Meeting Local Information Needs With National Data

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Since 1969, the U.S. Department of Transportation has been conducting the National Personal Travel Surveys (NPTS) about every 5 years to collect information on personal travel patterns. The NPTS data were used to estimate personal travel statistics such as the number of personal trips taken per household, by household social-economic attributes and the number of miles driven per driver, by driver demographic characteristics.

Although information-rich, the NPTS data are not recommended for drawing conclusions on travel in areas smaller than a Census division. Thus, small- and medium-sized communities use NPTS data for their planning based on trip rates averaged over:

- all of the households in the NPTS,
- the NPTS households that are from the same Census Region,
- the NPTS households that are from the same Census Division, or
- the NPTS households that are from areas of similar population size.

The challenge is whether there are alternative methods that:

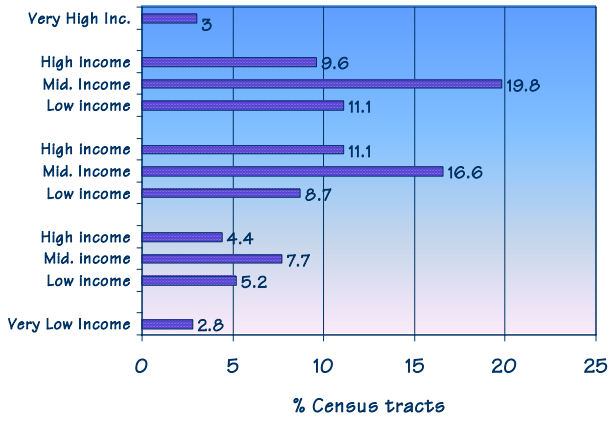
- better reflect the characteristics of small- and medium-sized communities, and
- maintain the reliability of the estimates.

Oak Ridge National Laboratory developed models to determine whether the NPTS data can be "transferred" to areas smaller than the NPTS sample design allows, while maintaining an acceptable level of reliability in the transferred information.

Our approach consisted of 4 steps:

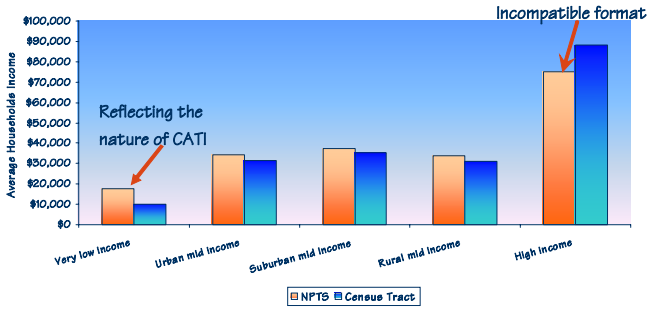
1. Categorize <u>all</u> of the census tracts in the country into "homogeneous" clusters with respect to travel determinants reported for each tract,
2. Assign NPTS households to these clusters based on the census tract where the household is located,
3. Calculate cluster-specific travel statistics based on data collected from NPTS households, and
4. Calculate total census tract-specific travel demand.

More than 60,000 eligible tracts in the country were grouped into 11 clusters.

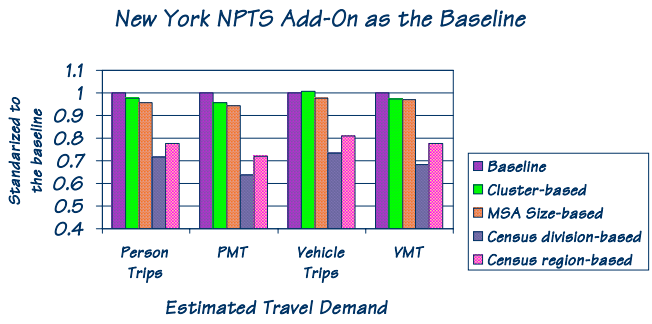


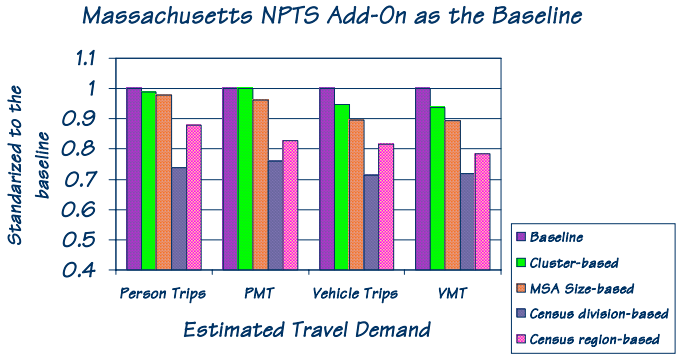
One of the key assumptions of this cluster-based approach is that there are enough NPTS households assigned to each cluster, and NPTS households in a cluster are representative of all households within that cluster, with respect to travel determinants.

In general, NPTS households are representative of the households in their corresponding clusters, with a few exceptions.



Independent assessments were conducted to evaluate the validity of the estimates based on this cluster-based approach.





Conclusion

If resources are available, a locale-specific household survey is most likely to yield estimates that are more accurate than those based on other surveys.

Otherwise, one has five ways to use the NPTS data:

- Cluster based
- Population-size based
- Census-Division based
- Census-Region based
- Nation-wide

Our results suggest that cluster-based estimates are more accurate than those derived from the other four approaches.

A web-tool to generate cluster-based travel statistics is available at:

http://npts.ornl.gov/npts

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