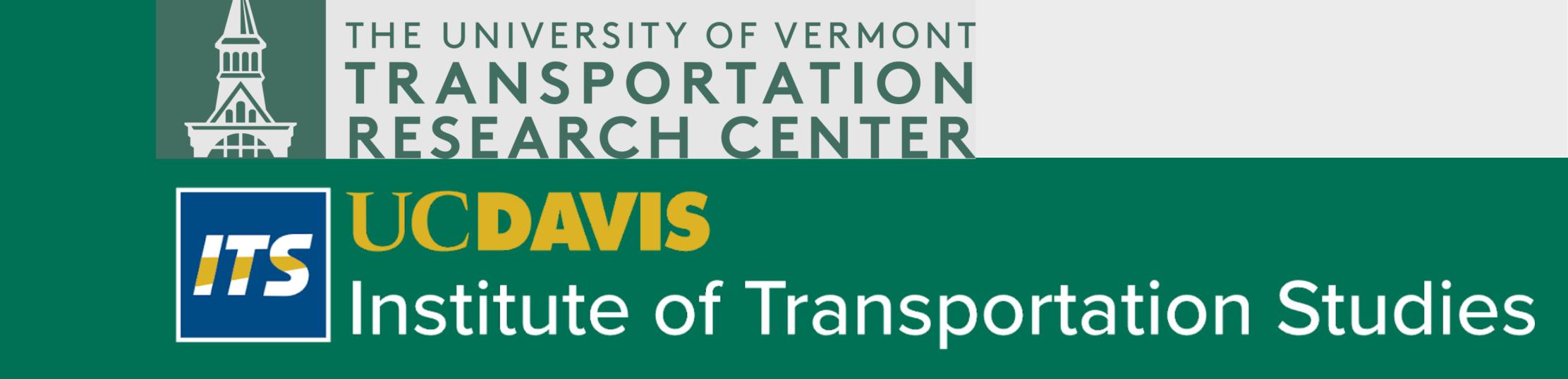
# Who Lacks Car Access and Where: Rural Disparities in Socioeconomic and Mobility Characteristics by Car Access in the US

Weijing Wang, Sierra Espeland, Jesus M. Barajas, Dana Rowangould

TRB Paper Number: TRBAM-23-03760



### Introduction



Approximately 4% (4.3 million) of rural residents do not have access to a household car.

### **Research Questions**

- 1. What are the scope and scale of rural car access in the U.S. and the associated factors of not having car access?
- 2. How do rural carless residents get around relative to their nonrural peers?
- 3. What are the consequences of not having car access in rural areas?

### Measures

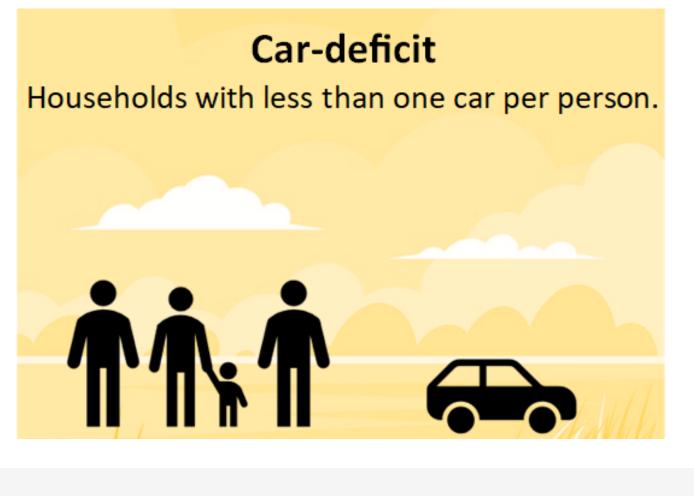
### Rural and Nonrural

- Public Use Microdata Areas (PUMAs) define rural and nonrural using spatially aggregated ACS data. It incorporates a sensitivity analysis, with a 20% rural population threshold that captures 90% of the rural population defined by the US Census.
- NHTS uses the US Census urban-rural definition.

### People and Mobility











Gender, age, race and ethnicity, language, citizenship, nationality, educational attainment, employment status and marital status.



Income, owner cost, rent cost, home ownership, single-parent household, presence of children, and presence of the elderly.



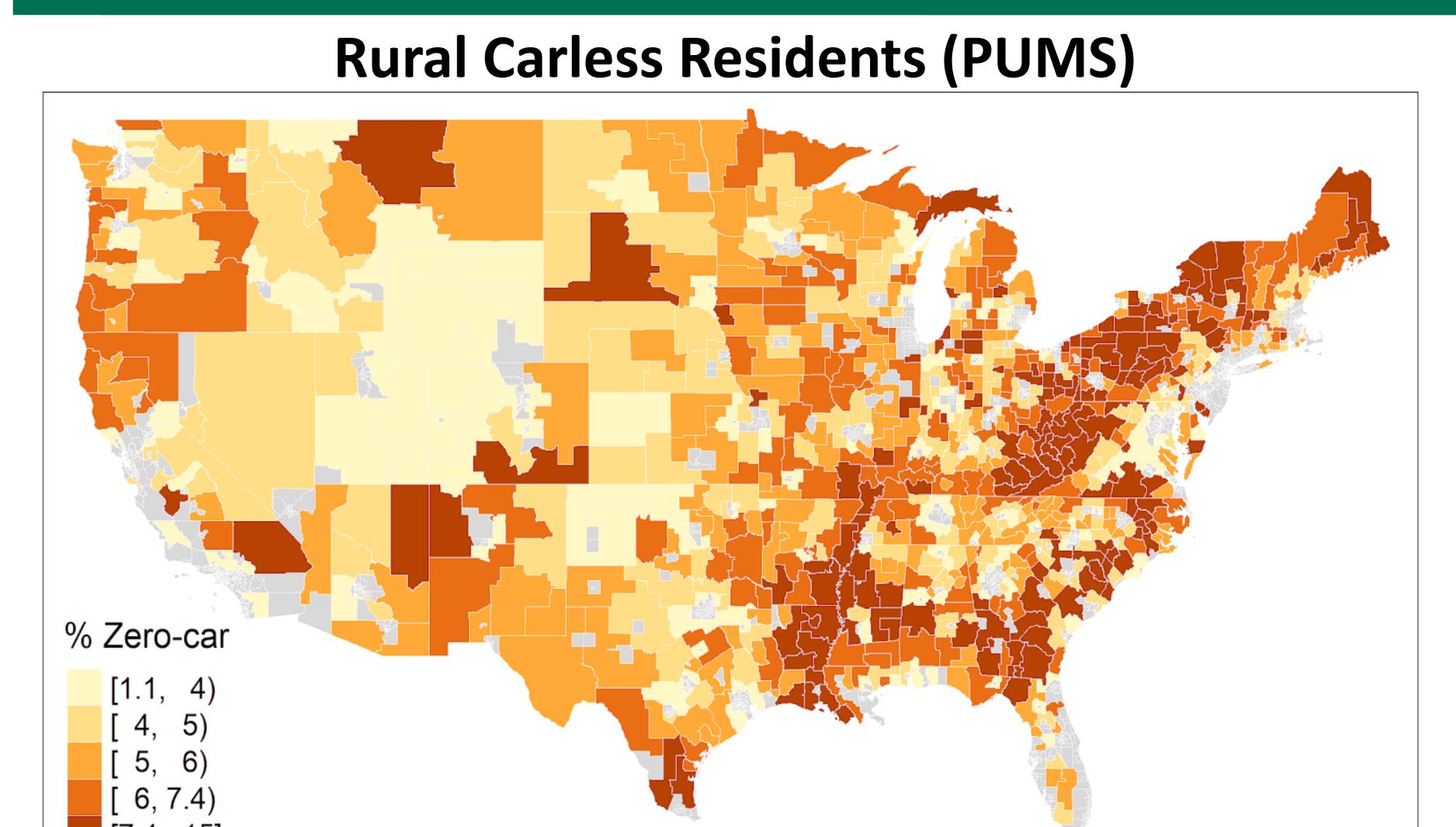
Self-reported financial burden, trip duration, and unmet travel need.

### Data



- PUMS: 2019 5—Year US Census Public Use Microdata Sample
- ACS: Spatially Aggregated 2019 ACS 5—Year Data
- NHTS: 2017 National Household Travel Survey

# Mapping Rural Car Access



Of the 22.2% of all rural residents that have limited car access, 4.3 million are carless.

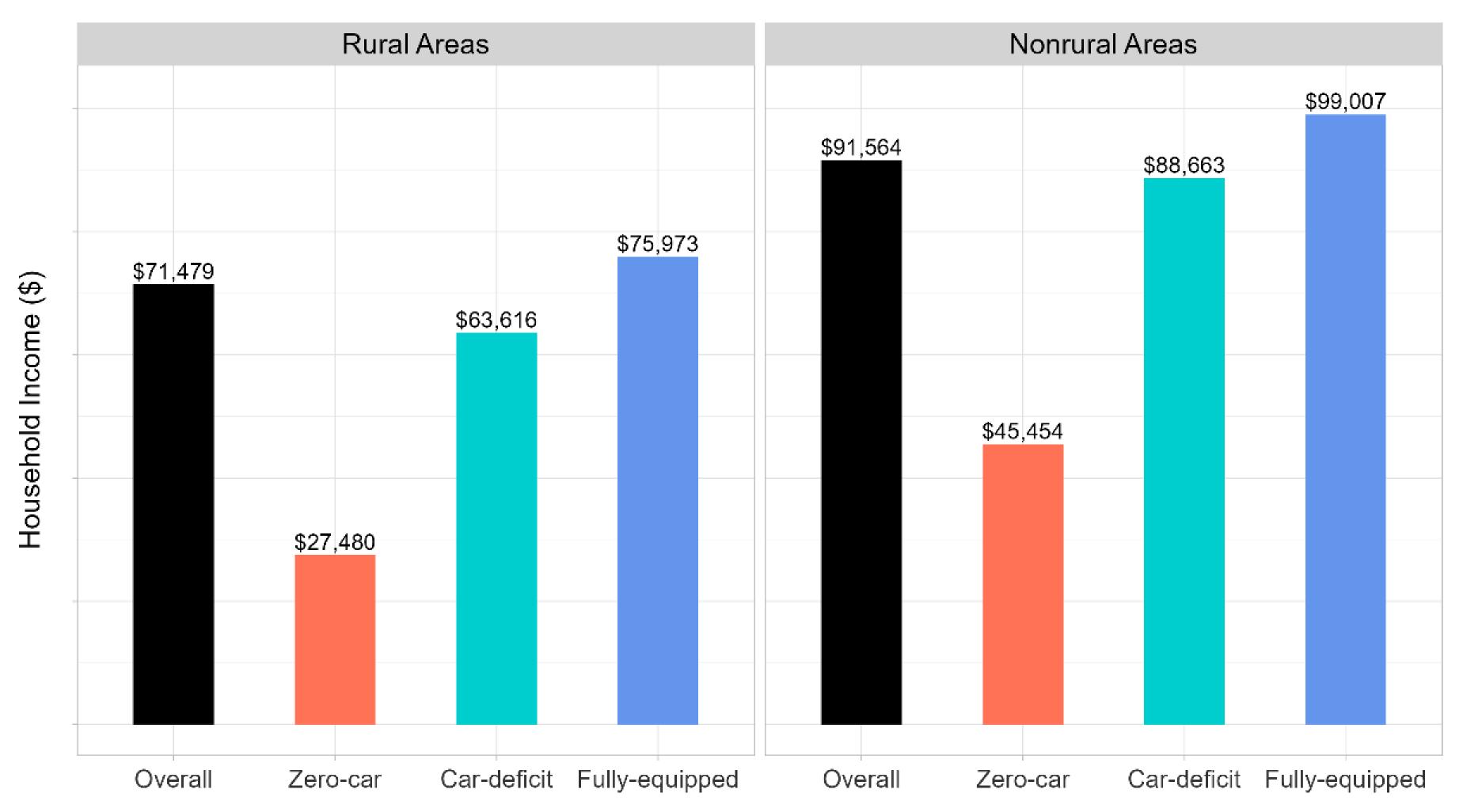
The Appalachian region, remote areas of the Northeast, portions of the coastal Southeast, the Mississippi Delta, southern Texas, and some Native American reservations and their surroundings have higher shares of carless households.

Approximately 19.3 million rural residents are car-deficit in the US. The Sunbelt area of the US, remote portions of the Northeast, central South Dakota, and parts of Northern California tend to have higher shares of car-deficit residents.

Rural Car-Deficit Residents (PUMS)

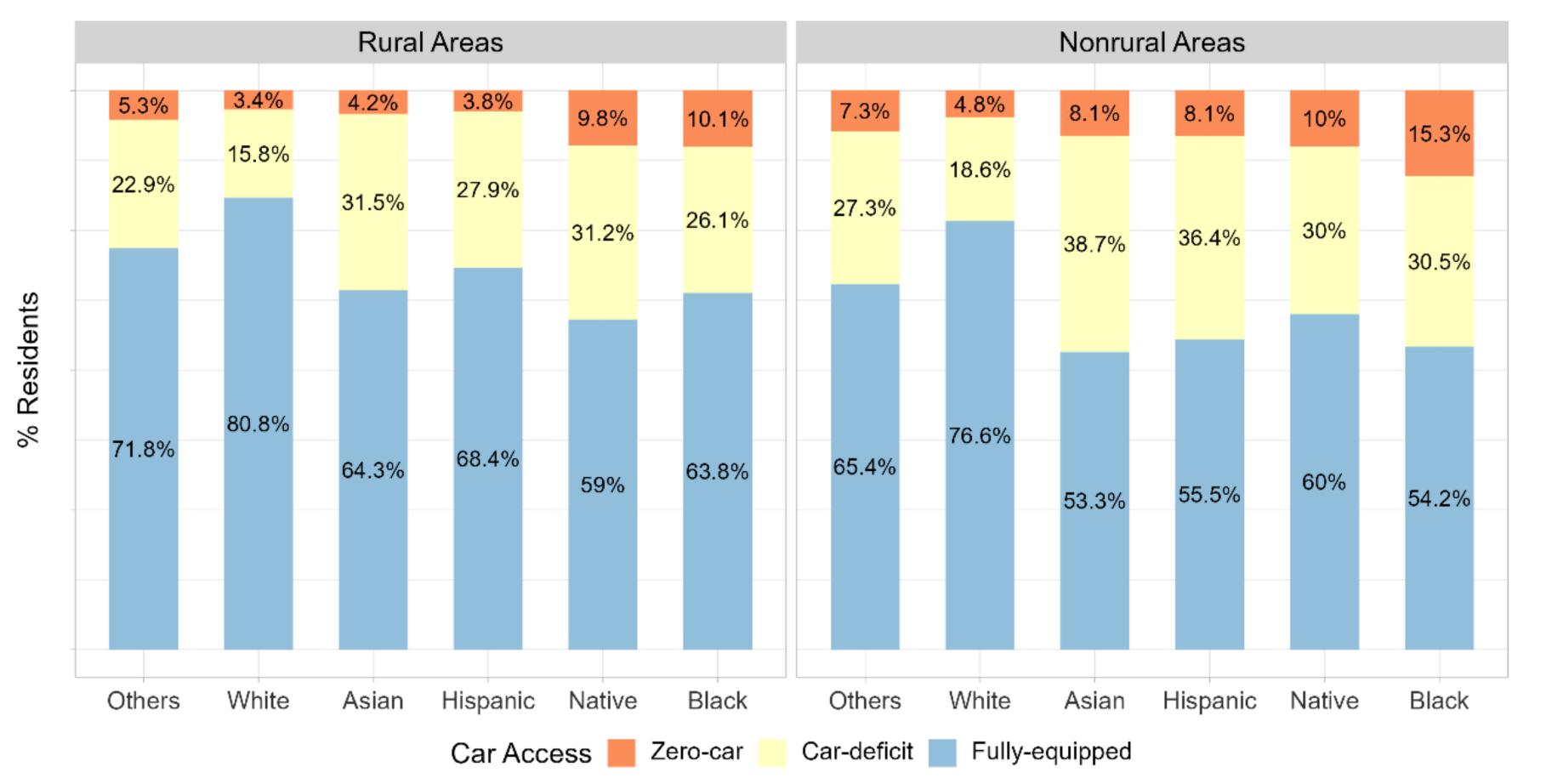
# Key Takeaways

### Differences in Household Income (PUMS)



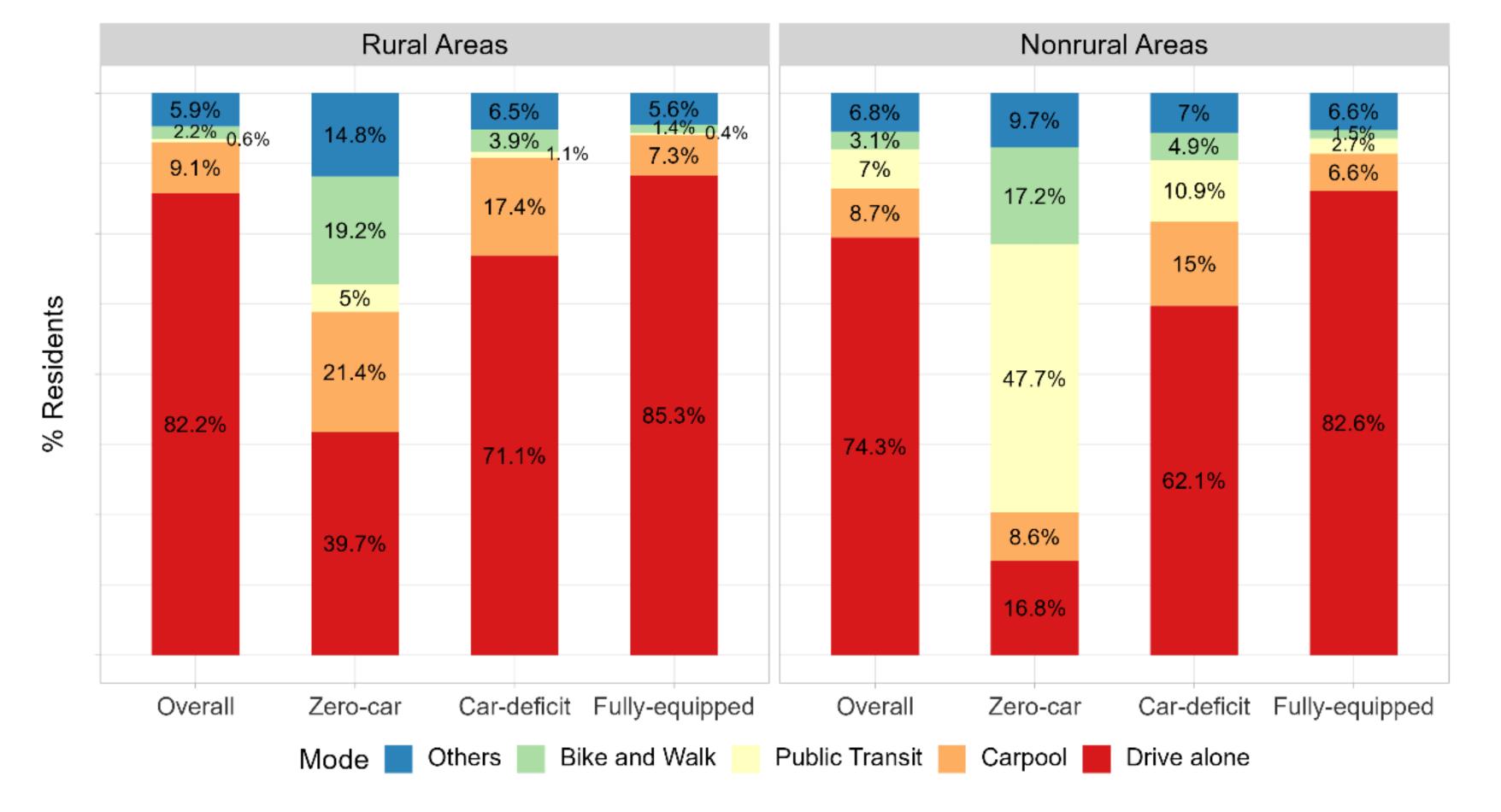
Rural car-less households earn 64% less than their rural car-fully equipped counterparts. Rural cardeficit households earn 16% less than their rural car-fully equipped counterparts. These rural disparities are also deeper than analogous disparities observed in nonrural areas.

### Differences in Race and Ethnicity (PUMS)



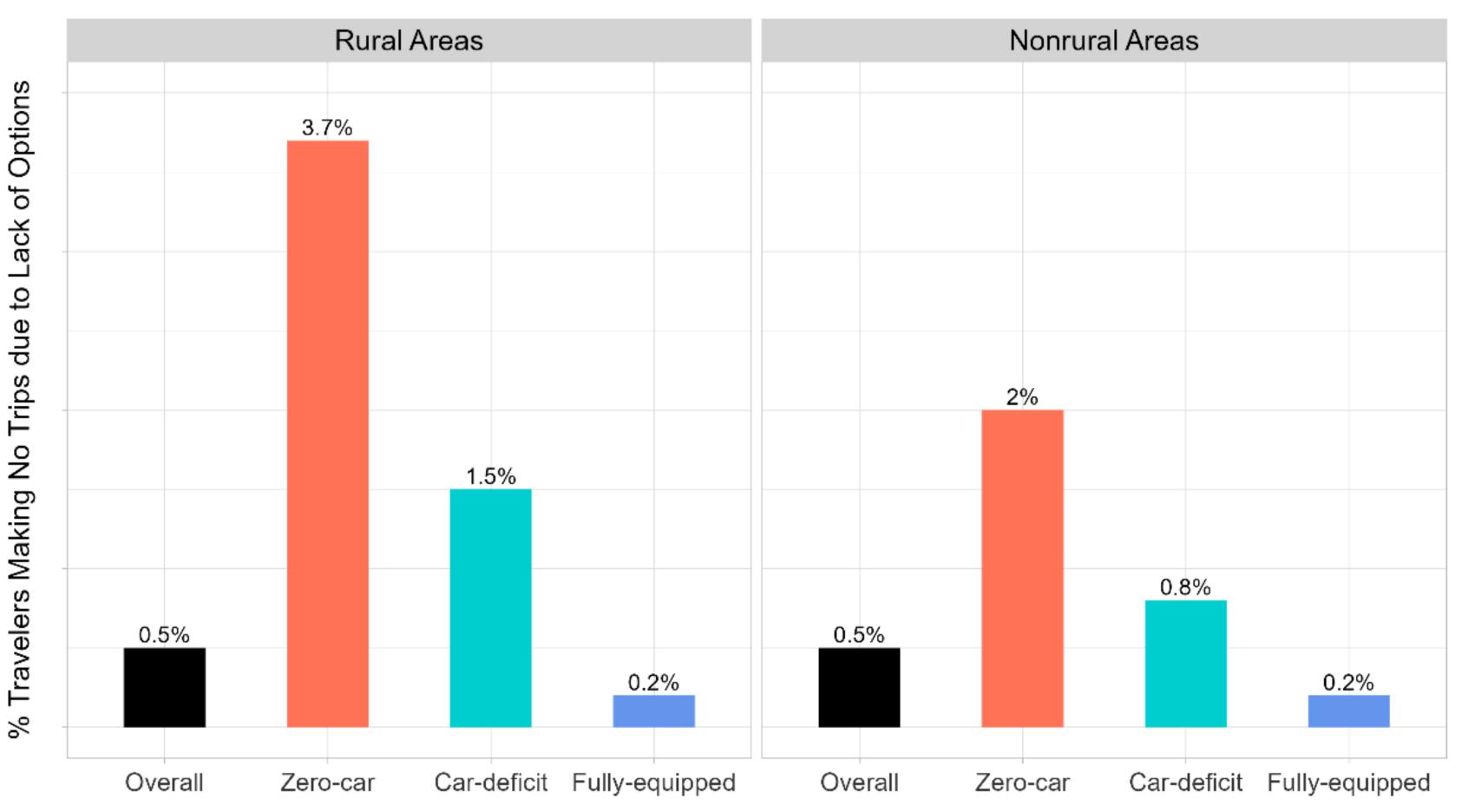
Rural Non-Hispanic Black and Native American travelers are 3 times as likely as rural White travelers to be carless. Rural Non-Hispanic Asian, Black, Native American and Hispanic travelers are all approximately 2 times as likely to be car -deficit than rural White travelers.

### Differences in Mode to Work (PUMS)



Despite not having car access, rural carless residents are 62.7% less likely than their nonrural peers, to bike, walk, or ride public transit. Similarly, rural car-deficit residents are 68.4% less likely than their nonrural peers, to bike, walk, or ride public transit.

### Differences in No Trips (No Options) (NHTS)



Rural carless travelers are 18.5 times as likely to not travel due to lack of transportation options than rural carfully equipped travelers. Rural car-deficit travelers are 7.5 times as likely.

# Acknowledgements

The authors would like to acknowledge the sponsors in supporting this study: the California Department of Transportation (Caltrans), the National Center for Sustainable Transportation (NCST) at University of California Davis (UCD) and The University of Vermont (UVM), the U.S. Department of Transportation's University Transportation Centers Program, and the US DOT Dwight D. Eisenhower Transportation Fellowship Program.





