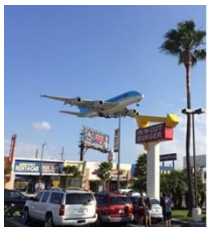

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ANALYSIS BRIEF

Can We Use the NHTS to Estimate Long-Distance Travel?

Transportation planners and forecasters are searching for data on long-distance travel in the United States—the last national survey was conducted as part of the 2001 NHTS, and the last survey to provide estimates at the state-level was the 1995 American Travel Survey. So much have changed since then that planners hesitate to use those data to represent current (or future) long-distance travel. To fill this critical data gap, some analysts wonder whether the National Household Travel Survey coud be used to esitmate long-distance travel in the U.S.

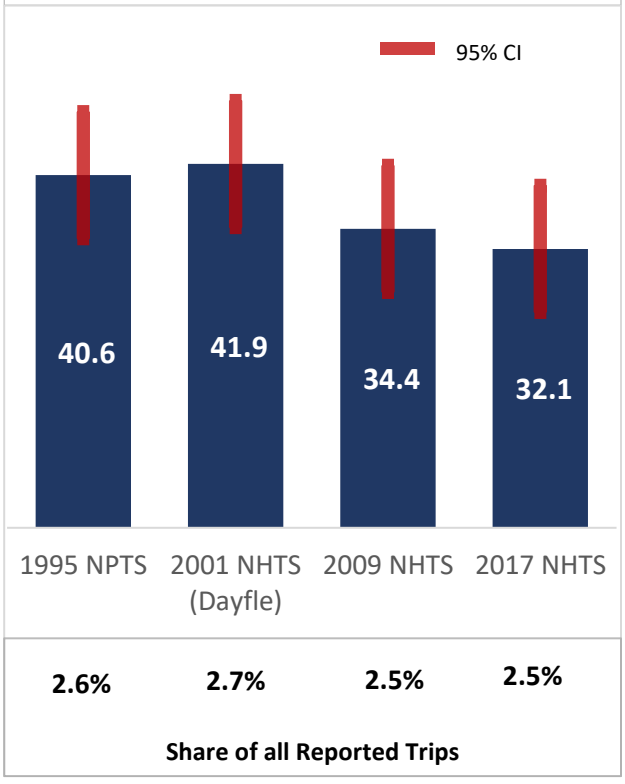
The NHTS collects travel data from a large sample (over a quarter million people) who report on a single assigned 'travel day'. As a result, multi-day journeys are not represented at all. For example, if a survey respondent drove from New York to Chicago, but stopped in Cleaveland overnight, they would report a single day of travel of their two-day trip on their travel day. The whole trip could not be reported given the NHTS survey protocols.

But even with that limitation, there are many long trips (those of 50 miles or more) reported in the NHTS. In 2009, respondents reported over 25,000 unweighted trips of 50 miles or longer, and in 2017 they reported 23,420 unweighted trips. This brief presents a quick analysis of the longer trips reported in the NHTS data series.

There is generally more travel as the population grows. In addition, long-distance travel can grow if the trips per person increase. Figure 1 shows the weighted per capita estimate and the proportion of all reported trips that are 50 miles or more in length (by people aged 18 and older). The 2001 NHTS had a long-distance component with a 28-day recall period, but this analysis focuses on the just those trips reported on the travel day to be comparable to the other survey years.

Throughout the years shown in Figure 1, trips of 50 miles or more in length represented about 2.5 percent of all trips reported by people 18 and older. The per capita trip rates are statistically the same, since the confidence intervals overlap (the red bars represent the 95 percent confidence intervals).

Figure 1 – Annual Per Capita Trips and Share of All Trips that are 50 Miles or More in Length, People 18 and older, with 95% Confidence Intervals



In addition to changes in per capita trip-making, long-distance travel can change because people make longer or shorter trips than previously. Again, the data from the NHTS is inconclusive, as shown in Figure 2. While the average trip length in 2017 was nominally higher, the small sample size contributes to large margins of error. Since the error bars overlap, the estimates across the years cannot be said to be statistically different. Note that the 2017 NHTS collected information on the trip distance via a google-map type interface compared to self-reported distance in previous surveys. While offering a more consistent trip distance estimate, the change in methods would impact the trends shown here[1].

Figure 2 – Mean Trip Length of Trips that are 50 Miles or More in Length, People 18 and older, with 95% Confidence Intervals

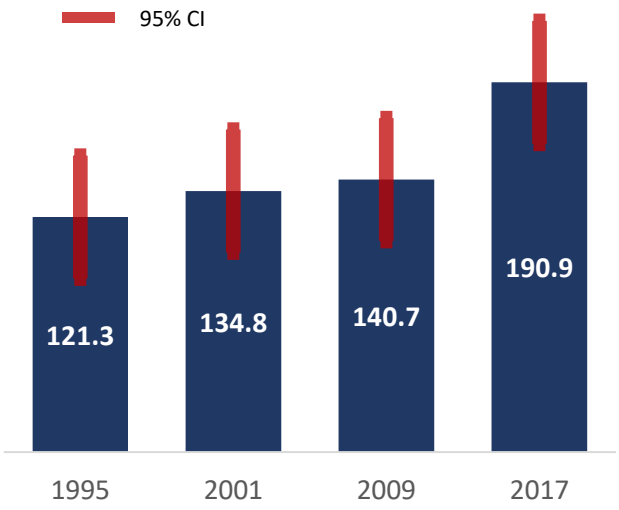
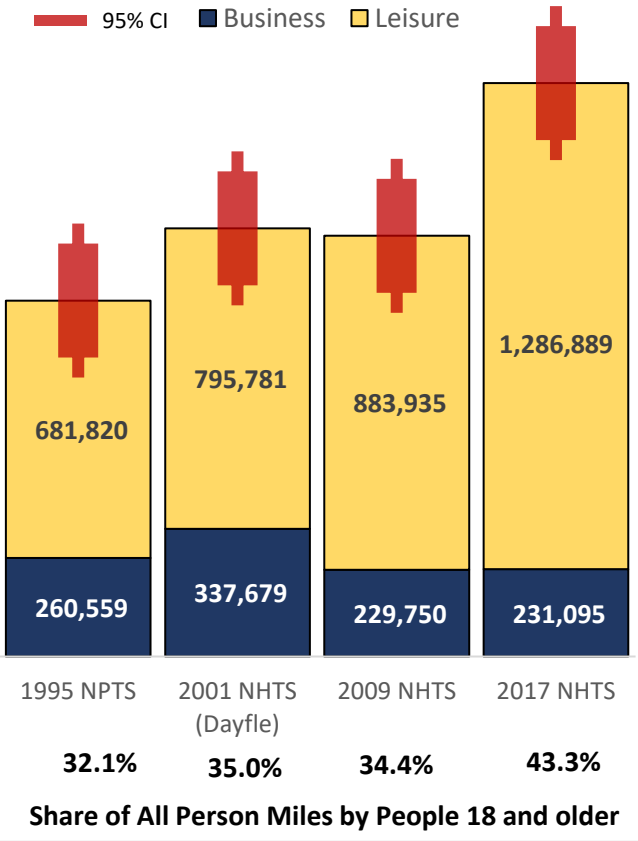


Figure 3 shows the annual person miles of travel (PMT) represented by trips of 50 miles or more in length in the data series, and the percent of PMT in these longer trips compared to all person miles of travel by people aged 18 and older.

Figure 3 – Annual Person Miles of Travel (PMT) in Trips of 50 Miles or More in Length, People 18 and older (weighted in millions)



These estimates show a significant increase in PMT in 2017, with a notable spike in the reports of longer trips for leisure. Miles of travel for leisure purposes may be growing for several reasons, including the improved economy and demographic changes. For example, as the baby-boomers retire they may have more disposable time for travel, and new modes like inter-city bus may induce more travel. However, saliency and method changes may also be a factor, and further research is needed.

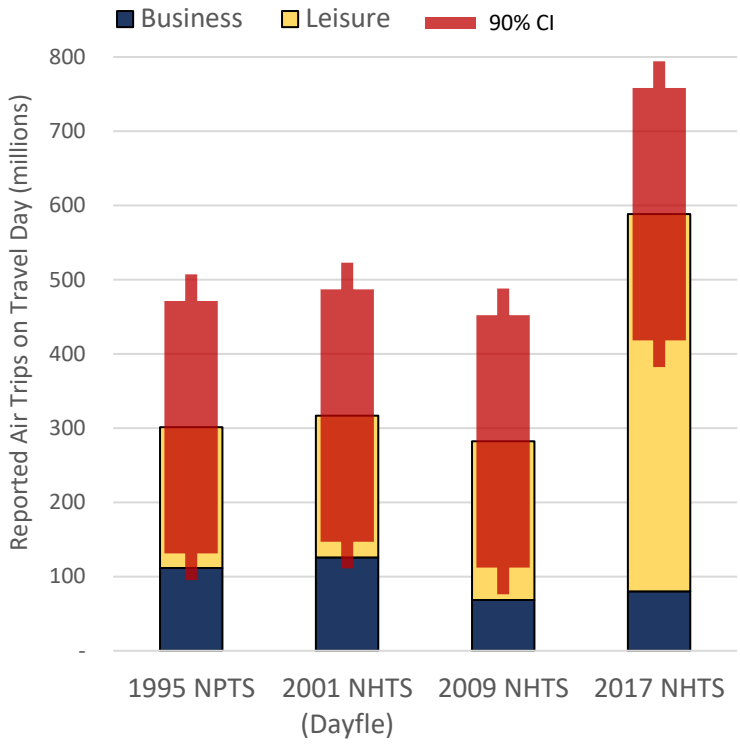
Finally, Figure 4 shows the estimate of air trips reported throughout the recent data series. Air travel is a relatively rare means of daily travel. In 2017 NHTS there are just over 2,000 unweighted air trips reported for the travel day. On the other hand, in 2017 there were almost a billion air passengers (including domestic and international service[2]) in the U.S.

Again, although the nominal number of reported air trips is higher in 2017, because of the small sample size and large margin of error, the estimate cannot be said to be statistically different from that in 2009.

The NHTS data series shows that the survey captures some longer trips, and that these trips contribute a substantial portion to total person miles of travel (PMT). Critically, the number of longer trips from travel day reports is too small to be able to create robust estimates or track trends— the estimates have large margins of error that overlap across all the recent surveys. In addition, there may be bias introduced because the NHTS protocols only capture a single day of travel—multi-day 'road trips' are not represented.

Therefore, while the NHTS may not be able to make robust estimates of long-distance travel even at the national level (for example trends in mode and purpose), the data shows that a substantial portion of travel is in trips of 50 miles or more, and that PMT in longer trips has grown significantly compared to 2009. Current and comprehensive data on this critical element of U.S. travel is needed to understand the whole picture of travel.

Figure 4 – Annual Number and Mode Share of Reported Trips by Air, People 18 and older (weighted in millions)



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[1] See the 2017 NHTS Summary of Travel Trends, Appendix A for detail on the impact of this methods change
[2] Source: Bureau of Transportation Statistics, T-100 Market and Segment