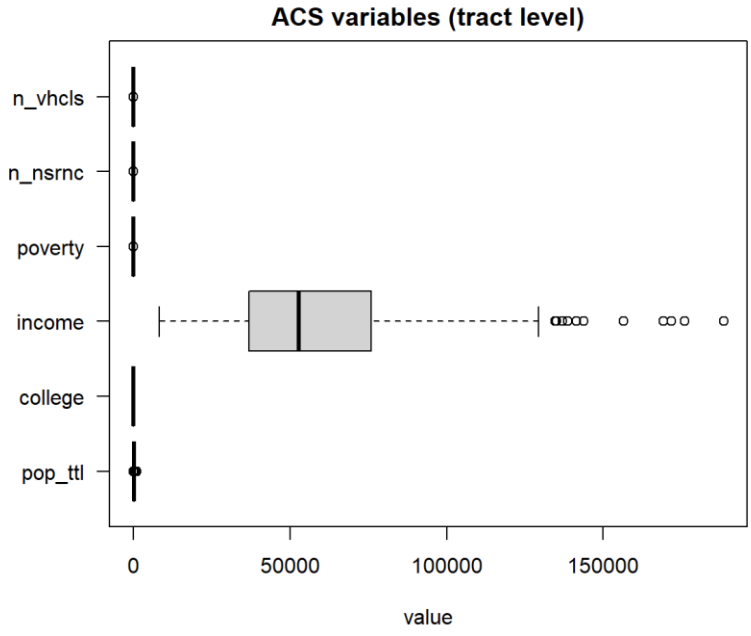
TO: Professor - Huyen Le
FROM: Omar Ali
DATE: 9/26/25

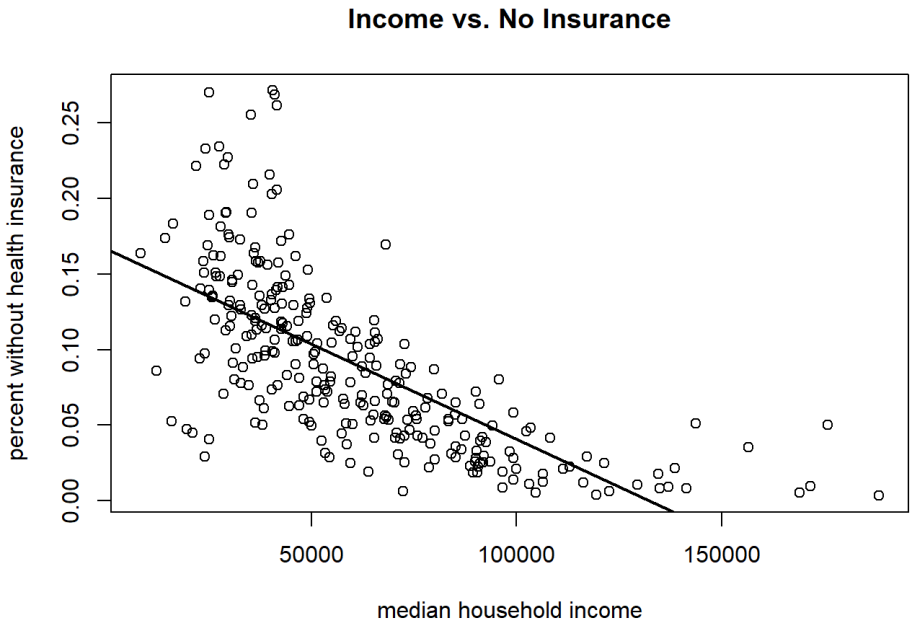
SUBJECT: Franklin County – ACS Summary, Plots, and Maps

In this report I use ACS tract data and TIGER roads for Franklin County. I imported both layers as sf, verified fields with names() and head(), and summarized tract attributes after dropping geometry with st_drop_geometry().

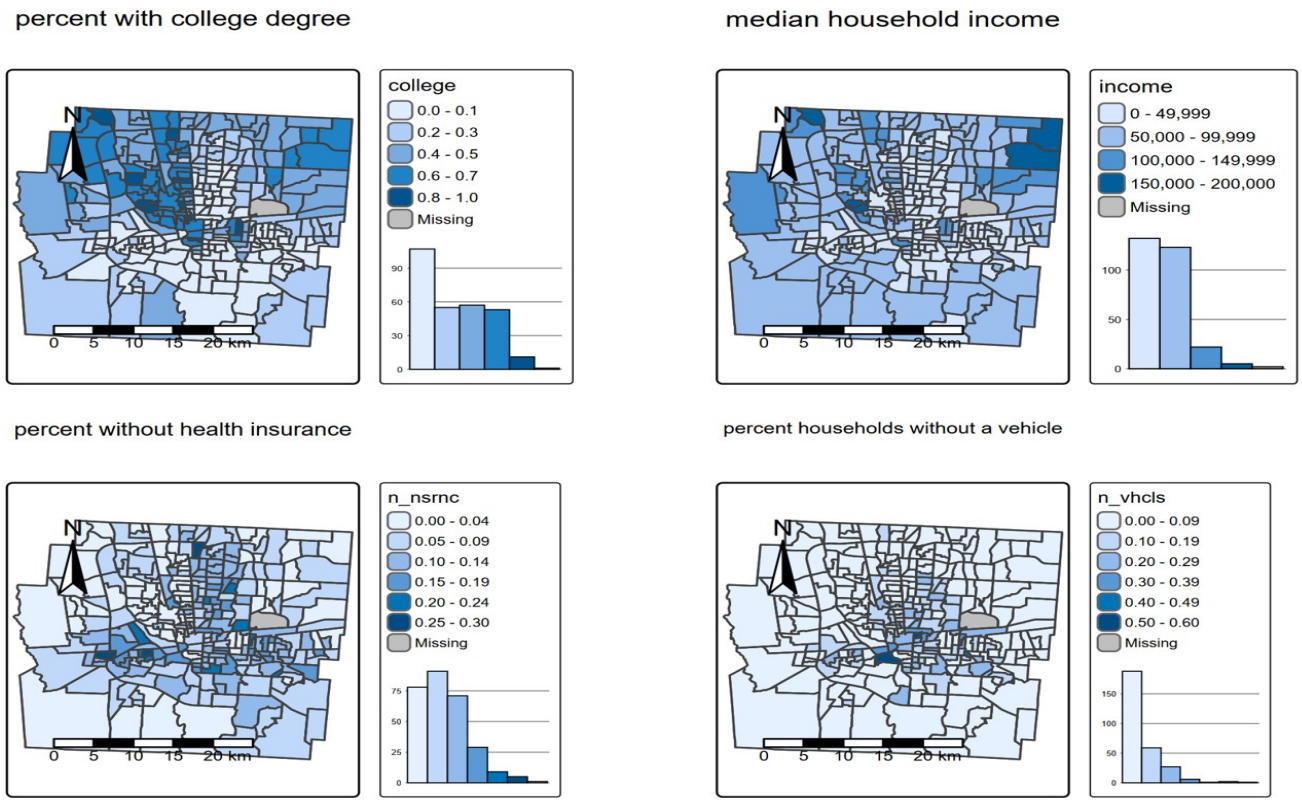
I reported mean, median, min, and max for six variables: total population (pop_ttl), percent with a college degree (college), median household income (income), poverty rate (poverty), percent without health insurance (n_nsrnc), and percent of households without a vehicle (n_vhcls). The four rate variables are proportions. Income is right skewed, the proportion variables sit mid-range with some high-low tracts.

The boxplots (one panel) show the widest spread for income and tighter IQRs for the rate variables, with a few outliers. The income vs. uninsured scatter has a clear downward trend; the fitted line from lm() slopes down.

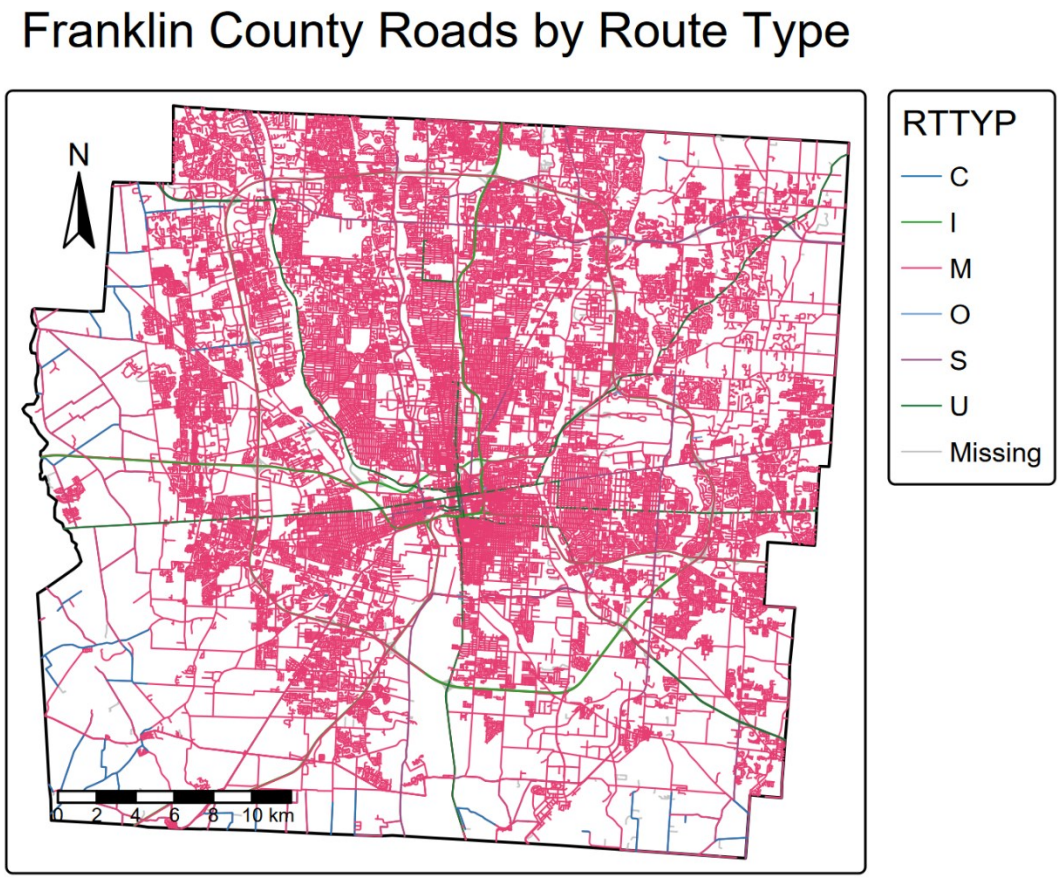




I made a 2 x 2 panel for college %, income, % without insurance, and % without a vehicle. Each map includes a legend histogram, north arrow, and scale bar. Higher income-college tracts cluster together, higher uninsured/no vehicle tracts cluster in other areas.



I created a county border with st_union(acs) and mapped roads colored by RTTYP, with a north arrow and scale bar. The map highlights major routes and local roads across the county.



Higher income tracts tend to have lower uninsured rates, and the maps show where these differences cluster within Franklin County.