U.S. Department of Transportation
National Highway Traffic Safety Administration

TRAFFIC SAFETY FACTS
Research Note

NHTSA

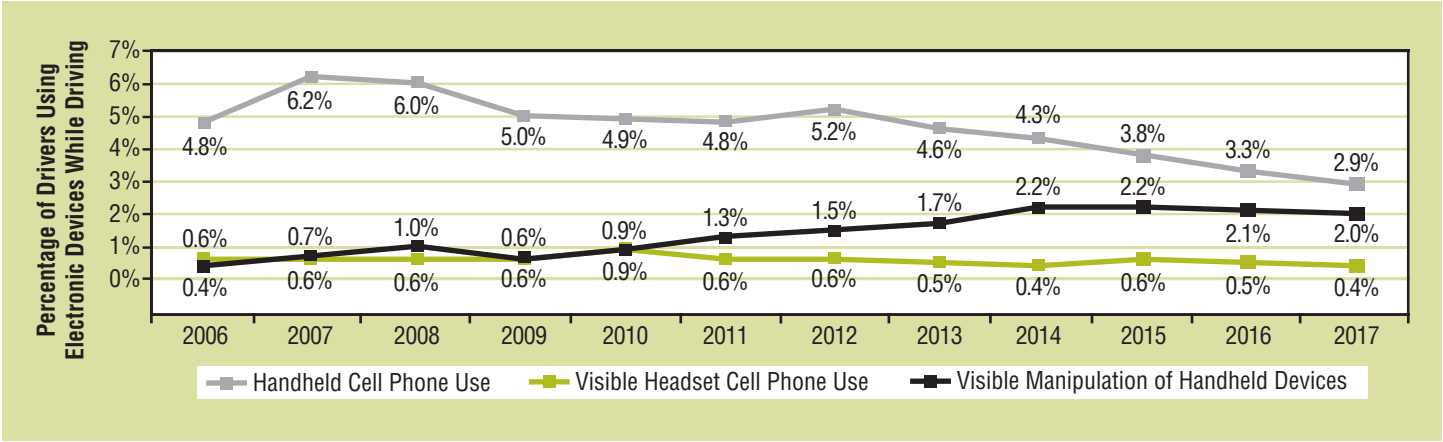
DOT HS 812 665 | Summary of Statistical Findings | January 2019

Driver Electronic Device Use in 2017

Summary

Passenger vehicle driver handheld cell phone use decreased from 3.3 percent in 2016 to 2.9 percent in 2017 (Figure 1), a statistically significant decrease. The percentage of drivers speaking with visible headsets while driving decreased from 0.5 percent in 2016 to 0.4 percent in 2017 (Figure 1); this was not a statistically significant decrease. Drivers' visible manipulation of handheld devices decreased from 2.1 percent in 2016 to 2.0 percent in 2017 (Figure 1); this was not a statistically significant decrease. These results are from the National Occupant Protection Use Survey (NOPUS), which provides the only nationwide probability-based observed data on driver electronic device 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. The percentages provided in this research note are interpreted as the percentage of drivers nationwide at a typical daylight moment.

Figure 1
Driver Use of Electronic Devices, 2006–2017



Results

NOPUS observes three types of driver electronic device use while driving: "holding phones to their ears," "speaking with visible headsets on," and "visibly manipulating handheld devices." The results of these observations follow.

Drivers Holding Phones to Their Ears While Driving

The percentage of drivers holding cell phones to their ears while driving decreased from 3.3 percent in 2016 to 2.9 percent in 2017 (Table 1). This percentage is based on an estimated 415,953 passenger vehicles driven by people using handheld cell phones at a typical daylight moment in 2017. An estimated 5.3 percent of drivers were using some type of phone, either handheld or hands-free, at a typical daylight moment in 2017 (refer to the section **Estimating Overall Cell Phone Use, Both Handheld and Hands-Free** for more details on this estimate).

The 2017 NOPUS found that handheld cell phone use continued to be higher among female drivers than male drivers (Figure 2). It also found that handheld cell phone use continued to be highest among 16- to 24-year-old drivers and lowest among drivers 70 and older (Figure 3).

Figure 2
Driver Handheld Cell Phone Use by Gender, 2006–2017

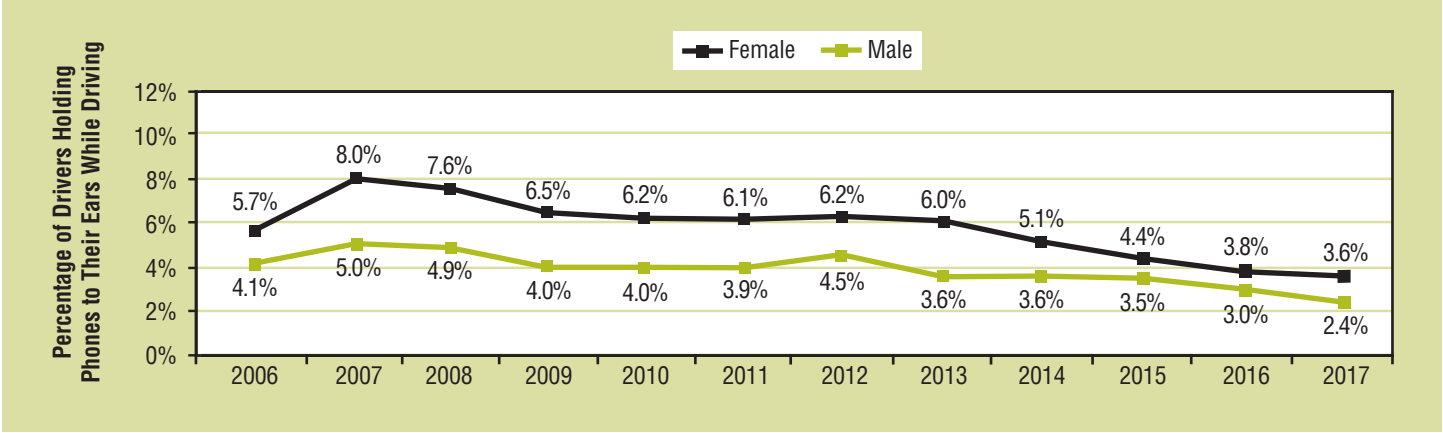
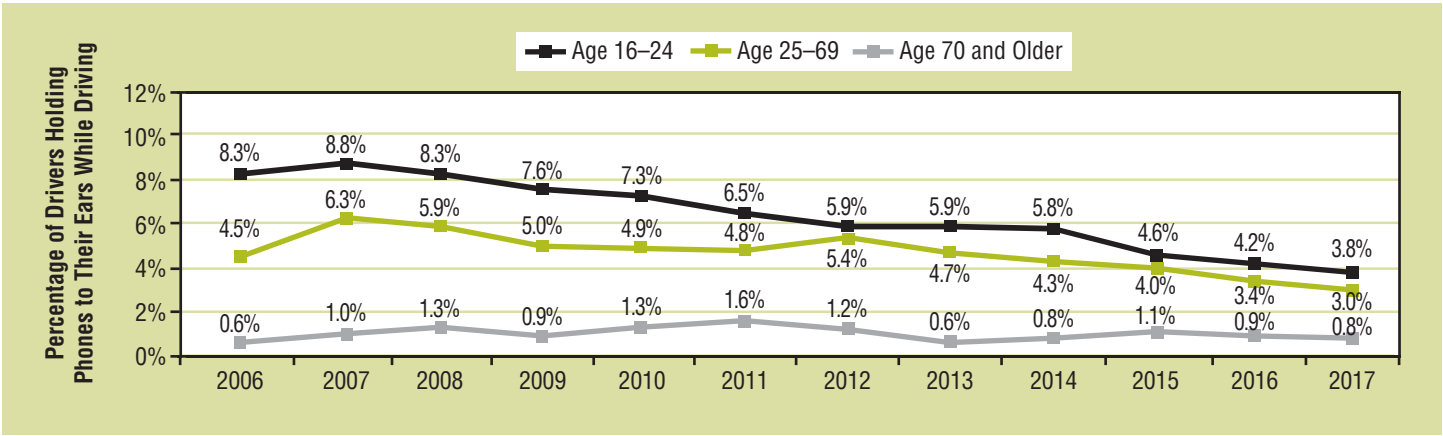


Figure 3
Driver Handheld Cell Phone Use by Age, 2006–2017

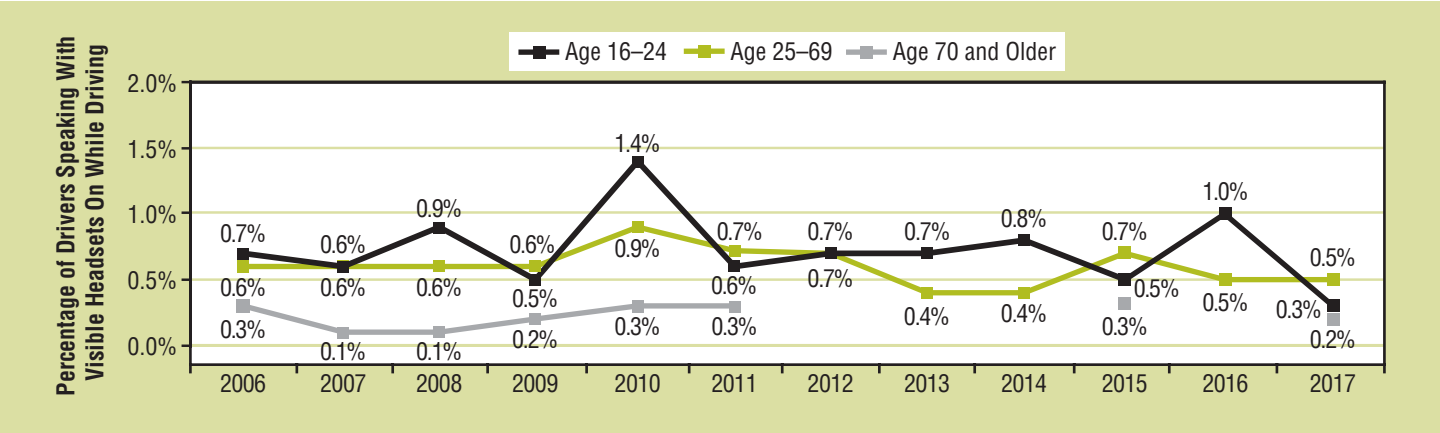


Drivers Speaking With Visible Headsets On While Driving

Table 2 shows the percentages of drivers speaking with visible headsets on while driving in 2016 and 2017, by major characteristics.

The percentage of drivers speaking with visible headsets while driving decreased from 0.5 percent in 2016 to 0.4 percent in 2017, as shown in Figure 1 and Table 2. For drivers who appeared to be 16 to 24 years old, that estimate decreased significantly from 1.0 percent in 2016 to 0.3 percent in 2017 as shown in Table 2 and Figure 4.

Figure 4
Drivers Speaking With Visible Headsets On by Age, 2006–2017



Note: Missing data points signify insufficient data to produce reliable estimates.

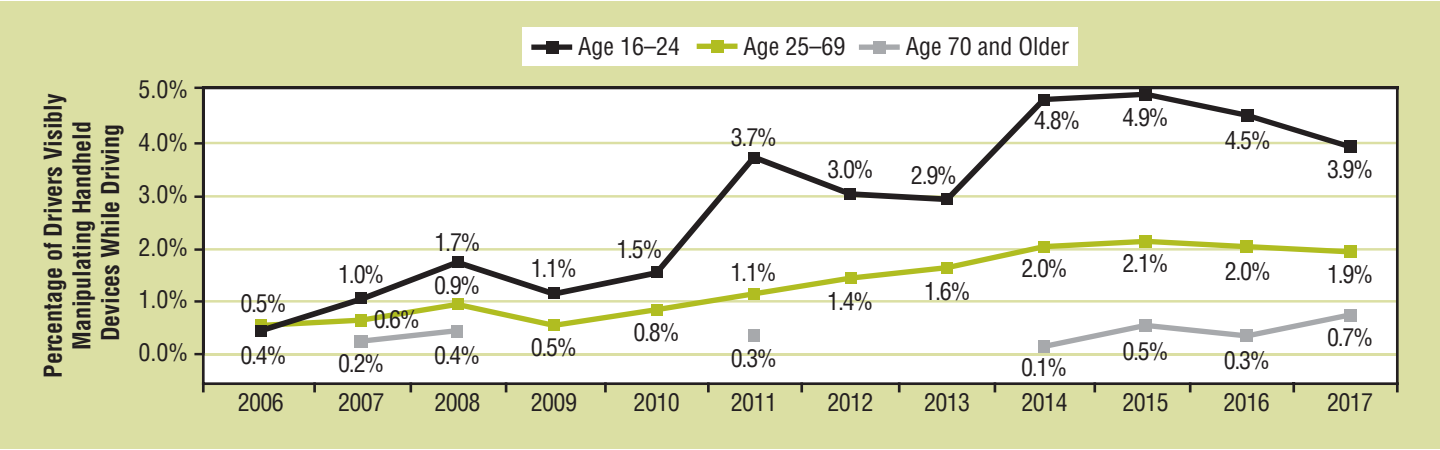
Drivers Visibly Manipulating Handheld Devices While Driving

The percentage of drivers visibly manipulating handheld devices while driving decreased from 2.1 percent in 2016 to 2.0 percent in 2017 (Figure 1 and Table 3). Table 3 presents the percentages of drivers visibly manipulating handheld devices in 2016 and 2017 by major characteristics.

The 2017 NOPUS observed a significant increase in visible manipulation of handheld electronic devices for drivers in the Northeast, from 1.1 percent in 2016 to 2.8 percent in 2017 (Table 3).

Additionally, Figure 5 shows that since 2007, young drivers 16 to 24 years old have been observed manipulating electronic devices at higher rates than older drivers have been.

Figure 5
Drivers Visibly Manipulating Handheld Devices by Age, 2006–2017



Note: Missing data points signify insufficient data to produce reliable estimates.

Table 1
The Percentage of Drivers Holding Phones to Their Ears While Driving, by Major Characteristics

Driver Group[1]	2016		2017		2016–2017 Change		
	% of Drivers Holding Phones to Ears[2]	95% Confidence Interval[3]	% of Drivers Holding Phones to Ears[2]	95% Confidence Interval[3]	Change in Percentage[7]	95% Confidence Interval[4]	P-Value[5]
All Drivers[6]	**3.3%**	**(2.9, 3.8)**	**2.9%**	**(2.6, 3.3)**	**-0.4**	**(-0.7, -0.1)**	**0.01**
Males	**3.0%**	**(2.5, 3.4)**	**2.4%**	**(2.1, 2.8)**	**-0.5**	**(-0.9, -0.2)**	**0.01**
Females	3.8%	(3.3, 4.5)	3.6%	(3.2, 4.2)	-0.2	(-0.7, 0.3)	0.41
Drivers by Age Group[6]							
16–24	4.2%	(3.3, 5.4)	3.8%	(3.1, 4.5)	-0.5	(-1.5, 0.6)	0.40
25–69	**3.4%**	**(3.0, 3.9)**	**3.0%**	**(2.7, 3.4)**	**-0.4**	**(-0.7, -0.1)**	**0.02**
70 and Older	0.9%	(0.5, 1.6)	0.8%	(0.4, 1.4)	-0.1	(-0.8, 0.5)	0.67
Drivers by Race[6]							
White	**3.3%**	**(2.9, 3.8)**	**2.9%**	**(2.6, 3.3)**	**-0.4**	**(-0.7, -0.1)**	**0.01**
Black	4.6%	(3.5, 6.0)	4.3%	(3.2, 5.6)	-0.4	(-1.4, 0.7)	0.51
Other Races	2.4%	(1.7, 3.3)	1.7%	(1.3, 2.2)	-0.7	(-1.4, 0.1)	0.09
Drivers on							
Expressway Exit Ramps	**3.3%**	**(2.7, 4.1)**	**2.5%**	**(2.1, 3.0)**	**-0.8**	**(-1.3, -0.4)**	**0.00**
Other Surface Streets	3.3%	(2.8, 3.9)	3.2%	(2.7, 3.7)	-0.1	(-0.5, 0.2)	0.45
Drivers Traveling Through							
Light Precipitation	3.4%	(2.7, 4.2)	3.8%	(2.7, 5.4)	0.4	(-1.1, 1.9)	0.60
Light Fog	2.5%	(1.2, 5.1)	1.4%	(0.6, 3.1)	-1.1	(-2.8, 0.7)	0.22
Clear Weather Conditions	**3.3%**	**(2.9, 3.8)**	**2.8%**	**(2.5, 3.2)**	**-0.5**	**(-0.8, -0.2)**	**0.00**
Drivers of							
Passenger Cars	3.1%	(2.5, 3.8)	2.8%	(2.4, 3.2)	-0.3	(-0.9, 0.3)	0.29
Vans and SUVs	**3.3%**	**(2.9, 3.8)**	**2.8%**	**(2.5, 3.2)**	**-0.5**	**(-0.9, 0.0)**	**0.05**
Pickup Trucks	3.8%	(3.2, 4.6)	3.3%	(2.7, 4.0)	-0.6	(-1.3, 0.1)	0.10
Drivers in the							
Northeast	1.9%	(1.3, 2.9)	1.9%	(1.7, 2.3)	0.0	(-0.8, 0.9)	0.95
Midwest	**4.2%**	**(3.4, 5.1)**	**3.5%**	**(2.9, 4.2)**	**-0.7**	**(-1.1, -0.3)**	**0.00**
South	3.9%	(3.1, 5.0)	3.5%	(2.9, 4.3)	-0.4	(-1.1, 0.2)	0.17
West	2.4%	(1.6, 3.7)	2.1%	(1.4, 3.2)	-0.3	(-0.9, 0.2)	0.24
Drivers in							
Urban Areas	3.3%	(2.9, 3.9)	3.0%	(2.7, 3.3)	-0.3	(-0.7, 0.1)	0.09
Rural Areas	3.2%	(2.6, 4.1)	2.7%	(2.0, 3.5)	-0.6	(-1.2, 0.1)	0.07
Drivers Traveling During							
Weekdays	**3.8%**	**(3.3, 4.3)**	**3.3%**	**(2.9, 3.8)**	**-0.4**	**(-0.8, -0.1)**	**0.02**
Rush Hours	3.8%	(3.2, 4.4)	3.4%	(2.8, 4.1)	-0.4	(-0.9, 0.1)	0.13
Non-Rush Hours	3.7%	(3.2, 4.3)	3.3%	(2.8, 3.9)	-0.4	(-1.1, 0.2)	0.18
Weekends	2.0%	(1.6, 2.6)	1.8%	(1.5, 2.1)	-0.3	(-0.8, 0.2)	0.22
Drivers With[5]							
No Passengers	**4.2%**	**(3.7, 4.8)**	**3.5%**	**(3.1, 4.0)**	**-0.7**	**(-1.1, -0.3)**	**0.00**
At Least One Passenger	1.2%	(1.0, 1.6)	1.5%	(1.2, 1.8)	0.2	(-0.2, 0.7)	0.34
Drivers With[5]							
No Passengers	**4.2%**	**(3.7, 4.8)**	**3.5%**	**(3.1, 4.0)**	**-0.7**	**(-1.1, -0.3)**	**0.00**
Passengers All Under Age 8	3.8%	(2.5, 5.9)	3.8%	(2.7, 5.4)	-0.1	(-2.3, 2.2)	0.96
Passengers All 8 and Older	0.9%	(0.7, 1.2)	1.2%	(0.9, 1.6)	0.2	(-0.2, 0.7)	0.35
Some Passengers Under 8, and Some 8 or Older	1.5%	(0.7, 3.2)	1.9%	(0.9, 3.9)	0.4	(-1.4, 2.2)	0.68

[1] Drivers of passenger vehicles stopped at a stop sign or stoplight between the hours of 7 a.m. and 6 p.m.
[2] The percentage of drivers holding a phone to their ears, based on the subjective assessments of roadside observers.
[3] The Wilson Confidence Interval is used in the estimated percentages in the driver group (e.g., drivers in urban areas), which is in 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 drivers holding phones to ears, $n_{EFF} = n/D_{EFF}$ is the effective sample size (where n is the sample size and D_{EFF} is the design effect), $t = t_{(1-\alpha/2)}(df)$, 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. The degrees of freedom used in 2017 is different from that used in 2016.
[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 2016 and 2017 estimates for the group in question, indicated with bold type.
[6] Age, gender, and racial classifications are based on the subjective assessments of roadside observers.
[7] Belt use rate, 95 percent Confidence Interval, annual changes have been rounded to the nearest tenth. Annual changes have been computed based on unrounded estimates and may not equal those based on displayed values.

Data Source: NOPUS, NHTSA's National Center for Statistics and Analysis, 2016, 2017

Table 2
The Percentage of Drivers Speaking With Visible Headsets on While Driving, by Major Characteristics

Driver Group[1]	2016		2017		2016–2017 Change		
	% of Drivers Speaking with Headsets[2]	95% Confidence Interval[3]	% of Drivers Speaking with Headsets[2]	95% Confidence Interval[3]	Change in Percentage[7]	95% Confidence Interval[4]	P-Value[5]
All Drivers[6]	0.5%	(0.4, 0.7)	0.4%	(0.4, 0.6)	-0.1	(-0.3, 0.1)	0.40
Males	0.6%	(0.4, 0.8)	0.4%	(0.3, 0.5)	-0.2	(-0.4, 0.0)	0.13
Females	0.5%	(0.3, 0.7)	0.5%	(0.4, 0.6)	0.0	(-0.2, 0.3)	0.81
Drivers by Age Group[6]							
16–24	**1.0%**	**(0.6, 1.5)**	**0.3%**	**(0.2, 0.6)**	**-0.7**	**(-1.2, -0.1)**	**0.02**
25–69	0.5%	(0.4, 0.7)	0.5%	(0.4, 0.6)	0.0	(-0.2, 0.1)	0.69
70 and Older	NA	NA	0.2%	(0.1, 0.7)	NA	NA	NA
Drivers by Race[6]							
White	0.4%	(0.3, 0.6)	0.4%	(0.3, 0.5)	0.0	(-0.2, 0.2)	0.91
Black	1.1%	(0.6, 1.8)	0.7%	(0.5, 1.0)	-0.3	(-1.0, 0.3)	0.29
Other Races	0.9%	(0.5, 1.5)	0.5%	(0.3, 0.8)	-0.4	(-1.0, 0.3)	0.24
Drivers on							
Expressway Exit Ramps	0.5%	(0.4, 0.8)	0.5%	(0.4, 0.7)	0.0	(-0.3, 0.2)	0.79
Other Surface Streets	0.5%	(0.4, 0.7)	0.4%	(0.3, 0.5)	-0.1	(-0.4, 0.1)	0.34
Drivers Traveling Through							
Light Precipitation	0.7%	(0.3, 1.8)	0.5%	(0.2, 1.2)	-0.2	(-1.1, 0.6)	0.56
Light Fog	NA	NA	NA	NA	NA	NA	NA
Clear Weather Conditions	0.5%	(0.4, 0.7)	0.5%	(0.3, 0.6)	-0.1	(-0.3, 0.1)	0.53
Drivers of							
Passenger Cars	0.5%	(0.4, 0.7)	0.4%	(0.3, 0.6)	-0.1	(-0.3, 0.2)	0.45
Vans and SUVs	0.6%	(0.4, 0.9)	0.5%	(0.4, 0.7)	-0.1	(-0.4, 0.2)	0.43
Pickup Trucks	0.3%	(0.2, 0.5)	0.3%	(0.2, 0.5)	0.0	(-0.2, 0.2)	0.84
Drivers in the							
Northeast	0.6%	(0.4, 0.9)	0.7%	(0.6, 1.0)	0.2	(-0.2, 0.5)	0.41
Midwest	0.2%	(0.1, 0.4)	0.3%	(0.2, 0.5)	0.0	(-0.2, 0.2)	0.66
South	**0.6%**	**(0.4, 0.8)**	**0.4%**	**(0.3, 0.5)**	**-0.2**	**(-0.4, -0.0)**	**0.04**
West	0.7%	(0.3, 1.5)	0.5%	(0.3, 0.9)	-0.2	(-0.8, 0.5)	0.61
Drivers in							
Urban Areas	0.6%	(0.4, 0.9)	0.5%	(0.4, 0.6)	-0.1	(-0.4, 0.1)	0.37
Rural Areas	0.3%	(0.2, 0.5)	0.3%	(0.2, 0.6)	0.0	(-0.2, 0.2)	0.92
Drivers Traveling During							
Weekdays	0.6%	(0.4, 0.8)	0.5%	(0.4, 0.6)	-0.1	(-0.3, 0.2)	0.59
Rush Hours	0.6%	(0.4, 1.0)	0.6%	(0.4, 0.8)	-0.1	(-0.3, 0.2)	0.56
Non Rush Hours	0.5%	(0.3, 0.8)	0.5%	(0.3, 0.6)	0.0	(-0.3, 0.2)	0.78
Weekends	0.4%	(0.2, 0.7)	0.3%	(0.2, 0.5)	-0.1	(-0.4, 0.2)	0.35
Drivers With[5]							
No Passengers	0.7%	(0.5, 1.0)	0.6%	(0.5, 0.7)	-0.1	(-0.4, 0.2)	0.50
At Least One Passenger	0.2%	(0.1, 0.4)	0.1%	(0.1, 0.2)	-0.1	(-0.2, 0.1)	0.46
Drivers With[5]							
No Passengers	0.7%	(0.5, 1.0)	0.6%	(0.5, 0.7)	-0.1	(-0.4, 0.2)	0.50
Passengers All Under Age 8	0.1%	(0.1, 0.4)	0.4%	(0.2, 0.8)	0.2	(-0.1, 0.5)	0.16
Passengers All 8 and Older	0.2%	(0.1, 0.4)	0.1%	(0.1, 0.2)	-0.1	(-0.3, 0.1)	0.17
Some Passengers Under 8, and Some 8 or Older	NA	NA	NA	NA	NA	NA	NA

[1] Drivers of passenger vehicles stopped at a stop sign or stoplight between the hours of 7 a.m. and 6 p.m.
[2] The percentage of drivers speaking with visible headsets while driving, based on the subjective assessments of roadside observers.
[3] The Wilson Confidence Interval is used in the estimated percentages in the driver group (e.g., drivers in urban areas), which is in 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 speaking with visible headsets while driving, $n_{EFF} = n/D_{EFF}$ is the effective sample size (where n is the sample size and D_{EFF} is the design effect), $t = t_{(1-\alpha/2)}(df)$, 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. The degrees of freedom used in 2017 is different from that used in 2016.
[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 2016 and 2017 estimates for the group in question, indicated with bold type.
[6] Age, gender, and racial classifications are based on the subjective assessments of roadside observers.
[7] Belt use rate, 95 percent Confidence Interval, annual changes have been rounded to the nearest tenth. Annual changes have been computed based on unrounded estimates and may not equal those based on displayed values.
NA: Data was not sufficient to produce a reliable estimate.

Data Source: NOPUS, NHTSA's National Center for Statistics and Analysis, 2016, 2017

Table 3
The Percentage of Drivers Visibly Manipulating Handheld Devices While Driving, by Major Characteristics

Driver Group[1]	2016		2017		2016–2017 Change		
	% of Drivers Manipulating Hand-Held Devices[2]	95% Confidence Interval[3]	% of Drivers Manipulating Hand-Held Devices[2]	95% Confidence Interval[3]	Change in Percentage[7]	95% Confidence Interval[4]	P-Value[5]
All Drivers[6]	2.1%	(1.7, 2.6)	2.0%	(1.6, 2.6)	-0.1	(-0.5, 0.3)	0.68
Males	1.7%	(1.3, 2.1)	1.7%	(1.3, 2.2)	0.1	(-0.4, 0.5)	0.80
Females	2.8%	(2.2, 3.4)	2.5%	(1.9, 3.2)	-0.3	(-0.9, 0.4)	0.37
Drivers by Age Group[6]							
16–24	4.5%	(3.5, 5.8)	3.9%	(3.1, 5.0)	-0.6	(-1.8, 0.7)	0.35
25–69	2.0%	(1.6, 2.5)	1.9%	(1.5, 2.5)	-0.1	(-0.5, 0.4)	0.78
70 and Older	0.3%	(0.1, 0.7)	0.7%	(0.3, 1.4)	0.4	(-0.2, 1.0)	0.15
Drivers by Race[6]							
White	1.9%	(1.6, 2.3)	1.7%	(1.3, 2.3)	-0.2	(-0.6, 0.2)	0.30
Black	3.0%	(2.0, 4.6)	3.8%	(2.7, 5.3)	0.8	(-1.0, 2.5)	0.39
Other Races	2.4%	(1.7, 3.2)	2.4%	(1.7, 3.3)	0.0	(-0.7, 0.7)	0.94
Drivers on							
Expressway Exit Ramps	2.0%	(1.4, 2.7)	1.9%	(1.4, 2.6)	0.0	(-0.6, 0.6)	0.95
Other Surface Streets	2.2%	(1.9, 2.6)	2.1%	(1.6, 2.7)	-0.1	(-0.6, 0.4)	0.58
Drivers Traveling Through							
Light Precipitation	2.8%	(2.0, 3.9)	2.6%	(1.6, 4.0)	-0.2	(-1.7, 1.3)	0.77
Light Fog	NA	NA	1.5%	(0.4, 5.9)	0.5	(-2.1, 3.1)	0.67
Clear Weather Conditions	2.1%	(1.7, 2.5)	2.0%	(1.5, 2.5)	-0.1	(-0.5, 0.3)	0.54
Drivers of							
Passenger Cars	2.4%	(1.9, 3.0)	2.4%	(1.8, 3.2)	0.0	(-0.5, 0.6)	0.91
Vans and SUVs	2.1%	(1.7, 2.6)	2.0%	(1.5, 2.5)	-0.2	(-0.7, 0.4)	0.54
Pickup Trucks	1.4%	(1.0, 1.9)	1.2%	(0.9, 1.7)	-0.1	(-0.7, 0.4)	0.61
Drivers in the							
Northeast	**1.1%**	**(0.6, 2.1)**	**2.8%**	**(1.4, 5.4)**	**1.7**	**(0.5, 2.9)**	**0.01**
Midwest	2.1%	(1.5, 3.0)	1.4%	(0.9, 2.2)	-0.7	(-1.6, 0.2)	0.11
South	2.6%	(1.9, 3.6)	2.3%	(1.6, 3.3)	-0.3	(-1.0, 0.4)	0.36
West	2.0%	(1.5, 2.6)	1.6%	(1.1, 2.5)	-0.4	(-1.0, 0.3)	0.24
Drivers in							
Urban Areas	2.4%	(2.0, 3.0)	2.4%	(1.9, 3.1)	0.0	(-0.5, 0.5)	0.94
Rural Areas	1.3%	(0.9, 1.9)	1.1%	(0.7, 1.6)	-0.2	(-0.7, 0.2)	0.31
Drivers Traveling During							
Weekdays	2.3%	(1.8, 2.8)	2.0%	(1.5, 2.7)	-0.2	(-0.7, 0.3)	0.39
Rush Hours	2.3%	(1.7, 3.0)	2.3%	(1.7, 3.3)	0.0	(-0.7, 0.8)	0.91
Non-Rush Hours	2.2%	(1.8, 2.7)	1.7%	(1.3, 2.4)	-0.5	(-1.0, 0.1)	0.08
Weekends	1.7%	(1.3, 2.2)	2.0%	(1.6, 2.5)	0.3	(-0.1, 0.7)	0.12
Drivers With[5]							
No Passengers	2.6%	(2.2, 3.2)	2.5%	(2.0, 3.3)	-0.1	(-0.6, 0.4)	0.62
At Least One Passenger	0.9%	(0.6, 1.2)	0.8%	(0.6, 1.2)	0.0	(-0.3, 0.3)	0.87
Drivers With[5]							
No Passengers	2.6%	(2.2, 3.2)	2.5%	(2.0, 3.3)	-0.1	(-0.6, 0.4)	0.62
Passengers All Under Age 8	1.9%	(1.0, 3.6)	1.8%	(1.1, 2.7)	-0.2	(-1.5, 1.2)	0.79
Passengers All 8 and Older	0.8%	(0.6, 1.1)	0.7%	(0.5, 1.0)	-0.1	(-0.4, 0.2)	0.55
Some Passengers Under 8, and Some 8 or Older	0.6%	(0.3, 1.2)	1.3%	(0.5, 2.9)	0.7	(-0.5, 1.9)	0.24

[1] Drivers of passenger vehicles stopped at a stop sign or stoplight between the hours of 7 a.m. and 6 p.m.
[2] The percentage of drivers visibly manipulating handheld devices while driving, based on the subjective assessments of roadside observers.
[3] The Wilson Confidence Interval is used in the estimated percentages in the driver group (e.g., drivers in urban areas), which is in 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 drivers visibly manipulating handheld devices, $n_{EFF} = n/D_{EFF}$ is the effective sample size (where n is the sample size and D_{EFF} is the design effect), $t = t_{(1-\alpha/2)}(df)$, 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. The degrees of freedom used in 2016 is different from that used in 2015.
[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 2015 and 2016 estimates for the group in question, indicated with bold type.
[6] Age, gender, and racial classifications are based on the subjective assessments of roadside observers.
[7] Belt use rate, 95 percent Confidence Interval, annual changes have been rounded to the nearest tenth. Annual changes have been computed based on unrounded estimates and may not equal those based on displayed values.
NA: Data was not sufficient to produce a reliable estimate.

Data Source: NOPUS, NHTSA's National Center for Statistics and Analysis, 2016, 2017

NOPUS Data Collection and Estimation

NOPUS is the only nationwide probability-based observational survey of driver electronic device use in the United States. The survey observes usage as it actually occurs at randomly selected roadway sites and thus provides the best tracking of the extent to which people in the United States use cell phones and other electronic devices while driving.

The survey data is collected by trained data collectors at probabilistically sampled intersections controlled by stop signs or stoplights, where data collectors observe, from the roadside, drivers and other occupants of passenger vehicles. Data is collected from 7 a.m. to 6 p.m. Only stopped vehicles are observed to allow time to collect the variety of information required by the survey, including subjective assessments of 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 occupants, so that NOPUS can capture the untainted behavior of occupants. The 2017 NOPUS data was collected from June 5 to June 19, while the 2016 data was collected from June 6 to June 25.

Statistically significant increases in the use of handheld phones, headset use, and manipulation of handheld devices from 2016 to 2017 are shown, respectively, in Table 1, Table 2, and Table 3 by having a result with a p-value 0.05 or less in the tables' far-right column.

The NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation procedures. The sample sites for the 2017 NOPUS were entirely from the 2015 NOPUS sample redesign. Table 4 shows the observed sample sizes of the 2017 NOPUS. 50,577 vehicles were observed at the 1,615 data collection sites. Due to ineligibility, construction, danger in the area, or road closure, the observations could not be completed at some of the sampled observation sites.

Table 4
Sites and Vehicles Observed in the 2017 NOPUS

Number of	2016	2017	Percentage Change
Sites Observed	1,600	1,615	0.9%
Vehicles Observed	48,177	50,577	5.0%

Data collection, estimation, and variance estimation for NOPUS are conducted by Westat, Inc., under the direction of NHTSA's National Center for Statistics and Analysis under Federal contract number DTNH22-13-D-00284.

NOPUS Categories and Definitions

NOPUS observes three types of driver electronic device use while driving: "holding phones to their ears," "speaking with visible headsets on," and "visibly manipulating handheld devices."

Drivers are counted as "holding phones to their ears" if they are holding to their ears what appear to the data collectors to be phones. This would include behaviors such as drivers engaging in conversation, listening to messages, or conducting voice-activated dialing while holding phones to their ears. However, a data collector may not have knowledge of various types of wireless phones. Thus, the device that has been identified as a "phone" may only reflect his/her conception of what constitutes a "phone." Also, the corded car phones and satellite phones may or may not have been identified as "phones."

Drivers are counted as "speaking with visible headsets on" if they appear to be speaking and wearing a headset with a microphone. This would include behaviors such as talking, engaging in conversation, or conducting voice-activated dialing via a wireless earpiece on the driver's right ear or via an ear bud connected by wire to a cell phone. Talking via a visible Bluetooth headset (usually on the driver's right ear) would also be included in this category. However, it would not include drivers using headsets that do not involve cell phones (e.g., iPods), since these headsets do not involve microphones. Note that the wireless earpieces that are obscured by hair or clothing or are on the driver's left ear would not be included because they would not be visible to the roadside observer. In addition, some wireless ear buds would not be included as they are too small to be observed from the roadside. The drivers with headsets who are not speaking at the time of observation are not included because they might have recently completed a call or be waiting for an expected call. Each driver in the survey is observed for about 10 seconds before the data collector decides whether or not the driver is speaking. Also, note that the drivers counted as speaking through a visible headset might have been talking to a passenger or using voice-activated computer software rather than using a phone.

Drivers are counted as "visibly manipulating handheld devices" if they appear to be manipulating some type of electronic device such as a cell phone, a smart phone, tablet, video game, or some other device. This would include behaviors such as text messaging, using a Web-capable smart phone (e.g., an iPhone) or a tablet (e.g., iPad) to view travel directions, check e-mails or calendar appointments, or surf the Internet, manual dialing, playing handheld games, and holding phones in front of their faces to converse or check messages via speakerphone or use voice-activated dialing. Manipulation of the non-handheld devices (adjusting volume on stereos, pressing buttons on a dashboard GPS unit, etc.) is not included in this category. Also, note that a driver characterized by the survey as "manipulating handheld device" may or may not have been speaking.

There are means by which the drivers can use cell phones that would neither be recorded as "holding phones to their ears" nor as "speaking with visible headsets on" nor as "visibly manipulating handheld devices" in the NOPUS. These would include: (1) a driver using a cell phone headset but is not speaking during the approximately 10-second period when he/she is being observed, and (2) a driver using technologies that cannot be observed from the roadside. The

unobservable technologies would include: a wireless earpiece obscured by hair or clothing or on the left ear, a driver conversing via a speakerphone with the phone on the passenger seat or in a cell phone holder on the vehicle dashboard, a driver using a phone that is built into the vehicle (e.g., OnStar), and a driver using the cell phone hands-free via a Bluetooth car kit or via a Bluetooth system that is built into the vehicle (e.g., Sync). It is possible that at some point in the future, NOPUS may be able to capture such behaviors by directing a device that can detect cell phones in-use in the passing vehicles.

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

"Expressway Exit Ramps" are defined as the access roads from roadways with limited access, while "Other Surface Streets" comprise all other roadways.

"Weekday Rush Hours" are defined to be 7 a.m. to 9:30 a.m. and 3:30 p.m. to 5 p.m. on weekdays, while "Weekday Non-Rush Hours" comprise all other weekday hours (9:30 a.m. to 3:30 p.m. and 5 p.m. to 6 p.m.).

Since NOPUS is not a census and is based on a probability sample, it is impossible to produce State-by-State driver electronic device use results. However, NOPUS produces regional estimates of the use rates based on the following categories:

- **Northeast:** ME, VT, NH, MA, RI, CT, NY, PA, NJ
- **Midwest:** MI, OH, IN, IL, WI, MN, IA, MO, KS, NE, SD, ND
- **South:** WV, MD, DE, VA, KY, TN, NC, SC, GA, FL, AL, MS, AR, LA, OK, TX, DC
- **West:** AK, WA, OR, CA, NV, ID, UT, AZ, NM, CO, WY, MT, HI

Please note that since 2015, we use an objective area type classification to replace the subjective area type based on trained data collectors' best judgement. Each NOPUS site is assigned an objective area type characterization based on the Census Bureau definitions of urbanized areas and urban clusters (see www.census.gov/geo/reference/ua/urban-rural-2010.html). It is defined as:

- **Urban:** A site which intersects an urbanized area or urban cluster (i.e., an area of at least 2,500 people);
- **Rural:** All other sites.

Estimating Overall Cell Phone Use, Both Handheld and Hands-Free

NHTSA's 2007 Motor Vehicle Occupant Safety Survey (MVOSS) estimated that for drivers using cell phones while driving, 55 percent tended to use handheld cell phones and 45 percent tended to use hands-free phones. Applying the proportion 0.8182 (= 45/55) of these percentages to the 2.9 percent estimate of drivers using handheld cell phones in 2017 from NOPUS shows an estimated 2.4 (= 0.8182×2.9) percent of drivers using hands-free cell phones. Thus, a total of 5.3 (= 2.9+2.4) percent of drivers are estimated to be using either a handheld or a hands-free cell phone while driving at a typical daylight moment in the United States in 2017. Please note that the MVOSS estimates are based on self-reported use from both day and nighttime driving while the NOPUS estimates are observed during daylight hours.

State Laws on Driver Electronic Device Use (Enacted as of March 2017)

Many States restrict cell phone use by drivers. As of July 2017, no State completely bans all forms of cell phone use by drivers. However, Table 5 shows that a ban on driving while talking on a handheld cell phone was in place in 15 States (California, Connecticut, Delaware, Hawaii, Illinois, Maryland, Nevada, New Hampshire, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, and West Virginia), the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands (available at www.ghsa.org/html/stateinfo/laws/cellphone_laws.html). All these laws are primary enforcement—an officer may cite a driver for using a handheld cell phone without any other traffic offense taking place.

Forty-seven States, the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands ban text messaging for all drivers (Table 6). In 43 States, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands texting laws are primary enforcement, and 4 States have secondary enforcement of texting for drivers. Of the 4 States without an all driver texting ban, 2 prohibit text messaging by novice drivers and 1 restricts school bus drivers from texting.

Table 5
States and U.S. Territories With Laws† Banning Handheld Cell Phone Use While Driving

California	Connecticut	Delaware	Hawaii	Illinois
Maryland	Nevada	New Hampshire	New Jersey	New York
Oregon	Rhode Island	Vermont	Washington	West Virginia
District of Columbia	Puerto Rico	Guam	U.S. Virgin Islands	

†States and the District of Columbia with laws in effect as of July 2017

Table 6
States and U.S. Territories With Laws† Banning Text-Messaging While Driving

Alabama	Alaska	Arkansas	California	Colorado
Connecticut	Delaware	Florida*	Georgia	Hawaii
Idaho	Illinois	Indiana	Iowa	Kansas
Kentucky	Louisiana	Maine	Maryland	Massachusetts
Michigan	Minnesota	Mississippi	Nebraska*	Nevada
New Hampshire	New Jersey	New Mexico	New York	North Carolina
North Dakota	Ohio*	Oklahoma	Oregon	Pennsylvania
Rhode Island	South Carolina	South Dakota*	Tennessee	Texas
Utah	Vermont	Virginia	Washington	West Virginia
Wisconsin	Wyoming	District of Columbia	Puerto Rico	Guam
U.S. Virgin Islands				

†States and the District of Columbia with laws in effect as of July 2017
Note: States with* have secondary enforcement of texting for drivers.

Arkansas also bans the use of handheld cell phones while driving in a school zone or in a highway construction zone. This law is secondarily enforced. Texas has banned the use of cell phones and texting in school zones.

References

Santos, A., McGuckin, N., Nakamoto, H. Y., Gray, D., & Liss, S. (2011, June). *Summary of travel trends: 2009 National Household Travel Survey* (Report No. FHWA-PL-ll-022). Washington, DC: Federal Highway Administration. Available at http://nhts.ornl.gov/2009/pub/stt.pdf.

For More Information

Additional data and information on the survey design and analysis procedures will be available in upcoming publications to be posted on the website at www.nhtsa.gov/research-data.

For more information on NHTSA's policy on distracted driving, please visit www.nhtsa.gov/risky-driving/distracted-driving.

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National Highway Traffic Safety Administration

This research note and other general information on highway traffic safety may be accessed at: www-nrd.nhtsa.dot.gov/CATS/index.aspx