Understanding Telemobility Behavior Under COVID-19

Grantee: Northwestern University

Center Name: Tier I University Transportation Center on Telemobility

Research Priority: Improving Mobility of People and Goods

Research Project Funding: $400,000

Project End Date: March 31, 2022

Project Description: COVID-19 has abruptly upended normal travel, retail and work routines, causing an acceleration of trends that were already underway involving a shift towards virtual environments. The goal of the behavior research team is to understand, both qualitatively and quantitatively, the complex tele-adoption behaviors taking shape during the pandemic era. We focus our analysis on telework and e-commerce engagement with grocery and food delivery, and examine three main research themes:

1. Behavior modeling of telework/e-commerce adoption levels, experiences and future intentions. We specifically examine the socio-demographics, satisfaction, values, and life-style variables that shape the adoption experience, and future intentions.

2. Analysis of adoption across multiple engagement layers, i.e. monetary expenditure, time-use, physical travel/virtual access, and parcel delivery activity. We specifically highlight the importance of hybrid forms of engagement, namely where respondents use mixed forms of shopping (virtual and physical store visits, new pick-up options) or mixed strategies for work (alternating between office and in-home), and explain motivations, satisfaction and outcomes.

3. Analysis of adoption pattern evolution, seeking to explain changes in e-commerce/work strategies over time. Specifically we examine notching up and gateway behavior: that is if experienced segments act differently than novice users, and if specific e-commerce or work experience lead to accelerated or persistent willingness to use telemobility.

Throughout this research we highlight the importance of dynamic behavior and learning, complex substitution or complementarity between physical and telemobility, and nuanced differences determined by respondents work-situation and family status.

Outputs: The team designed, developed, tested and implemented a longitudinal behavioral tracker survey that was administered to a nationally representative sample of 450 respondents using prolific’s online platform. The goal of the tracker survey is to analyze travel, e-commerce, and working-from-home behaviors, study variation among population segments, and examine how preferences and behaviors evolve over time. The study was completed in March 2021 following 6 waves spaced every two weeks, covering 12 weeks in total. Figure 1 shows an overview of the tracker question design wave by wave, with a block of core e-commerce and telework questions tracked continuously, and several blocks of questions covering home investments, time-use, attitudes, experiences, and future intentions, aimed at deepening our understanding of the engagement and adoption of tele-activities in the COVID-19 era. Informed by a rigorous implementation strategy, we reached the sampling goal of 300 respondents completing all 6 which will serve as the basis to address the research questions outlined in the project description.

Outcomes/Impacts: The main deliverable of the team is the design, development, field-testing and dissemination of six cycles of the behavioral tracker survey to a representative U.S. sample focusing on the adoption, experience and outlook for both telework and e-commerce behaviors. Results from this detailed survey allows us to carefully model the impact of quantitative and qualitative (e.g. well-being) on telemobility behaviors and outlook. We will also control for moderating factors of age, essential work status, race and ethnicity, and family status, and thereby our modeling can help design evidence-based roadmaps for future telework and e-commerce policies that are
behaviorally valid, and sensitive to disparate COVID-19 impacts and experiences. Furthermore, zip-codes were collected to enable further analysis of current COVID burden, restrictive measures, and other demographic and land-use factors.

Figure 1. Six-wave Telemobility Behavior tracker study (n=450): overview of question type and frequency