

Ling Jin, Lawrence Berkeley National Laboratory

Title: Life course as a contextual system to investigate the effects of life events, gender and generation on travel mode usage

Abstract: Transitions between life events, such as attending school, getting employed, and having a child, can disrupt habitual travel behavior and shift choices between alternative transportation modes. This mode use change, however, may depend on dynamically changing constraints and opportunities within individual travelers' life contexts, and may vary across gender and generations. Past studies have used life-cycle stages to categorize travelers in order to contextualize these types of travel decisions. However, these life-cycle stages have generally been treated statically and independently, without considering the dynamics present in the longer life history. This paper uses different types of life course patterns and trajectories as an alternative contextual system to investigate (1) the effects of life events on travel mode usage and (2) the differentiation between gender and generation groups in these life event effects. We generate distinct life-course trajectory archetypal patterns to define five cohorts of people. We do this by applying a machine learning approach called joint social sequence clustering based on the patterns and timing of events in the family and career dimensions of respondents to the life history calendar portion of the WholeTraveler Transportation Behavior study survey conducted in the San Francisco Bay Area. We then investigate the impacts on regularly chosen travel modes (driving, public transportation, and walking or biking) of the following life events: attending school, getting employed, and having a child. We investigate how these impacts differ across the five different life history context cohorts defined using the sequence clustering analysis, and further disaggregate these impacts by gender and generation to understand how the prevalence of different life course trajectories change based on these factors, and how travel choices are impacted by these differences. While the effects we find associated with these life events are mostly similar to previous literature, especially for school and employment status, we observe significant differences in the effect of having a child in the home on personal car use across travelers with different family forming histories. Additionally, significant gender and generational differences are associated with the effects of life events on mode when the life events are situated within these five different life course contexts.