

## **Vehicle Occupants and Driver Behavior: A Novel Data Approach to Assessing Speeding (02-009) Dataset**

Dataset available at: <https://doi.org/10.15787/VTT1/YRTS1Z>

(This dataset supports report **Vehicle Occupants and Driver Behavior: A Novel Data Approach to Assessing Speeding**)

This U.S. Department of Transportation-funded dataset is preserved by the Virginia Tech Transportation Institute (VTTI) in their data repository (<https://dataverse.vtti.vt.edu/>), and is available at <https://doi.org/10.15787/VTT1/YRTS1Z>

The related final report **Vehicle Occupants and Driver Behavior: A Novel Data Approach to Assessing Speeding**, is available from the National Transportation Library's Digital Repository at <https://rosap.ntl.bts.gov/view/dot/61974>.

### **Metadata from the VTTI Repository record:**

Dataset Persistent ID: doi:10.15787/VTT1/YRTS1Z

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Title: Vehicle Occupants and Driver Behavior: A Novel Data Approach to Assessing Speeding (02-009)

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#### Description:

- Project Description:
  - The question of whether driver behavior, and speeding in particular, differs based on vehicle occupancy requires the use of large amounts of data—some of which may be difficult to accurately obtain. Traditional methods of obtaining information on driver behavior either lack passenger information altogether (i.e., insurance companies using telematics) or rely on rough estimates of passenger age and gender obtained from blurred photos (i.e., naturalistic driving studies like State Highway Research Program 2 (SHRP 2)). This research project represents a novel, data-driven approach to this topic. Household travel survey demographic information and global positioning system (GPS) traces were linked to HERE network speed limit to study the impact of vehicle occupancy on speeding. Survey responses from 11 study areas were cleaned, merged, and ultimately used in developing binomial logistic regression models. Of particular interest were the driver groups of teenagers, adults driving with children, and older drivers. The models suggest that drivers speed less when there is a passenger in the vehicle, especially adults with a child passenger. These data represent the trip summary

model inputs for determining the influence that passengers may have on the following driver groups' speeding behavior:

- younger drivers (16-years-old to 24-years-old),
- older drivers (65+ years old), and
- all drivers 16-years-old to 55-years-old with a child passenger (0-years-old to 15-years-old).

The original trip data came from the Texas Department of Transportation Travel Survey Program's household travel surveys from eleven urban areas around the state. Each trip was matched with its corresponding GPS trace data to determine the travel route. The route was then assigned posted speed limits from the HERE streets network. Each trip was coded as a speeding trip if at least 20% of the trip free-flow (any traveling speed that ranged from 5 miles per hour below the posted speed limit or greater) duration was comprised of driving speeds greater than the posted speed limit. All trips were included in the data set irrespective of travel speed. Driver and passenger demographic characteristics were gathered from the household travel surveys.

- Project Scope:
  - Trip summaries in tabular format (three Excel CSV files):
    - younger\_driver\_data\_public.csv
    - older\_driver\_data\_public.csv
    - all\_drivers\_data\_public.csv
  - 11 cities across Texas:
    - Abilene
    - Bryan-College Station
    - Corpus Christi
    - El Paso
    - Houston
    - Midland-Odessa
    - San Angelo
    - Sherman-Denison
    - Texarkana
    - Victoria
    - Wichita Falls
  - Trips per driver group:
    - Younger drivers – 825
    - Older drivers – 2,654
    - All drivers with child passenger – 6,106

Subject: Engineering

Keyword: trip records, naturalist driving data set, speeding, household travel survey, young drivers, older drivers, child passengers

Deposit Date: 2019-10-17

**Recommended citation:**

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**Dataset description:**

This dataset contains 1 file collection, described below.

**Vehicle Occupants and Driver Behavior \_Data.zip**

- 2-009 Data Specification.pdf
- all\_drivers\_data\_public.csv
- older\_driver\_data\_public.csv
- younger\_driver\_data\_public.csv

**File Type Descriptions:**

- The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit <https://www.file-extensions.org/csv-file-extension>).
- The .pdf file format is an Adobe Acrobat Portable Document Format (PDF) file and can be opened with the Adobe Acrobat software.

**National Transportation Library (NTL) Curation Note:**

As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (<https://doi.org/10.21949/1503647>) Section 7.4.2 Data, the NTL staff has performed **NO** additional curation actions on this dataset. NTL staff last accessed this dataset at <https://doi.org/10.15787/VTT1/YRTS1Z> on 2022-05-26. If, in the future, you have trouble accessing this dataset at the host repository, please email [NTLDataCurator@dot.gov](mailto:NTLDataCurator@dot.gov) describing your problem. NTL staff will do its best to assist you at that time.