

UTC Spotlight

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Attitudes Towards the Future of Transportation

The Center for *Teaching Old Models New Tricks* (TOMNET), is a Tier 1 University Transportation Center (UTC) at Arizona State University (ASU). Aptly named, it is researching behaviors that affect mobility choices: how do people choose to get around; how many and what types of vehicles do they own; when do they travel and to where are just some of the key patterns they study. TOMNET is developing and implementing new models that can accurately forecast future travel demand in the face of such “new tricks” as transformational technologies. Around the country, metropolitan planning organizations (MPOs) and other planning agencies are grappling with facing radically different transportation options in the future.

How can agencies plan wisely when drawing up long range transportation plans? What should they assume about transportation behaviors of how people adopt and adapt (or resist) to new and emerging transportation technologies? TOMNET is striving to provide agencies with the behavioral data that will better inform their plans.

As one of its signature projects, TOMNET researchers are conducting a large-scale four-city survey-based research study to understand the public’s preferences and choices in mobility options and technologies. The survey will collect data about people’s mobility patterns, as well as attitudes towards options such as ride-hailing services and autonomous vehicles. TOMNET consortium members, which include Georgia Tech, University of Washington, and University of South Florida, as well as a UTC, the Data-Supported Transportation Operations and Planning Center (D-STOP), led by the University of Texas at Austin, are collaborating with ASU to collect data from about 5,000 randomly sampled residents in Phoenix, Tampa, Austin, and Atlanta.

The four city survey is unique in asking a large number of attitudinal questions to understand the perceptions and preferences affecting travelers’ behaviors. A few

key highlights of findings from the Greater Phoenix metropolitan area survey sample are described below.

The survey helped reveal a number of attitudes and preferences. In the Phoenix sample, 37 percent of respondents indicate that they are committed to using less polluting means of transportation. Just about one-half of the respondents like to be among the first to acquire and use the latest technology on the market. These individuals are likely to be early adopters of automated vehicles.

Having internet connectivity at all times is important to nearly 70 percent of survey respondents. Eighty percent of the respondents indicate that they try to make good use of the time spent traveling, suggesting that there is a fairly large appetite for automated or shared travel that facilitates multitasking while traveling. Giving up personal car ownership may be a difficult transition, however: 77 percent of the respondents indicate that they like the idea of owning their personal car.

The TOMNET team has also discovered a *generational divide* in the extent to which people are willing to embrace emerging transportation technologies such as autonomous or automated vehicles (AV).

Respondents were asked to indicate the degree to which they agree or disagree with the statement: “I will never ride in an AV.” Figure 2 presents a summary of the results, depicting patterns of potential AV adoption for different age groups. Among those 18-35 years of age and 36-49 years of age, the percentages of individuals indicating various degrees of agreement with this statement are quite similar. For both of these age groups, about 18 percent agree with the statement while just over 58 percent disagree with the statement. However, there is a clear generational split at the 50-year age threshold. Among those 50-64 years of age, nearly one-quarter of the sample (24.1 percent) agreed with the statement that they would never ride an AV, while

Figure 1. Adoption of Ride-hailing Service by Attitude Towards Use of Less Polluting Means of Transportation

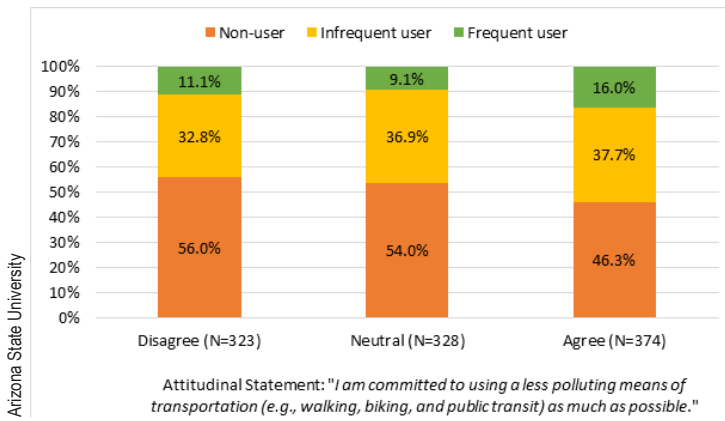
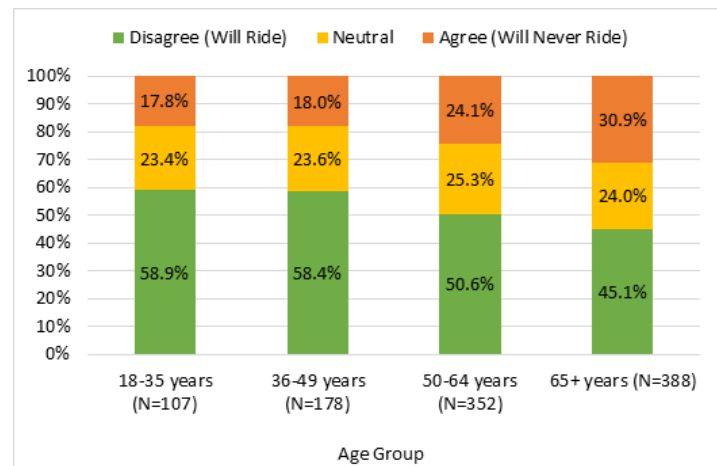


Figure 2. Agreement with Statement "I Will Never Ride in an AV" by Age Group



just over one-half of the sample (50.6 percent) disagreed with the statement. Among those 65 years or older, 31.1 percent indicate that they agree with the statement that they would never ride in an AV and only 45 percent indicate that they disagree with the statement.

Overall, considering the sample as a whole (all age groups), it is found that just about one-half of the sample (50.7 percent) disagree with the statement that they would never ride in an AV – suggesting that they are likely to be inclined to ride in an AV when the opportunity arises. The other one-half of the sample is about equally split between agreeing with the statement that they would never ride in an AV and being neutral towards the statement (i.e., one-quarter of the sample remains unsure of their willingness to ride in an AV).

The TOMNET survey explicitly recognizes that individual attitudes, and not just socioeconomic characteristics, affect how people will use and adopt new transportation technologies. The TOMNET multi-city survey collects general lifestyle as well as transportation-related attitudes for large samples in multiple jurisdictions. Combined with detailed data on individuals' perceptions and use of ride-hailing services and autonomous vehicles, the study will help planning for transportation demand and for long-range needs.

About This Project

TOMNET and D-STOP researchers are collecting data to explore how people will use and adopt emerging transportation technologies with a view to helping cities and regions chart a smart and resilient future. The transformative technologies in transportation (T3) survey described in this article is one of the largest and most comprehensive surveys about user attitudes towards and perceptions of new transportation technologies and services. The project involved a collaborative undertaking that brought together eight different principal investigators and an equal number of graduate students across four institutions. For more details about the study and to access early results, please contact TOMNET Assistant Director, Dr. Sara Khoeini, at skhoeini@asu.edu.

This newsletter highlights some recent accomplishments and products from one University Transportation Center. The views presented are those of the authors and not necessarily the views of the Office of the Assistant Secretary for Research and Technology or the U.S. Department of Transportation.

