U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

TRAFFIC SAFETY FACTS
Research Note

NHTSA

Seat Belt Use in 2019—Overall Results

The national estimate of seat belt use by adult front-seat passengers increased slightly to 90.7 percent in 2019 from the 89.6 percent observed in 2018. This change is not statistically significant at the 0.05 level of significance. The seat belt use rate estimate represents the percentage of occupants who are belted during an average daylight moment.

Figure 1 displays an increasing trend of seat belt use over a 15-year period, contrasted with a declining trend in the percentage of unrestrained passenger vehicle occupant fatalities during the daytime. The 2019 survey also found that seat belt use for occupants in the west region increased significantly from 92.7 percent in 2018 to 94.5 percent in 2019 (Figure 2 and Table 1). Seat belt use continued to be higher in the States in which occupants can be pulled over solely for not using seat belts ("primary law States") compared to the States with weaker enforcement laws ("secondary law States") or without seat belt laws (Figure 3). Seat belt use in "primary law States" increased significantly from 90.6 percent in 2018 to 92.0 percent in 2019 (Figure 3 and Table 1).

The 2019 survey also found the following significant changes.

■ Seat belt use among motorists traveling through clear weather conditions increased from 89.3 percent in 2018 to 90.9 percent in 2019 (Table 1).

■ Seat belt use among motorists traveling during the weekdays increased from 89.2 percent in 2018 to 90.8 percent in 2019 (Table 1).

■ Seat belt use among motorists traveling during weekday rush hours increased from 89.3 percent in 2018 to 90.7 percent in 2019 (Table 1).

■ Seat belt use among motorists traveling during weekday non-rush hours increased from 89.1 percent in 2018 to 90.8 percent in 2019 (Table 1).

These results are from the National Occupant Protection Use Survey (NOPUS), the only survey that provides nationwide probability-based observed data on seat belt use in the United States. The NOPUS is conducted annually by the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration.

Figure 1
National Seat Belt Use Rate and Daytime Percentage of Unrestrained Passenger Vehicle Occupant Fatalities
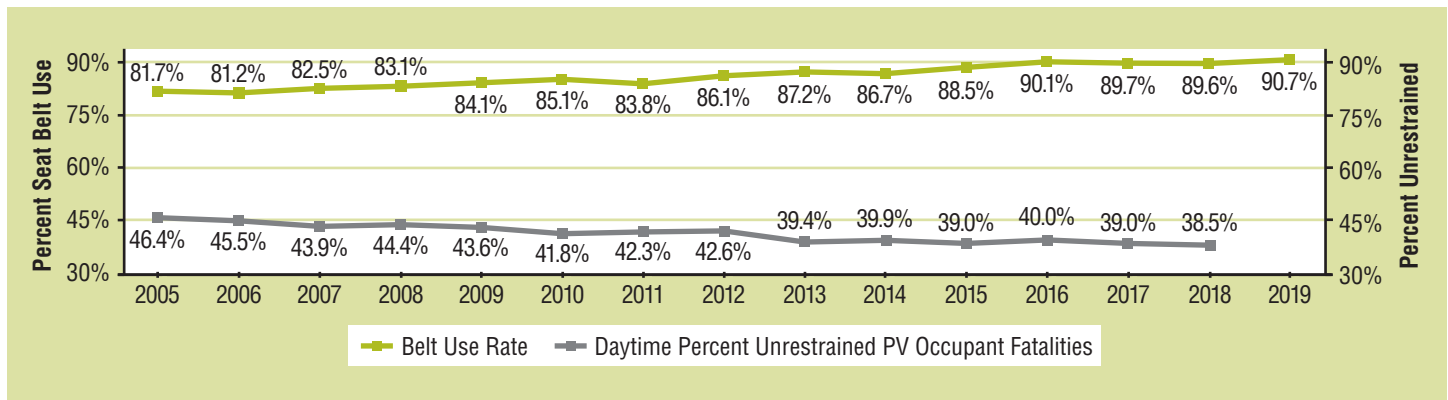
Source: NOPUS, FARS 2005-2017 Final File, FARS 2018 ARF

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[1] The FARS 2019 data on the percentage of unrestrained passenger vehicle occupant fatalities during daytime will be available later in 2020.

Table 1
Seat Belt Use by Major Characteristics

Occupant Group[1]	2018		2019		2018-2019 Change		
	Belt Use[2]	95% Confidence Interval[3]	Belt Use[2]	95% Confidence Interval[3]	Change in Percentage Points	95% Confidence Interval[4]	P-value[5]
All Occupants	89.6%	(88.0, 91.1)	90.7%	(89.2, 92.0)	1.1	(-0.2, 2.3)	0.09
Drivers	89.9%	(88.1, 91.4)	90.9%	(89.5, 92.2)	1.0	(-0.2, 2.3)	0.11
Right-Front Passengers	88.7%	(87.1, 90.1)	89.8%	(88.0, 91.4)	1.1	(-0.6, 2.8)	0.19
Occupants in States With[6]							
Primary Enforcement Laws	**90.6%**	**(89.0, 92.1)**	**92.0%**	**(90.5, 93.3)**	**1.3**	**(0.0, 2.7)**	**0.04**
Secondary/No Enforcement Laws	86.4%	(83.2, 89.0)	86.2%	(81.1, 90.1)	-0.1	(-3.2, 3.0)	0.93
Occupants Traveling on							
Expressways	92.4%	(90.9, 93.7)	93.5%	(91.5, 95.0)	1.0	(-0.8, 2.9)	0.27
Surface Streets	87.8%	(85.7, 89.6)	88.8%	(87.0, 90.4)	1.0	(-0.4, 2.4)	0.16
Occupants Traveling in							
Fast Traffic	91.9%	(90.7, 93.0)	92.7%	(90.7, 94.2)	0.7	(-1.0, 2.4)	0.38
Medium-Speed Traffic	88.7%	(86.1, 90.9)	89.6%	(87.9, 91.0)	0.9	(-0.7, 2.5)	0.27
Slow Traffic	85.8%	(82.4, 88.6)	87.6%	(84.8, 90.0)	1.8	(-0.6, 4.2)	0.13
Occupants Traveling in							
Heavy Traffic	90.8%	(88.7, 92.4)	92.0%	(90.7, 93.2)	1.3	(-0.2, 2.8)	0.10
Moderately Dense Traffic	89.5%	(87.9, 90.9)	89.7%	(87.6, 91.4)	0.2	(-1.6, 1.9)	0.84
Light Traffic	82.8%	(80.1, 85.2)	83.5%	(80.8, 85.9)	0.7	(-1.6, 3.0)	0.51
Occupants Traveling Through							
Not Clear Weather Conditions	92.2%	(88.5, 94.8)	89.2%	(85.6, 92.1)	-3.0	(-7.2, 1.2)	0.16
Clear Weather Conditions	**89.3%**	**(87.8, 90.7)**	**90.9%**	**(89.5, 92.1)**	**1.5**	**(0.4, 2.7)**	**0.01**
Occupants in							
Passenger Cars	90.3%	(88.5, 91.8)	91.2%	(89.5, 92.6)	0.9	(-0.6, 2.5)	0.23
Vans and SUVs	91.5%	(89.8, 93.0)	92.5%	(90.9, 93.8)	0.9	(-0.4, 2.2)	0.15
Pickup Trucks	84.1%	(82.2, 85.8)	85.6%	(83.6, 87.4)	1.5	(-0.1, 3.1)	0.06
Occupants in the							
Northeast	87.1%	(82.2, 90.8)	87.5%	(83.5, 90.6)	0.4	(-3.3, 4.1)	0.83
Midwest	89.1%	(84.1, 92.7)	89.2%	(85.1, 92.3)	0.1	(-2.5, 2.7)	0.95
South	89.5%	(87.2, 91.3)	91.0%	(88.5, 92.9)	1.5	(-0.6, 3.6)	0.16
West	**92.7%**	**(90.8, 94.2)**	**94.5%**	**(92.4, 96.1)**	**1.9**	**(1.0, 2.8)**	**< 0.01**
Occupants in							
Urban Areas	89.4%	(87.2, 91.3)	90.8%	(89.2, 92.3)	1.4	(-0.0, 2.8)	0.05
Rural Areas	90.1%	(88.4, 91.5)	90.4%	(88.2, 92.3)	0.4	(-1.4, 2.2)	0.67
Occupants Traveling During							
Weekdays	**89.2%**	**(87.6, 90.6)**	**90.8%**	**(89.3, 92.0)**	**1.6**	**(0.4, 2.8)**	**0.01**
Weekday Rush Hours	**89.3%**	**(87.9, 90.5)**	**90.7%**	**(89.4, 91.9)**	**1.4**	**(0.4, 2.5)**	**0.01**
Weekday Non-Rush Hours	**89.1%**	**(87.0, 90.9)**	**90.8%**	**(89.1, 92.3)**	**1.7**	**(0.2, 3.2)**	**0.03**
Weekends	90.7%	(88.8, 92.4)	90.6%	(88.4, 92.4)	-0.2	(-1.8, 1.5)	0.85

[1] Drivers and right-front passengers of all observed passenger vehicles
[2] Shoulder belt use observed from 7 a.m. to 6 p.m.
[3] The Wilson Confidence Interval has the form: $\{(2n_{EFF}p + t^2) \pm t\sqrt{(t^2 + 4n_{EFF}pq)}\}/2(n_{EFF} + t^2)$, where p is the estimated percentage of Belt Use, $n_{EFF} = n/DEFF$ is the effective sample size (where n is the sample size and $DEFF$ is the design effect), $t \equiv t_{1-\alpha/2}(df)$, is a multiplier from the t-distribution with df degrees of freedom, and $q = 1 - p$. For percentages these endpoints are multiplied by 100.
[4] The regular symmetric interval was used for the estimated change in percentage point, which is in the form: $p \pm t_{1-\alpha/2}(df)\sqrt{v(p)}$, where p is the estimated change in percentage point, $v(p)$ is its estimated variance, and $t_{1-\alpha/2}(df)$ is a multiplier from the t-distribution with df degrees of freedom.
[5] A p-value of 0.05 or less indicates that there is a statistically significant difference (at the alpha=0.05 level) between the 2017 and 2018 estimates for the group in question, **indicated with bold type.**
[6] Use rates reflect the laws in effect at the time data was collected.
Data Source: NOPUS, NCSA, 2018, 2019

Figure 2
Seat Belt Use by Region

Source: NOPUS

Figure 3
Seat Belt Use by Law Type
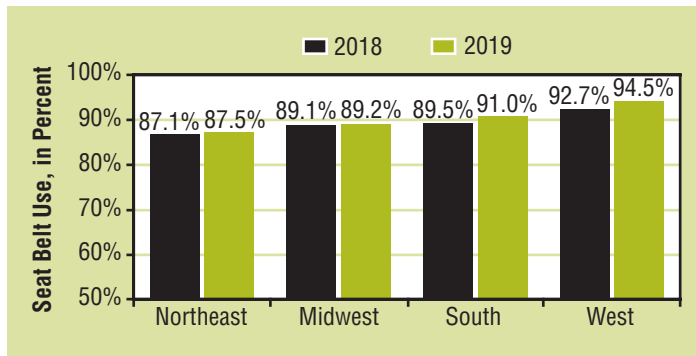
Source: NOPUS

Survey Methodology

NOPUS is the only nationwide probability-based observational survey of seat belt use in the United States. The survey observes seat belt use as it actually occurs at randomly selected roadway sites and thus provides the best tracking of the extent to which passenger vehicle occupants in the United States are buckling up.

The survey data is collected by sending trained observers to probabilistically sampled roadways, who observe passenger vehicles from 7 a.m. to 6 p.m. Observations are made either while standing at the roadside or, in the case of expressways, while riding in a vehicle in the traffic. In order to capture the true behavior of passenger vehicle occupants, the NOPUS observers do not stop vehicles or interview occupants. The 2019 NOPUS data was collected from June 2 to June 17, 2019, while the 2018 NOPUS data was collected from June 4 to June 20, 2018.

The NOPUS uses a complex, multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation procedures. Table 2 shows the observed sample sizes of the 2019 NOPUS Moving Traffic Survey. A total of 129,346 occupants were observed in the 105,714 vehicles at the 1,877 data collection sites.

Table 2
Sites, Vehicles, and Occupants* Observed

Numbers of	2018	2019	Percentage Change
Sites Observed	1,882	1,877	-0.27%
Vehicles Observed	104,889	105,714	0.79%
Occupants Observed*	128,934	129,346	0.32%

*Drivers and right-front passengers only.

Because the NOPUS sites were selected probabilistically, we can test the statistical significance of the results. Statistically significant changes in seat belt use between 2018 to 2019 are identified in Table 1 by a p-value that is 0.05 or less in the table's far-right column.
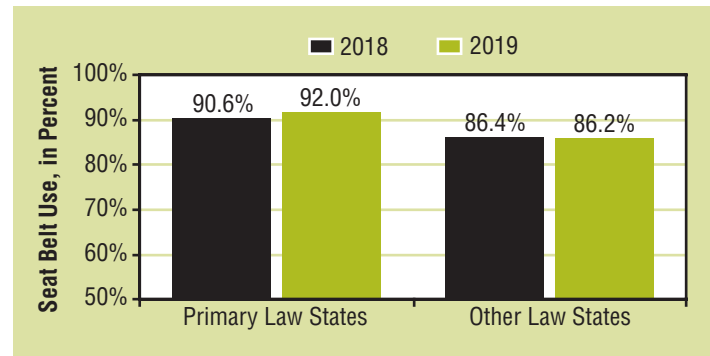
Data collection, estimation, and variance estimation for the NOPUS are conducted by Westat, Inc., under the direction of NHTSA's National Center for Statistics and Analysis under Federal contract number 693JJ918D000001.

Definitions

Under NOPUS observation protocols, a driver or right-front passenger is considered "belted" if a shoulder belt appears to be across the front of the body.

A jurisdiction that can enforce traffic laws, such as a State or the District of Columbia, has a "primary enforcement" law if occupants can be ticketed simply for not using their seat belts. Under "secondary enforcement" laws, occupants must be stopped for another violation, such as an expired license tag, before being cited for seat belt nonuse. As of May 31, 2019, primary laws were in effect in 34 States and the District of Columbia, 15 States had secondary laws, and 1 State (New Hampshire) effectively has no adult seat belt law. In New Hampshire, it is legal for occupants over age 18 to ride unbelted (Highway Loss Data Institute, 2019). Table 3 provides a list of the States with "primary enforcement" laws.

Table 3
States With Primary Enforcement Seat Belt Laws*

Alabama	Hawaii	Michigan	Rhode Island
Alaska	Illinois	Minnesota	South Carolina
Arkansas	Indiana	Mississippi	Tennessee
California	Iowa	New Jersey	Texas
Connecticut	Kansas	New Mexico	Utah
Delaware	Kentucky	New York	Washington
District of Columbia	Louisiana	North Carolina	West Virginia
Florida	Maine	Oklahoma	Wisconsin
Georgia	Maryland	Oregon	

*States with laws in effect as of May 31, 2019.

"Expressways" are defined to be roadways with limited access, while "surface streets" comprise all other roadways.

"Weekday Rush hours" are defined to be 7 a.m. to 9:30 a.m. and 3:30 to 6 p.m. on weekdays, while "Weekday Non-Rush Hours" comprise all other weekday hours (9:30 a.m. to 3:30 p.m.).

A roadway is defined to have "fast traffic" if during the observation period the average speed of passenger vehicles that pass the observer exceeds 50 mph, with "medium-speed traffic" defined as 31 to 50 mph, and "slow traffic" defined as 30 mph or slower.

A roadway is defined to have "heavy traffic" if the average number of vehicles on the roadway during the observation period is greater than 5 per lane per mile, with "moderately dense traffic" defined as greater than 1 but less than or equal to 5 vehicles per lane per mile, and "light traffic" as less than or equal to 1 vehicle per lane per mile.

As of 2018, "Not Clear Weather Conditions" includes sites where light precipitation or light fog is present.

Northeast: CT, MA, ME, NH, NJ, NY, PA, RI, VT

Midwest: IA, KS, IL, IN, MI, MN, MO, ND, NE, OH, SD, WI

South: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV

West: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

Seat belt use rates reflect the State laws in effect at the time of data collection.

References

Highway Loss Data Institute. (2019, May). Seat Belt and Child Seat Laws by State (web page). Insurance Institute for Highway Safety. Available at https://www.iihs.org/topics/seat-belts/seat-belt-law-table

National Center for Statistics and Analysis. (2019, March). Lives saved in 2017 by restraint use and minimum-drinking-age laws (Traffic Safety Facts CrashStats. Report No. DOT HS 812 683). National Highway Traffic Safety Administration.

For More Information

For questions regarding the information presented in this document, please contact ncsaweb@dot.gov.

Additional data and information on the survey design and analysis procedures will be available in upcoming publications to be posted at the website https://crashstats.nhtsa.dot.gov/#/.

Research has found that lap/shoulder seat belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent. In 2017 the use of seat belts in passenger vehicles saved an estimated 14,955 lives of occupants 5 and older (National Center for Statistics and Analysis, 2019). For more information on the campaign by NHTSA and the States to increase seat belt use, see www.nhtsa.gov/CIOT.

The NOPUS also observes other types of restraints, such as child restraints and motorcycle helmets, and observes driver electronic device use. This publication is part of a series that presents overall results from the survey on these topics. Please refer to the upcoming research notes and technical reports in the series, such as "Motorcycle Helmet Use in 2019– Overall Results," for the latest data on these topics.

Suggested APA format citation for this document is:

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This research note and other general information on highway traffic safety may be accessed by Internet users at: https://crashstats.nhtsa.dot.gov/#/.

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