Research

- **Long Term Impacts of COVID 19 on Travel Behavior**
- **Examining the Persistence of Telecommuting After the COVID-19 Pandemic**

Long Term Impacts of COVID 19 on Travel Behavior

- Long term impacts of COVID 19 on travel behavior research objectives:
  - Gather information about what data sources transportation planners have used and are using to track changes in travel before and during the Pandemic;
  - Determine what the data gaps and insufficiencies may be; and
  - Identify future data and analysis needs for advancing transportation planning efforts as the Pandemic wanes.

Data Sources

- Census Pulse - https://www.census.gov/data/experimental-data-products/household-pulse-survey.html
- IPUMS
- Household Travel Surveys
- Local Transit surveys
- ACS
- ACS PUMS
- NHTS
- CTPP (ACTS)
- LBS

Data (and Knowledge) Gaps

- Planners are being asked for significantly more sensitivity analyses on previous (pre-pandemic) projects
  - Concern that the pandemic has permanently invalidated previous forecasts
- Data to forecast telecommuting/WFH by both employment category and frequency
- Need to make better known BLS products aside from QCEW and CES
  - ATUS
  - CPS
  - JOLTS
- More, more frequent household travel surveys

Examining the Persistence of Telecommuting After the COVID-19 Pandemic

Examining the Persistence of Telecommuting After the COVID-19 Pandemic

- Presented by Kouros Mohammadian in the “Telecommuting in a World of Uncertainty” session at the Census Data for Transportation technical conference
- Three wave panel survey collected
  - Demographic and socioeconomic characteristics such as age, gender, race/ethnicity, annual household income, job category, location of residence, household structure, and vehicle availability.
  - Activity and travel behavior information, such as individuals’ commuting and telecommuting practices and future expectations, online and in-person shopping habits.
  - Health related information, such as whether respondents or respondent household members were infected with COVID-19, whether they were vaccinated, and whether they intend to be vaccinated.
  - Major life events

Teleworking

- Pre-survey/Pandemic ~70% did not have telecommute option
- During - ~70% were able to telecommute
- Post – it is expected that telecommuting will be reduced, but not to pre-pandemic levels
- Regarding choice (give up office – work from home):
  - 53% would “not mind”
  - 24% would like to sometimes go in
  - 23% would prefer an office

Using the survey data from 23 MSAs, the researchers developed a panel Generalized Structural Equations Model to capture how telecommuting frequency changes over time from wave to wave, as well as into the future. The model sought to capture both the effects of direct explanatory variables like worker characteristics and job characteristics as well as latent constructs of attitudinal data related to work productivity and perceptions of risk that (as noted above) shift from wave to wave. The model tries to capture the interactions between latent variables and direct explanatory variables to more accurately reflect attitudes in the forecasts.

To demonstrate the forecasting application of the finalized model, the researchers applied the model on the Phoenix metropolitan area PUMS records (representing 2.3 million workers). Phoenix was chosen because almost 400 survey observations were from the Phoenix area. Although the development of the Generalized Structural Equations Model was quite complex, its application for forecasting is a relatively simple binary choice model that predicts for each PUMS worker record the probability of teleworking. Based on the model results, 53 percent of workers in the Phoenix area have more than a 50 percent chance of teleworking. This result is quite consistent with the survey results indicating that about 55 percent of Phoenix workers were telecommuting.

Thoughts

- Behavior is **very** locale specific
- Work From Home trends are clashing with recession impacts and giving employers leverage
- But… (WS DOT)
- The five day office week may never return
- You need household travel surveys more than ever
- Quick online surveys yield good info
- Census data sources are always key elements in weighting such data collection efforts.