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MATH 120 - Final Project Proposal

Considering the United States exists within a hierarchical system involving differences in class and status, my final project will focus on upward mobility. This idea stems from the Urban Institute project where they define the things needed for upward mobility as economic success, power, autonomy, dignity, and belonging. To help identify which states in the U.S. need these necessities, we can explore provided mobility metrics in order to address the longitudinal trends over time. Specifically, I want to use these metrics to learn how the affordable housing supply has changed from years prior to 2023 by state and if these shortages are growing over time. Looking at this will help us understand which states may have a decreasing trend and need a focus on expanding affordable housing resources. Moreover, I would also like to explore which top 5 states have more affordable housing shortages and also have higher poverty exposure over time. Using linear regression, I could build off this idea to determine whether there is an association between states with more affordable housing shortages and higher poverty exposure.

To answer these research questions, I plan on importing the overall county-level mobility metrics CSV files from the Urban Data Catalog and removing missing values. The variables I will be selecting are ones involving affordable housing supply, share of poverty exposure, and share of homeless public-school children. I've explored these variables so far by making longitudinal graphs using state-level averages to see their change over time. Based on the graphs I've created so far, I plan on interpreting my results to inform policy recommendations at the identified top 5 states to expand affordable housing resources and address student homelessness.

The challenge I've been facing has been the file being too large to upload to GitHub. To combat this challenge, I have deleted 4 columns that had a majority of NA values that I will not

be using for analysis. This has made the file much smaller to upload in the clean data folder on

GitHub. Before completing the final draft, I plan on creating a linear regression model to see the

strength in association between housing shortages to poverty exposure. I also plan on writing

more full interpretations for the plots I have made and draw implications that can be made to

inform public policy.