

**Kansas**  
**Occupant Protection Observational Survey**  
**Supplementary Analyses**

**2018 Child Study**

Submitted To:  
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Bureau of Transportation Safety and Technology

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June 15, 2018

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## Summary Fact Sheet

The state-wide estimate of seatbelt use among Kansas children (0-17) as observed in 2017-2018 is about 89.5%.

The 0-4 age group is buckled up at the highest rate, at about 98%. 5-9 year olds have a belted rate of 88%, 10-14 year olds have a belted rate of 86%, and the 15-17 year old age group is belted the least frequently at 85%.

Since 2008, seatbelt use among Kansas children has continued to increase:

Belt use within the 0-4 age group has increased by about 2.5 percentage points.  
Belt use within the 5-9 age group has increased by nearly 14.6 percentage points.  
Belt use within the 10-14 age group has increased by about 19 percentage points.  
Belt use within the 15-17 age group has increased by nearly 23.8 percentage points.

Excluding the 15-17 year old age group added to the study in 2008 allows for a more extended period for comparison. In 2017-2018, the state-wide estimate for 0-14 year olds is 90%, as compared to the first child survey, conducted in 2002-2003, which found belt use rate among 0-14 year olds at approximately 55%.

In general, trend data indicates that children in urban counties are buckled up at a higher rate than in rural counties. In the 2017-2018 study, the average rate of child seatbelt use in urban counties remained constant at about 89%, while the average in rural counties increased to approximately 85%.

This study has also found children are much more likely to be buckled up if the driver is also belted. If the driver is belted, about 96.5% of children in the vehicle are also belted. If the driver is not belted, only about 29% of the observed children were belted.

Distracted driving (cell phone use, texting and other distractions) was added to the study in 2010. The 2018 results indicate a slight decline in observed distractions from the previous year. About 7% of 15-17 year old drivers were observed to be distracted in some way, while about 93% were observed as having no distraction.

## Method

The Child Occupant Protection Observational Survey is conducted annually and includes sites located in 20 Kansas counties. The counties were randomly selected in 2002 based on the National Highway Transportation Safety Administration (NHTSA) approved Uniform Criteria observational study methodology applicable at the time.

Three primary groups have been observed since 2002: children ages 0-4, 5-9, and 10-14. Beginning in 2008, the additional age group of children ages 15-17 was added based on a change in Kansas statute making drivers in this age group subject to a primary safety belt law.

To measure belt use among the 15-17 age group, 48 new, randomly selected sites were added in 2008.

Sites are comprised of neighborhoods where children within these age groups are likely to be. This include areas of grocery and general-purpose stores, day-care/preschool areas, elementary school neighborhoods, middle-school/junior high neighborhoods, and high school neighborhoods.

The number of actual observation sites varies from year to year due to school consolidation, business closings, and the highly fluid nature of licensed daycares.

For purposes of data stability, the data from the two most recent years are combined to produce the annual state-wide estimate.

The data are corrected for over and under reporting by age group using census figures which weight the age groups by the proportions they represent in the general population of the observed counties, by the proportions they represent in the urban/rural counties, and by the proportions these age groups represented in the counties that contain 85% of the state population.

The 2018 study is comprised of 17,710 child observations at 391 unique sites.

<b>Number of Children Observed</b>			
Age Group	Year		
	2017	2018	<b>2017 + 2018</b>
0-4	2,004	2,224	<b>4,228</b>
5-9	4,019	4,774	<b>8,793</b>
10-14	4,389	4,307	<b>8,696</b>
15-17	5,511	6,405	<b>11,916</b>
<b>Totals</b>	<b>15,923</b>	<b>17,710</b>	<b>33,633</b>

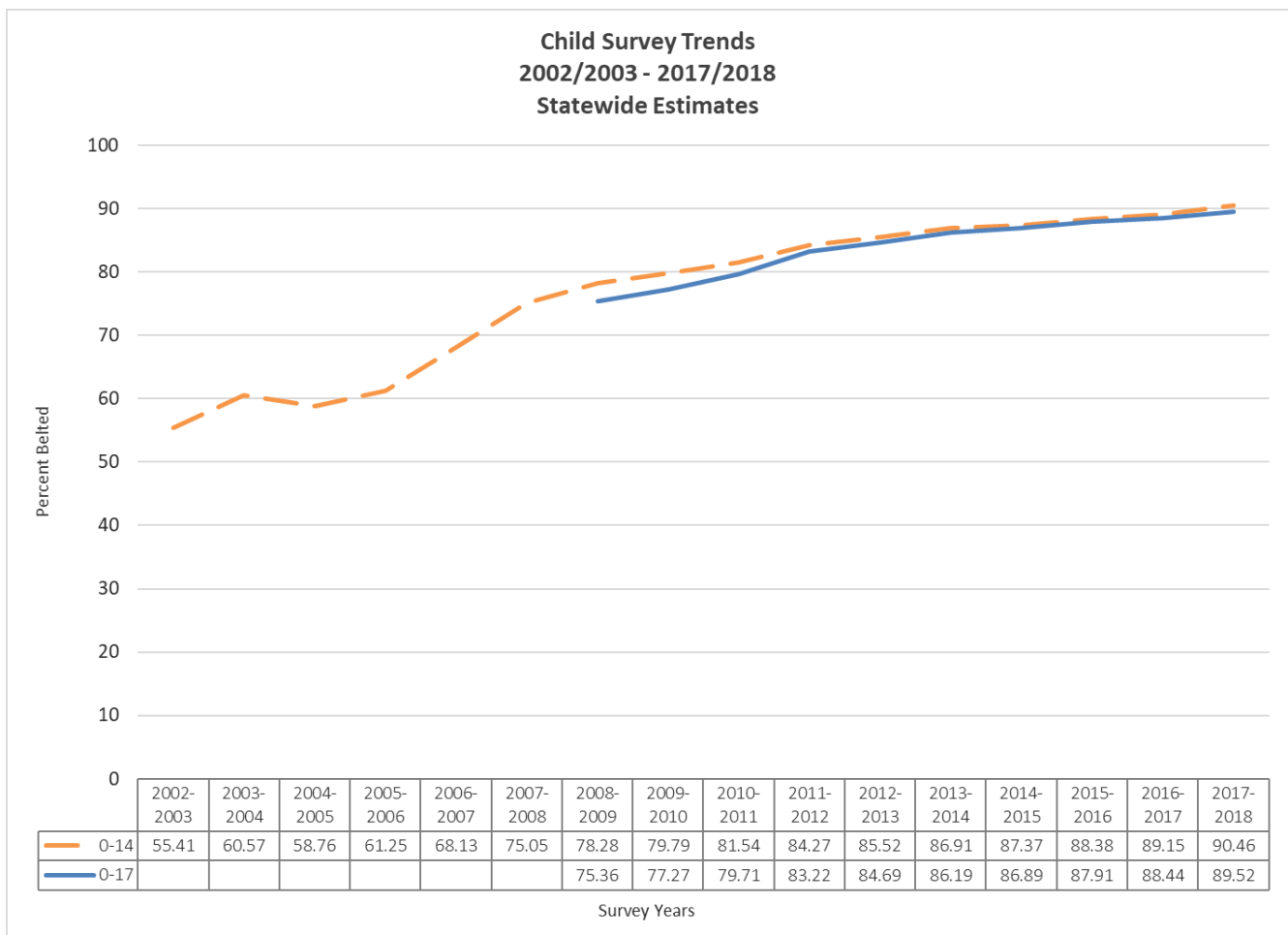
# Results

## Multi-Year, Weighted Data

### General Statewide Child Safety Belt Trends

There has been a general increase in child restraint use since 2002. Estimated safety belt usage among those 0-14 years old is 90.46 percent, an increase of nearly 34 percent since 2002.

Safety belt usage among all children 0-17 years old is an estimated 89.52 percent, an increase of 14 percent since the age range of the study was expanded in 2008 to include 15-17 year olds.

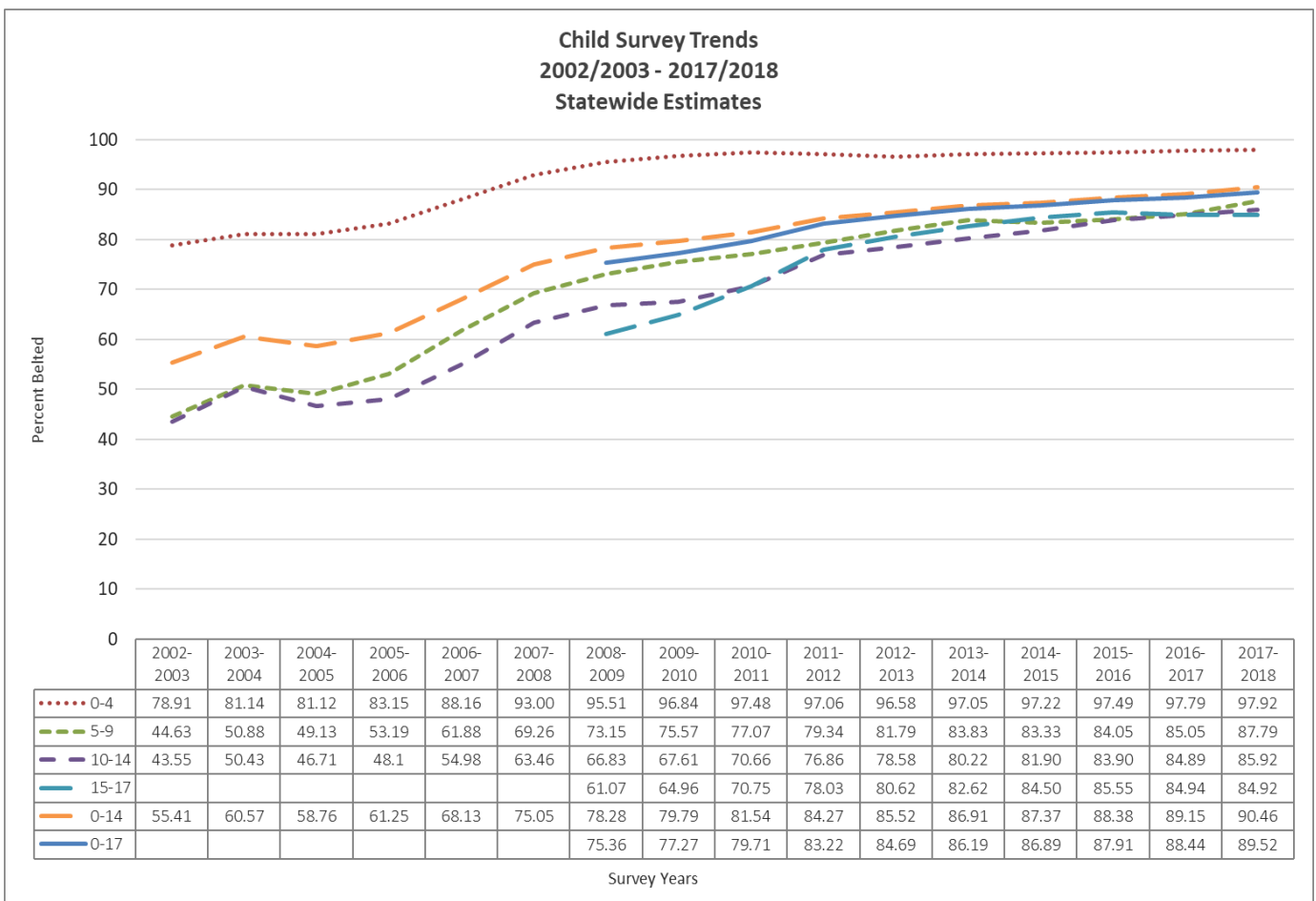


## Statewide Child Safety Belt Trends by Age Group

Historically, the younger the child, the more likely they are to be observed belted. The 0-4 age group has always produced the highest rate of restraint which, since 2009-2010, has remained relatively stable between approximately 96 and 97 percent.

Belt use rates among the 5-9, 10-14 and the 15-17 age groups has converged to between an estimated 84 and 85 percent.

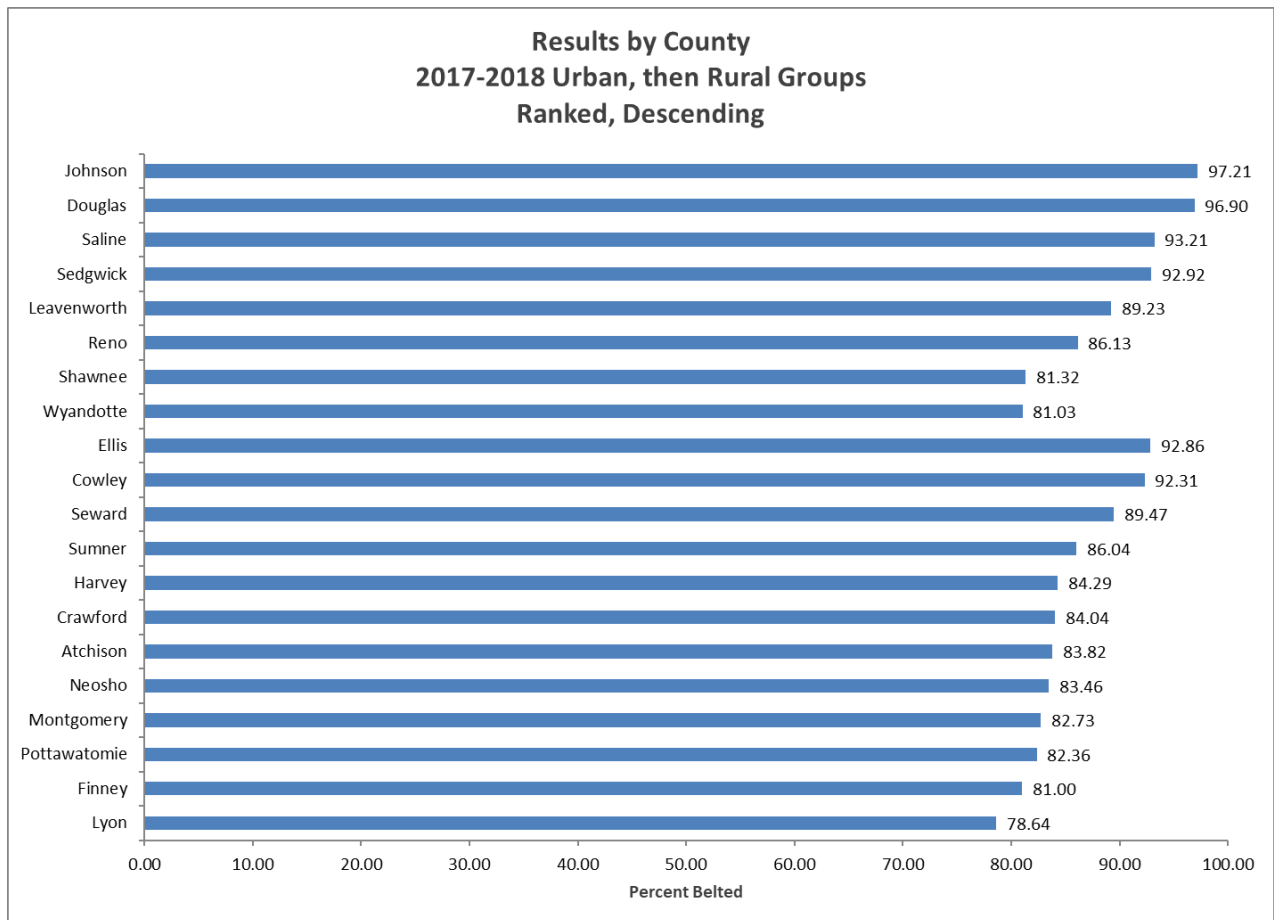
The only age group found to have slightly fallen in belt usage is that of 15-17 year olds with a slight decrease of less than a percentage point.



## Belt Use Rates by County

In general, children in urban counties are buckled up at a higher rate than in rural counties. The average among urban counties is about 89 percent, while the average among rural counties is about 83 percent.

Among urban counties, Johnson County children were buckled at the highest rate (97%), while children in Wyandotte County were buckled at the lowest rate (81%). Among rural counties, Ellis County children were buckled at the highest rate (93%), while children in Lyon County were buckled at the lowest rate (79%).



The following table displays the results from each county, for the past five years, ranked ascending, (based on 2017-2018 results) within rural and urban groups. These years contain all ages, 0-17.

Average belt use rates in both urban and rural counties have increased in 2017-2018 with the rural average being 85% belted and the urban average being nearly 90% belted.

<b>Child Restraint Use Ranked, Rural/Urban then Ascending</b>						
		2013 plus 2014	2014 plus 2015	2015 plus 2016	2016 plus 2017	2017 plus 2018
Urb/Rur		<i>Age Prop Weighted</i>	<i>Age Prop Weighted</i>	<i>Age Prop Weighted</i>	<i>Age Prop Weighted</i>	<i>Age Prop Weighted</i>
R	Lyon	70.42	72.19	74.17	75.78	78.64
R	Finney	74.06	69.72	74.87	80.96	81.00
R	Pottawatomie	72.53	72.66	71.99	74.88	82.36
R	Montgomery	83.94	90.68	90.97	85.16	82.73
R	Neosho	67.11	68.32	65.79	71.08	83.46
R	Atchison	91.43	96.49	92.78	85.21	83.82
R	Crawford	89.10	86.94	84.74	86.53	84.04
R	Harvey	68.33	67.17	72.36	77.95	84.29
R	Sumner	81.75	83.58	77.98	78.07	86.04
R	Seward	90.06	90.94	93.00	92.17	89.47
R	Cowley	85.45	88.73	91.38	91.67	92.31
R	Ellis	89.94	91.57	91.74	91.98	92.86
U	Wyandotte	83.18	75.80	76.11	79.89	81.03
U	Shawnee	72.23	72.48	73.47	76.26	81.32
U	Reno	85.07	85.37	86.92	91.88	86.13
U	Leavenworth	88.71	85.31	88.10	87.91	89.23
U	Sedgwick	89.78	92.97	93.95	91.90	92.92
U	Saline	90.68	91.95	94.03	93.78	93.21
U	Douglas	96.70	97.78	95.45	92.87	96.90
U	Johnson	94.38	95.97	97.52	97.98	97.21
	<b>Average</b>	<b>83.24</b>	<b>83.83</b>	<b>84.37</b>	<b>85.20</b>	<b>86.95</b>
	<b>SD</b>	<b>9.19</b>	<b>10.31</b>	<b>9.89</b>	<b>7.80</b>	<b>5.64</b>

<b>Average Rural</b>	<b>80.34</b>	<b>81.58</b>	<b>81.81</b>	<b>82.62</b>	<b>85.09</b>
<b>Average Urban</b>	<b>87.59</b>	<b>87.20</b>	<b>88.19</b>	<b>89.06</b>	<b>89.74</b>



## 2018 Unweighted Data

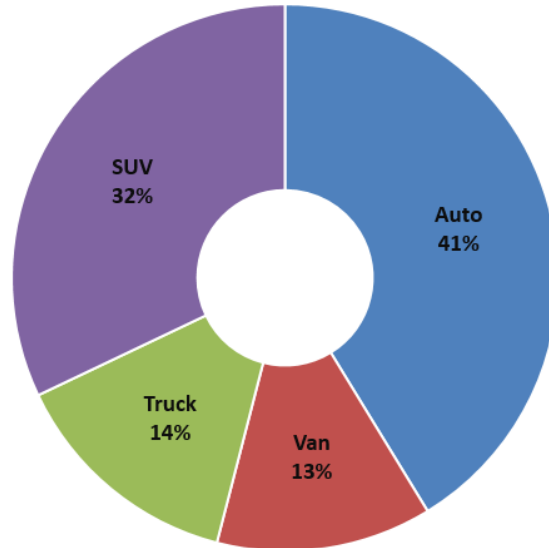
Unweighted results only include data collected in 2018. They are not statistically adjusted for over or under representation and include all 0-17 age groups.

### Types of Vehicles in the 2018 Survey

Children are most often observed in automobiles (41%), followed by SUV's (32%) trucks (14%), and vans (13%).

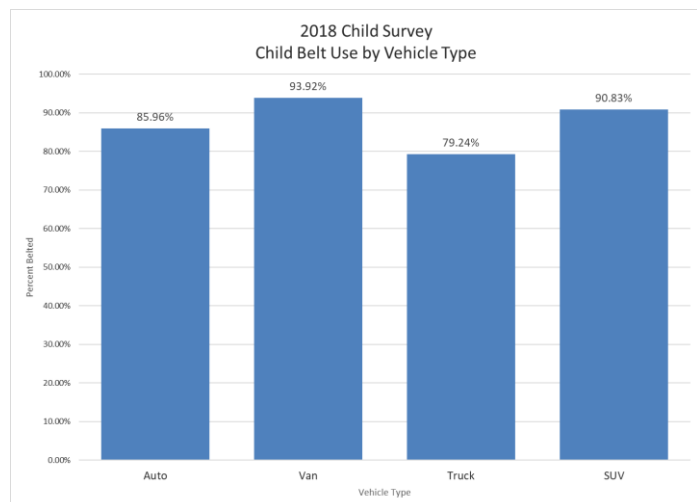
Vans are continuing to decline in numbers on the road, replaced by trucks and SUVs.

2018 Child Survey  
Proportions of Vehicles Observed



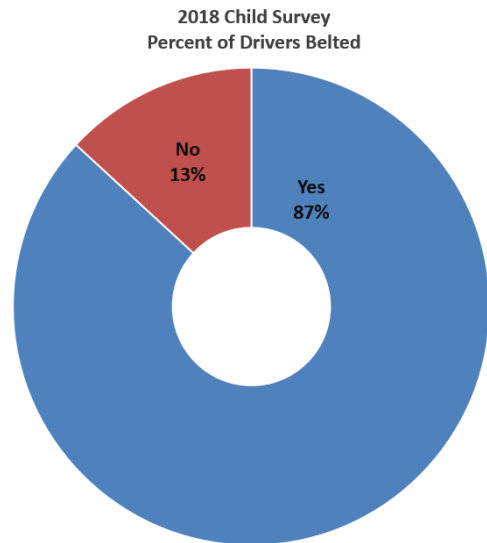
### Differences in Child Restraint Use Rates by Vehicle Type

Children are buckled up at the highest rate in vans (94%), followed by SUVs (91%), then autos (86%), and finally, trucks (79%). Observed belt use increased in all vehicle types over the previous year.



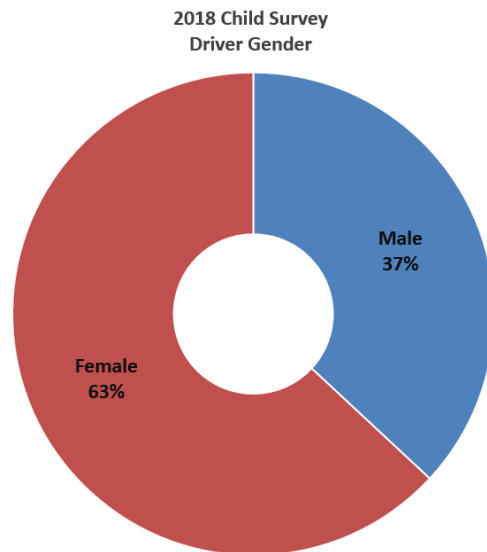
### Belt Use Rate Among Drivers of Vehicles Carrying Children

About 87% of drivers in vehicles carrying children were belted, while about 13% of drivers were not belted, a 4% increase over the previous year's findings.



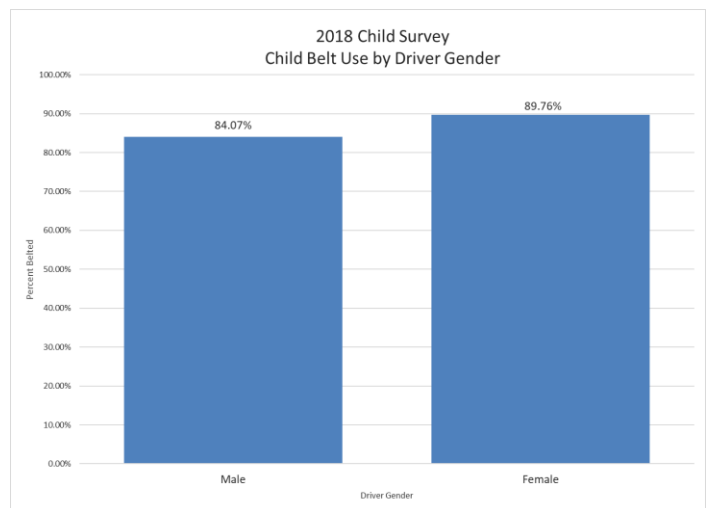
### Driver Gender of Vehicles Carrying Children

Women (63%) are more likely to be driving the vehicle carrying children. Men were driving about 37% of observed vehicles.



### Child Restraint by Driver Gender

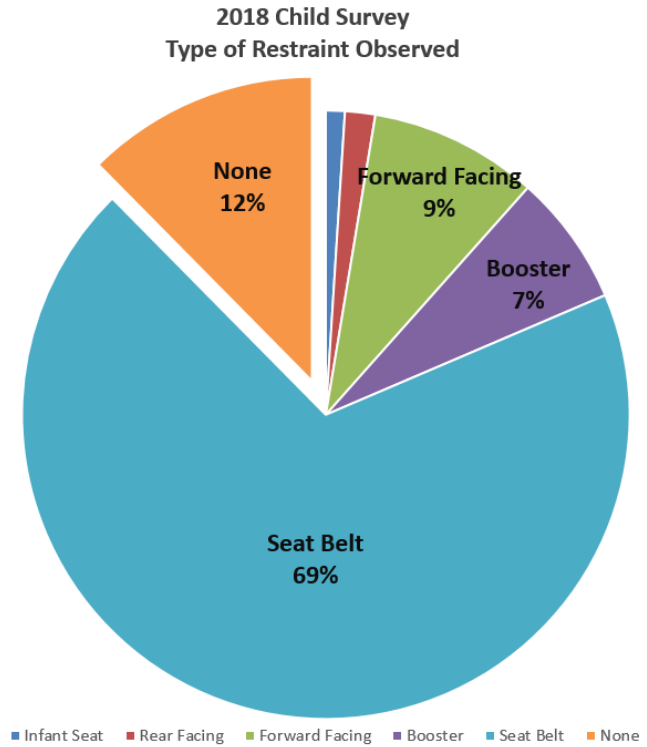
Children are more likely to be buckled up while riding with female drivers (89%) than when riding with a male driver (84%).



### Types of Restraint Observed

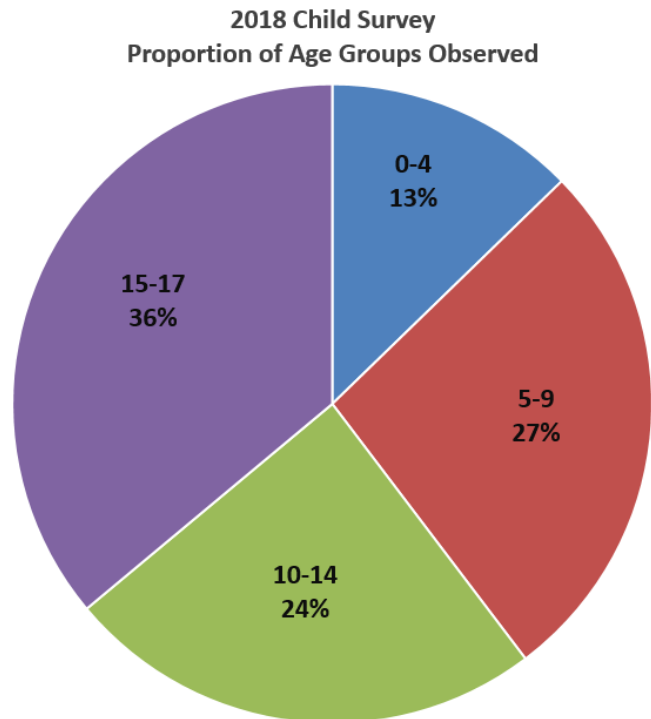
1% of observed children were in infant seats. About 1.6% were in rear-facing seats. About 9% were observed in front-facing seats, while about 7% were in booster seats. About 69% were observed in safety belts.

Approximately 12 percent of children observed were not restrained. About 87% were using some type of restraint (all seat types combined).



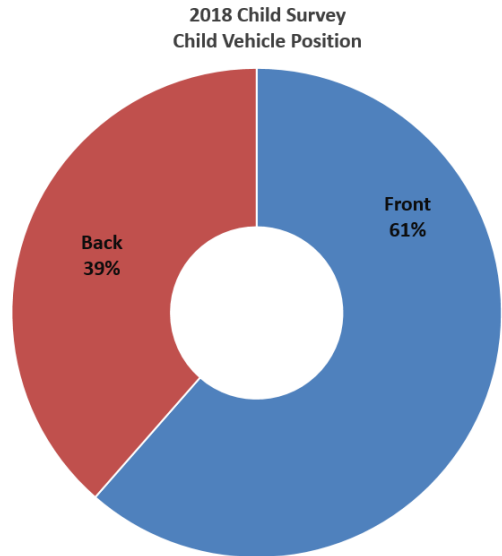
### Ages Groups Observed

About 13% of the children observed were in the 0-4 age group. The 5-9 age group contributed about 27% of the observed children. The 10-14 age group contributed about 24% of the observed children, while the 15-17 age group was the largest group observed and comprised about 36% of the total.



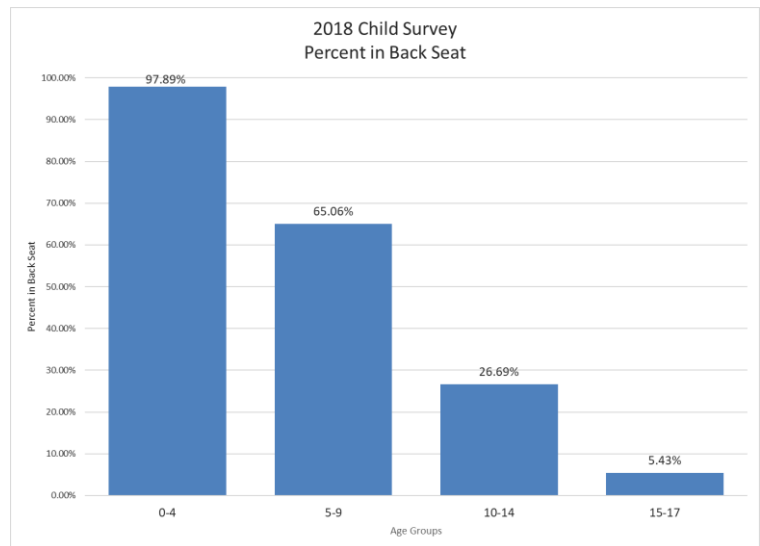
### Child Position in Vehicle

About 61% of observed children were riding in the front seat, while about 39% of the observed children were riding in the back of the vehicle.



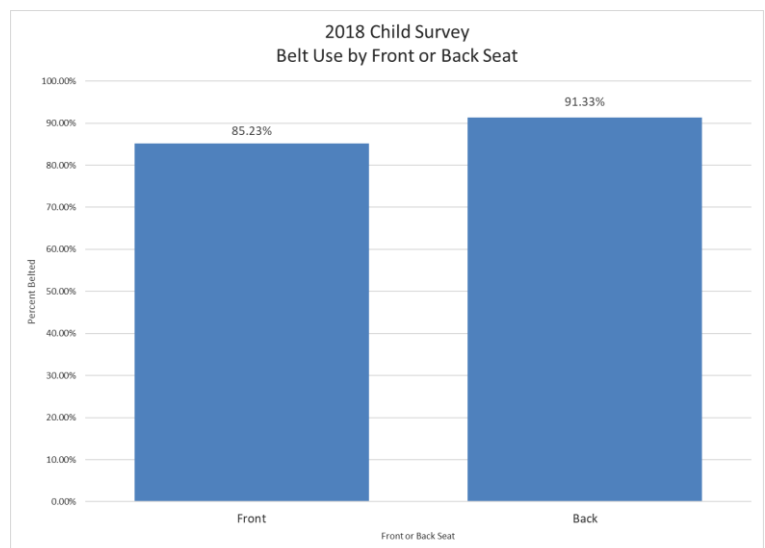
The percentage of children observed in the back seat decreases with age.

About 97% of the 0-4 age group are observed in the back seat, followed by the 5-9 age group (65%), followed by the 10-14 age group (27%), followed by the 15-17 age group (5%).



### Child Restraint by Vehicle Position

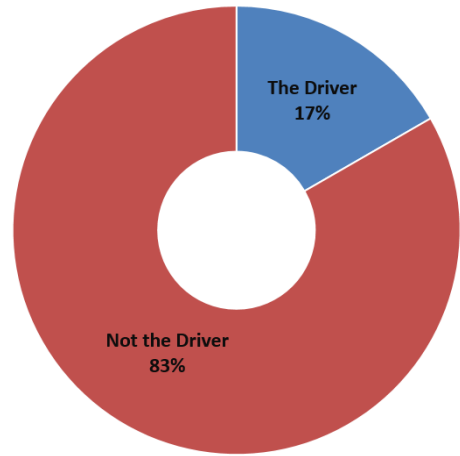
About 85% of children observed in the front seat were buckled up, while about 91% of those observed in the back seat were buckled. As has been found in previous surveys, child belt use while positioned in a front seat is lower than belt use while positioned in a rear seat.



### Percentage of 0-17 Year Old Children Driving Observed Vehicle

About 17% of 0-17 year old children were driving the observed vehicle, while most children observed (83%) were passengers.

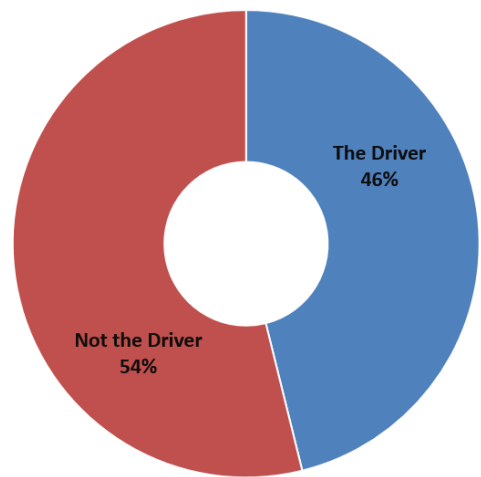
2018 Child Survey  
Percent of Observed Children (0-17)  
Who Were the Driver



### Percentage of 15-17 Year Old Children Driving Observed Vehicle

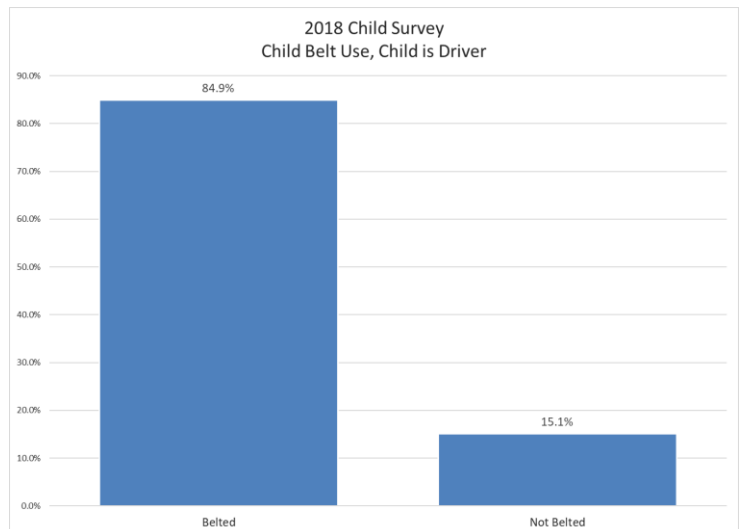
About 46% of the observed 15-17 year old children were driving the observed vehicle, while 54% were not the driver.

2018 Child Survey  
Percent of Observed Children (15-17)  
Who Were the Driver



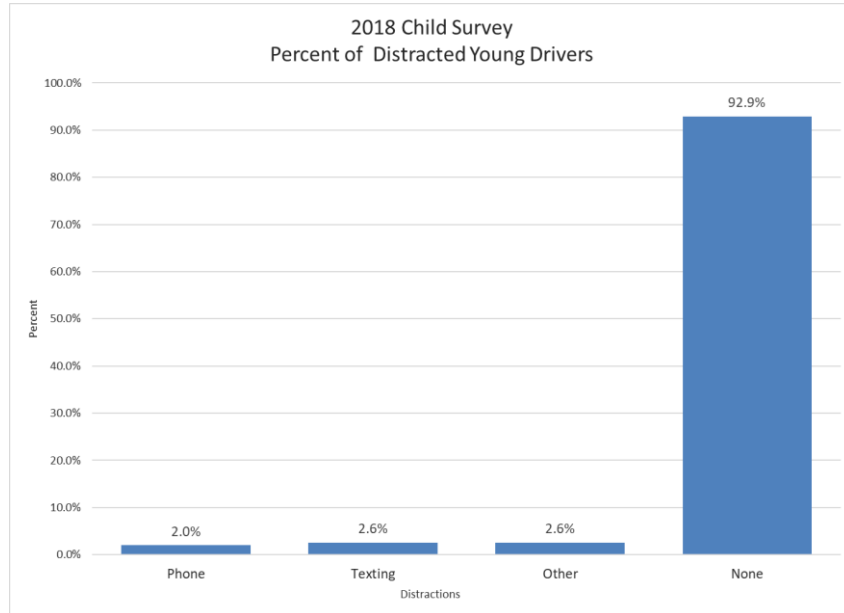
### Child Restraint when Child is Driver

When the observed child was also the driver of the vehicle, they were found to be belted approximately 85% of the time.



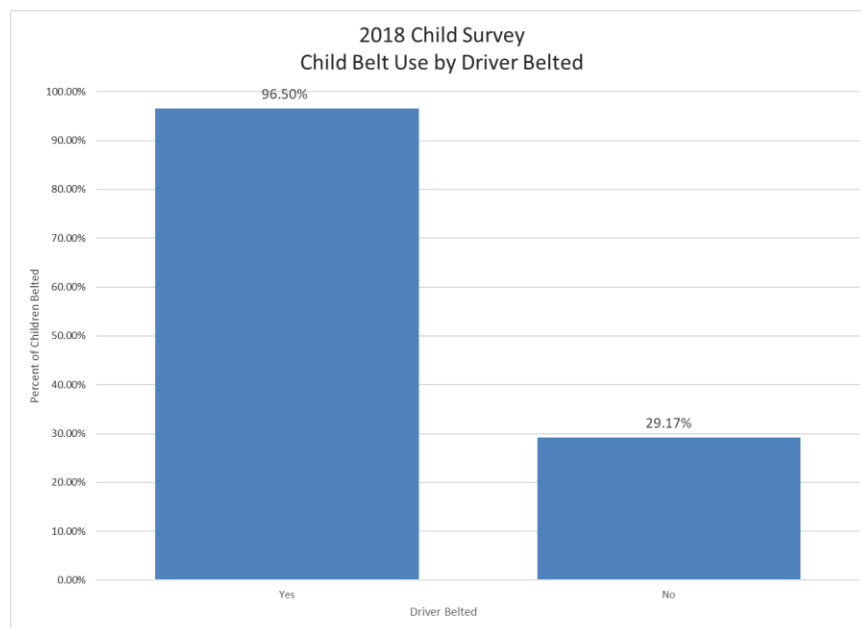
## Percentage of Young Drivers Distracted While Driving

About 7% of young drivers were observed to be distracted while driving. About 93% of young drivers were observed to have “No Distractions”, about a 1% decrease in distractions over the previous year’s findings



## Restraint Rate if Driver is Belted

Children are *much* more likely to be buckled up if the driver is also belted. If the driver is belted, about 96.5% of the children are also belted. If the driver is not belted, only about 29% of the observed children were belted.



## Data Reliability

Reliability data was collected at 29 sites comprising 6,516 separate observations. Observers had an overall agreement rate of 93.5%. Agreement within data categories ranged from 90% agreement on driver gender to 95% agreement on vehicle type.

$(\text{Agreements} / (\text{Agreements} + \text{Disagreements})) \times 100 = \text{Percent Agreement}$

