Public Transportation, Transportation Network Companies (TNC) and Active Modes

This project will cover three key questions regarding Public Transit, Transportation Network Companies (TNC) and Active Modes.

WHAT IS THE NEED?

Over the last few years, transit ridership has fallen drastically in Southern California whereas Transportation Network Companies (TNC) have been expanding tremendously. The decline of transit and the rise of TNCs have a number of adverse consequences, including increases in congestion in urban areas, additional air pollution, and a reduction in the physical activity of people who would otherwise walk/bike to access transit.

WHAT ARE WE DOING?

This project will cover three key questions related to Transit, TNC, and Active Mode based on the 2009 and 2017 National Highway Traffic Safety (NHTS) data:

1. **To what extent have TNCs displaced transit users in California?** The research team will find out the difference between the travel behavior of two transit user groups under the availability/non-availability of TNC services. They will use the Propensity Score Matching Technique to match the user groups based on socio-economic and land use variables.

2. **To what extent does public transportation contribute to active modes in California?** Transit is partly an active mode because the first and last mile of transit trips includes walking/biking. This dimension of transit has not been yet explored in the context of California. Through a cross-nested logit (CNL) model, the researchers will evaluate this nature of public transportation where transit will be a part of both active and non-active nests.
3. How can we promote Public Transit? The researchers will analyze transit perception questions in the 2017 NHTS.

WHAT IS OUR GOAL?

The results will shed some light on the impact of TNCs on transit, the contribution of transit to active modes in California, and what could be done to stem the decline of transit ridership in California. Results from this project will help the California Department of Transportation (Caltrans’) Transportation Planning Division in its articulation of a long-term vision for California’s transportation system and Caltrans’ sustainability efforts by promoting transit, along with walking and biking.

WHAT IS THE BENEFIT?

Results from this project will help Caltrans’ Transportation Planning Division in its articulation of a long-term vision for California’s transportation system and Caltrans’ sustainability efforts by promoting transit, along with walking and biking.

WHAT IS THE PROGRESS TO DATE?

1. The research finalized the analysis explaining the extent to which Transportation Network Companies have displaced transit users in California.
2. The researchers are still finalizing a paper summarizing the analyses and results. This will be deliverable 1A.
3. For Task 2, the researchers finished reviewing the literature and have been estimating cross-nested logit models with different modes.
4. The researchers are close to finalizing a questionnaire for the survey of the impacts of the Covid-19 crisis on the use of transit and Transportation Network Companies in California. Our questions have been informed by similar surveys conducted in the United States, Europe, and Australia.