⁶ All estimates, both unadjusted and adjusted, utilize the IPUMS-provided basic monthly person weights.

Each of our four outcomes is modeled as a function of a binary indicator of rural (urban) status, month, a set of month-by-rural interactions, and a set of controls. These focal variables allow us to estimate adjusted differences in outcomes between rural and urban adults during each month in our data. Standard errors in these regressions are clustered on the person to account for repeated observations inherent to the CPS sampling structure (U.S. Census Bureau 2019).⁷ The first set of regressions used to produce adjusted estimates include independent control variables which capture known differences in demographic structure—race, education, age, marital status, sex (i.e. a dichotomous female indicator), household size, and number of children in the household (Brown and Schafft 2018). We classify individuals as non-Hispanic White, non-Hispanic Black, Hispanic of any race, non-Hispanic Asian or Pacific Islander, and non-Hispanic other race. We utilize four categories of education: less than a high school education, a high school education, some college education, and a bachelor’s degree or higher. We utilize age groups of 18-25, 25-35, 36-45, 46-55, and 56-65 years old. Finally, we use three marital status groups: married, divorced, separated, or widowed, and single.

The second set of adjusted estimates—which we refer to as policy-adjusted estimates—are based on similar logistic regressions which include additional controls for state policies and socioeconomic context as captured by an indicator for state-level at-restaurant dining closures and state fixed effects. Using data produced by Raifman et al. (2020), we create an indicator for whether or not an individual was experiencing a state-level at-restaurant dining closure—meaning restaurants were prohibited from serving individuals at the restaurant, either inside or outside—during the month of interest. This type of policy has been dynamic at the state level over the study period and we expect it to be correlated with other pandemic-related restrictions. We also capture time-invariant state factors through the use of state fixed effects, which account for all time-invariant factors at the state level including economic and political structure. The regression models for the analysis of less educated adults matches the form of these models but differ in that they only include less educated individuals.⁸

Results

We begin with a broad focus on employment and find that the labor force impacts of the COVID-19 pandemic varied significantly between working-age adults (18 to 65) in the rural and urban United States. Employment among those in the labor force declined dramatically in both rural and urban areas. Compared to pre-pandemic (January) employment rates of 95.1 percent and 96.1 percent, in May, just 57.8 percent of rural adults and 41.2 percent of urban adults worked with no COVID-19 related disruptions. Non-disrupted employment rose by December—but not to pre-pandemic levels—increasing to 82.1 percent and 64.6 percent for rural and urban areas, respectively.

Next, we consider the prevalence of self-reported inability to work due to the pandemic. Consistent with these broader trends of employment, in May, 20.0 percent of rural adults reported being unable to work due to COVID-19 compared to 23.0 percent of urban adults (Fig. 1A). The prevalence of this outcome declined significantly by December, with a 14.9 percentage-point decrease in rural areas and a 15.5 percentage-point decline in urban areas—lowering the rural-urban difference to 2.3 percentage points. When adjusting for relevant demographic and state-level policy characteristics the rural advantage remained, suggesting that

⁷ Households are included in the CPS for four consecutive months, off for eight months, and then included for another four consecutive months.

⁸ Tables of point estimates and outputs of logistic regression are available in the supplemental materials.

Figure 1. Unadjusted, demographic-adjusted, and policy-adjusted estimates of four COVID-19 outcomes for rural and urban adults by month. Shaded area is 95% confidence interval.

rural adults were advantaged relative to urban adults over and above demographic composition. However, for May, rural-urban disparities in the policy-adjusted estimates is halved to 1.2 percentage points. The changes from model to model suggest that a substantial share—up to half—of the disparities in the early months of the pandemic may be attributed to differences in state-level business closure and reopening policies.

We also find evidence of a rural advantage in the prevalence of being paid for hours not worked due to COVID-19. In May, 22.2 percent of relevant rural adults reported being paid for missed work, which was 5.0 percentage points higher than the rate among corresponding urban adults (17.2%). Rural-urban differences in pay for those unable to work decreased by December to 3.0 percentage points, with rural and urban rates at 15.8 percent and 12.8 percent, respectively (Fig. 1B). The prevalence of being paid for hours not worked decreased for both groups, indicating that being unable to work became more perilous over time. Our adjustments only explain a modest portion of the rural-urban difference. For example, May and December demographics-adjusted rural-urban differences both remained above 4.8 points and policy-adjusted differences both above 3.2 points—indicating the presence of a rural advantage over and above compositional and state-level factors.

Next, we find that the prevalence of being unable to look for work due to COVID-19—which was only asked of adults not in the labor force—was lower in rural than urban areas. The rural advantage was a full 8.2 percentage points in May and remained at 4.0 points in December (Fig. 1C). In May, 8.4 percent of relevant rural adults were unable to look for work, slightly more than half of the rate for urban adults (16.6%). By December, prevalence of this outcome declined in both areas to 4.0 percent and 8.0 percent, respectively. When adjusting for demographic and state-policy characteristics, we find that rural areas were still advantaged and were less likely to report being unable to look for work due to COVID-19 during most months. Unlike the other outcomes, there are several months in which the rural and urban unadjusted and adjusted estimates have clear overlap, and most month-by-rural coefficients are non-significant in the regression model (see supplemental materials). While there is a general rural advantage for this outcome, the advantage is more dynamic and flexible than other labor market outcomes.

Our final outcome of interest is the ability to work remotely, which was measured among employed adults. This is the only source of a rural disadvantage that we find in our analysis. Urban adults were decidedly more likely to work remotely than their rural contemporaries. In May, 19.8 percent of rural employed adults worked remotely, compared to 38.4 percent of urban employed adults—a difference of 18.6 points. Rates of working remotely decreased by December in rural and urban areas to 9.3 percent and 26.3 percent, respectively, with a large difference of 17.0 percentage points remaining. Also, unlike the other outcomes, we find a sizeable portion of the rural-urban difference in working remotely can be attributed to compositional factors (Fig. 1D). The demographic adjusted rural-urban differences are 4.9 percentage points lower in May and 4.5 points lower in December than the corresponding unadjusted values. Accounting for policy differences lowers rural-urban differences by 7.3 and 5.8 points for these months, respectively. The implication is that a notable portion of the rural-urban difference in remote work can be explained by rural-urban differences in demographic characteristics—education likely chief among them—as well as state-level policy factors.

Impacts among Less Educated Adults

We now focus on the COVID-19 impacts experienced among less-educated rural and urban adults. In May, 26.1 percent of less-educated urban adults reported being unable to work,

Figure 2. Unadjusted, demographic-adjusted, and policy-adjusted estimates of four COVID-19 outcomes for less-educated rural and urban adults by month. Shaded area is 95% confidence interval.

which is 6.6 percentage points higher than among rural adults (Fig. 2A). The same disparity among all rural and urban adults was 3.0 points. By December, the rural-urban advantage had declined to 4.3 points, which is still higher than the advantage observed for rural adults of all education levels for that month (2.3%). We find that rural-urban differences are still present after both the demographic and policy adjustments; with a May advantage of 4.1 and 3.1 points, respectively.

Less educated adults in both rural and urban areas were relatively unlikely to receive pay for missed hours (Fig. 2B). In rural areas, only 18.1 percent of such rural adults were paid for missed work in May, and by December this rate had declined to just 12.0 percent. Urban adults experienced a much smaller May to December decline at 2.3 points (13.0% vs. 10.8%). We find that the rural advantage was slightly smaller during the study period for less educated adults than among all adults. Further, the rural advantage in this outcome is still present even when including demographic and policy adjustments. We conclude that the vast majority of less educated adults (over 80%) who were unable to work were not compensated for missed hours, and that the rural advantage in this outcome cannot simply be explained due to demographic or state-level policy factors.

Like with the analysis of all adults, we find that less-educated rural adults reported being unable to look for work due to COVID-19 less often. In May, 8.7 percent of less-educated rural adults not in the labor force reported being unable to look for work due to COVID-19, compared to 16.2 percent of urban adults—a difference of 7.5 points (Fig. 2C). The unadjusted rural advantage in December stood at 3.9 points as rural and urban rates fell from 16.2 to 7.9 percent during the study period, respectively. In general, these trends match the findings among all adults (i.e., our full sample). We also find that demographic and policy adjustments do not explain all of these rural-urban differences, as in May our demographic and policy-adjusted estimates produce a rural advantage of 5.5 and 4.7 points, respectively.

Rates of working remotely differ greatly between our two analyses, with less educated adults being significantly less likely to work remotely. In May—the month with the highest rates of remote work—only 6.9 percent of rural less-educated employed adults worked remotely, compared to 19.8 percent of all employed rural adults (Fig. 2D). Our estimates reveal a large 25.0-point difference in urban areas as well (13.4% vs. 38.4%). Demographic and policy adjustments explain much less of the rural-urban differences in working remotely among less educated adults than in our full sample analysis—leaving a clear urban advantage for this outcome.

Discussion and Conclusions

The purpose of this study was to evaluate disparities in COVID-19-related labor force disruptions experienced by rural and urban adults, and to assess to what extent these disparities can be explained by rural-urban differences in demographic composition and policy. While we outlined a number of reasons to expect rural residents to be more affected by the COVID-19 pandemic than urban peers, this does not hold true under our analysis. We find that rural adults were less likely to report being unable to work or unable to look for work due to COVID-19, and were more likely to be paid for missed hours. This rural advantage persists even when accounting for rural-urban differences in demographic composition and state-level factors.

Importantly, these rural advantages may reflect differences in the types of jobs typically worked by rural and urban Americans—which were, at best, captured partially by our state fixed effects. Employment sectors common in rural areas—agriculture, natural resources, and

manufacturing—were often deemed essential, could not be done remotely (Lin et al. 2021), and in some cases were even mandated to remain open (Taylor et al. 2020). Rural workers are also less likely to be unionized than their urban counterparts (Brady, Baker, and Finnigan 2013; Thiede and Slack 2017), potentially resulting in many rural workers not having the bargaining power to opt out of work during high risk times. Rural school districts were also less likely to close or go remote (Gross and Opalka 2020), which in turn may have meant that many rural parents did not have to leave work temporarily or be unable to look for work due to childcare needs unlike many urban parents. Counter-intuitively, many of the potential sources of this rural advantage in the labor force impacts of COVID-19 are rooted in the region’s socioeconomic disadvantage relative to urban America.

The one exception to this rural advantage narrative pertains to remote work. Urban adults were more likely to work remotely throughout the study period, but the gap between rural and urban workers significantly decreases when accounting for compositional and state-level factors. In addition to rural-urban occupational differences, the remaining urban advantage may be explained by more prevalent home internet access in urban areas (Perrin 2019). Hence, many rural individuals would be unable to work from home even if the option was available from their employer.

Less educated adults in both rural and urban areas experienced heightened labor force challenges relative to the general population. This population was particularly disadvantaged in their likelihood of being paid for missed hours and ability to work remotely. This temporary loss of income likely put these individuals and their families in a very unstable economic position and likely severely affected household food security and other forms of wellbeing (Cowin et al. 2020; Morales et al. 2020). While the loss of wages or employment may have been temporary for these families, the impacts may be long term; it is likely that these marginalized groups experienced the pandemic’s economic disruptions in ways that cannot be measured via currently available CPS data (Van Lancker and Parolin 2020).

Indeed, there are at least two notable limitations to the study that stem from our data. First, questions related to one’s industry of employment are only asked of those currently working by the CPS. We are therefore unable to directly assess how much of the estimated rural advantage in labor force impacts is due to industrial compositional differences between rural and urban adults. Such differences are only partially captured by state-fixed effects and cannot be differentiated from other state-level factors absorbed in those terms. While previous research has established that certain industries in rural areas were mandated to stay open (Taylor et al. 2020), the extent to which rural and urban adults working similar jobs were impacted differently by COVID-19 has yet to be assessed. Second, the CPS does not provide the county of residence of all respondents, which prevents us from considering the differential impacts of county-level COVID-19 mandates and closures between rural and urban areas. Future research on the differences in impact of COVID-19 in rural and urban areas should address these gaps through the use of alternative data sources.

The COVID-19 pandemic will have significant near and long-term impacts; impacts that will not be felt equally across society or space. As documented here, urban and rural people have experienced the pandemic quite differently over and above what can be explained by differences in demographic composition and state-level policy. Contrary to what may have been expected from concerns voiced previously (Henning-Smith 2020; Paul et al. 2020; Peters 2020; Souch and Cossman 2021), we find the labor force impacts in urban areas have largely been more severe than those felt in rural areas—with the ability to work remotely being the key exception. There

are many potential reasons for worse outcomes in urban America, including the pandemic's initial peak in urban areas, more aggressive pandemic-related mandates, differential experience of racism across urban and rural America, and the kinds of jobs worked in urban versus rural areas, among others. These pronounced rural-urban differences highlight the necessity of not adopting one-size-fits-all COVID-19 recovery policies. Importantly, this rural advantage may grow or even reverse over time depending on the trajectory of the pandemic and corresponding economic changes. It is essential that we continue to monitor rural and urban outcomes in-concert in order to better inform future relief efforts.

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Supplemental Materials

Table A1. Estimates of COVID-19 labor force impacts among rural and urban adults

	Unable to work			Paid for missed hours			Unable to look for work			Worked remotely		
	Unadjusted	Demographic	Policy	Unadjusted	Demographic	Policy	Unadjusted	Demographic	Policy	Unadjusted	Demographic	Policy
<u>Rural estimates</u>												
May	20.0	20.4	20.2	22.2	21.5	19.2	8.4	8.7	9.1	19.8	19.4	20.1
June	14.8	15.0	15.7	19.7	19.1	17.6	5.9	6.1	6.5	15.6	14.8	16.0
July	9.8	9.9	10.5	13.5	12.6	11.5	5.4	5.6	6.1	10.5	9.6	10.5
August	7.4	7.6	8.0	17.0	16.5	15.4	5.5	5.7	6.2	10.0	9.1	9.9
September	6.2	6.3	6.7	16.5	15.9	14.8	3.7	3.8	4.0	8.8	8.0	8.7
October	4.7	4.7	5.0	13.2	12.6	11.7	4.3	4.4	4.8	8.1	7.2	7.9
November	4.7	4.7	5.0	18.8	17.5	16.1	3.2	3.2	3.5	9.3	8.4	9.1
December	5.1	5.1	5.4	15.8	14.8	13.9	4.0	4.0	4.4	9.3	8.4	9.1
<u>Urban estimates</u>												
May	23.0	22.6	21.4	17.2	16.7	16.0	16.6	15.1	14.4	38.4	33.1	31.4
June	18.8	18.5	18.2	15.3	14.7	14.7	12.6	11.5	11.1	34.1	28.7	28.1
July	14.8	14.4	14.3	12.6	12.0	12.0	11.2	10.1	9.8	29.4	23.6	23.2
August	11.3	11.0	10.9	11.4	10.7	10.7	8.7	7.8	7.5	27.0	21.2	20.9
September	9.1	8.8	8.7	9.8	9.3	9.3	7.7	6.9	6.6	25.3	19.8	19.5
October	7.0	6.8	6.7	11.5	10.9	11.1	6.0	5.4	5.2	23.6	18.5	18.1
November	6.9	6.6	6.5	13.1	12.4	12.4	6.9	6.1	5.8	24.1	19.0	18.4
December	7.4	7.1	7.0	12.8	12.5	12.4	8.0	7.1	6.8	26.3	20.9	20.2
<u>Differences in estimates</u>												
Rural-urban (May)	3.0	2.2	1.2	-5.0	-4.8	-3.2	8.2	6.5	5.2	18.6	13.7	11.3
Rural-urban (Nov)	2.3	2.0	1.6	-3.0	-2.4	-1.4	4.0	3.0	2.4	17.0	12.5	11.1
Rural May-Nov.	14.9	15.2	14.8	6.4	6.6	5.3	4.4	4.6	4.8	10.5	11.0	11.0
Urban May-Nov.	15.5	15.4	14.4	4.4	4.2	3.5	8.6	8.1	7.6	12.1	12.2	11.2

Table A2. Estimates of COVID-19 labor force impacts among rural and urban adults; less educated adults only

	Unable to work			Paid for missed hours			Unable to look for work			Worked remotely		
	Unadjusted	Demographic	Policy	Unadjusted	Demographic	Policy	Unadjusted	Demographic	Policy	Unadjusted	Demographic	Policy
<u>Rural estimates</u>												
May	19.5	21.3	20.8	18.1	16.7	14.7	8.7	9.2	9.6	6.9	5.2	5.6
June	14.5	16.0	16.6	16.6	15.4	13.9	6.3	6.6	6.8	5.5	4.2	4.6
July	8.9	9.7	10.2	10.6	9.8	8.5	5.3	5.5	5.7	2.3	1.7	1.8
August	7.6	8.4	8.8	15.2	14.0	12.6	4.8	5.1	5.2	3.5	2.5	2.7
September	6.2	6.7	7.1	13.5	12.6	11.4	3.1	3.2	3.3	3.0	2.2	2.4
October	4.6	5.0	5.3	15.8	14.6	13.2	3.4	3.5	3.6	2.8	2.1	2.2
November	4.1	4.4	4.6	15.5	14.0	12.2	2.4	2.4	2.5	3.4	2.6	2.7
<u>Urban estimates</u>												
December	4.5	4.8	5.1	12.0	10.9	9.9	4.0	4.1	4.3	2.8	2.1	2.3
May	26.1	25.4	23.8	13.0	12.7	12.3	16.2	14.7	14.2	13.4	11.9	11.4
June	20.8	20.1	19.8	11.4	11.2	11.1	12.6	11.3	10.8	11.1	9.8	9.4
July	16.8	16.1	16.0	9.1	8.8	8.7	11.1	9.8	9.4	9.4	8.2	7.8
August	12.1	11.5	11.4	9.1	8.7	8.6	7.9	6.9	6.6	7.7	6.6	6.3
September	10.0	9.5	9.4	8.0	7.8	7.7	7.5	6.6	6.3	7.4	6.4	6.1
October	8.0	7.5	7.4	9.3	9.0	9.0	6.3	5.5	5.2	6.3	5.5	5.2
November	7.8	7.3	7.1	9.4	9.2	9.1	7.0	6.1	5.8	6.4	5.6	5.3
December	8.8	8.2	8.0	10.8	10.7	10.5	7.9	6.9	6.7	7.8	6.8	6.5
<u>Differences in estimates</u>												
Rural-urban (May)	6.6	4.1	3.1	-5.1	-3.9	-2.4	7.5	5.5	4.7	6.5	6.7	5.8
Rural-urban (Nov)	4.3	3.4	3.0	-1.2	-0.2	0.6	3.9	2.9	2.4	5.0	4.7	4.2
Rural May-Nov.	15.0	16.4	15.7	6.1	5.7	4.9	4.7	5.1	5.3	4.1	3.1	3.3
Urban May-Nov.	17.3	17.1	15.8	2.3	2.0	1.8	8.3	7.7	7.6	5.6	5.1	4.9

Table A3. Logistic regression of COVID-19 outcomes

		Unable to work		Paid for hours not worked		Unable to look for work		Worked remotely	
		Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Rural (ref = urban)		0.878 ***	(0.030)	1.366 ***	(0.102)	0.531 ***	(0.048)	0.485 ***	(0.021)
<u>Month (ref = May)</u>									
	June	0.777 ***	(0.012)	0.865 ***	(0.036)	0.725 ***	(0.029)	0.812 ***	(0.014)
	July	0.578 ***	(0.011)	0.684 ***	(0.034)	0.628 ***	(0.028)	0.624 ***	(0.012)
	August	0.426 ***	(0.009)	0.596 ***	(0.034)	0.473 ***	(0.022)	0.543 ***	(0.011)
	September	0.331 ***	(0.007)	0.511 ***	(0.032)	0.413 ***	(0.019)	0.499 ***	(0.010)
	October	0.249 ***	(0.006)	0.614 ***	(0.039)	0.319 ***	(0.016)	0.457 ***	(0.009)
	November	0.244 ***	(0.006)	0.708 ***	(0.044)	0.365 ***	(0.018)	0.472 ***	(0.010)
	December	0.264 ***	(0.006)	0.712 ***	(0.044)	0.427 ***	(0.020)	0.534 ***	(0.011)
<u>Rural-Month Interaction</u>									
	Rural#June	0.892 **	(0.039)	0.997	(0.103)	0.941	(0.120)	0.890 *	(0.047)
	Rural#July	0.746 ***	(0.040)	0.775	(0.111)	0.995	(0.143)	0.709 ***	(0.044)
	Rural#August	0.752 ***	(0.045)	1.216	(0.189)	1.349 *	(0.199)	0.769 ***	(0.051)
	Rural#September	0.792 ***	(0.048)	1.357 *	(0.211)	0.997	(0.150)	0.720 ***	(0.049)
	Rural#October	0.781 ***	(0.051)	0.862	(0.157)	1.521 **	(0.220)	0.703 ***	(0.048)
	Rural#November	0.797 ***	(0.053)	1.099	(0.179)	0.954	(0.147)	0.805 **	(0.054)
	Rural#December	0.803 ***	(0.052)	0.895	(0.148)	1.040	(0.150)	0.714 ***	(0.048)
<u>Racial Group (ref = White)</u>									
	Black	1.268 ***	(0.029)	1.173 **	(0.060)	1.565 ***	(0.065)	0.808 ***	(0.022)
	Hispanic	1.468 ***	(0.028)	0.919	(0.044)	1.644 ***	(0.064)	0.821 ***	(0.020)
	Asian or Pacific Islander	1.301 ***	(0.038)	0.651 ***	(0.046)	1.198 **	(0.068)	1.359 ***	(0.037)
	Other	1.379 ***	(0.067)	0.930	(0.100)	1.351 ***	(0.122)	1.197 **	(0.068)
<u>Education Group (ref = < H.S.)</u>									
	High School	1.031	(0.027)	1.455 ***	(0.103)	1.303 ***	(0.061)	2.478 ***	(0.146)
	Some College	1.060 *	(0.029)	1.661 ***	(0.118)	1.418 ***	(0.068)	4.958 ***	(0.289)
	Bach Degree+	0.781 ***	(0.022)	2.454 ***	(0.173)	1.406 ***	(0.074)	18.326 ***	(1.050)
<u>Age Group (ref = 18-25)</u>									
	26-35	1.227 ***	(0.032)	1.379 ***	(0.091)	1.560 ***	(0.075)	1.596 ***	(0.052)
	36-45	1.295 ***	(0.037)	1.318 ***	(0.095)	1.477 ***	(0.079)	1.659 ***	(0.058)
	46-55	1.320 ***	(0.038)	1.299 ***	(0.095)	1.309 ***	(0.072)	1.557 ***	(0.055)
	56-65	1.063 *	(0.032)	1.392 ***	(0.105)	0.645 ***	(0.036)	1.412 ***	(0.051)
<u>Marital Status (ref = married)</u>									
	Divorced, separated, widowed	1.179 ***	(0.026)	0.937	(0.046)	1.422 ***	(0.065)	0.839 ***	(0.020)
	Single	1.278 ***	(0.025)	0.760 ***	(0.035)	1.490 ***	(0.060)	0.910 ***	(0.018)
Female (0/1)		1.006	(0.014)	1.082 *	(0.036)	0.808 ***	(0.026)	1.277 ***	(0.019)
Household size		0.994	(0.007)	0.990	(0.017)	0.950 ***	(0.013)	0.880 ***	(0.007)
Number of children in household		1.008	(0.010)	1.000	(0.023)	1.029	(0.021)	1.089 ***	(0.012)
Observations		491,651		53,228		124,858		338,409	
Pseudo R-squared		0.05		0.028		0.055		0.17	

Note: Person weights applied. Odds ratios shown. Sig: * <.05 ** <.01 *** <.001

Table A4. Logistic regression of COVID-19 outcomes; less educated adults only

	Unable to work		Paid for hours not worked		Unable to look for work		Worked remotely	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Rural (ref = urban)	0.794 ***	(0.041)	1.369 **	(0.163)	0.586 ***	(0.069)	0.407 ***	(0.042)
<u>Month (ref = May)</u>								
June	0.739 ***	(0.019)	0.863	(0.066)	0.739 ***	(0.045)	0.804 ***	(0.035)
July	0.565 ***	(0.017)	0.661 ***	(0.062)	0.634 ***	(0.042)	0.660 ***	(0.034)
August	0.383 ***	(0.013)	0.655 ***	(0.068)	0.432 ***	(0.032)	0.522 ***	(0.029)
September	0.308 ***	(0.011)	0.577 ***	(0.063)	0.411 ***	(0.029)	0.501 ***	(0.027)
October	0.238 ***	(0.009)	0.678 ***	(0.075)	0.338 ***	(0.025)	0.428 ***	(0.024)
November	0.231 ***	(0.009)	0.697 **	(0.079)	0.375 ***	(0.027)	0.437 ***	(0.024)
December	0.264 ***	(0.010)	0.824	(0.086)	0.434 ***	(0.031)	0.541 ***	(0.029)
<u>Rural-Month Interaction</u>								
Rural#June	0.954	(0.064)	1.058	(0.174)	0.949	(0.154)	0.987	(0.128)
Rural#July	0.705 ***	(0.057)	0.824	(0.200)	0.913	(0.167)	0.470 ***	(0.078)
Rural#August	0.883	(0.079)	1.239	(0.288)	1.224	(0.238)	0.902	(0.145)
Rural#September	0.863	(0.078)	1.256	(0.324)	0.806	(0.167)	0.829	(0.140)
Rural#October	0.823 *	(0.080)	1.259	(0.331)	1.062	(0.215)	0.897	(0.149)
Rural#November	0.743 **	(0.075)	1.173	(0.314)	0.658	(0.143)	1.088	(0.173)
Rural#December	0.713 ***	(0.070)	0.744	(0.203)	0.974	(0.185)	0.728	(0.122)
<u>Racial Group (ref = White)</u>								
Black	1.361 ***	(0.048)	1.173	(0.103)	1.702 ***	(0.100)	0.732 ***	(0.046)
Hispanic	1.636 ***	(0.046)	0.931	(0.069)	1.759 ***	(0.095)	0.661 ***	(0.034)
Asian or Pacific Islander	2.250 ***	(0.112)	0.549 ***	(0.076)	1.745 ***	(0.153)	0.672 ***	(0.063)
Other	1.388 ***	(0.110)	0.800	(0.154)	1.376 *	(0.178)	1.141	(0.143)
<u>Education Group (ref = < H.S.)</u>								
High School	1.052	(0.029)	1.441 ***	(0.105)	1.316 ***	(0.062)	2.296 ***	(0.142)
<u>Age Group (ref = 18-25)</u>								
26-35	1.223 ***	(0.048)	1.378 **	(0.144)	1.356 ***	(0.092)	2.071 ***	(0.157)
36-45	1.285 ***	(0.053)	1.380 **	(0.157)	1.255 **	(0.093)	1.953 ***	(0.156)
46-55	1.280 ***	(0.055)	1.341 *	(0.156)	1.088	(0.085)	2.016 ***	(0.162)
56-65	0.884 **	(0.040)	1.687 ***	(0.199)	0.515 ***	(0.040)	1.843 ***	(0.149)
<u>Marital Status (ref = married)</u>								
Divorced, separated, widowed	1.133 ***	(0.038)	0.917	(0.079)	1.280 ***	(0.084)	0.803 ***	(0.043)
Single	1.137 ***	(0.035)	0.869	(0.069)	1.234 ***	(0.070)	0.764 ***	(0.038)
Female (0/1)	0.939 **	(0.022)	1.101	(0.063)	0.788 ***	(0.036)	2.201 ***	(0.081)
Household size	0.961 ***	(0.010)	1.005	(0.027)	0.953 *	(0.019)	0.958 *	(0.017)
Number of children in household	1.040 *	(0.016)	0.950	(0.036)	1.021	(0.029)	0.993	(0.026)
Observations	178,563		20,690		60,204		106,067	
Pseudo R-squared	0.059		0.02		0.058		0.069	

Note: Person weights applied. Odds ratios shown. Sig: * <.05 ** <.01 *** <.001

Table A5. Logistic regression of COVID-19 outcomes; policy variables included

	Unable to work		Paid for hours not worked		Unable to look for work		Worked remotely	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Rural (ref = urban)	0.930 *	(0.033)	1.246 **	(0.096)	0.599 ***	(0.056)	0.548 ***	(0.025)
<u>Month (ref = May)</u>								
June	0.819 ***	(0.016)	0.907	(0.048)	0.742 ***	(0.037)	0.853 ***	(0.018)
July	0.613 ***	(0.014)	0.719 ***	(0.046)	0.645 ***	(0.035)	0.659 ***	(0.016)
August	0.451 ***	(0.011)	0.631 ***	(0.044)	0.485 ***	(0.028)	0.576 ***	(0.015)
September	0.351 ***	(0.009)	0.541 ***	(0.040)	0.421 ***	(0.024)	0.528 ***	(0.014)
October	0.264 ***	(0.007)	0.654 ***	(0.049)	0.324 ***	(0.019)	0.483 ***	(0.013)
November	0.255 ***	(0.007)	0.745 ***	(0.052)	0.370 ***	(0.020)	0.492 ***	(0.012)
December	0.275 ***	(0.007)	0.747 ***	(0.051)	0.434 ***	(0.023)	0.554 ***	(0.013)
<u>Rural-Month Interaction</u>								
Rural#June	0.897 *	(0.039)	0.992	(0.103)	0.933	(0.120)	0.891 *	(0.048)
Rural#July	0.753 ***	(0.041)	0.762	(0.110)	0.995	(0.144)	0.708 ***	(0.044)
Rural#August	0.759 ***	(0.046)	1.220	(0.190)	1.345 *	(0.200)	0.762 ***	(0.051)
Rural#September	0.803 ***	(0.049)	1.358 *	(0.212)	0.994	(0.150)	0.716 ***	(0.049)
Rural#October	0.794 ***	(0.052)	0.857	(0.156)	1.538 **	(0.224)	0.704 ***	(0.049)
Rural#November	0.814 **	(0.054)	1.087	(0.177)	0.967	(0.150)	0.811 **	(0.055)
Rural#December	0.819 **	(0.054)	0.910	(0.152)	1.050	(0.152)	0.720 ***	(0.049)
<u>Racial Group (ref = White)</u>								
Black	1.303 ***	(0.031)	1.153 **	(0.061)	1.602 ***	(0.069)	0.836 ***	(0.023)
Hispanic	1.415 ***	(0.029)	0.969	(0.048)	1.509 ***	(0.062)	0.783 ***	(0.020)
Asian or Pacific Islander	1.181 ***	(0.036)	0.690 ***	(0.050)	1.044	(0.061)	1.211 ***	(0.034)
Other	1.346 ***	(0.067)	0.924	(0.101)	1.295 **	(0.120)	1.190 **	(0.068)
<u>Education Group (ref = < H.S.)</u>								
High School	1.027	(0.027)	1.486 ***	(0.106)	1.282 ***	(0.060)	2.531 ***	(0.150)
Some College	1.053	(0.028)	1.716 ***	(0.122)	1.385 ***	(0.067)	5.014 ***	(0.293)
Bach Degree+	0.766 ***	(0.022)	2.559 ***	(0.182)	1.358 ***	(0.072)	18.129 ***	(1.042)
<u>Age Group (ref = 18-25)</u>								
26-35	1.199 ***	(0.031)	1.416 ***	(0.094)	1.528 ***	(0.074)	1.559 ***	(0.051)
36-45	1.258 ***	(0.036)	1.363 ***	(0.098)	1.448 ***	(0.078)	1.611 ***	(0.057)
46-55	1.277 ***	(0.037)	1.348 ***	(0.099)	1.263 ***	(0.070)	1.505 ***	(0.053)
56-65	1.018	(0.031)	1.447 ***	(0.110)	0.617 ***	(0.035)	1.343 ***	(0.049)
<u>Marital Status (ref = married)</u>								
Divorced, separated, widowed	1.177 ***	(0.026)	0.944	(0.047)	1.424 ***	(0.066)	0.841 ***	(0.021)
Single	1.240 ***	(0.024)	0.772 ***	(0.036)	1.437 ***	(0.058)	0.864 ***	(0.018)
Female (0/1)	1.006	(0.014)	1.076 *	(0.035)	0.810 ***	(0.026)	1.283 ***	(0.019)
Household size	0.982 **	(0.007)	0.996	(0.017)	0.938 ***	(0.013)	0.862 ***	(0.007)
Number of children in household	1.023 *	(0.010)	0.983	(0.023)	1.046 *	(0.021)	1.111 ***	(0.013)
Experiencing COVID-19 shutdown (0/1)	1.085 ***	(0.020)	1.070	(0.052)	1.035	(0.043)	1.085 ***	(0.021)
State	Controlled		Controlled		Controlled		Controlled	
Observations	491,651		53,228		124,858		338,409	
Pseudo R-squared	0.055		0.036		0.064		0.182	

Note: Person weights applied. Odds ratios shown. Sig: * <.05 ** <.01 *** <.001

Table A6. Logistic regression of COVID-19 outcomes; less educated individuals and policy variables included

	Unable to work		Paid for hours not worked		Unable to look for work		Worked remotely	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Rural (ref = urban)	0.838 **	(0.045)	1.232	(0.153)	0.638 ***	(0.077)	0.462 ***	(0.049)
<u>Month (ref = May)</u>								
June	0.789 ***	(0.026)	0.889	(0.087)	0.732 ***	(0.054)	0.807 ***	(0.045)
July	0.606 ***	(0.023)	0.681 ***	(0.078)	0.627 ***	(0.051)	0.665 ***	(0.043)
August	0.412 ***	(0.017)	0.673 **	(0.084)	0.426 ***	(0.037)	0.524 ***	(0.037)
September	0.331 ***	(0.014)	0.597 ***	(0.079)	0.403 ***	(0.034)	0.504 ***	(0.035)
October	0.255 ***	(0.011)	0.705 **	(0.093)	0.330 ***	(0.029)	0.430 ***	(0.030)
November	0.244 ***	(0.010)	0.711 **	(0.092)	0.370 ***	(0.030)	0.438 ***	(0.028)
December	0.279 ***	(0.011)	0.835	(0.097)	0.431 ***	(0.034)	0.543 ***	(0.034)
<u>Rural-Month Interaction</u>								
Rural#June	0.964	(0.064)	1.052	(0.175)	0.945	(0.155)	1.001	(0.131)
Rural#July	0.717 ***	(0.058)	0.791	(0.195)	0.914	(0.169)	0.474 ***	(0.079)
Rural#August	0.896	(0.081)	1.244	(0.294)	1.214	(0.237)	0.903	(0.146)
Rural#September	0.884	(0.080)	1.246	(0.327)	0.805	(0.168)	0.835	(0.141)
Rural#October	0.844	(0.082)	1.251	(0.331)	1.080	(0.220)	0.900	(0.150)
Rural#November	0.760 **	(0.077)	1.128	(0.302)	0.667	(0.146)	1.090	(0.175)
Rural#December	0.727 **	(0.072)	0.757	(0.210)	0.977	(0.187)	0.729	(0.122)
<u>Racial Group (ref = White)</u>								
Black	1.401 ***	(0.052)	1.180	(0.107)	1.735 ***	(0.107)	0.737 ***	(0.048)
Hispanic	1.611 ***	(0.050)	0.954	(0.075)	1.677 ***	(0.098)	0.556 ***	(0.031)
Asian or Pacific Islander	2.079 ***	(0.108)	0.576 ***	(0.083)	1.547 ***	(0.141)	0.580 ***	(0.057)
Other	1.375 ***	(0.112)	0.741	(0.144)	1.296	(0.173)	1.065	(0.139)
<u>Education Group (ref = < H.S.)</u>								
High School	1.050	(0.029)	1.471 ***	(0.109)	1.300 ***	(0.062)	2.303 ***	(0.143)
<u>Age Group (ref = 18-25)</u>								
26-35	1.200 ***	(0.047)	1.423 ***	(0.150)	1.337 ***	(0.091)	2.006 ***	(0.153)
36-45	1.260 ***	(0.052)	1.428 **	(0.164)	1.230 **	(0.092)	1.886 ***	(0.151)
46-55	1.245 ***	(0.053)	1.387 **	(0.164)	1.060	(0.082)	1.940 ***	(0.156)
56-65	0.852 ***	(0.038)	1.749 ***	(0.209)	0.496 ***	(0.039)	1.748 ***	(0.142)
<u>Marital Status (ref = married)</u>								
Divorced, separated, widowed	1.137 ***	(0.039)	0.917	(0.080)	1.296 ***	(0.086)	0.802 ***	(0.043)
Single	1.113 ***	(0.034)	0.875	(0.070)	1.210 ***	(0.069)	0.747 ***	(0.037)
Female (0/1)	0.937 **	(0.022)	1.095	(0.063)	0.786 ***	(0.036)	2.213 ***	(0.082)
Household size	0.951 ***	(0.010)	1.006	(0.028)	0.947 **	(0.019)	0.938 ***	(0.017)
Number of children in household	1.054 ***	(0.016)	0.937	(0.036)	1.029	(0.029)	1.014	(0.027)
Experiencing COVID-19 shutdown (0/1)	1.106 **	(0.034)	1.046	(0.092)	0.985	(0.061)	1.020	(0.052)
State	Controlled		Controlled		Controlled		Controlled	
Observations	178,563		20,690		60,204		106,067	
Pseudo R-squared	0.064		0.031		0.068		0.078	

Note: Person weights applied. Odds ratios shown. Sig: * <.05 ** <.01 *** <.001