DOT HS 810 932   April 2008

Seat Belt Use in 2007—Demographic Results

Tony Jianqiang Ye[1] and Timothy Pickrell[2]

In 2007, seat belt use in the United States increased among occupants 70 and older. This result is from the National Occupant Protection Use Survey (NOPUS), which provides the only probability-based observed data on seat belt use in the United States. NOPUS is conducted annually by the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration.
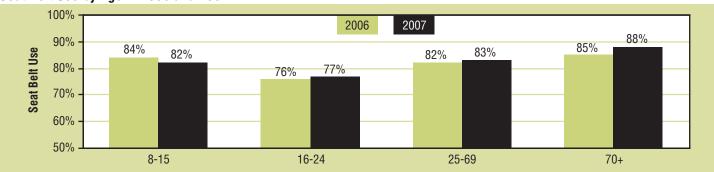
The 2007 survey also found the following:

- Seat belt use continued to be lower among 16- to 24-year-olds than other age groups.

- Seat belt use continued to be lower among Blacks than other races.

- Seat belt use continued to be higher among females than males.

- Seat belt use continued to be lower among drivers driving alone than among drivers with passengers.
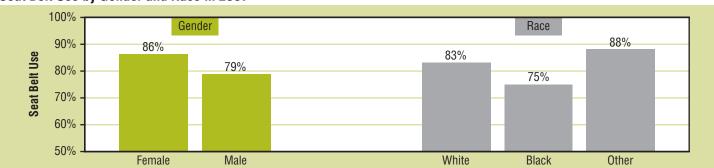
Seat belt use nationwide was 82 percent in 2007, a slight gain from the 2006 use rate of 81 percent. This research note presents the demographic breakouts of the 82 percent national rate. For information about the 2007 use rates in terms of region, vehicle type, etc., please see the companion publication "Seat Belt Use in 2007—Overall Results," which is available at www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx.

Seat Belt Use by Age in 2006 and 2007

Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2006, 2007

Seat Belt Use by Gender and Race in 2007

Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2007

[1] Statistician, URC Enterprises Inc.
[2] Mathematical Statistician, Mathematical Analysis Division, National Center for Statistics and Analysis, NHTSA

Passenger Vehicle Occupant Seat Belt Use by Demographic and Other Characteristics

Occupant Group[1]	2006 Belt Use[2]	2006 Confidence That Use Is High or Low in Group[3]	2007 Belt Use[2]	2007 Confidence That Use Is High or Low in Group[3]	2006-2007 Change: Change in Percentage Points	2006-2007 Change: Confidence in a Change in Use[4]
All Occupants	81%		82%		1	73%
Males	78%	**100%**	79%	**100%**	1	65%
Females	85%	**100%**	86%	**100%**	1	79%
Occupants Who Appear to Be						
Age 8-15	84%	86%	82%	57%	-2	50%
Age 16-24	76%	**97%**	77%	**100%**	1	36%
Age 25-69	82%	80%	83%	88%	1	60%
Age 70 and Older	85%	**96%**	88%	**100%**	3	**97%**
Occupants Who Appear to Be						
White	81%	51%	83%	62%	2	80%
Black	75%	**98%**	75%	**100%**	0	21%
Members of Other Races	88%	**100%**	88%	**100%**	0	5%
Drivers With						
No Passengers	83%	**95%**	82%	**100%**	-1	77%
At Least One Passenger	87%	**95%**	86%	**100%**	-1	86%
Drivers With						
No Passengers	83%	**95%**	82%	**100%**	-1	77%
Passengers All Under Age 8	89%	**93%**	87%	**100%**	-2	69%
Passengers All Age 8 and Older	87%	**91%**	85%	**100%**	-2	83%
Some Passengers Under Age 8 and Some Age 8 or Older	90%	**96%**	88%	**100%**	-2	63%
Drivers Age 16-24 With						
No Passengers	80%	58%	79%	82%	-1	40%
Passengers All Age 16-24	75%	86%	78%	70%	3	49%
At Least One Passenger Not Age 16-24	87%	**97%**	83%	**98%**	-4	**90%**
Occupants Age 16-24 When						
All Occupants Are Age 16-24	78%	57%	77%	76%	-1	15%
At Least One Occupant Is Not Age 16-24	77%	57%	78%	76%	1	33%

[1] Drivers and right-front passengers of passenger vehicles with no commercial or government markings.
[2] Use of shoulder belts observed between 7 a.m. and 6 p.m.
[3] The level of statistical confidence that use in the occupant group (e.g., occupants who appear to be White) is higher or lower than use in the corresponding complementary occupant groups (e.g., combined occupants who appear to be Black or members of other races). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100 percent.
[4] The degree of statistical confidence that the 2007 use rate is different from the 2006 rate. Confidence levels that meet or exceed 90% are formatted in boldface type.
Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Survey Methodology

The National Occupant Protection Use Survey is the only probability-based observational survey of seat belt use in the United States. The survey observes usage as it actually occurs at a random selection of roadway sites, and so provides the best tracking of the extent to which vehicle occupants in this country are buckling up.

The survey data is collected by sending trained observers to probabilistically sampled intersections controlled by stop signs or stoplights, where vehicle occupants are observed from the roadside. Data is collected between 7 a.m. and 6 p.m. Only stopped vehicles are observed to permit time to collect the variety of information required by the survey, including subjective assessments of vehicle occupants' age and race. Observers collect data on the driver, right-front passenger, and up to two passengers in the second row of seats. Observers do not interview vehicle occupants, so that the NOPUS can capture the untainted behavior of occupants. The

2007 NOPUS data was collected between June 4 and June 25, while the 2006 data was collected between June 5 and June 26.

Sites, Vehicles, and Occupants Observed

Numbers of	2006	2007	Percentage Change
Sites Observed	1,200	1,500	25%
Vehicles Observed	43,000	58,000	35%
Occupants Observed	59,000	82,000	39%
Front Seat	54,000	75,000	39%

Although the data was collected solely from vehicles stopped at intersections controlled by stop signs or stoplights, the estimates in this publication concerning seat belt use in the front seat reflect use by occupants *in transit* on *all types of roadways*. This is accomplished by making adjustments using data from another portion of the survey that observes belt use in vehicles in transit on general roadways.

Because NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically significant changes in belt use between 2006 and 2007 are identified in the table "Passenger Vehicle Occupant Seat Belt Use by Demographic and Other Characteristics" by having a result that is 90 percent or greater in the table's column 7. Statistical confidence levels that seat belt use in a given occupant group (e.g., occupants who appear to be White) is higher or lower than in the complementary occupant groups (e.g., combined occupants who appear to be Black or members of other races) are provided in columns 3 and 5. Such comparisons are made within categories delineated by changes in row shading in the table.

The 2007 survey yielded nearly a 40-percent increase in the number of occupants observed (59,000 in 2006 versus 82,000 in 2007). This could be due in part to our additional efforts to find eligible sites and consequently data was collected from 300 more sites in 2007 than in 2006. Therefore, we have more accurate results in 2007.

In order to better capture early commuters, NOPUS began collecting data one hour earlier in 2007. NOPUS data collection now begins at 7 a.m., instead of 8 a.m. in the 2006 and prior surveys. The survey also changed its definitions of "weekday rush hour" in order to end the morning rush hour 30 minutes earlier. The definition of weekday rush hour in 2006 and prior survey years was that data collection at the site began before 10 a.m. or after 3:30 p.m. The definition used in 2007 is that data collection at the site began before 9:30 a.m. or after 3:30 p.m. Neither the new start time nor the new definition

of rush hour appeared to have an appreciable impact on the survey results.

NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. The 2007 survey results reflect the partial incorporation of a new set of probabilistically designed observation sites. Specifically, like the 2006 survey, the 2007 survey used half of the observation sites from the survey years before 2006 and half of the sites from the newly designed sample of observation sites. Data from 2005 and prior years were obtained from the old observation sites only.

Data collection, estimation, and variance estimation for NOPUS are conducted by Westat, Inc., under the direction of the National Center for Statistics and Analysis in NHTSA under Federal contract number DTNH22-07-D-00057.

Definitions

Vehicle occupants observed in the survey were counted as "belted" if they appeared to have a shoulder belt across the front of the body. NOPUS does not observe the use of lap belts because these restraints cannot be reliably observed from the roadside.

The racial categories "Black," "White," and "Members of Other Races" appearing in the table reflect subjective characterizations by roadside observers regarding the race of vehicle occupants. Likewise observers recorded the age group (8-15 years; 16-24 years; 25-69 years; and 70 years or older) that best fit their visual assessment of each observed occupant.

For More Information

Detailed analyses of the data in this publication, as well as additional data and information on the survey design and analysis procedures, will be available in upcoming publications to be posted at the Web site www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx in 2008.

Seat belts are approximately 50-percent effective at preventing fatality and save approximately 15,000 lives each year. (Traffic Safety Facts: 2006 Data, NHTSA, DOT HS 810807). For more information on the campaign by NHTSA and the States to increase seat belt use, see www.nhtsa.gov/portal/site/nhtsa/menuitem.ce4a601cdfe97fc239d17110cba046a0.

NOPUS also observes other types of restraints, such as motorcycle helmets and child restraints, and observes

driver electronic device use. This publication is part of a series that presents overall results from the survey on these topics. Please see other notes in the series such as "Motorcycle Helmet Use in 2007—Overall Results" for the latest data on these topics.