



SEAT BELT AND MOTORCYCLE HELMET SURVEY



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INTRODUCTION

Mississippi has benefited from a primary seat belt law for a little over four years. In May 2006, Mississippi passed a primary seat belt law making it lawful for an officer to stop and ticket a vehicle driver for no other reason than not using a seat belt. The officer may also ticket the driver for unbelted passengers in the front seat of a vehicle. This small victory in public safety has resulted in increased seat belt usage rates for the state and thereby theoretically saved the lives of a number of Mississippians.

In 2009, the United States recorded the lowest number of motor vehicle traffic fatalities since 1950 – 33,808 fatalities. This reduction in fatalities is nearly a 10 percent change from 2008 and could be attributed to factors such as the economy, unemployment, vehicle improvements and highway safety programs. Despite the significant reduction, fatal crashes have claimed many lives over the years and continue to claim, on average, about 92 lives every day. In terms of a rate in 2009, the nation experienced 1.13 fatalities per 100 million vehicle miles of travel. Compare this figure with a rate in the range of three fatalities per 100 million vehicle miles traveled in the late 1970s.¹

Vehicle safety is a major component in all aspects of vehicle and road designs. However, it is the behavior of the driver and passengers with respect to belt use that ultimately determines the probability of survival in most vehicle crashes. A great number of fatalities may have been avoided if proper vehicle

restraints had been used at the time of the crashes. The National Highway Traffic Safety Administration (NHTSA) estimated from 1975 to 2008, safety belts saved 255,115 lives on American roads – with 13,250 of those estimated lives saved in 2008 alone.²

In 2009, Mississippi's traffic fatality rate of 23.71 fatalities per 100,000 Mississippians was over 115 percent higher than the national average of 11.01.

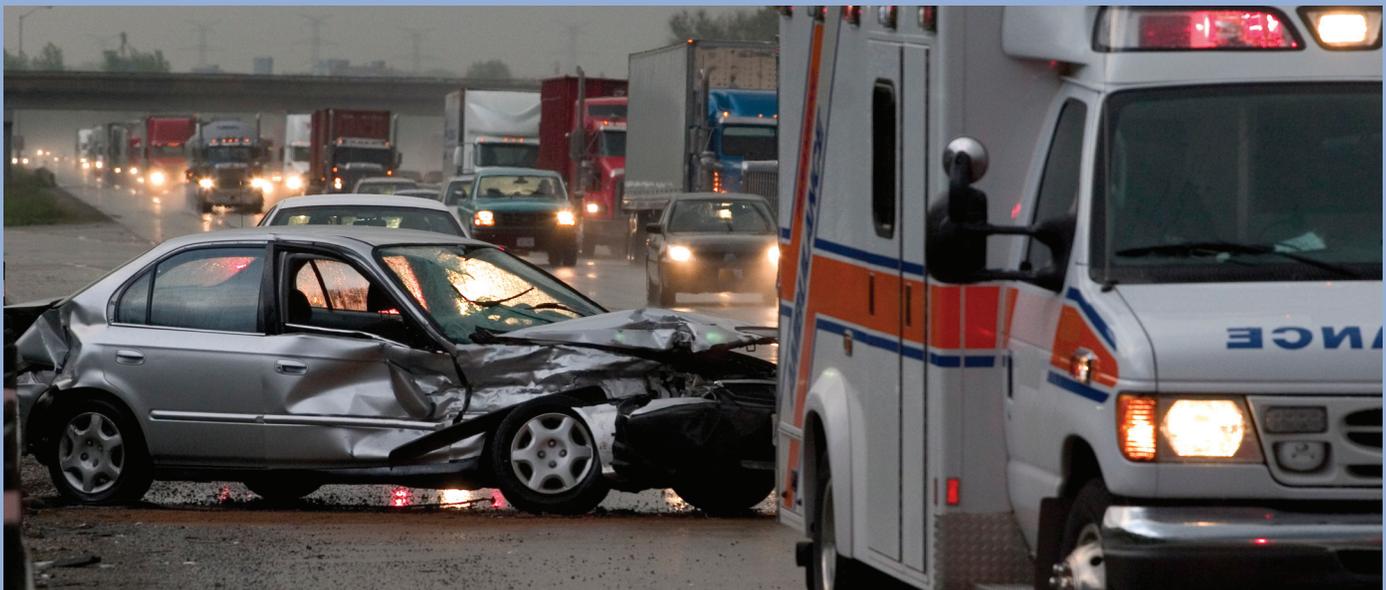
In 2009, Mississippi's traffic fatality rate of **23.71** fatalities per 100,000 Mississippians was over **115 percent** higher than the national average of 11.01.

This rate continues to be reflected by the 700 lives lost in Mississippi in 2009.³ Despite significant increases in observed seat belt usage since the primary law was passed, the loss of life due to automobile crashes in Mississippi is still staggering. Perhaps a portion of this loss of life could be attributed to Mississippi continuing to lag behind the national belt use average. Mississippi had an estimated 76.0 percent seat belt usage rate in 2009.

The national average was 84 percent. Last year only eight states had a lower belt usage rate than Mississippi. These states were Arkansas (74.4%), Louisiana (74.5%), Massachusetts (73.6%), New Hampshire (68.9%), Rhode Island (74.7%), South Dakota (72.1%), Wisconsin (73.8%) and Wyoming (67.6%). Five of these eight states (Massachusetts, New Hampshire, Rhode Island, South Dakota and Wyoming) do not have a primary seat belt law, and two of these states added their primary law in 2009 (Arkansas and Wisconsin). New Hampshire remains as the last state in the nation not having any form of seat belt law.⁴

For the past ten years, Mississippi has participated in a major effort conducted under the term “Click It or Ticket” (CIOT) during Memorial Day mobilizations. These efforts have been an attempt to increase seat belt awareness and use by implementing a number of phases. The first of these phases was an earned media phase including public service announcements, brochures and newspaper articles that were introduced to the Mississippi public. After two weeks of earned media, an extensive paid media campaign began (second phase). Lastly, a statewide law enforcement blitz (third phase) increased the intensity of seat belt law enforcement throughout the state. All law enforcement agencies participated in this increased level of enforcement by using road blocks as well as saturated patrolling efforts.

In 2010, two observational seat belt surveys were conducted by the Social Science Research Center at Mississippi State University. One survey was conducted prior to media and law enforcement intervention. This pre-campaign survey was a sub-sample (64 sites in eight Mississippi counties) of the larger post-campaign survey design. The follow-up or post-campaign survey in 2010 includes observations from 168 sites in 16 counties to produce the official seat belt usage rate for Mississippi. This survey was conducted following all law enforcement and media interventions. Preusser Research Group, Inc. (PRG) assisted SSRC in the data analysis phase of the project.



¹NHTSA Traffic Safety Facts – Highlights of 2009 Motor Vehicle Crashes – August 2010 (DOT HS 811 363)

²NHTSA Traffic Safety Facts 2008 – Overview (DOT HS 811 162)

³NHTSA State Traffic Information – Mississippi – 2009

⁴NHTSA Traffic Safety Facts – Seat Belt Use in 2009 – May 2010 (DOT HS 811 324)

SEAT BELT SURVEY METHODOLOGY

The seat belt and motorcycle helmet survey for Mississippi uses a multi-stage area probability approach. In the first stage, an appropriate number of sampling units are randomly selected. The primary sampling unit for the Mississippi survey is the county. The least populated counties, approximately 15 percent of the State's population, are excluded from the sampling process. Sixteen Mississippi counties, containing approximately 47 percent of the State's population, were then chosen. The second stage of sampling determines the 168 road segment locations in those 16 counties.

SUMMARY OF SAMPLING METHODOLOGY

- A. Five counties were selected as certainty counties because of having populations much larger than other Mississippi Counties. These counties also comprise nearly 30 percent of the state's population. The certainty counties were Hinds, Harrison, DeSoto, Jackson and Rankin.
- B. Thirty-four of the least populated counties, whose combined population accounted for only 15 percent of the state's population, were eliminated from the sampling frame.
- C. Sampling was done without replacement. In addition to the five certainty counties, 11 other counties were chosen, thus the sample consists of 16 counties.
- D. The sample includes 168 forty-minute observation periods at 168 pseudo-randomly chosen road segment locations. Each road segment within a county was randomly chosen with probability of being chosen proportionate to the VMT of the road segment. The five certainty counties were allotted 16 observation periods, while the remaining 11 counties were allotted eight observation periods each.
- E. The qualifying route segments comprising the sampling population are identified from the Mississippi Department of Transportation (MDOT) Roadway Characteristics File.
- F. The route segments from each of the survey counties are stratified into the following four groupings using MDOT functional classification data: (1) Interstates and Other Expressways, (2) Other Principal Arterials, (3) Minor Arterials and (4) Collectors.

- G. For a given county, segments were pseudo-randomly chosen from each of the four strata.
- H. For each certainty county, the 16 sites were grouped by proximity into two clusters of 8 sites each.
- I. For each cluster (certainty counties have two 8-site clusters, other counties have one 8-site cluster) a day of the week was randomly chosen. All days of the week were eligible for selection.
- J. Once a site was assigned a day of the week, observation times between 8 a.m. and 6 p.m. were randomly chosen in hourly increments.
- K. Direction of observation was randomly assigned for all 168 sites.
- L. Observers were instructed to observe from a site using the assigned direction for a period of 40 minutes.
- M. The sampling frame includes counting all passenger vehicles, sports utility vehicles, vans and pickup trucks. Other vehicles, such as large buses, larger trucks and farm equipment are excluded from observation.
- N. One observer is used at each observation site and the shoulder belt use/nonuse of all front seat, outboard occupants of qualifying vehicles is recorded on forms supplied by the SSRC.

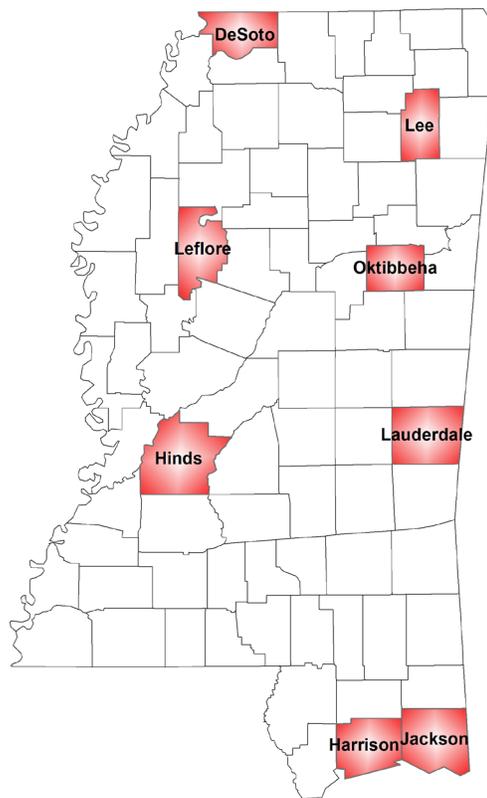
Special thanks to Preusser Research Group (PRG) for their assistance in the development of this methodology and continuing technical expertise.



Further details on the sampling methodology of the survey can be found in the document "PROPOSAL FOR MISSISSIPPI OBSERVATIONAL SURVEYS OF SAFETY BELT AND MOTORCYCLE HELMET USE" prepared by David R. Parrish (SSRC), Mark G. Solomon (PRG), William A. Leaf (PRG), Jarryl B. Ritchie (SSRC) and Katie Holland (SSRC). This methodology was approved by NHTSA in 2008 and can be obtained from the Social Science Research Center at Mississippi State University, Box 5287 Mississippi State, MS 39762, or by contacting Mr. David Parrish at (662) 325-8116 or david.parrish@ssrc.msstate.edu.

SECTION ONE: PRE-CAMPAIGN OBSERVATIONAL SEAT BELT SURVEY RESULTS

Prior to any media or law enforcement efforts encouraging seat belt usage, a mini survey was conducted. This survey was administered with intentions of establishing a baseline seat belt usage rate before the CIOT campaign. This mini survey includes observations from 64 sites in eight counties (eight sites per county). It is a sub-sample of the 168 site/16 county sample. **Figure 1** shows the counties chosen in the mini (baseline) survey.



1. DeSoto
2. Harrison
3. Hinds
4. Jackson
5. Lauderdale
6. Lee
7. Leflore
8. Oktibbeha

Figure 1: Mini Survey Counties

The data from this survey was collected between April 9 and May 9, 2010. The counties in the survey include a mixture of different geographical regions where both rural and urban counties are represented. Likewise, a mixture of rural and urban road segments from all road classes are also part of this mini survey.

Table 1: Baseline Seat Belt Usage Rates* by Type of Vehicle

Mini Survey of 64 Sites in 8 Counties

Type of Vehicle	Occupants Observed	Percent Belted
Passenger Car	3,367	77.9%
Pickup Truck	1,801	67.0%
SUV	1,526	81.6%
Van	579	84.3%
Total	7,273	76.5%

*unweighted rates

Table 2: Baseline Seat Belt Usage Rates* by Type of Vehicle

Mini Survey of 64 Sites in 8 Counties

County	Occupants Observed	Percent Belted
DeSoto	1,545	76.6%
Harrison	409	93.2%
Hinds	807	88.1%
Jackson	433	81.5%
Lauderdale	1,478	80.5%
Lee	983	74.2%
Leflore	818	55.9%
Oktibbeha	800	69.6%
Total	7,273	76.5%

*unweighted rates

Table 1 shows the baseline belt use figures by type of vehicle observed. Note these are unweighted usage rate percentages. The overall usage rate for the baseline survey was 76.5 percent. Vans held the highest rate of occupant restraint use with 84.3 percent. Occupants in SUVs showed restraint use slightly below the van rate at 81.6 percent. Passenger car occupants exhibited a higher than average 77.9 percent belt rate, but pickup truck occupants continue to exhibit a reluctance to belt use. A low 67.0 percent belted rate for trucks lowers the total average significantly. Seat belt compliance for pickup truck occupants is a considerable problem area for Mississippi, which if addressed could result in a much higher total rate for Mississippi belt use.

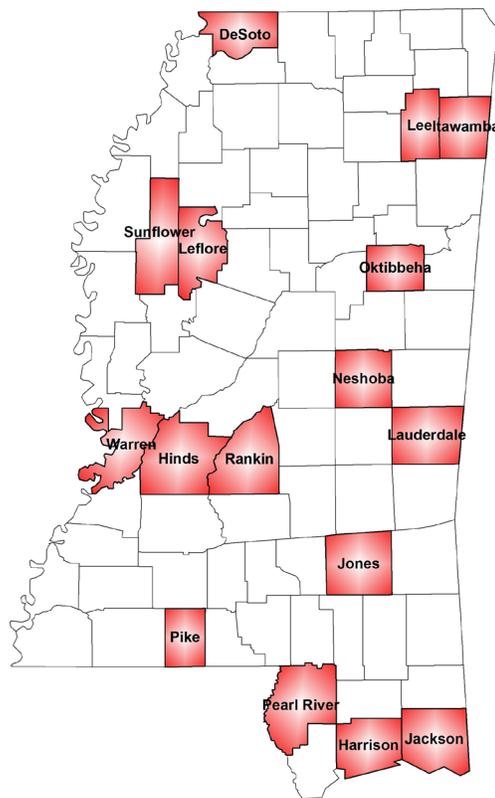
A breakdown of seat belt usage rates by county in the mini survey reveals Harrison County as the lone frontrunner at 93.2 percent restrained. Hinds, Jackson and Lauderdale Counties also illustrated occupant

restraint usage above 80 percent. However, some disappointing behavioral characteristics in terms of occupants' low belt use were exhibited by the counties of Leflore (55.9%) and Oktibbeha (69.6%).

The mini survey seems to produce baseline belt usage rates that adequately represent the state of Mississippi. Since the primary seat belt law passed in 2006, Mississippi has consistently shown belt usage rates in at least the low 70 percent range. This year the 76.5 percent baseline belt rate is virtually equivalent to last year's 76.0 percent post-CIOT rate. This suggests seat belt usage behavior has been sustained throughout the year.

SECTION TWO: POST-CAMPAIGN OBSERVATIONAL SEAT BELT SURVEY RESULTS

The post-campaign survey was a recently (2008) re-designed observational survey that produced the official seat belt usage rates for the state of Mississippi in 2010. **Figure 2** shows the counties that frame the 2010 seat belt survey. There were 168 road segments observed in these 16 counties. This number of site locations is down from the 409 sites in 16 counties used in previous surveys prior to the 2008 surveys.



1. DeSoto
2. Harrison
3. Hind
4. Itawamba
5. Jackson
6. Jones
7. Lauderdale
8. Lee
9. Leflore
10. Neshoba
11. Oktibbeha
12. Pearl River
13. Pike
14. Rankin
15. Sunflower
16. Warren

Figure 2: Post CIOT Survey Counties

Nine of these counties have historically been included in recent years' post campaign survey sample – **DeSoto, Harrison, Hinds, Jackson, Lauderdale, Lee, Leflore, Rankin and Warren**. The inclusion of these counties provides a familiar feel to the sample and more importantly a sense of reliability to the results. The overall result for the **2010 Mississippi Seat Belt Survey** is an **81.04 percent** occupant seat belt usage rate with a standard error of **0.70 percent**. The lower limit of the 95 percent confidence interval is 79.66 percent and the upper limit is 82.42 percent.

Table 3: Seat Belt Usage Rates by Road Class
Full Survey of 168 Sites in 16 Counties

Road Class	Belt Usage Rate
Interstates & Other Expressways	86.8%
Other Principal Arterials	83.3%
Minor Arterials	81.6%
Collectors	79.3%

As it has been confirmed by many previous surveys, there is still a clearly defined trend of higher seat belt usage rates on higher traffic count roads. **Table 3** shows “interstates and other expressways” leading the road class categories with nearly an 87 percent belt usage rate in 2010. The next level of road category, “other principal arterials,” followed closely with an 83.3 percent belt use rate. The remaining two functional classification divisions (minor arterials and collectors) had very similar rates to one another around the 80 percent range.

Table 4: Seat Belt Usage Rates by Vehicle Type
Full Survey of 168 Sites in 16 Counties

Vehicle	Belt Usage Rate
Passenger Car/Wagon	86.2%
Pickup	71.3%
SUV	88.0%
Van	80.9%

Table 4 illustrates the breakdown of belt usage rates in four vehicle categories. Passenger cars and sports utility vehicles or SUVs topped the list in percent belt usage with 86.2 percent and 88.0 percent respectively. Vans were in a close third with nearly an 81 percent occupant belt usage rate. To no surprise, pickup trucks were the vehicles with the lowest usage rate at 71.3 percent. However, this is a small improvement over last year’s 69.1 percent usage rate and a tremendous improvement from the 62.3 percent usage rate for pickups in 2008.

The 2010 survey had four vehicle choices for surveyors. Instead of only differentiating pickup trucks from other passenger cars as had previously been done prior to 2008, the surveyors made a choice among four categories: passenger car/wagon, pickup truck, sports utility vehicle or van.

The tables on the subsequent pages (Tables 5-10) provide breakdowns of seat belt use rates by type of vehicle, by county, by driver/passenger and by gender. The extent of this data narrowing produces more specific results but is of practical use only if the number of observations is significant enough to draw conclusions. Usually the minimum number of total observations per category should be around 30 before conclusions can be drawn. Many of the figures in this series of tables may not meet this requirement. However, this in-depth breakdown can be used as a loose guide to potential specific problem areas that may deserve attention.

Table 5: Seat Belt Usage Rates by County - All Vehicles
Full Survey of 168 Sites in 16 Counties
All Types of Vehicles by Driver/Passenger and Gender (N=19,515)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	74.9%	82.6%	78.0%	70.8%	84.8%	80.3%	78.4%
Harrison	87.2%	89.1%	87.9%	90.3%	97.2%	94.0%	88.9%
Hinds	77.3%	96.3%	87.3%	72.7%	98.6%	90.1%	87.5%
Jackson	81.6%	91.5%	85.2%	87.6%	96.0%	91.4%	86.4%
Rankin	75.9%	95.9%	85.5%	61.7%	96.0%	87.6%	85.8%
Itawamba	69.8%	88.0%	75.8%	71.8%	87.7%	82.6%	77.3%
Jones	80.8%	89.1%	84.4%	83.1%	87.3%	85.3%	84.7%
Lauderdale	80.0%	77.5%	78.8%	82.8%	94.8%	88.9%	80.5%
Lee	70.0%	79.3%	74.4%	68.0%	87.1%	78.8%	75.2%
Leflore	60.1%	69.6%	63.7%	51.1%	74.6%	63.5%	63.3%
Neshoba	66.2%	80.6%	70.4%	67.1%	79.9%	77.3%	71.8%
Oktibbeha	69.0%	78.8%	72.8%	59.2%	74.6%	71.3%	72.8%
Pearl River	81.5%	87.2%	83.4%	75.9%	93.8%	85.8%	84.0%
Pike	65.8%	79.4%	72.5%	58.8%	85.2%	75.5%	72.4%
Sunflower	75.9%	90.0%	82.6%	70.7%	97.6%	88.2%	84.6%
Warren	91.0%	91.4%	91.3%	87.3%	92.2%	88.0%	90.9%
Total	76.4%	85.9%	80.6%	73.5%	90.2%	84.0%	81.2%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in YELLOW for the reader's convenience only. Some of these figures could be misleading due to basing a percentage on a very small number of observations. This phenomenon is common when producing breakdowns to a finer resolution. Also, 0% and 100% usage rates are highlighted in PURPLE and should not be considered a true approximation for the same reason.

Table 5 considers all vehicle types and shows an overall total usage rate of 81.2 percent, which is virtually identical to the official overall rate of 81.04 percent. Female drivers and passengers in Hinds, Jackson, Rankin, Sunflower and Warren Counties recorded outstanding belt use numbers over 90 percent. Male passengers in Leflore, Oktibbeha and Pike are on the low end of the spectrum of belt use with below 60 percent usage. Eight of the 16 counties (Harrison, Hinds, Jackson, Rankin, Pearl River, Jones, Sunflower and Warren) had overall belt use equal to or higher than the 2009 national average of 84 percent.

Male drivers and passengers of all types of vehicles continue to lag behind females when it comes to buckling up. Seventy-six percent of male drivers appear to be using seat belts while female drivers are buckling up at nearly a 10 percent higher rate. A greater ratio disparity exists by gender in passenger belt use – the female buckle rate is 90 percent and the male rate is 74 percent.

All observed occupants in Warren County were exceptional at buckling up, and it should be noted that Warren increased its overall belt use from 64.4 percent in 2009 to 90.9 percent in 2010 – a 25 percent increase in belt use in one year!

Table 6: Seat Belt Usage Rates by County - Cars, SUVs, Vans

Full Survey of 168 Sites in 16 Counties

Cars+SUVs+Vans by Driver/Passenger and Gender(N=14,746)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	77.9%	83.1%	80.5%	71.9%	86.3%	81.7%	80.7%
Harrison	87.1%	89.9%	88.3%	93.8%	96.8%	95.5%	89.5%
Hinds	84.5%	96.7%	91.7%	89.1%	98.4%	95.6%	92.1%
Jackson	83.5%	93.1%	87.4%	89.4%	96.1%	92.5%	88.4%
Rankin	87.6%	96.5%	93.0%	82.0%	97.0%	93.3%	93.0%
Itawamba	79.9%	86.3%	82.9%	80.1%	83.6%	81.6%	82.4%
Jones	80.0%	88.5%	84.7%	82.5%	86.5%	84.5%	84.8%
Lauderdale	85.4%	78.0%	81.3%	82.7%	96.3%	88.1%	82.5%
Lee	77.9%	79.4%	78.6%	69.0%	89.5%	81.4%	79.1%
Leflore	59.3%	71.0%	65.1%	61.6%	76.0%	69.3%	65.2%
Neshoba	77.2%	82.5%	78.7%	74.5%	83.3%	81.5%	79.0%
Oktibbeha	74.3%	81.1%	78.3%	74.7%	82.2%	77.5%	78.4%
Pearl River	89.0%	86.8%	87.2%	75.3%	97.2%	88.8%	87.6%
Pike	72.1%	81.4%	77.0%	81.1%	83.5%	80.4%	76.7%
Sunflower	74.0%	89.7%	83.5%	68.4%	97.3%	88.9%	85.4%
Warren	91.2%	91.1%	91.5%	83.1%	91.9%	84.8%	90.6%
Total	81.0%	86.5%	83.9%	79.8%	91.2%	86.4%	84.3%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in YELLOW for the reader's convenience only. Some of these figures could be misleading due to basing a percentage on a very small number of observations. This phenomenon is common when producing breakdowns to a finer resolution. Also, 0% and 100% usage rates are highlighted in PURPLE and should not be considered a true approximation for the same reason.

Table 6 shows results from the consolidation of three vehicle type – cars, SUVs and vans. This pickup-absent category mimics the category of “passenger cars” in years before 2008. The highlights in this particular breakdown show exemplary belt use rates by Hinds, Rankin and Warren Counties. Both males and females alike in these counties are committed to buckling up as they drive. Many counties show female drivers and passengers above or very close to 90 percent belt use. It should be noted that in this pickup truck excluded table, the total rate of belt use is equal to the 2009 national average of 84 percent for all vehicles.

The low point of this table is exhibited by Leflore County, showing an outlying belt use rate of 65.2 percent and a male driver belt use rate less than 60 percent. The next lowest county (Pike at 76.7%) is over ten percentage points higher than Leflore.

Table 7 is the first in this series that isolates a particular type of vehicle for analysis. In this case belt use in passenger cars/wagons are examined. The overall belt rate for cars is 84.3 percent. This figure is only two percent less than the 2009 passenger car national average of 86 percent. Counties showing a rate equal to or higher than the 2009 national average are Harrison, Hinds, Jackson, Rankin, Pearl River and Warren. Excellent belt rates above 90 percent are scattered throughout the table and deserve attention. Two blemishes below 60 percent are shown in the low usage county of Leflore.

Table 7: Seat Belt Usage Rates by County - Passenger Cars
Full Survey of 168 Sites in 16 Counties
Passenger Cars by Driver/Passenger and Gender (N=9,118)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	76.4%	81.7%	78.9%	70.4%	85.5%	80.9%	79.3%
Harrison	86.8%	88.6%	87.4%	95.4%	95.0%	95.5%	88.8%
Hinds	85.1%	95.8%	91.4%	89.8%	96.9%	94.7%	91.8%
Jackson	83.7%	92.0%	87.2%	89.8%	93.5%	91.8%	88.1%
Rankin	88.0%	97.1%	93.3%	73.3%	96.2%	94.5%	93.5%
Itawamba	79.3%	90.1%	83.4%	76.2%	73.4%	78.3%	82.6%
Jones	81.3%	85.2%	83.7%	84.0%	84.4%	81.8%	84.2%
Lauderdale	76.7%	84.9%	84.5%	93.6%	94.3%	93.9%	85.3%
Lee	77.1%	79.8%	78.6%	74.5%	85.4%	78.0%	78.5%
Leflore	59.8%	68.7%	64.2%	59.4%	66.5%	68.3%	64.4%
Neshoba	85.2%	86.1%	82.5%	98.2%	78.1%	80.6%	81.6%
Oktibbeha	78.4%	78.5%	78.5%	68.3%	83.2%	75.2%	78.1%
Pearl River	86.3%	84.8%	85.4%	83.1%	95.0%	89.3%	86.3%
Pike	72.2%	81.5%	76.1%	91.6%	72.4%	74.8%	76.3%
Sunflower	72.8%	88.5%	81.9%	69.3%	98.4%	88.4%	84.1%
Warren	92.7%	91.0%	92.2%	94.5%	83.5%	90.7%	92.1%
Total	80.9%	86.5%	83.9%	83.7%	87.7%	86.1%	84.3%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in YELLOW for the reader's convenience only. Some of these figures could be misleading due to basing a percentage on a very small number of observations. This phenomenon is common when producing breakdowns to a finer resolution.

Table 8: Seat Belt Usage Rates by County - Pickup Trucks
Full Survey of 168 Sites in 16 Counties
Pickup Trucks by Driver/Passenger and Gender (N=4,769)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	69.2%	80.2%	71.2%	65.6%	77.7%	73.3%	72.0%
Harrison	87.4%	84.7%	86.5%	77.3%	100.0%	87.1%	86.9%
Hinds	56.6%	84.5%	60.3%	46.4%	100.0%	47.7%	60.1%
Jackson	76.0%	82.9%	77.5%	82.5%	95.6%	86.8%	79.1%
Rankin	59.2%	83.8%	62.1%	38.4%	83.9%	64.6%	62.2%
Itawamba	54.3%	98.9%	58.7%	58.2%	99.3%	72.1%	61.7%
Jones	82.0%	93.9%	84.0%	83.5%	96.1%	87.5%	85.0%
Lauderdale	72.1%	58.4%	72.4%	91.1%	83.1%	89.9%	74.2%
Lee	54.9%	78.9%	56.6%	61.4%	73.7%	61.6%	57.5%
Leflore	60.2%	49.6%	59.3%	49.7%	0.0%	39.8%	57.8%
Neshoba	59.8%	55.1%	58.9%	41.2%	76.8%	62.6%	60.5%
Oktibbeha	61.9%	60.0%	61.4%	25.1%	78.2%	51.5%	60.2%
Pearl River	71.7%	91.2%	74.3%	72.1%	94.8%	77.2%	75.1%
Pike	61.3%	63.5%	63.6%	22.2%	88.3%	72.2%	64.1%
Sunflower	77.5%	100.0%	79.8%	79.1%	100.0%	83.9%	82.2%
Warren	91.1%	95.3%	91.2%	100.0%	100.0%	100.0%	92.4%
Total	69.1%	78.5%	70.4%	62.9%	85.8%	72.6%	71.2%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in YELLOW for the reader's convenience only. Some of these figures could be misleading due to basing a percentage on a very small number of observations. This phenomenon is common when producing breakdowns to a finer resolution. Also, 0% and 100% usage rates are highlighted in PURPLE and should not be considered a true approximation for the same reason.

As in years past, **Table 8** presents some major concerns and challenges to the state of Mississippi. A major portion of the cells in this table are yellow – meaning there are many belt use rates identified below 60 percent. Also note there are cells in purple – meaning these results should not be considered reliable for this breakdown. Again, these breakdowns to a fine resolution may not be representative of the individual group due to low sample size (n).

A few bright spots can perhaps be identified among the dismal. One example is female drivers and passengers in a few counties show terrific

use rates in pickups. Female drivers and passengers in general show 78.5 percent and 85.8 percent use rates respectively. Warren County stands out as the exception in this table with all categories of pickup truck belt rates above 90 percent.

Two of the 16 counties show less than 60 percent belt use rates for all occupants (far right column) in pickup trucks. It is clear that belt use in pickup trucks and especially males in pickups have a long way to go to parallel belt use in the other vehicle types. The 2009 national average for belt use in pickup trucks was 74 percent.

Table 9: Seat Belt Usage Rates by County - SUVs
Full Survey of 168 Sites in 16 Counties
SUVs by Driver/Passenger and Gender (N=4,113)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	78.8%	82.5%	80.0%	71.6%	90.1%	85.0%	81.0%
Harrison	88.1%	93.1%	90.8%	93.5%	97.4%	93.9%	91.6%
Hinds	89.2%	97.7%	94.6%	88.3%	100.0%	98.0%	94.9%
Jackson	83.4%	94.2%	87.3%	91.9%	98.3%	94.1%	88.6%
Rankin	90.4%	96.5%	95.1%	82.3%	97.2%	93.7%	94.6%
Itawamba	78.1%	88.8%	78.3%	100.0%	80.0%	84.9%	79.6%
Jones	81.9%	92.6%	87.4%	96.3%	77.7%	84.6%	87.1%
Lauderdale	91.1%	70.3%	82.2%	68.1%	100.0%	79.3%	81.7%
Lee	73.6%	80.2%	80.5%	74.6%	89.4%	83.1%	80.9%
Leflore	62.0%	80.5%	71.2%	72.9%	85.1%	76.4%	69.5%
Neshoba	49.8%	82.4%	70.1%	79.6%	94.1%	85.1%	72.6%
Oktibbeha	68.8%	87.0%	78.5%	100.0%	90.4%	90.4%	81.0%
Pearl River	94.6%	88.3%	90.1%	78.0%	99.4%	89.2%	89.7%
Pike	74.3%	85.8%	79.7%	71.1%	78.2%	70.3%	77.5%
Sunflower	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Warren	99.5%	92.6%	95.4%	91.9%	92.0%	90.1%	94.2%
Total	82.5%	88.4%	86.0%	84.3%	92.8%	87.8%	86.1%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in YELLOW for the reader's convenience only. Some of these figures could be misleading due to basing a percentage on a very small number of observations. This phenomenon is common when producing breakdowns to a finer resolution. Also, 0% and 100% usage rates are highlighted in PURPLE and should not be considered a true approximation for the same reason.

Table 9 shows seat belt use in SUVs is an impressive 86.1 percent overall. Harrison, Hinds, Jackson, Rankin and Warren Counties produce excellent numbers across the board. Many of the counties have SUV belt use rates in the high seventies and eighties. Leflore and Neshoba are displaying the lowest SUV belt rates around the 70 percent range. Male drivers of SUVs in Neshoba exhibited an astonishingly low 49.8 percent.

There are several purple highlighted cells that show 100 percent usage rates, and as stated before, these cells should be disregarded. There seems to be few SUV counts in Sunflower County as a whole.

The last category of vehicles in this series is vans. **Table 10** illustrates the breakdown by county, driver/passenger, and gender. Vans are not a prominent vehicle on Mississippi roads – just over 1,500 observations of vans for the entire survey of 16 counties. Consequently, that small a number broken down by multiple levels does not translate into reliable information at this scale. Several of the cells in this table are highlighted purple for that exact reason.

The overall results of belt use in vans can be stated with reasonable confidence. **Table 10** shows van passengers (83.3%) buckling up more than drivers (77.6%). Also, the 2010 overall van usage rate (78.4%) is almost ten percentage points less than the 2009 national average belt rate for vans (87%).

Table 10: Seat Belt Usage Rates by County - Vans
Full Survey of 168 Sites in 16 Counties
Vans by Driver/Passenger and Gender (N=1,515)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	86.4%	91.7%	88.8%	93.1%	83.0%	85.3%	88.1%
Harrison	86.4%	92.6%	88.7%	93.1%	100.0%	96.6%	89.9%
Hinds	60.5%	100.0%	77.3%	0.0%	100.0%	76.3%	77.1%
Jackson	81.4%	95.8%	88.8%	82.0%	99.1%	91.8%	88.9%
Rankin	72.9%	94.2%	84.7%	78.3%	100.0%	93.4%	86.3%
Itawamba	86.3%	88.1%	86.7%	100.0%	87.8%	88.1%	87.1%
Jones	59.1%	100.0%	68.0%	67.0%	100.0%	67.0%	70.0%
Lauderdale	75.3%	69.4%	65.1%	100.0%	100.0%	100.0%	68.9%
Lee	74.1%	78.1%	73.0%	38.1%	97.4%	85.4%	76.4%
Leflore	65.8%	87.6%	69.3%	100.0%	52.2%	52.2%	68.1%
Neshoba	86.1%	72.7%	88.4%	88.8%	100.0%	94.4%	91.2%
Oktibbeha	72.1%	83.2%	75.0%	64.2%	83.3%	70.3%	74.4%
Pearl River	92.1%	100.0%	84.1%	100.0%	100.0%	100.0%	86.1%
Pike	78.3%	80.5%	71.6%	0.0%	100.0%	100.0%	72.5%
Sunflower	70.5%	64.8%	71.5%	0.0%	82.4%	54.7%	65.9%
Warren	55.0%	92.2%	68.4%	51.4%	100.0%	63.5%	67.1%
Total	74.2%	87.5%	77.6%	62.6%	94.7%	83.3%	78.4%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in YELLOW for the reader's convenience only. Some of these figures could be misleading due to basing a percentage on a very small number of observations. This phenomenon is common when producing breakdowns to a finer resolution. Also, 0% and 100% usage rates are highlighted in PURPLE and should not be considered a true approximation for the same reason.



Figure 3A: Male Seat Belt Usage Rates by Vehicle Type & Race
Full Survey of 168 Sites in 16 Countries

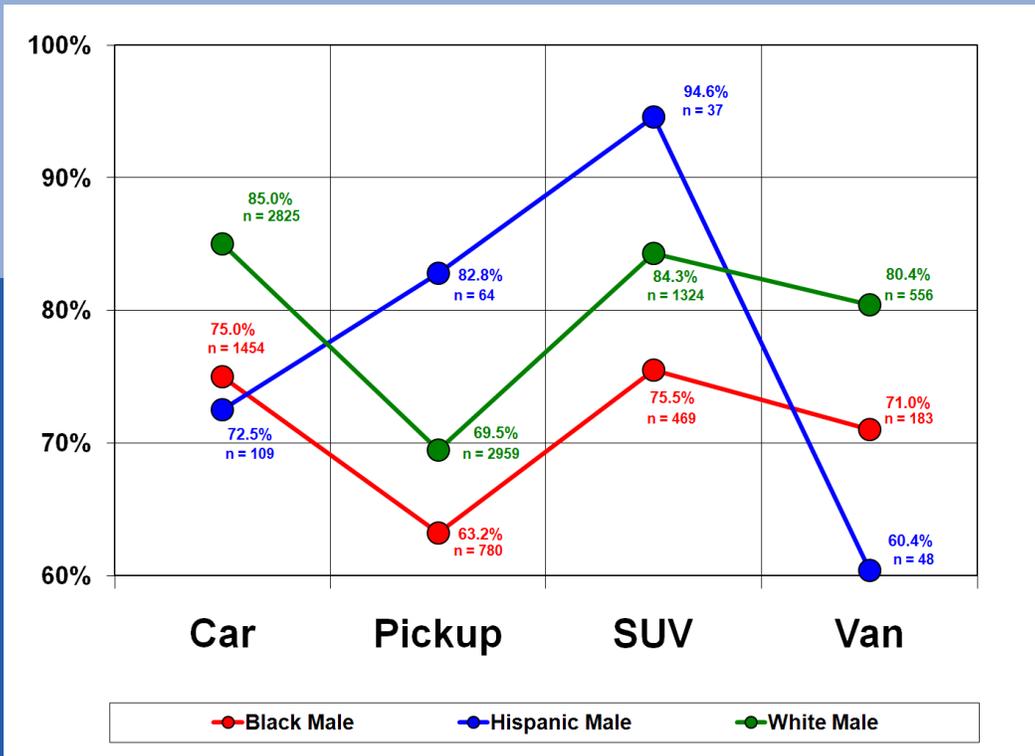


Figure 3B: Female Seat Belt Usage Rates by Vehicle Type & Race
Full Survey of 168 Sites in 16 Countries

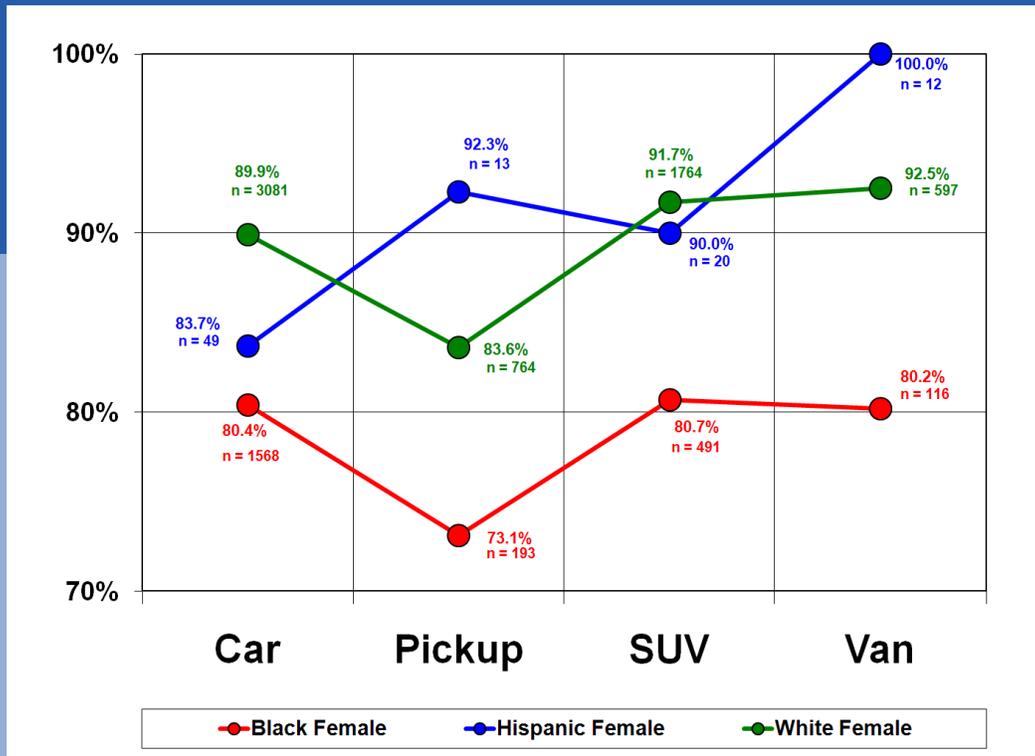


Figure 3A and Figure 3B are graphic illustrations of how well the observed population buckled up by gender, race and type of vehicle. Figure 3A shows males, and Figure 3B shows females. Notice how the black and white trends are virtually parallel in both the male and female figures. Black males tend to trail behind white males in buckling up in Mississippi – same behavior exists when comparing females. Also a comparison between graphs shows females using vehicle restraints far better than males. In general, the conclusion can be drawn that white female are the most likely group to be using a seat belt restraint in Mississippi.

CAR

>80%

The first columns in both graphs show white males, white females and black females above the 80 percent belt usage range for passenger cars.

PICKUP

83.6%

The second columns show white females (83.6%) and black females (73.1%) buckling up more often than white males (69.5%) and black males (63.2%).

The Hispanic percentage figures in both graphs could be misleading; therefore, the number of observations is included in the graphs. As you can see, only the column showing Hispanic males in passenger cars in Figure 3A has a sample size greater than 100. The other columns in each of the graphs present data that may not be representative of Hispanic motorists' behavior.

SUV

>80%

The third column indicates all demographics of race and gender except black males buckling up over 80% of the time. Again, the Hispanic figures may not be representative.

VAN

92.5%

White females observed in vans have the highest rate of belt use behavior at 92.5 percent. All 12 of the Hispanic females observed were buckled. This is not considered representative of Hispanic females but it is a very positive observation.

Figure 4: Seat Belt Usage Rates by Race & Gender

Full Survey of 168 Sites in 16 Counties

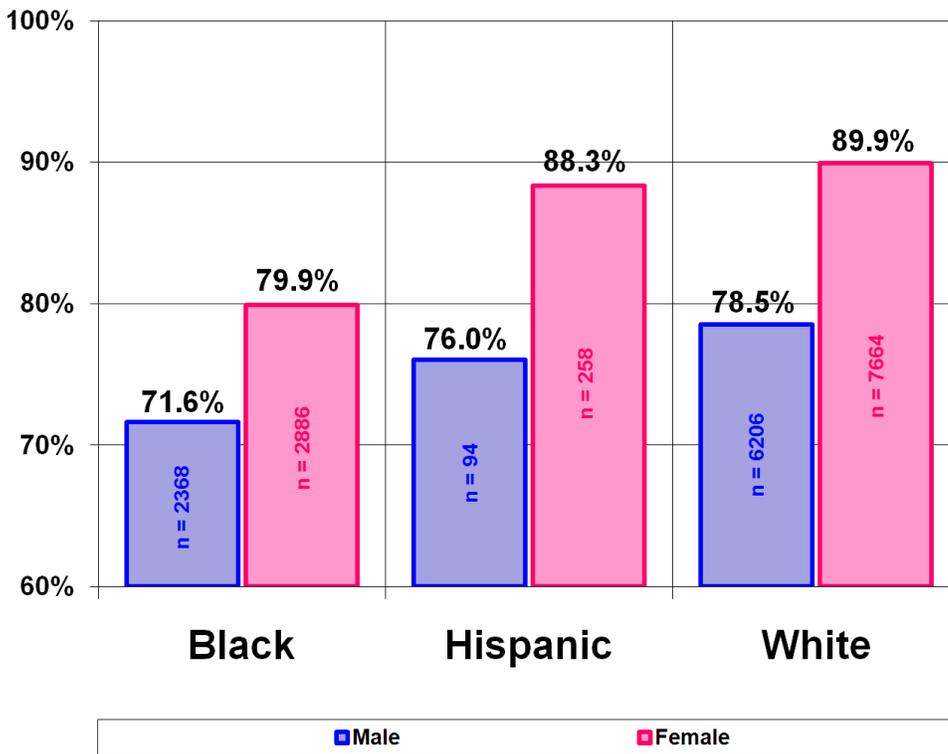


Figure 4 presents an analysis of belt use broken down only by race and gender. This chart reveals that males within each race category lag about eight to 12 percentage points behind females when it comes to buckling up. White females are exactly 10 percentage points above black females and almost 20 percentage points above black males. Black females are slightly better than any of the male race categories in belt use.

Figures 5 and 6 illustrate Mississippi seat belt usage rates for the past 17 years (Figure 5) and the seat belt use rates for the United States in 2009 (Figure 6).

SECTION THREE: BELT USE BEFORE AND AFTER INTERVENTION

The comparison of the baseline (or pre-campaign) survey results to the follow-up (or post-campaign) survey may provide officials feedback on where media and enforcement tactics worked in increasing seat belt awareness or changing human behavior with regard to buckling up. Comparative analysis can also give officials direction on what facets of the campaign need to be targeted for altering or strengthening. The following tables and figures illustrate how the campaign may have affected seat belt use throughout the state of Mississippi.

Table 11: Baseline versus Follow-up County Comparisons
Seat Belt Usage Rates by County

County	Percent Belted		Percent Change	Percent + or -
	Baseline*	Follow-up		
DeSoto	76.6%	78.4%	1.8%	2.3%
Harrison	93.2%	88.9%	-4.3%	-4.6%
Hinds	88.1%	87.5%	-0.6%	-0.7%
Itawamba	-	77.3%	-	-
Jackson	81.5%	86.4%	4.9%	6.0%
Jones	-	84.3%	-	-
Lauderdale	80.5%	80.5%	0.0%	0.0%
Lee	74.2%	75.2%	1.0%	1.3%
Leflore	55.9%	63.3%	7.4%	13.2%
Neshoba	-	71.8%	-	-
Oktibbeha	69.6%	72.8%	3.2%	4.6%
Pearl River	-	84.0%	-	-
Pike	-	72.4%	-	-
Rankin	-	85.8%	-	-
Sunflower	-	84.6%	-	-
Warren	-	90.9%	-	-
Total	76.4%	81.0%	4.6%	6.0%

* Baseline percentages are not weighted

Comparing pre- and post-campaign seat belt usage numbers in **Table 11** is helpful in determining geographic areas that may need special attention in future campaigning. However, it must be noted that in **Table 11** the follow-up results are weighted figures and the baseline results are unweighted. Weighting the follow-up figures does not skew the figures drastically, but this is still an unconventional means of comparison. Therefore, the comparisons in **Table 11** are relative and decisions based on the percent change or percent increase or decrease should take this into account.

Table 11 shows mentionable post-campaign increases in belt use for Jackson and Leflore Counties. Harrison, on the other hand, is the only county that demonstrated a slight decline in belt use over the CIOT campaign.

Table 12: Baseline versus Follow-up Road Class Comparisons
Seat Belt Usage Rates by Road Class

Vehicle	Percent Belted		Percent Change	Percent + or -
	Baseline*	Follow-up*		
Interstates & Other Expressways	81.7%	84.9%	3.2%	3.9%
Other Principal Arterials	75.7%	80.8%	5.1%	6.7%
Minor Arterials	73.5%	79.1%	5.6%	7.6%
Collectors	74.8%	79.2%	4.4%	5.9%

* Baseline and follow-up percentages are not weighted

Comparing before and after belt usage rates by road classification is presented in **Table 12**. The largest change was a positive change in minor arterial roads (7.6%), but all classifications of roads showed increases. These increases suggest the CIOT seat belt awareness message was successful across all road classes.

Table 13 illustrates there were more positive than negative changes in belt use across type of vehicle due to the CIOT campaign. Passenger car occupants showed the best response to the campaign by an **8.2 percent** increase in observed belt use. SUVs and pickup truck occupants also demonstrated significant increases in belt usage presumably due to the campaign. However, van occupants exhibited a decrease in belt use despite the campaign efforts.

Table 13: Baseline versus Follow-up Vehicle Type Comparisons
Seat Belt Usage Rates by Vehicle Type

Vehicle Type	Percent Belted		Percent Change	Percent + or -
	Baseline*	Follow-up*		
Car/Wagon	77.9%	84.3%	6.4%	8.2%
Pickup	67.0%	71.2%	4.2%	6.3%
SUV	81.6%	86.1%	4.5%	5.5%
Van	84.3%	78.4%	-5.9%	-7.0%

* Baseline and follow-up percentages are not weighted

Table 14: Baseline versus Follow-up Race/Gender Comparisons
Seat Belt Usage Rates by Race and Gender

	Percent Belted		Percent Change	Percent + or -
	Baseline*	Follow-up*		
Black Female	73.3%	79.9%	6.6%	9.0%
Black Male	62.0%	71.6%	9.6%	15.5%
Hispanic Female	80.4%	88.3%	7.9%	9.8%
Hispanic Male	77.9%	76.0%	-1.9%	-2.4%
White Female	87.8%	89.9%	2.1%	2.4%
White Male	75.0%	78.5%	3.5%	4.7%

* Baseline and Follow-up percentages are not weighted

In **Table 14**, the comparison of belt use is across race and gender. Both the baseline and follow-up numbers in this table are unweighted. The CIOT campaign seems to have made major impact on the black community. Both black males and black females showed significant increases in belt use across the campaign with 15.5 percent and 9.0 percent increases respectively. There was almost a 5 percent increase in belt use by white males and white females showed a slight increase of 2.4

percent. A large increase in Hispanic female belt use rates is shown but the baseline percentages were calculated using very small numbers of observation. The same can be said concerning the small decrease in belt use exhibited by Hispanic males. The Hispanic population in Mississippi is small but will continue to grow and should be considered as an integral part of any future seat belt campaign.



Comparison of the overall belt use numbers for the state of Mississippi in 2010 is the following:

The unweighted baseline belt use rate is **76.4 percent.**

The unweighted follow-up belt use is **81.3 percent.**

The official, weighted belt use rate for Mississippi is **81.0 percent.**

Percent change of **4.6 percent**

Percent increase of **6.0 percent**

SECTION FOUR: MOTORCYCLE HELMET USE

The final segment for discussion is motorcycle helmet use in Mississippi. Mississippi is fortunate to have an excellent motorcycle helmet law. It is a primary law. All motorcycle riders must wear helmets or receive a ticket. As a part of the post-campaign seat belt survey, motorcycle helmets were also counted, and helmet use in 2010 was found to be an outstanding 99.1 percent.

Whereas motorcycle helmet use has shown a sharp decline in use in the U.S., Mississippi has maintained a consistently high percentage of use. A number of studies (Arkansas and Texas to name two) have consistently and very strongly shown that helmet use is directly correlated with having a primary law. It is hoped that the legislature will continue to resist efforts to roll back the primary law.



99.1%

Motorcycle helmet use
in Mississippi in 2010
is 99.1 percent.

Table 15: Mississippi Unweighted Motorcycle Helmet Usage
Full Survey of 168 Sites in 16 Counties

Motorcycle Riders	Counts	Percent
Using Helmet	329	99.1%
Not Using Helmet	3	0.9%
Total	332	100.0%

Table 15 provides a summary on the 2010 Motorcycle Helmet Survey in Mississippi. There was no attempt in the survey to judge whether the helmet was legal or illegal.

SUMMARY

For the past ten years, intense media and enforcement campaigns have been directed towards Mississippians with the intent of increasing their awareness of seat belt laws, promoting highway safety, and changing the behavior of those who do not buckle their belts. The Click It or Ticket (CIOT) campaign is conducted over a four week period of earned media, paid media and enforcement. This awareness and enforcement effort is part of the Memorial Day mobilization. The effectiveness of these efforts was evaluated by surveys managed by the Social Science Research Center at Mississippi State University.

In 2008, a new survey design was developed, approved by National Highway Traffic and Safety Administration (NHTSA) and implemented. This new design includes

168 observation sites in 16 Mississippi counties. This new design took the place of the old design which was comprised of 409 observation sites in 16 counties. The new survey of 168 sites has been used for the past three years as the post-campaign survey capturing the official seat belt usage rates for the state each year. The 2010 Mississippi observational seat belt survey was conducted after CIOT project implementation during the month of June.

Prior to the CIOT campaign, a mini survey was conducted to establish a baseline seat belt usage rate before the CIOT campaign. The results of the mini survey are believed to represent the state adequately.

These baseline data – observations from eight sites in each of eight counties – were collected from mid April to early May 2010.

Overall, the baseline information indicated a 76.4 percent belt use rate, and when compared to the 81.0 percent count in the post campaign survey, Mississippi showed a very favorable change in belt use over the campaign period. In fact, Mississippi reached a milestone in belt use by showing, for the

first time, a belt use rate greater than 80 percent. This means four out of five Mississippi motorists are choosing to drive and ride safer by using seat belts. Perhaps this indicates the seat belt media and enforcement activities of 2010 encouraged this positive behavior in Mississippi. The primary seat belt law was enacted in 2006 and the high level of

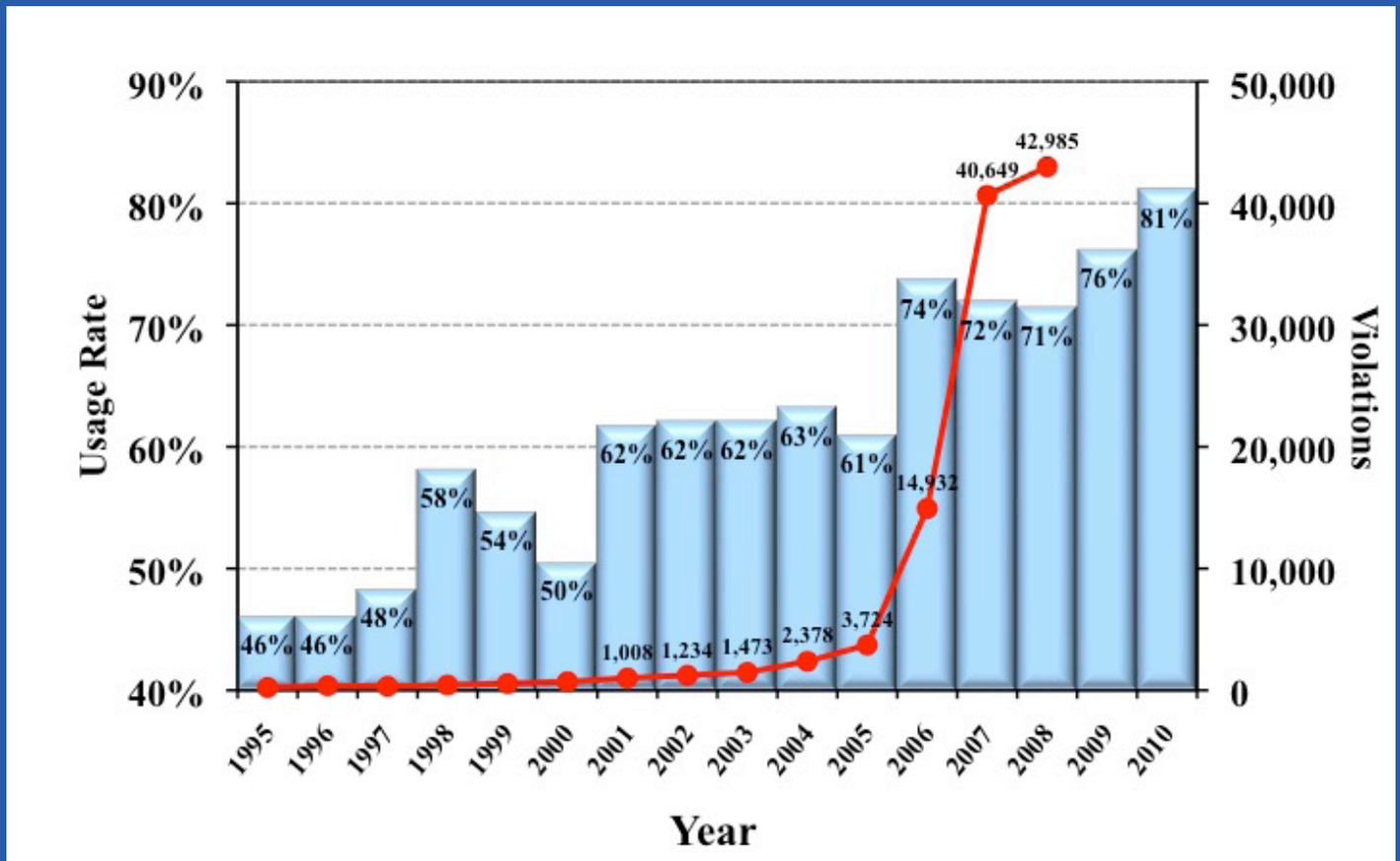
Mississippi reached a milestone in belt use by showing, for the first time, a belt use rate **greater than 80 percent**. This means **four out of five** Mississippi motorists are choosing to drive and ride safer by using seat belts.

enforcement accompanying this law has seemed to engrave positive behaviors and attitudes into a greater percentage of Mississippians. This new milestone and the retention of belt use behavior throughout the past few years have undoubtedly saved many lives. Nevertheless, the state must continue to strive forward in the challenge to raise seat belt usage rates up to the current national average of 85 percent.

Finally, as is evident by the survey numbers, Mississippi has an excellent usage rate for motorcycle helmets. For a number of years, the helmet use rate has been near 100 percent.

Mississippi Seat Belt Usage Rates & Belt Violation Citations

The figure below shows a bar and line graph depicted simultaneously in one chart. The bar graph shows Mississippi's seat belt usage rates over the past 16 years. From a dismal rate of 46 percent in 1995 to this year's milestone breaching rate of 81 percent, the upward trend over this time period is apparent.



Until 2000, the belt use rate remained below half of the Mississippi motoring population. From 2001 to 2005 a relatively flat belt use rate in the lower 60 percent range was exhibited by the state. It wasn't until 2006 when Mississippi enacted a primary seat belt law that provided the catalyst for over a ten percentage point increase in belt use. All during the time leading up to the adoption of a primary seat belt law the line graph shows a very small number of seat belt violations being issued.

In 2007 and 2008 (the most recent full years of data available), the number of violations issued for non-compliance of the state's seat belt law has soared to over forty thousand per year. This increase in law enforcement, coupled with high visibility "Click It or Ticket" campaigns, has brought Mississippi over the 80 percent usage mark. With four out of five Mississippi motorist buckling up, the probability of fewer deaths on the state's road network is at an all time high.

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