2009 Mississippi Safety Belt / Motorcycle Helmet Survey

Prepared for:

The Office of Highway Safety
Division of Public Safety Planning,
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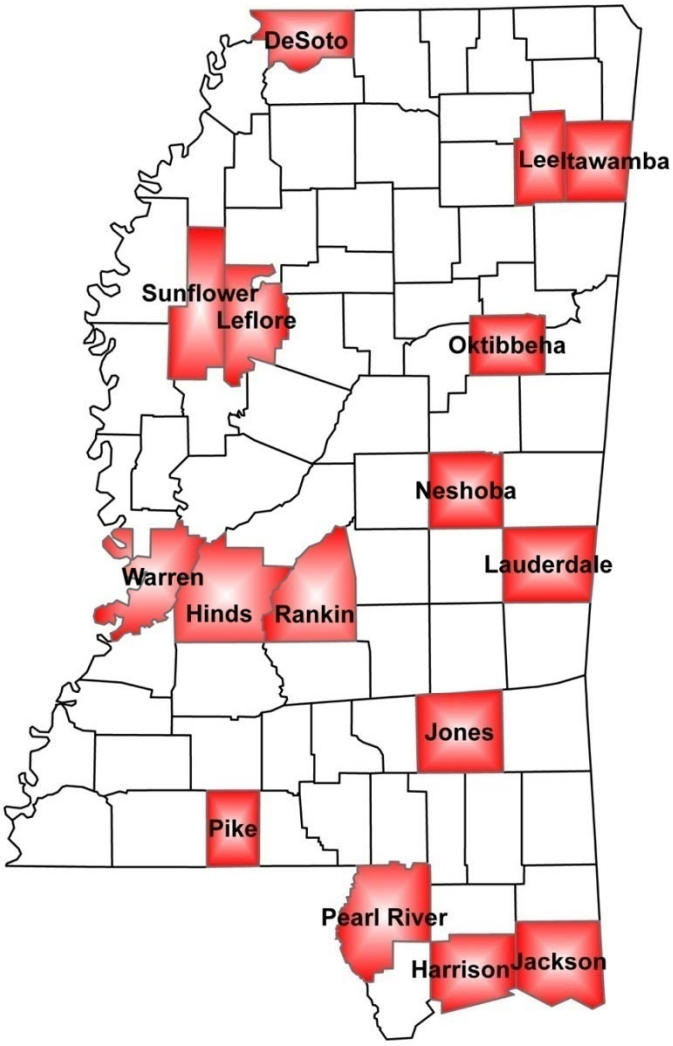

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INTRODUCTION

Mississippi has benefited from a primary seat belt law for a little over three years. In May of 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 seatbelt. 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 2006, fatal injuries resulting from vehicle crashes were the leading killer of persons 3 to 34 years of age in this country. Fatal crashes have claimed many lives over the years and continue to claim on average about 102 lives each and every day. On the American road network in 2008, there were an estimated 5,811,000 police-reported traffic crashes, of which 37,261 people lost their lives. In terms of a rate in 2008, the nation experienced 1.27 fatalities per 100 million vehicle miles of travel. Compare this figure with a rate of 1.58 per 100 million vehicle miles traveled in 1998. A great number of these 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.[1]

In 2008, Mississippi's traffic fatality rate of 26.65 fatalities per 100,000 Mississippians was over 117 percent higher than the national average of 12.25. This rate continues to be reflected by the 783 lives lost in Mississippi in 2008.[2] Despite a significant increase in observed seat belt usage since the primary law was passed, the loss of life in automobile crashes in Mississippi is staggering. Perhaps this loss of life could be attributed mostly to Mississippi continuing to lag behind most of the nation in belt use. Mississippi had a estimated 71.3% seat belt usage rate in 2008. Only four states had a lower belt usage rate than Mississippi in 2008 (Arkansas, Massachusetts, New Hampshire and Wyoming). None of these states have a primary seat belt law and New Hampshire remains as the last state in the nation not having any form of seat belt law.[3]

For the past nine 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.

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[1] *NHTSA Traffic Safety Facts 2008 – Overview* (DOT HS 811 162)
[2] *NHTSA State Traffic Information* – Mississippi – 2008
[3] *NHTSA Traffic Safety Facts – Crash/Stats – April 2009* (DOT HS 811 106)

In 2009, 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 8 Mississippi counties) of the larger post-campaign survey design. The follow-up or post-campaign survey in 2009 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.

SEAT BELT SURVEY METHODOLOGY

The seat belt and motorcycle 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% of the State's population, are excluded from the sampling process. The survey was conducted in 16 Mississippi Counties containing approximately 47% of the State's population.

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% 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 8 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 4 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 8:00 a.m. and 6:00 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.

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.

DESCRIPTION OF 2009 SURVEYS

This report will be divided into four sections.

Section I will present results from the pre-campaign (mini) observational survey of 64 sites in 8 counties.

Section II will showcase the analysis of the post-campaign 2009 Mississippi observational seat belt survey from 168 sites in 16 Mississippi counties.

Section III will compare seat belt use prior to project intervention and seat belt use following intervention.

Section IV will summarize the Motorcycle Helmet Use in Mississippi.

SECTION I:
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 8 counties (8 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.

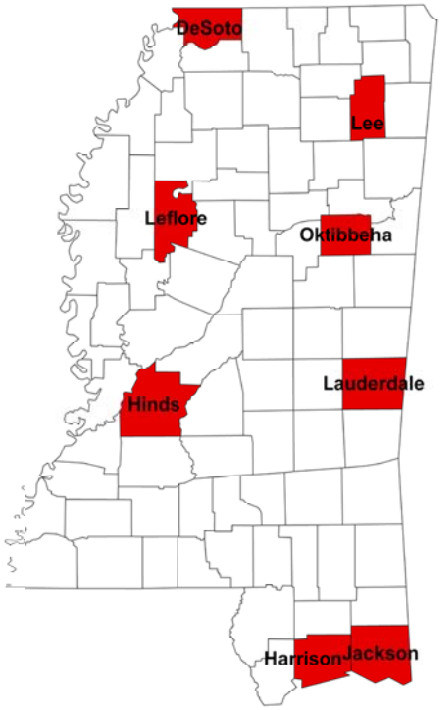


Figure 2: Mini Survey Counties

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

The data from this survey was collected between April 1 and May 3, 2009. 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	3634	76.3%
Pickup Truck	1841	63.6%
SUV	1586	78.3%
Van	572	84.1%
Total	7633	74.2%

* 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 74.2%. Vans held the highest rate of occupant restraint use with 84.1%. Occupants in SUV's and passenger cars showed restraint use above 75%, but pickup truck drivers continue to exhibit a reluctance to belt use. A low 63.6% belted rate for trucks is a problem area for Mississippi.

Table 2: Baseline Seat Belt Usage Rates* by County

Mini Survey of 64 Sites in 8 Counties

County	Occupants Observed	Percent Belted
DeSoto	1330	75.2%
Harrison	1174	87.0%
Hinds	840	81.1%
Jackson	1002	79.7%
Lauderdale	825	62.4%
Lee	1046	77.3%
Leflore	673	53.8%
Oktibbeha	743	64.6%
Total	7633	74.2%

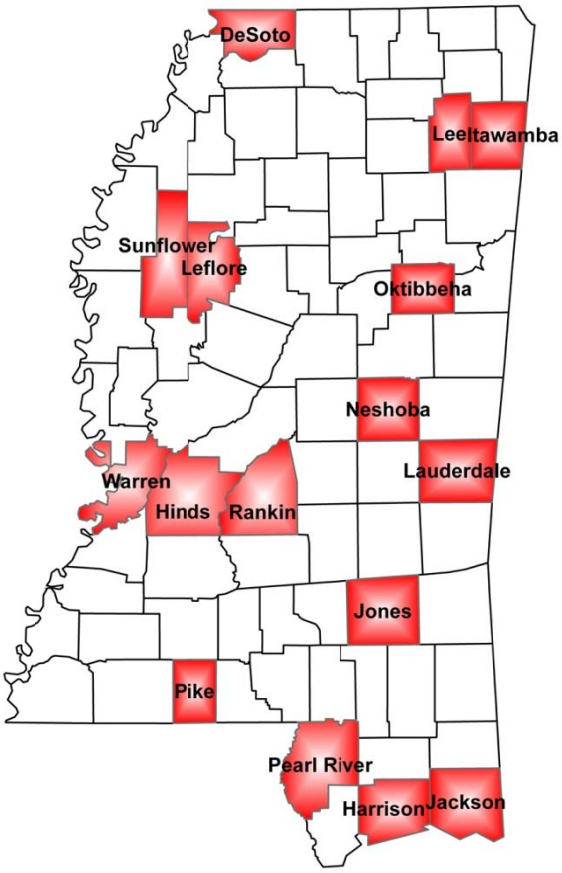
* unweighted rates

A breakdown of seat belt usage rates by county in the mini survey reveals Harrison County as the lone frontrunner at 87.0% restrained. Hinds County also illustrated occupant restraint usage above 80%. However, some disappointing behavioral characteristics in the form of low belt use were exhibited by the counties of Lauderdale (62.4%), Leflore (53.8%) and Oktibbeha (64.6%).

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 the low 70% range. Continuous law enforcement of Mississippi's seat belt law throughout the year could explain the slight increase in the baseline usage rate from 71.3% post-campaign in 2008 to 74.2% pre-campaign in 2009.

SECTION II:
POST-CAMPAIGN OBSERVATIONAL SEAT BELT SURVEY RESULTS

The post-campaign survey was a newly developed in 2008 and implemented observational survey design that produced the official seat belt usage rates for the state of Mississippi in 2009. Figure 2 shows the counties that frame the 2009 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 last year's survey (2008).



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 Surveyed 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. This occurrence provides a familiar feel to the sample and more importantly a sense of reliability to the results. The overall result for the 2009 Mississippi Seat Belt Survey is a **76.04%** occupant seat belt usage rate with a standard error of **0.64%**. The lower limit of the 95% confidence interval is 74.79% and the upper limit is 77.30%.

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	82.8%
Other Principal Arterials	76.4%
Minor Arterials	73.0%
Collectors	75.5%

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 over 80% belt usage rate in 2009. The remaining functional classification divisions (other principal arterials, minor arterials, and collectors) had very similar rates to one another around the mid seventies 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	78.6%
Pickup	69.1%
SUV	81.3%
Van	82.7%

The 2009 survey had four vehicle choices for surveyors. Instead of differentiating pickup trucks from other passenger cars as had previously been done, the surveyors made a choice among four categories: (1) passenger car/wagon, (2) sports utility vehicle, (3) pickup truck, or (4) van. Table 4 illustrates the breakdown of belt usage rates in these vehicle categories. Vans and sports utility vehicles or SUVs topped the list in percent belt usage with 82.7% and 81.3% respectively. Passenger cars were in a close second with nearly an 80% occupant belt usage rate. To no surprise, pickup trucks were the vehicles with the lowest usage rate at 69.1%. However, this is a tremendous improvement from the 62.3% usage rate for pickups in 2008 – up 7 percentage points!

The following series of tables (Tables 5-10) provides 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 = 19,221)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	71.2%	73.1%	72.1%	49.5%	69.8%	61.1%	69.8%
Harrison	82.8%	86.8%	84.4%	79.3%	93.0%	86.1%	84.7%
Hinds	84.5%	97.3%	91.8%	83.9%	93.9%	91.1%	91.7%
Jackson	82.2%	76.4%	80.0%	83.1%	75.3%	78.1%	79.6%
Rankin	88.5%	98.1%	92.8%	80.8%	95.9%	91.8%	92.5%
Itawamba	57.1%	83.4%	67.5%	64.2%	82.6%	77.4%	69.8%
Jones	72.9%	81.2%	76.3%	65.1%	77.9%	72.1%	75.1%
Lauderdale	60.5%	65.0%	62.2%	61.1%	62.4%	63.1%	62.1%
Lee	66.7%	78.3%	71.3%	75.1%	77.9%	77.0%	72.4%
Leflore	67.3%	73.7%	70.0%	59.1%	63.7%	60.3%	68.8%
Neshoba	67.0%	67.1%	67.1%	68.6%	74.2%	70.1%	67.4%
Oktibbeha	68.3%	82.3%	73.9%	42.5%	79.2%	65.0%	72.4%
Pearl River	74.0%	90.6%	81.4%	66.6%	89.0%	79.1%	80.8%
Pike	65.9%	77.7%	71.9%	71.1%	80.6%	73.2%	72.1%
Sunflower	72.9%	93.8%	81.5%	78.7%	96.5%	87.6%	83.9%
Warren	55.9%	77.9%	63.7%	74.8%	69.6%	69.8%	64.4%
Total	72.2%	81.8%	76.4%	70.3%	80.6%	76.0%	76.3%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in RED 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 YELLOW 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 76.3%, which is virtually identical to the official overall rate of 76.04%. Female drivers and passengers in Hinds, Rankin, and Sunflower Counties recorded outstanding belt use numbers over 90%. Male drivers in Itawamba and Warren are on the low end of the spectrum of belt use with below 60% usage. Four counties (Harrison, Hinds, Rankin, and Sunflower) had overall belt use higher than the 2008 national average of 83%. Hinds and Rankin Counties deserve applause as they both achieved a belt use rate over 90%.

Male drivers and passengers of all types of vehicles continue to lag behind females when it comes to buckling up. Seventy-two percent of male drivers appear to be using seat belts while female drivers are buckling up at nearly a ten percent higher rate. The same ratio exist by gender in passenger belt use – the female buckle rate is 80% and the male rate is 70%.

Using the far right column of this table (all occupants) as a guide, possible problem counties that may need special targeting include Lauderdale and Warren – both with below 65% overall belt use rates.

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 = 13,994)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	74.7%	73.0%	73.7%	59.7%	70.5%	66.1%	71.8%
Harrison	84.5%	87.9%	85.9%	78.5%	91.7%	85.7%	85.9%
Hinds	86.6%	97.3%	93.3%	91.5%	95.6%	94.7%	93.5%
Jackson	83.7%	76.8%	80.8%	81.3%	74.1%	76.7%	80.2%
Rankin	91.1%	98.3%	95.1%	86.3%	97.5%	95.5%	95.0%
Itawamba	65.3%	86.0%	77.1%	90.1%	81.5%	82.3%	78.4%
Jones	72.1%	82.3%	77.5%	69.2%	80.5%	75.8%	76.8%
Lauderdale	66.5%	64.1%	65.4%	64.4%	60.9%	63.6%	64.7%
Lee	72.5%	78.4%	75.4%	79.2%	78.9%	80.1%	76.4%
Leflore	70.2%	73.7%	72.3%	54.0%	63.1%	59.7%	70.7%
Neshoba	65.7%	68.0%	67.1%	65.9%	75.6%	70.8%	67.7%
Oktibbeha	74.9%	82.4%	78.6%	45.9%	78.4%	69.4%	77.2%
Pearl River	78.8%	90.7%	85.9%	65.2%	90.1%	81.8%	84.9%
Pike	62.0%	77.5%	73.0%	68.0%	84.8%	70.1%	73.0%
Sunflower	78.4%	93.4%	86.5%	85.0%	95.8%	91.5%	88.4%
Warren	64.0%	88.1%	75.0%	80.1%	82.3%	80.6%	75.7%
Total	75.3%	82.7%	79.5%	73.4%	82.1%	78.5%	79.3%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in RED 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 YELLOW 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 category mimics the category of "passenger cars" in years before 2008. The highlights in this particular breakdown show exemplary belt use rates by Hinds and Rankin Counties. Both males and females alike in these counties are committed to buckling up as they drive. Also, female drivers and passengers in Pearl River and Sunflower were above 90%. An interesting statistic is male drivers in Itawamba showed a very low belt use rate (65.3%), which was quite opposite from the belt use among male passengers in Itawamba (90.1%). Overall, there were five counties (Harrison, Hinds, Rankin, Pearl River and Sunflower) that demonstrate all occupant belt use in the Car+SUVs+Van category over the 2008 national average of 83%. It should be noted that in this pickup truck excluded table, the total rate of belt use is nearly 80%.

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 = 8,673)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	73.1%	70.4%	71.7%	53.0%	60.8%	59.8%	69.0%
Harrison	82.8%	87.0%	84.6%	76.0%	91.1%	86.3%	84.9%
Hinds	84.4%	97.4%	92.5%	90.5%	90.3%	94.5%	92.8%
Jackson	82.9%	77.8%	80.3%	81.4%	75.0%	79.8%	80.1%
Rankin	90.9%	98.1%	94.5%	95.2%	97.0%	96.6%	94.9%
Itawamba	56.2%	88.6%	75.6%	96.5%	77.0%	81.6%	76.9%
Jones	71.8%	83.9%	79.1%	53.0%	74.8%	71.9%	77.7%
Lauderdale	64.4%	60.6%	62.5%	60.4%	54.7%	58.6%	61.8%
Lee	71.6%	75.4%	73.4%	74.8%	80.7%	81.4%	74.5%
Leflore	69.3%	73.8%	70.6%	67.4%	67.6%	63.7%	69.6%
Neshoba	64.4%	74.2%	70.5%	69.8%	70.9%	69.8%	70.5%
Oktibbeha	74.2%	81.9%	78.1%	45.3%	70.3%	67.2%	76.2%
Pearl River	78.9%	92.2%	87.3%	51.8%	89.2%	79.6%	85.6%
Pike	54.9%	77.7%	72.2%	69.9%	81.0%	62.0%	71.3%
Sunflower	78.9%	90.4%	84.7%	84.2%	93.9%	89.8%	86.4%
Warren	66.3%	85.1%	74.6%	100.0%	40.1%	77.0%	74.7%
Total	73.9%	82.4%	78.9%	73.1%	76.4%	76.9%	78.5%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in RED 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 YELLOW and should not be considered a true approximation for the same reason.

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. Impressive overall belt rates above the 2008 national average of 83% are exhibited by Harrison, Hinds, Rankin, Pearl River, and Sunflower. Hinds and Rankin deserved special attention for being above the 90% mark for the entire breakdown except male drivers in Hinds. Low belt use figures are scattered throughout the table above. Again, as can be seen, the low rates are mostly in the male columns. Lauderdale County, however, shows particularly low numbers for female passengers and overall passengers.

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 = 5,227)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	67.0%	69.1%	68.1%	42.2%	71.1%	48.4%	65.1%
Harrison	79.6%	83.8%	80.3%	81.5%	96.1%	87.5%	81.1%
Hinds	76.5%	97.0%	80.5%	75.5%	78.4%	74.9%	79.2%
Jackson	78.8%	78.9%	78.2%	89.0%	73.2%	80.2%	78.6%
Rankin	83.9%	95.0%	85.0%	70.4%	92.7%	77.9%	83.9%
Itawamba	46.9%	64.6%	48.1%	47.0%	81.9%	68.1%	52.1%
Jones	73.9%	76.1%	73.7%	54.9%	56.0%	57.2%	70.8%
Lauderdale	55.0%	84.3%	57.1%	56.0%	70.5%	61.3%	57.4%
Lee	56.3%	69.9%	57.3%	56.7%	82.7%	61.3%	58.0%
Leflore	65.4%	88.0%	66.2%	69.8%	100.0%	69.8%	66.1%
Neshoba	68.8%	58.2%	67.1%	74.3%	71.3%	73.1%	67.1%
Oktibbeha	62.5%	77.3%	64.3%	47.2%	86.0%	57.9%	63.7%
Pearl River	69.4%	91.9%	74.0%	66.9%	90.9%	72.7%	74.2%
Pike	68.2%	79.4%	68.9%	69.9%	70.6%	79.4%	69.7%
Sunflower	63.8%	100.0%	69.6%	73.3%	100.0%	80.6%	73.3%
Warren	50.4%	43.4%	49.8%	79.0%	38.8%	47.7%	50.0%
Total	67.9%	79.5%	69.3%	67.2%	77.9%	69.0%	69.2%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in RED 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 YELLOW and should not be considered a true approximation for the same reason.

Table 8 presents some major concerns and challenges to the state of Mississippi. A major portion of the cells in this table are red – meaning there are many belt use rates identified below 60%. Also note there are cells in yellow – 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 79.5% and 77.9% use rates respectively.

Four of the sixteen counties show less than 60% 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.

Table 9: Seat Belt Usage Rates by County – SUVs

Full Survey of 168 Sites in 16 Counties
SUVs by Driver/Passenger and Gender (N = 4,001)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	73.9%	72.2%	73.0%	69.2%	73.6%	70.0%	71.9%
Harrison	87.1%	88.8%	87.3%	81.6%	90.4%	85.4%	86.7%
Hinds	92.4%	96.9%	95.5%	79.7%	96.0%	93.3%	95.2%
Jackson	84.0%	70.3%	80.6%	80.0%	60.8%	70.0%	78.7%
Rankin	96.6%	99.1%	98.1%	85.5%	98.8%	95.1%	97.3%
Itawamba	77.7%	80.4%	77.9%	48.9%	70.7%	67.1%	77.4%
Jones	74.1%	79.2%	74.8%	87.3%	69.1%	77.5%	76.2%
Lauderdale	63.5%	63.8%	64.4%	53.6%	72.9%	67.7%	64.8%
Lee	74.5%	84.7%	79.6%	84.2%	76.6%	78.0%	79.9%
Leflore	77.3%	72.5%	76.8%	60.6%	60.8%	53.9%	74.6%
Neshoba	75.2%	63.0%	66.5%	60.4%	87.0%	70.5%	67.6%
Oktibbeha	76.9%	87.4%	81.1%	33.2%	92.6%	72.7%	80.8%
Pearl River	82.4%	88.3%	86.5%	73.2%	92.5%	85.1%	86.5%
Pike	62.8%	68.7%	72.9%	71.7%	66.2%	68.1%	73.2%
Sunflower	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Warren	65.2%	95.7%	83.0%	100.0%	100.0%	100.0%	84.9%
Total	79.1%	82.5%	81.5%	74.9%	82.9%	79.8%	81.5%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in RED 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 YELLOW and should not be considered a true approximation for the same reason.

Table 9 shows seat belt use in SUVs is an impressive 81.5% overall. Hinds and Rankin Counties produce excellent numbers across the board. There are also multiple counties that have SUV belt use rates in the high seventies and eighties. Only Lauderdale and Neshoba are displaying SUV belt rates below 70%.

There are several yellow highlighted cells that show 100% usage rates, and as stated before, these cells should be disregarded. There seems to be few SUV counts in Sunflower County as a whole. Also, the red highlighted cells for Itawamba and Oktibbeha could be misleading. The number of male passenger observations in SUVs in those counties was below ten in both circumstances.

Table 10: Seat Belt Usage Rates by County – Vans

Full Survey of 168 Sites in 16 Counties
Vans by Driver/Passenger and Gender (N = 1,320)

County	Drivers			Passengers			Occupants
	Male	Female	All	Male	Female	All	All
DeSoto	81.3%	83.8%	84.0%	79.8%	91.8%	81.6%	83.3%
Harrison	86.7%	89.6%	87.6%	87.4%	98.6%	93.8%	88.3%
Hinds	95.5%	100.0%	96.0%	100.0%	100.0%	100.0%	96.0%
Jackson	81.1%	77.5%	78.4%	66.5%	85.2%	82.9%	77.9%
Rankin	77.9%	95.5%	86.3%	83.1%	100.0%	95.8%	87.3%
Itawamba	86.9%	82.0%	84.7%	100.0%	92.5%	93.0%	87.4%
Jones	75.8%	88.8%	65.5%	50.0%	73.3%	67.0%	65.2%
Lauderdale	82.3%	89.8%	83.9%	100.0%	69.6%	79.6%	81.2%
Lee	78.6%	88.4%	78.5%	100.0%	92.1%	94.7%	79.9%
Leflore	80.3%	73.9%	76.7%	14.0%	100.0%	38.9%	74.3%
Neshoba	72.3%	69.0%	73.4%	100.0%	58.1%	73.1%	73.1%
Oktibbeha	92.7%	60.5%	72.4%	55.1%	83.8%	73.1%	68.9%
Pearl River	68.4%	69.7%	68.3%	66.7%	100.0%	72.7%	67.6%
Pike	71.6%	90.5%	81.9%	100.0%	100.0%	100.0%	83.5%
Sunflower	50.0%	100.0%	70.1%	50.0%	100.0%	80.3%	75.2%
Warren	51.1%	65.0%	60.0%	28.2%	100.0%	64.1%	63.2%
Total	77.6%	83.9%	78.7%	75.8%	90.2%	82.0%	78.9%

Note: Exceptionally positive belt use rates (above 90%) are highlighted in GREEN and exceptionally low belt use rates (below 60%) are highlighted in RED 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 YELLOW and should not be considered a true approximation for the same reason.

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 1,300 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 yellow for that exact reason.

The overall results of belt use in vans can be stated with reasonable confidence. Table 10 shows van passengers (82.0%) buckling up more than drivers (78.7%). Also, the overall van usage rate (78.9%) is almost ten percentage points higher than that of pickup trucks (69.2%).

Figure 3: Seat Belt Usage Rates by Vehicle Type, Race & Gender

Full Survey of 168 Sites in 16 Counties

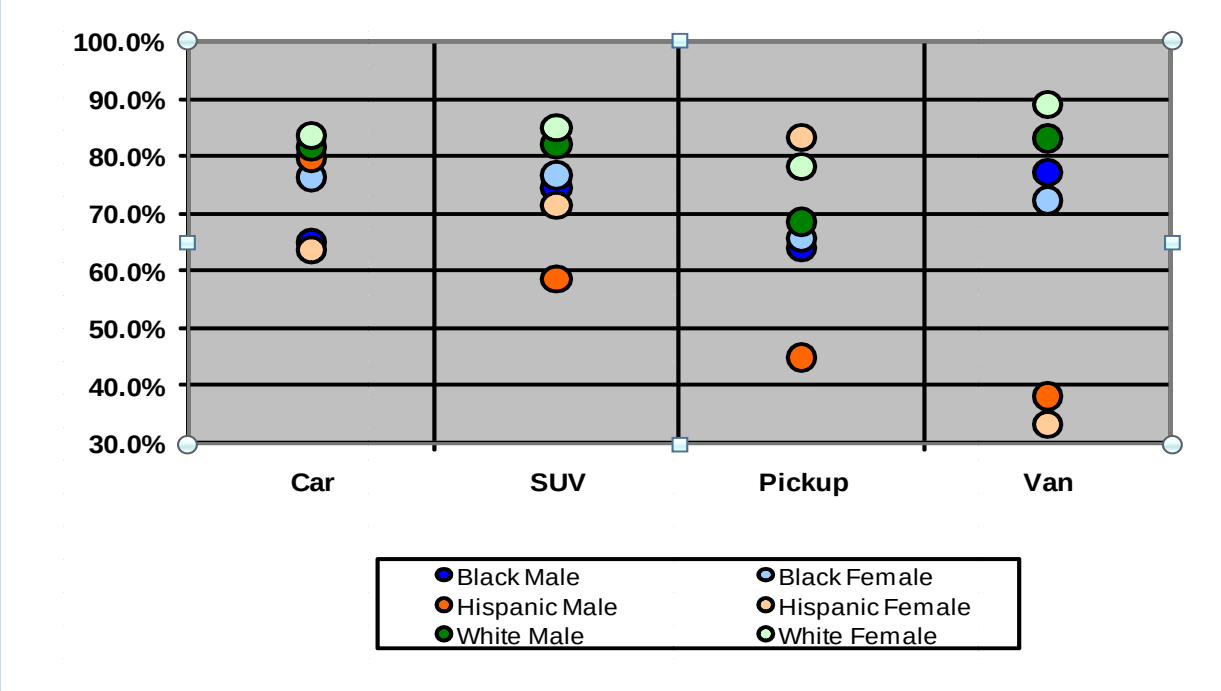


Figure 3 is a graphic illustrating how well the observed population buckled up by gender, race, and type of vehicle. It appears that Hispanic and African American males are continuing to choose not to buckle their vehicle seat belts. However, in this study there were only 230 total Hispanics observed as drivers or passengers of vehicles. Only 29 Hispanics were observed in vans, 38 in SUVs, 76 in pickups and 87 in passenger vehicles. Therefore there is not much data to draw definitive conclusions with respect to the Hispanic population. However, it can be said that females are much better than males in occupant protection behavior. In general, white female are the most likely group to be using a seat belt.

CAR: The first column shows white females and white males atop the buckled list for passenger cars. Black males and Hispanic females are less likely than any group to use their seat belts in a passenger car.

SUV: The second column indicates white females and white males lead the way in buckling up in SUVs. African American females and males lag behind less than 10 percentage points and Hispanic occupants finish the list with lower usage rates in SUVs.

PICKUP: Hispanic females and white females are the best at buckling up in pickups. White males and African American males and females are somewhat clustered in the mid to high sixty percent belt use range.

VAN: Vans have the greatest dispersion of belt use rates among race and gender. Again this is most likely attributed to the low count of vans in the survey. However, the results indicate white females and males with the highest usage rate and Hispanic females and males with the lowest.

Figure 4: Seat Belt Usage Rates by Race & Gender

Full Survey of 168 Sites in 16 Counties

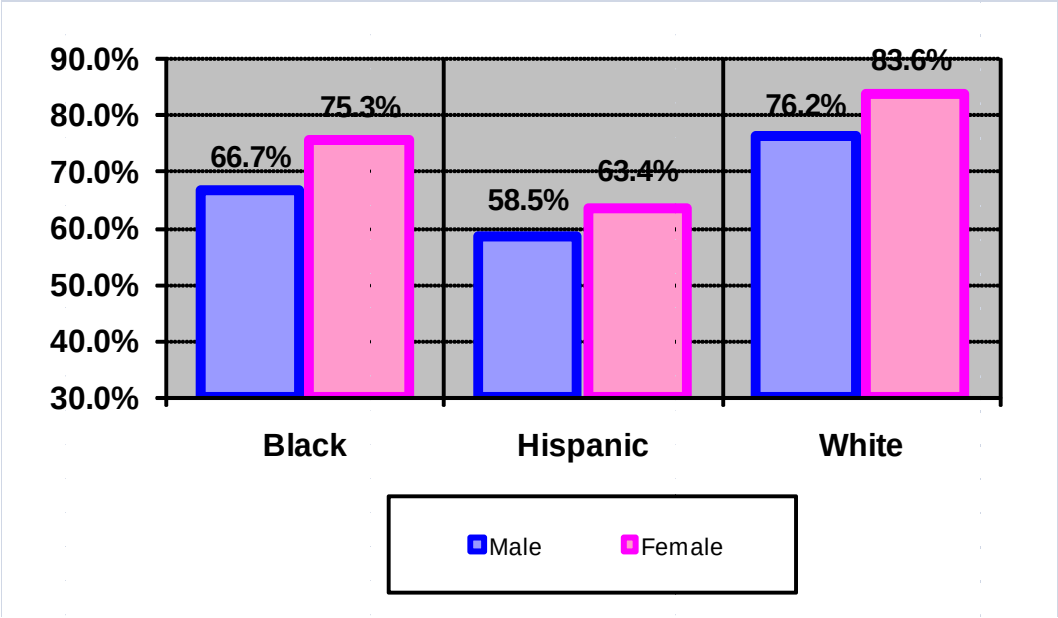


Figure 4 presents an analysis of belt use broken down only by race and gender. This chart reveals that males within each race category lag about 5 to 10 percentage points behind females when it comes to buckling up. White females are over 8 percentage points above black females more than 25 percentage points above Hispanic males. White males are virtually equivalent with black females in seat belt use.

The figures on the next page illustrate Mississippi seat belt usage rates for the past 16 years (Figure 5) and the seat belt use rates for the United States in 2008 (Figure 6). Figure 5 shows a definite upward trend of seat belt usage rates since 1994. Each year displays an official belt use rate and 95% confidence interval upper and lower limits. Since the primary seat belt law went into effect, the trend has stayed relatively flat as can be seen by the overlapping of confidence intervals since 2006. The rate did take a positive jump to 76.0% this year – the highest it has ever been.

Figure 6 has been included below this trend chart for viewers to gain a geographic sense of Mississippi's peer states with regard to belt use rates in 2008. Last year Mississippi had a better seat belt use rate compared only three other states – Arkansas (70.4%), Massachusetts (66.8%), and New Hampshire (69.2%). States colored in orange or red had seat belt usage rates below the 2008 national average of 83%. States in the hatched light green or darker solid green had belt use rates above the national average. The highest belt use states in the nation (above 90%) are the solid green states. This elite category does include the three areas that are not mapped: District of Columbia (90.0%), Hawaii (97.6%) and Puerto Rico (92.8%).

Figure 5: Mississippi Seat Belt Usage Rates

With 95% Confidence Interval Upper and Lower Limits (1994 – 2009)

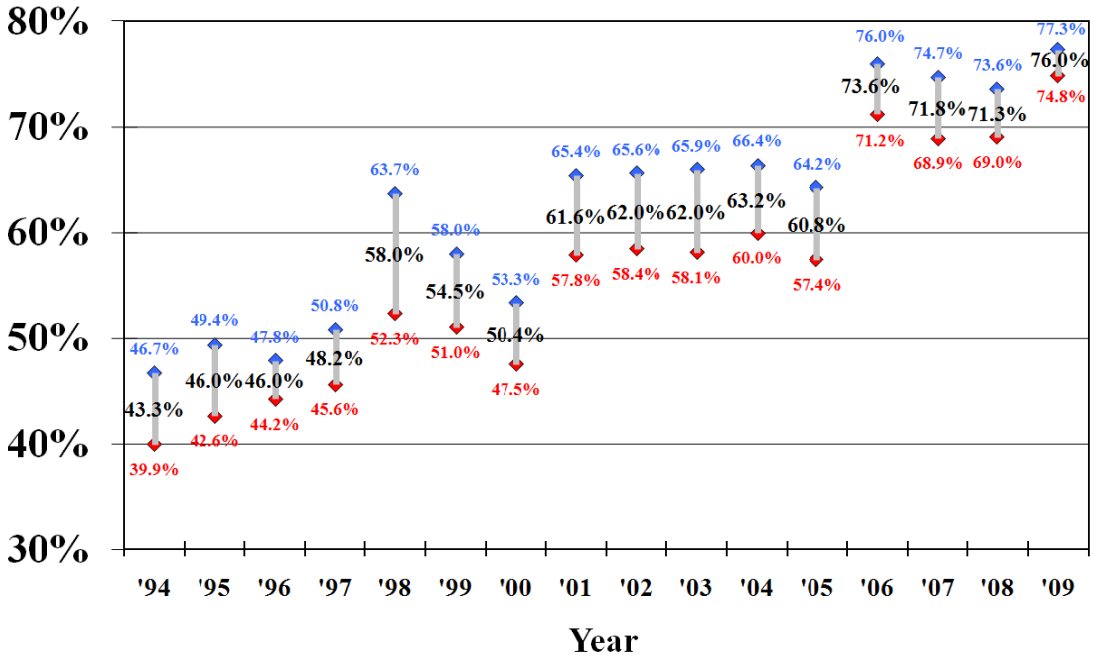
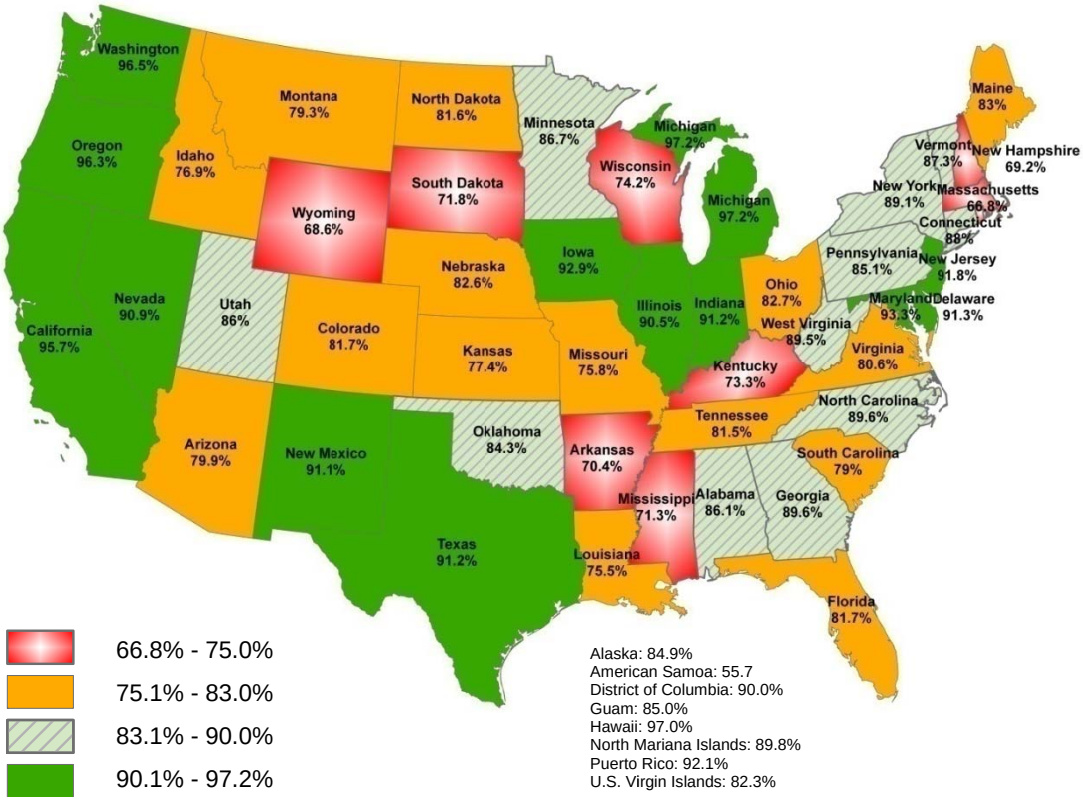


Figure 6: National Seat Belt Use Rates in 2008

Source: 2008 NHTSA Traffic Safety Facts: Crash/Stats DOT HS 811 106 – April 2009



SECTION III:
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	75.2%	69.8%	-5.4%	-7.2%
Harrison	87.0%	84.7%	-2.3%	-2.7%
Hinds	81.1%	91.7%	10.6%	13.1%
Itawamba	-	69.8%	-	-
Jackson	79.7%	79.6%	-0.1%	-0.1%
Jones	-	75.1%	-	-
Lauderdale	62.4%	62.1%	-0.3%	-0.5%
Lee	77.3%	72.4%	-4.9%	-6.3%
Leflore	53.8%	68.8%	15.0%	27.9%
Neshoba	-	67.4%	-	-
Oktibbeha	64.6%	72.4%	7.8%	12.1%
Pearl River	-	80.8%	-	-
Pike	-	72.1%	-	-
Rankin	-	92.5%	-	-
Sunflower	-	83.9%	-	-
Warren	-	64.4%	-	-
Total	74.2%	76.3%	2.1%	2.9%

* 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 substantial post-campaign increases in belt use for Hinds, Leflore and Oktibbeha Counties. Lee and DeSoto Counties, on the other hand, demonstrated a significant decline (> 5%) 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	81.2%	82.8%	1.6%	2.0%
Other Principal Arterials	74.1%	76.4%	2.3%	3.1%
Minor Arterials	70.1%	73.0%	2.9%	4.1%
Collectors	71.3%	75.5%	4.2%	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 collector roads. This 6 percent increase may suggest the CIOT seat belt awareness message was more prevalent at this classification of road due to some portion of the campaign.

Table 13: Baseline versus Follow-up Vehicle Type Comparisons

Seat Belt Usage Rates by Vehicle Type

Vehicle	Percent Belted		Percent Change	Percent + or -
	Baseline*	Follow-up*		
Car/Wagon	76.3%	78.6%	2.3%	3.0%
SUV	63.6%	69.1%	5.5%	8.6%
Pickup	78.3%	81.3%	3.0%	3.8%
Van	84.1%	82.7%	-1.4%	-1.7%

* Baseline and Follow-up percentages are not weighted

Table 13 illustrates there were more positive than negative changes in belt use across type of vehicle due to the CIOT campaign. SUV occupants showed the best response to the campaign by an 8.6% increase in observed belt use. Passenger cars and pickup truck occupants experienced a slight increase in belt usage presumably due to the campaign. However, van occupants show a slight decrease in belt use despite the campaign efforts.

Table 14: Baseline versus Follow-up Race/Gender Comparisons

Seat Belt Usage Rates by Race and Gender

County	Percent Belted		Percent Change	Percent + or -
	Baseline*	Follow-up*		
Black Female	68.3%	75.3%	7.0%	10.2%
Black Male	56.2%	66.7%	10.5%	18.7%
Hispanic Female	76.5%	63.4%	-13.1%	-17.1%
Hispanic Male	74.5%	58.5%	-16.0%	-21.5%
White Female	86.4%	83.6%	-2.8%	-3.2%
White Male	73.3%	76.2%	2.9%	4.0%

* 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 18.7% and 10.2% increases respectively. There was a slight decrease in the white female occupants of 3.2%. Severe decreases in Hispanic belt use rates are shown but the baseline percentages were calculated using very small numbers of observation. 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.

The comparison of the overall belt use numbers for the state of Mississippi in 2009 is the following:

The unweighted baseline belt use rate is 74.2%.
The unweighted follow-up belt use is 76.9%.
The official, weighted belt use rate for Mississippi is 76.0%
Percent change of 1.8%
Percent increase of 2.4%

SECTION IV:
MOTORCYCLE HELMET USE

The final segment to be discussed concerns the motorcycle helmet use in Mississippi. As a part of the seat belt survey, motorcycle helmets are also counted. Mississippi is fortunate to have an excellent motorcycle helmet law. Mississippi has a primary law in regards to motorcycle helmet use. All motorcycle riders must wear helmets or receive a ticket.

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, 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.

Motorcycle helmet use for Mississippi in 2009 is 97.7%

Table 12 provides a summary on the 2009 Motorcycle Helmet Survey in Mississippi. There was no attempt in the survey to judge whether the helmet was legal or illegal.

Table 15: Mississippi Unweighted Motorcycle Helmet Usage

Full Survey of 168 Sites in 16 Counties

Motorcycle Riders	Counts	Percent
Using Helmet	389	97.7%
Not Using Helmet	9	2.3%
Total	398	100.0%

SUMMARY

For the past nine years, intense media and enforcement campaigns have been directed towards Mississippians with the intent of increasing the awareness of a seat belt laws, promoting highway safety, and changing the behavior of those who do not buckle their belts. The Click It or Ticket 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, and implemented. This new design included 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 was performed in 2008 and 2009 as the post-campaign survey capturing the official seat belt usage rates for the state each year. The 2009 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 to late April, 2009.

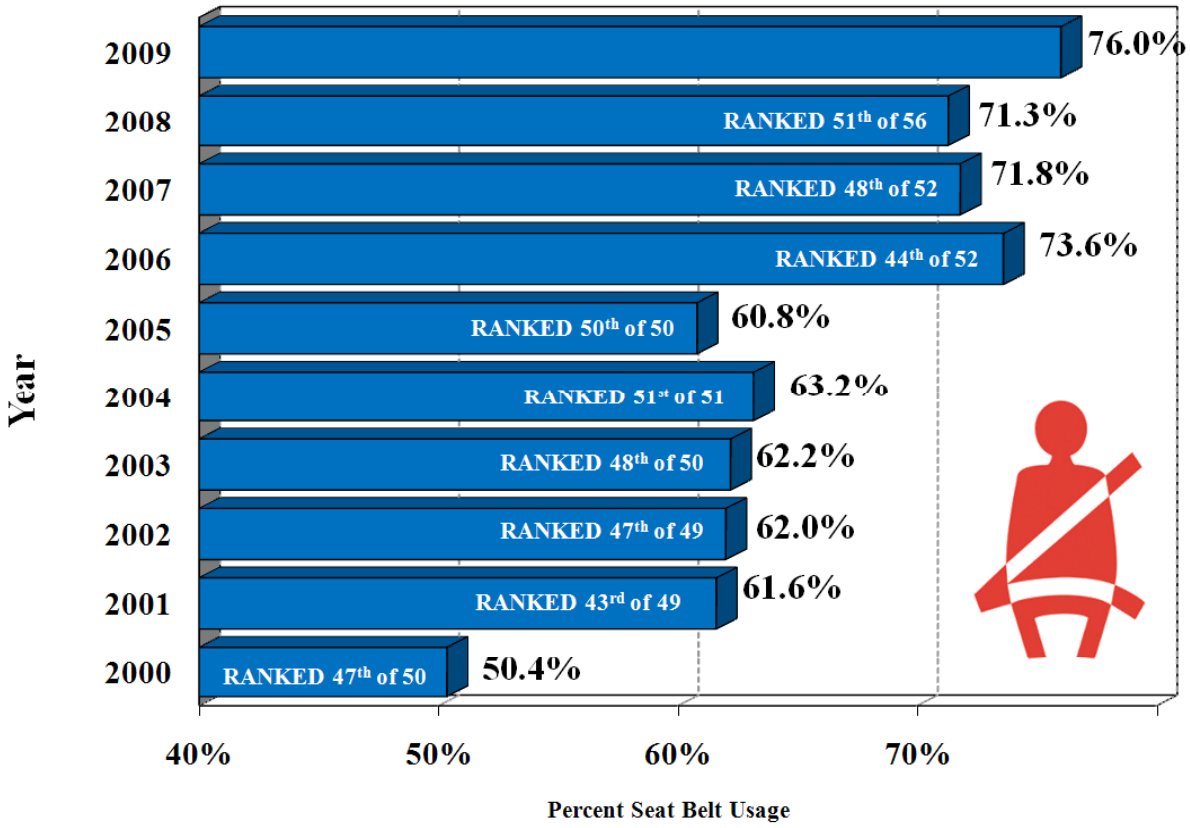
Overall, the baseline information indicated a 74.2% belt use rate, and when compared to the 76.0% count in the post campaign survey, Mississippi showed a positive change in belt use over the campaign period. Perhaps this indicates the seat belt media and enforcement activities of 2009 encouraged more vehicle occupants in Mississippi to buckle up. The primary seat belt law was enacted in 2006 and has seemed to engrave positive behaviors and attitudes into a greater percentage of Mississippians. For the first year Mississippi has shown a belt use rate over 75%, indicating 3 out of 4 Mississippians are clicking the belt. 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 83%.

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 over 97%.

Mississippi Seat Belt Usage Rates (2000 – 2009)

and Rankings Among U.S. States and Territories

(2008 ranking includes American Samoa, District of Columbia, Guam, Northern Mariana Islands, Puerto Rico, and U.S. Virgin Island)



Source:2008 NHTSA Traffic Safety Facts: Crash/Stats DOT HS 811 106

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