Changes in Temperature Mobility Response Patterns in the San Francisco Bay Area

Historic studies exploring the response of human mobility in response to temperature across the United States are often completed under the assumption of relatively stable social and policy environment. However, the behavioral changes associated with shifting shelter-in-place policies have had an impact on the response to extreme heat in the San Francisco Bay Area. To explore this relationship, we created a highly resolved mobility metric utilizing Safegraph’s Neighborhood Patterns data, and combined the results with gridMET temperature data and demographic data from the US census. We then used a binned fixed effects regression model to characterize the mobility response to temperatures across the San Francisco Bay Area. We find that when compared to the two years prior, in addition to overall lowered movement throughout 2020, extremely hot temperatures resulted in a reduction of mobility between census block groups, where prior years would see a relative increase. These results point to the role public indoor spaces have in heat mitigation and adaptation that allows for continued activities in extreme temperatures.