



Correlation and the Disproportionate Impact of COVID-19

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Eakinomics: Correlation and the Disproportionate Impact of COVID-19

COVID-19 has a disproportionately large impact on the health and economic well-being of minority populations. (See my [testimony](#) before the House Committee on Ways and Means.) This stylized fact has been apparent for a while and has spawned Groundhog-Day-like regular exchange between AAF's Tara O'Neill Hayes and me:

ME: I get it that there are higher rates of infection and death among minorities, but there is also higher poverty, poorer housing, worse locations, greater uninsurance, and a million other things. Are you sure that difference is being a racial minority, *per se*? Maybe if you controlled for these other things, the differences would go away?

TARA: *Loud, long sigh.* As I said to you 197 (which, by the way, is a prime number) times before, I don't know. We have not seen a study that does that yet.

Well Eakinomics fans, the waiting is over. Yesterday Tara flagged for us this [study](#) that finds income and insurance status do not explain the increased rate of death among African Americans.

Before I go further, a standard caveat applies. You should never, ever accept as definitive any single study; rather focus only on those facts that are present in a large body of peer-reviewed research. There, having done that, let us turn to this single working paper. ?

In the authors' words: "We correlate county-level COVID-19 death rates with key variables using both linear regression and negative binomial mixed models, although we focus on linear regression models. We include four sets of variables: socio-economic variables, county-level health variables, modes of commuting, and climate and pollution patterns. Our analysis studies daily death rates from April 4, 2020 to May 27, 2020. We estimate correlation patterns both across states, as well as within states."

A key finding is that "For both models, we find higher shares of African American residents in the county are correlated with higher death rates." In addition to not being explained by income and health insurance, there is also no correlation with air pollution or obesity rates. There is a correlation with diabetes rates in a county, but there is a large quantitative impact of using public transportation.

It is interesting to speculate as to what might be behind these correlations, so the authors do just exactly that: "We uncover two stylized facts. First, the mode of commute correlated with the highest death rates is public transit. Second, depending on which model we focus on, there is evidence that all modes of commutes, other than biking, are associated with higher death rates relative to telecommuting. A scenario that is consistent with

both of these stylized facts is that some of higher death rate associated with public transit use is coming from public transit itself. And, some is coming from the day-to-day interaction with others as part of the types of jobs those workers taking public transit do.”

The next steps are to replicate these findings using other data and techniques. But to the extent these stylized facts hold up, it suggests that an important part of operating the economy in the face of the coronavirus will be the physical layout of transportation and workplaces, something that policies can begin to address even now.