

Mississippi Observational Seat Belt Survey Report

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Statewide Observational Seat Belt Survey

In 2013 NHTSA directed each state to perform their respective statewide observational seat belt usage surveys according to a new criteria set forth by the federal agency's final rule in 2011. Mississippi, therefore, designed a new survey sampling methodology and began using the model in 2013. The NHTSA-approved survey design has been used as the official estimator of seat belt usage for the past four years. It resulted in a 74.4% estimated statewide belt use in 2013, 78.3% in 2014, 79.6% in 2015, and 77.9% in 2016. This same design and sample was implemented for the fifth and final year of the survey in 2017. A new sample is scheduled to be utilized in the 2018 survey.

The 2017 statewide survey was conducted after an intense seat belt media and enforcement campaign known as "Click It or Ticket" during the month of May, 2017. The intentions of this survey are to quantitatively gauge how effective the campaign was received by the motoring public and to generate an official 2017 estimate of seat belt usage for the state. Table 1 shows the counties that frame the 2017 observational seat belt survey. There were 173 road segments (or "sites") observed in 16 counties.

1.	Chickasaw	8 sites
2.	DeSoto	15 sites
3.	Hancock	10 sites
4.	Harrison	15 sites
5.	Hinds	15 sites
6.	Holmes	8 sites
7.	Jackson	15 sites
8.	Lee	10 sites
9.	Leflore	8 sites
10.	Madison	10 sites
11.	Panola	10 sites
12.	Perry	8 sites
13.	Pike	10 sites
14.	Pontotoc	8 sites
15.	Prentiss	8 sites
16.	Rankin	15 sites

Table 1: Counties observed and number of sites observed per county

The overall result for the 2017 Mississippi Observational Seat Belt Survey is a **78.8%** occupant seat belt usage rate with a standard error of **0.918%**. The lower limit of the 95% confidence interval is 76.96% and the upper limit is 80.56%. There were 19,571 vehicle occupants observed.

Table 2: Seat Belt Usage Rates by Road Class

Road Class	Occupants Observed	Belt Usage Rate
Interstates & Other Expressways	5,300	86.3%
Other Principal Arterials	6,221	83.5%
Minor Arterials	4,304	78.0%
Collectors	2,349	77.0%
Local Roads	1,404	74.5%

As confirmed by many previous surveys, there continues to be a trend of higher seat belt usage rates on higher traffic count roads. Table 2 shows “interstates and other expressways” along with “other principal arterials” leading the road class categories with 86.3% and 83.5% estimated belt usage rates respectively in 2017. The next three categories of road classes fell below the 80 percent belt use mark. “Minor arterials” shows a belt use rate of 78.0%. “Collectors” followed closely at 77.0%, and “local roads” rounded out the road class categories with a 74.5% estimated belt use rate. Local roads exhibited a distinct improvement from 66.2% in 2016 to the 74.5% shown for 2017, an 8.3 percentage point increase.

Table 3: Seat Belt Usage Rates by Vehicle Type

Vehicle	Occupants Observed	Belt Usage Rate
Passenger Car/Wagon	7,972	81.4%
Pickup	5,317	70.9%
SUV	4,893	85.2%
Van	1,396	80.4%

Table 3 illustrates the breakdown of belt usage rates in four vehicle categories. SUV’s lead the belt use categories with 85.1% estimated use. Passenger cars and vans were also above the 80% belt use mark with 81.4% and 80.4% belt use rates respectively. It was not a surprise to once again see pickup trucks as the trailing vehicle type in this breakdown. Each year pickup trucks pale in comparison to the other vehicle categories. The rate for pickups is 10 percentage points lower than any other vehicle category. However, pickup trucks did show slight improvement over the 68.7% estimated belt usage in 2016. The 2017 belt use rate for pickups is 70.9%.

A breakdown of the statewide belt use survey by county shows only one county, Harrison, above the 90% mark for 2017. Table 4 shows Harrison as well as the belt usage rates for the other fifteen sample counties surveyed in Mississippi. Six counties had belt use estimates in the 80% range. Those counties are DeSoto, Jackson, Hancock, Holmes, Perry, and Pike. Seven counties exhibited belt usage above the 70% mark but below 80%. Those counties are Hinds, Rankin, Lee, Madison, Panola, Pontotoc and Prentiss. Chickasaw and Leflore are the last two counties that round out the sixteen, and both of those counties display estimated belt use rates in the low 60% range.

Table 4: Seat Belt Usage Rates by County

County	Occupants Observed	Belt Usage Rate
DeSoto	2,409	83.4%
Harrison	2,366	90.6%
Hinds	1,631	75.2%
Jackson	1,817	89.6%
Rankin	1,616	76.8%
Chickasaw	690	63.4%
Hancock	1,220	88.5%
Holmes	881	83.5%
Lee	1,121	76.8%
Leflore	647	62.4%
Madison	957	77.6%
Panola	1,343	78.2%
Perry	590	89.2%
Pike	930	80.2%
Pontotoc	735	72.7%
Prentiss	625	74.9%

Comparison of Results from Seat Belt Surveys

Since 2012 seat belt observational surveys have been conducted based on the same sampling criteria set forth by NHTSA. In Table 5 below, the statewide survey in 2016 is compared to the statewide of 2017. Also, the mini survey of 2017, which is performed before CIOT in selected counties, is compared to the 2017 statewide survey results. The mini survey uses observations from 54 sites in 8 counties and these belt usage rates are unweighted. Each of the statewide survey results are from weighted calculations based on observations from 173 sites from 16 counties.

Table 5: County Comparisons

County	Percent Belted			Percent Change A to C	Percent Change B to C
	2016 Statewide	2017 Mini*	2017 Statewide		
	A	B	C		
Chickasaw	65.0%	-	63.4%	-1.6%	-
DeSoto	88.4%	88.1%	83.4%	-5.0%	-4.7%
Hancock	75.7%	-	88.5%	12.8%	-
Harrison	90.3%	89.8%	90.6%	0.3%	0.8%
Holmes	78.8%	-	83.5%	4.7%	-
Hinds	72.5%	-	75.2%	2.7%	-
Jackson	88.0%	-	89.6%	1.6%	-
Lee	70.3%	77.2%	76.8%	6.5%	-0.4%
Leflore	68.7%	63.4%	62.4%	-6.3%	-1.0%
Madison	81.4%	83.4%	77.6%	-3.8%	-5.8%
Panola	80.3%	-	78.2%	-2.1%	-
Perry	92.3%	83.5%	89.2%	-3.1%	5.7%
Pike	82.8%	80.2%	80.2%	-2.6%	0.0%
Pontotoc	72.9%	-	72.7%	-0.2%	-
Prentiss	70.6%	-	74.9%	4.3%	-
Rankin	72.6%	80.6%	76.8%	4.2%	-3.8%
Total	77.9%	82.2%	78.8%	0.9%	-3.4%

* Mini 2017 results are unweighted

The survey results of 2017 showed a few notable differences from the estimated belt usages of 2016. These differences could be the product of a variety of circumstances, but pinpointing causation is not possible. The media and enforcement campaign seemed to have a positive effect on belt use in some of the counties surveyed but not all. A 78.8% estimated belt use rate for Mississippi in 2017 is slightly higher than last year's statewide estimate of 77.9%.

As can be seen in Table 5, comparing the statewide surveys from 2016 (A) to 2017 (C), only one major negative differences can be seen in Leflore County (-6.3%). On the other end of the spectrum, the only significant increases in belt use from 2016 to 2017 came from Hancock (+12.8%) and Lee (+6.5%).

All other differences among the counties surveyed were less than or equal to 5% in either a positive or negative direction. These differences are considered to be due to normal fluctuations and of minimal impact.

Comparing the mini 2017 (B) to the statewide 2017 (C) is intended to gauge the impact of the CIOT campaign from before implementation to after the completion of media and enforcement activities. However, since the mini survey is a subsample of 54 sites, the comparison is not exactly equitable. The percent change between belt use estimations show many insignificant increases or decreases over the campaign period. The comparison of the overall belt use estimates shows a decrease of 3.4 percentage points in estimated belt usage from pre-CIOT to post-CIOT. Of the 8 counties compared, there were two outliers. Madison County, which has shown volatile rates in the past few years, exhibited a 5.8 percentage point drop in estimated belt use from the mini (83.4%) to the follow-up (77.6%). Contrarily, Perry County exhibited an increase of 5.7 percentage points from the mini (83.5%) to the follow-up (89.2%).

Table 6: Road Class Comparisons

Road Class	Percent Belted			Percent Change A to C	Percent Change B to C
	2016 Statewide	2017 Mini*	2017 Statewide		
	A	B	C		
Interstates & Other Expressways	85.8%	85.4%	86.3%	0.5%	0.9%
Other Principal Arterials	83.0%	85.1%	83.5%	0.5%	-1.6%
Minor Arterials	80.7%	78.9%	78.0%	-2.7%	-0.9%
Collectors	77.6%	77.1%	77.0%	-0.6%	-0.1%
Local Roads	66.2%	78.6%	74.5%	8.3%	-4.1%

* Mini 2017 results are unweighted

Comparing before and after belt usage rates by road classification is presented in Table 6. Only one of the rate differences from the 2016 statewide (A) to the 2017 statewide (C) is significantly positive. The local road class exhibited a sign of behavioral change that perhaps can be attributed to the impact of the CIOT campaign. The remaining differences between A and C in this road class comparison are considered minimal and due to normal fluctuation. In the comparison of the 2017 mini (B) to the 2017 statewide (C), none of the changes were considered significant and worthy of discussion.

Table 7: Vehicle Type Comparisons

Vehicle	Percent Belted			Percent Change	Percent Change
	2016 Statewide	2017 Mini*	2017 Statewide		
	A	B	C	A to C	B to C
Car/Wagon	82.5%	83.4%	81.4%	-1.1%	-2.0%
Pickup	68.7%	74.1%	70.9%	2.2%	-3.2%
SUV	83.1%	86.2%	85.2%	2.1%	-1.0%
Van	82.6%	90.2%	80.4%	-2.2%	-9.8%

* Mini 2017 results are unweighted

Table 7 illustrates, from the 2016 statewide (A) to the 2017 statewide (C), the belt use rates for none of the vehicle type varied significantly. There were slight increases in pickups and SUV's and slight decreases in passenger cars and vans. Comparison of the 2017 mini (B) to the 2017 statewide (C) shows a significant decrease in van belt usage of 9.8 percentage points. All other vehicle types reveal much lower and insignificant changes over the campaign period. The differences between these estimates can most likely be attributed to weighting factors and the samples not being the same. Again, the mini is a subset of the statewide survey.

The 2016 statewide and 2017 statewide both use the full survey results from 173 sites in 16 counties. Comparing these full surveys to the 2016 Mini is not an equitable comparison. Therefore, in an effort to develop a meaningful evaluation, the 54 sites that comprise the 2017 mini were filtered out of the two other statewide surveys and another comparison was conducted. The results of this comparison by county surveyed can be seen in Table 8.

Table 8: County Comparisons of 54 Mini Sites

County	Percent Belted			Percent Change	Percent Change
	2016 Statewide*	2017 Mini*	2017 Statewide*		
	A	B	C	A to C	B to C
DeSoto	92.5%	88.1%	84.6%	-7.9%	-3.5%
Harrison	91.2%	89.8%	91.5%	0.3%	1.7%
Lee	71.2%	77.2%	78.1%	6.9%	0.9%
Leflore	71.0%	63.4%	67.2%	-3.8%	3.8%
Madison	87.5%	83.4%	83.5%	-4.0%	0.1%
Perry	94.8%	83.5%	90.8%	-4.0%	7.3%
Pike	80.8%	80.2%	79.8%	-1.0%	-0.4%
Rankin	84.0%	80.6%	79.5%	-4.5%	-1.1%

* All results are unweighted

This “mini sites only” comparison in Table 8 shows one county with a relatively large decrease in belt use and one county with an comparatively large increase in belt use, when comparing the unweighted figures from the 2016 statewide (A) to the 2017 statewide (C) surveys. DeSoto County exhibits a decrease of 7.9 percentage points, while Lee County displays a 6.9 percentage point increase. The six other counties show smaller changes in observed belt use but most are negative. However, over the campaign period in 2017, no counties show significantly high decreases in belt use. When comparing the 2017 mini (B) to the same eight counties from the 2017 statewide survey (C), the only pronounced difference is a 7.3 percentage point increase in Perry County. All other differences in the last column of Table 8 are considered normal fluctuations in observed belt use estimates.

Summary

The 2017 Mississippi Observational Seat Belt Survey produced an official statewide belt usage estimate of 78.8%. Therefore, approximately 4 out of every 5 motorists on Mississippi roads are choosing to use seat belts for their protection. The 2017 rate is almost a percentage point higher than Mississippi’s 2016 estimated belt rate of 77.9%. Therefore, the 2017 Click It or Ticket campaign conducted in Mississippi seems to have had a slight, but positive, impact on the behavior of drivers and front seat passengers when it comes to buckling their seat belts.