

NHTS Paper ideas for Graduate Students

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Elaine Murakami, Nancy McGuckin, Ed Christopher, Susan Liss

This list was developed to further our understanding of travel behavior while providing students a starting point when considering topics for study. The items on the list are presented in no particular order.

Life Cycle Stage. Work needs to be done examining life cycle stage and travel. The notion of looking at the age of the head of householder (as collected by the census bureau) might not be the best determinant of travel or activity. For example, single parents with children under 5 are likely to have similar travel patterns whether they are 20 or 45. Do they? Are there differences in travel behavior in non-working adults by age.

Worker Status

- Workers on a working day, workers on a non-work day. Describe their travel; compare VMT, trip purpose, travel time (long distance shopping on weekend, short distance shopping on weekday; similarly with recreational trips (neighborhood gym vs. state park).
- Workers who don't go to work at "peak" period? Who are they? What jobs do they do? Is there evidence of the peak spreading, or more off-peak workers? Consider other labor statistics as well and related to service industry, shopping hours. Compare to workers who go to work during "peak" period. Is it true that people who don't go to work during the peak are less likely to use transit, given the general reduction in transit service in "off-peak" periods. Blending the Census and ACS PUMS for work related travel and the NHTS for both work and non-work trips and analyzing the two might yield some interesting findings.

Household interactions. Examine distribution of trips in multiple adult households, 1 worker households, and 2+ worker households. Look for child care responsibility trips (one adult drops off, one adult picks up). Look for who does the household errands, and examine distance to work.

Vehicle Availability: Are we done examining vehicle availability or is still more to learn? (Polzin has O-car paper for Nov Conf and C Bhat also has some recent work.

People of Color: African Americans and Hispanics. Currently there is work at Morgan State (HBCU project) underway but as of 8/31/04 there are no results. The main topics of this work will be on “spatial mismatch” and on travel patterns in neighborhoods that have undergone major demographic shifts (in ethnic make-up). Probably need a paper on travel by WOMEN, including driver’s licensing, vehicle availability, employment, child care, trip-chaining.

Age – Children and teenagers: Little is know about their travel behavior. What can be said? There is some work around on children NOT walking as it is related to health issues. From the STPP/Transportation and Land Use Coalition/ Latino Issues Forum, Sept 2003 “Can’t get there from here the was some work on the declining independent mobility of California’s Children and Youth.” Also, some on the “Relative Risks of School Travel” TRB, Committee on School Transportation Safety, TRB Special Report 269, 2002. Kelly Clifton did some work using 1995 NPTS and travel by teenagers. Lisa Weston, student at UT Austin planning to do some work.

Elderly (Sandi Rosenbloom has paper for Nov 2004 NHTS conference)

- Issues of people aging in place (in the suburbs)
- Link travel of various elderly age groups with employment & travel/tourism data

Baby Boomer Analysis The is much to be gained examining how baby boomers travel has changed over time (and into the future) Using NHTS and past NPTS this type of analysis should be feasible. For example the cohorts could be traced though 1977, 1983, 1990, and 1995 NPTS data sets along with the 2001 NHTS. People who were born 1946 thru 1963 in all surveys could be analyzed and changes in life cycle and travel behavior discussed. How are baby boomers changing?

Disability: Can one link NHTS data on disabilities affecting transportation and the response to them with other data on disabilities? What can be said about disability using the NHTS? Combine with BTS special survey?

Land use

- Neighborhood classification scheme, apply it to NHTS households & analyze travel patterns.
- Use add-on data files with geocoding and look at activity space. Where are trips (by purpose) relative to location of work, school, and home. (Nathan Erlbaum, New York data, and GIS analysis)

Internet use: Link NHTS data on internet availability and use with other internet use surveys. Help expand the body of knowledge regarding internet and its affects on travel and transportation.

Other Travel Data

- Compare NHTS data with VMT from HPMS and traffic volume trends.
- Congestion data from TTI compared to NHTS travel speed
- The interface and relationships between the NHTS and Census Journey-to-Work
- The interface and relationships between the NHTS and the Census PUMS

Safety

- High-risk groups (teens/young adults, elderly) with their actual incidence of death & injury. UMTRI used to do this with every release of NPTS. What is the status with 2001 NHTS? UMTRI hasn't done it yet.
- Pedestrian safety –who is walking -- when, why, how far, type of area, linked with accident & injury data (Xuehao Chu, CUTR, "Danger of Walking" July 2003.
- SUV safety issues – travel in SUVs—driver characteristics, number and ages of occupants, trip length, time of day, etc. linked to accident data

Security

- Frank Southworth at ORNL has “daytime pop est.” for Nov 2004 NHTS conference. What else could be done?
- How far apart are family members (spouses/parents & children) during travel day in miles, differences by geography (HBHUR), income, region of country, MSA size, etc. Most emergency evacuators understand that family units will attempt to re-unite before leaving an area. How would this affect evacuation plans? Is it a big constraint?
- Evacuation in vehicles and vehicle fuel efficiency—I understand Nathan estimated that $\frac{1}{4}$ of the vehicles in NY would run out of gas in a 4-6 hour evacuation. This would create new constraints for the evacuees, both in those vehicles and others. What kind of range in stop & go and idling traffic would the average HH vehicle (assuming newest or largest is used) have in terms of mileage with $\frac{1}{2}$ tank of gas?

Travel Mode

- Bicyclists and Pedestrians: There seems to be a lot on this. For the November 2004 Conference over 10 abstracts were submitted on non-motorized. A synthesis on what we know may be in order.
- Transit—Steve Polzin’s work for CUTR, Polzin & F. Williams paper for Nov conference, also John Pucher
- Carpooling? Related to Hispanic families, and vehicle acquisition
- Carpooling and Family-pooling – How many of the carpools are household members traveling together, related to lifecycle and HBHUR (density measures in NHTS)

Time of Day/ Day of Week: Differentiate activities by time of day for different types of people. Maybe use Life-cycle stages to describe activities occurring by cluster (workers, parents at home, retired). E.g. At 9:00 a.m. most of the workers are at work; adults mostly at home, with some shopping and some

leisure/recreational activities. This would be taking Ed Kashuba's time-of-day chart and breaking it up into clusters.

Activity Patterns

- Calculate the activity times from NHTS and compare with activity-based surveys. How do different question wordings effect the time reported at activities ("what did you do next? And when did you start that activity?" Vs. "where did you go next? And when did you begin that trip?" BLS just released data from American Time Use Survey (ATUS).
- Look more closely at people who work at home. Compare to same workers who go into work. Look at and examine trip rates, miles, time spent at various activities (work, shop, get meal, etc.)

Other

- Look at cost of trips using fuel use data by purpose of trip—e.g. marginal increases in work trip length and time in travel by income, the cost of such trips by auto vs. transit. Cost of longer-distance shopping trips, weekend social/rec trips, etc. There is a big move afoot to look harder at cost/benefits of congestion management strategies...
- Look at shift between auto and airplane for longer-distance trips (we did this using 1995 ATS and 1995 NPTS), by distance traveled and income before and after 9/11. It would be interesting to compared door to door travel times now and in 1995 for paired cities, with some estimate on the cost of security delays to ridership.