

Puerto Rico Observational Survey of Seat Belt Use, 2019

Final Report

Submitted to: Traffic Safety Commission of Puerto Rico



September 27, 2019

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INTRODUCTION

The Traffic Safety Commission of Puerto Rico (CST by its Spanish acronym), with the collaboration of Estudios Técnicos, Inc., conducted the Seat Belt Use Survey for 2019. The purpose of the study is to estimate seat belt use in Puerto Rico at a specific point in time.

The sample design is similar to the one approved by the National Highway Traffic Safety Administration (NHTSA) on November 9, 2011. For this year we used the same road selection from 2017 following the Uniform Criteria for State Observational Surveys of Seat Belt Use, approved by NHTSA on May 30, 2017.

The fieldwork team was composed of eleven (12) members. All team members participated in a one-day training session on August 19, 2019 that included all the different aspects for the observations and quality control. The training was organized in two sections. The first section addressed the objectives of the survey, operational definitions concerning field observations, and data gathering protocols. The second section consisted of examples and the recreation of the different situations and possible scenarios in the field. This second part also included role playing exercises for observers, counters and quality control monitors.

Observations were conducted from August 21 to September 12, 2019. Seventeen (17) counties were visited, for a total of 6,800 vehicle observations.

METHODOLOGY

The methodology used for the Seat Belt Survey is similar to the one implemented in 2011 and approved by NHTS. For 2017 a new road selection was made following the Uniform Criteria for State Observational Surveys of Seat Belt Use, approved by NHTSA on May 30, 2017. As mention in the introduction, for 2019 the same 68 road segments from 2018 were visited.

Two main units were considered in the sample design. The primary sample unit (PSU) is by counties, the second sample unit (SSU) by road segments, followed by: time segment, road direction, lane and vehicle selection. The PSU was stratified following a geographic distribution of the Island, composed of five regions. A sample of 17 counties was selected from a sample frame of 45 counties, after considering an exclusion of 15 percent of passenger vehicle occupant fatalities in the 78 counties that compose Puerto Rico. Counties were stratified by region. The selection was established according to the number of active driver's licenses by county.

The road sample was stratified in each county by three road types: (1) Primary, (2) Secondary and (3) Local. A total of four road segments were selected in each county,

including at least one road for every road type in each county. The selection was made using segment length as the measure of size (MOS). The four road segments by county represented one workday of data collection. Observations were scheduled ensuring that they were made during the seven days of the week. A universal period of observation of 45 minutes was used, with an estimation of 45 minutes of traveling time between segments. The starting time for each day was randomly chosen between 7:00 AM and 1:00 PM to warrant the observation probability between 7:00 AM and 6:00 PM.

Site locations for observations were selected deterministically by the first intersection or ramp encountered. Observations were conducted by three team members: two data collectors and one vehicle counter. The team recorded roadway directions of the selected segments and chose randomly roadway directions to be observed when there were more than two directions. Seven percent of the segments were visited without advance notice by an independent monitor for quality control purposes.

An observation protocol was used to guide field observations. The protocol established the roles for each team member, how to choose roadway directions, place to collect the information, how to identify the right vehicles to be observed, people to be observed inside the vehicles, and how to record the observations. A total of four protocols were developed to guide their actions in special situations. These included the following: (1) temporarily unavailable locations, (2) permanently unavailable locations, (3) nonresponse rates that exceed 10% and (4) process for non-usable data. The protocols warrant that sample units were represented, and that standard error does not exceed 2.5 percentage points.

For data entry and processing, the following software programs were used: SPSS, Excel and SUDAAN. The belt use rate estimation was calculated through a ratio estimator and the standard error with SUDAAN software. Both procedures were included in the Sample Design submitted and approved by NHTSA.

FINDINGS

General Findings

The five (5) regions of Puerto Rico were covered with the visits of the 17 counties (four road segments in each one selected for the sample). The number of observations per segment was 100 vehicles, for a total of 6,800 observed vehicles and 8,524 occupants (6,800 drivers and 1,724 front passengers).

The 68 segments visited were the same ones as 2018 (following NHTSA procedure) within the same time period and days of the week. There was no need to change road segments do to the fact that all 100 observations were completed in each of the 68 road segments used in 2017 and 2018.

Quality control was conducted in seven percent of the observed segments. These segments, which are included in table one, were randomly selected.

TABLE 1: QUALITY CONTROL BY ROAD SEGMENTS

County	Type	Road Segment	Latitude	Longitude	Date	Hour
Arecibo	Local	Cll Municipal	18.459663	-66.590922	August 24,2019	11:30
Carolina	Primary	Pr- 26	18.400937	-65.981510	August 25,2019	14:30
Caguas	Secondary	Pr- 789	18.222181	-66.022902	August 25,2019	9:00
San Juan	Local	Cll Hoare	18.450362	-66.081601	August 30,2019	11:30

Observers recorded belt use information of 6,636 drivers and 1,686 front seat passengers. The number of occupants with unknown belt use was 202 (164 drivers and 38 front passengers) for a nonresponse rate of 2.4% (nonresponse rate = 202/8,524). Table two includes the number of observations of drivers and passengers per county and region.

TABLE 2: NUMBERS OF VALID OBSERVATIONS OF FRONT SEAT OCCUPANTS PER COUNTY/REGION

	Drivers	Passengers	Total
North Region	1,168	398	1,566
Arecibo	390	131	521
Hatillo	400	151	551
Toa Baja	378	116	494
West Region	1,170	276	1,446
Aguada	387	73	460
Isabela	393	123	516
Mayagüez	390	80	470
South Region	1,558	352	1,910
Ponce	387	82	469
Cayey	394	104	498
Juana Díaz	385	72	457
Salinas	392	94	486
East Region	1,958	504	2,462
Caguas	389	141	530
Canóvanas	396	102	498
Fajardo	392	81	473
Juncos	390	83	473
Naguabo	391	97	488
Metropolitan Región	782	156	938
Carolina	388	101	489
San Juan	394	55	449
Total	6,636	1,686	8,322

The overall belt use measured combining drivers and passengers (once weights were applied as indicated in the sample design) was 88.3 percent, with a standard error of 1.07%.

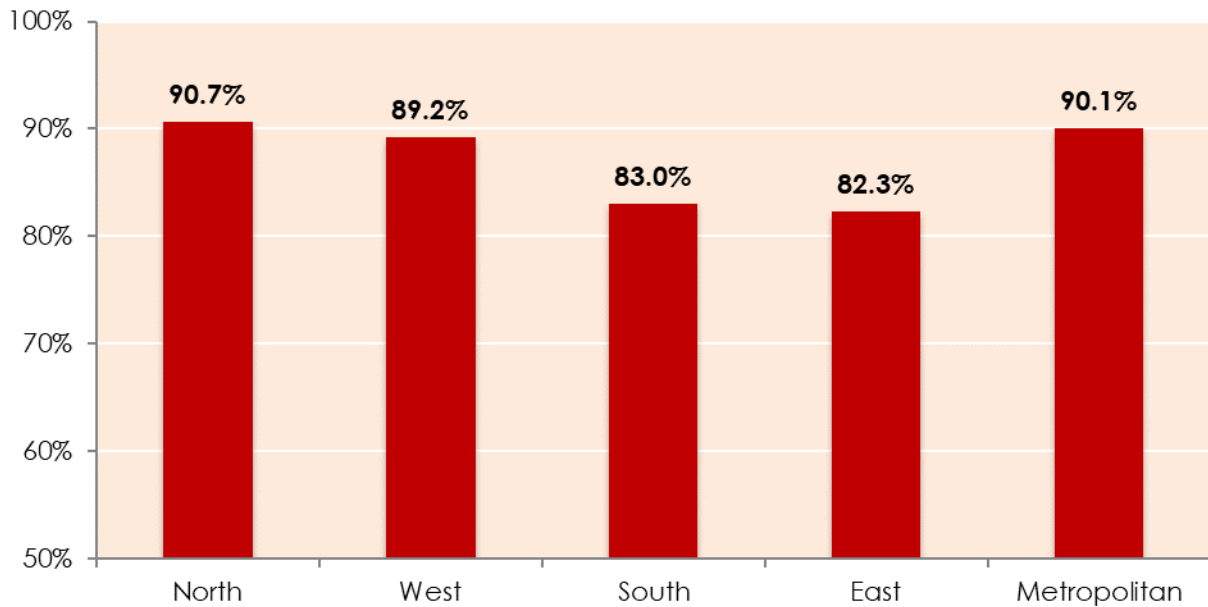
TABLE 3: WEIGHTED SEAT BELT USE RATE FOR PUERTO RICO 2018

Rate of belt use	Standard Error	95 Percent Confidence Interval	
88.3%	1.07%	86.2%	90.4%
n = 8,322			

Significant¹ difference was found in belt use by region. In the Metropolitan Area (90.1%), North (90.7%) and West (89.2%) regions belt use is more intense than the other regions, especially the East (82.3%) and South (83%).

¹ A Chi Square Test of Independence was calculated to identify relations between belt use and the rest of the observed variables.

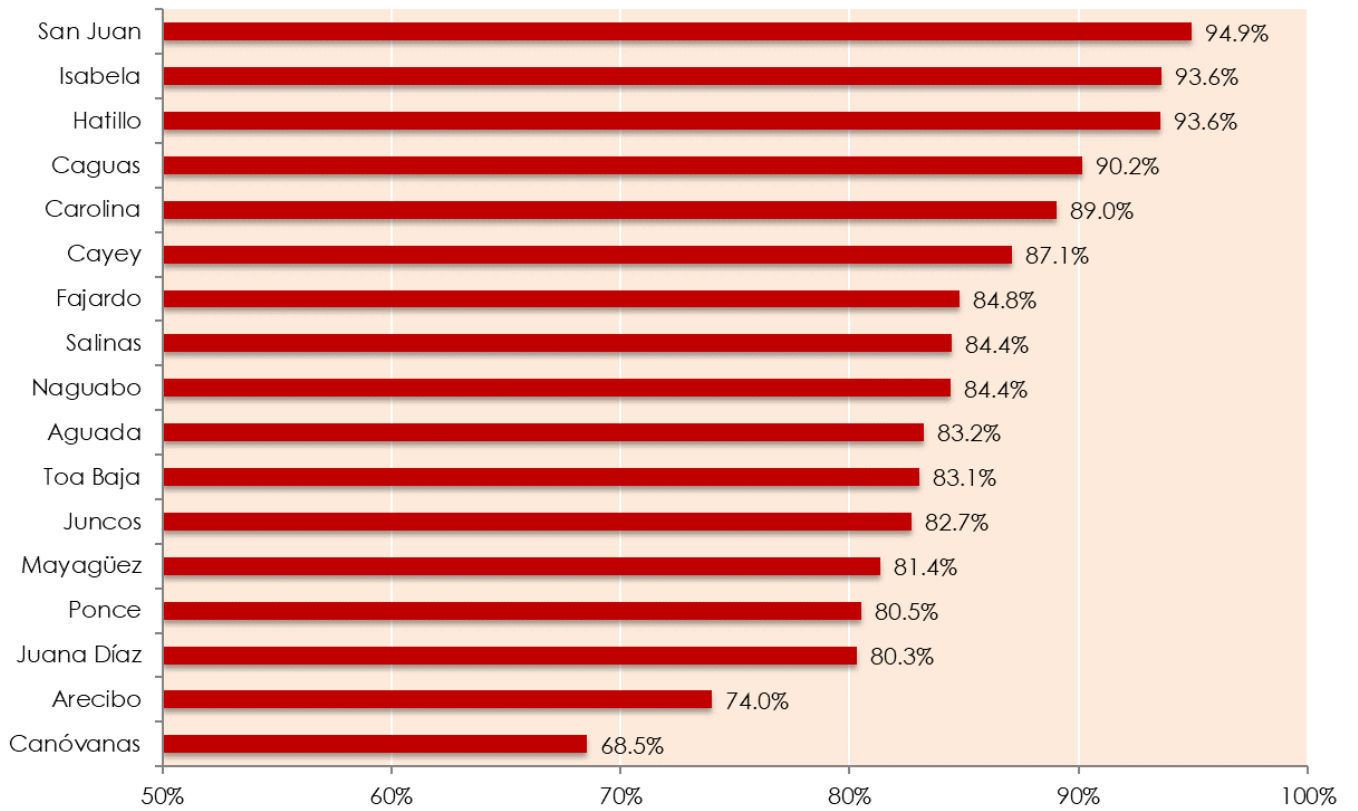
GRAPH 1: OBSERVED BELT USE BY REGION



The belt use measurements by county showed that San Juan was the county with the highest belt use with 94.9%. Other counties that reached belt usage close to 90 percent were:

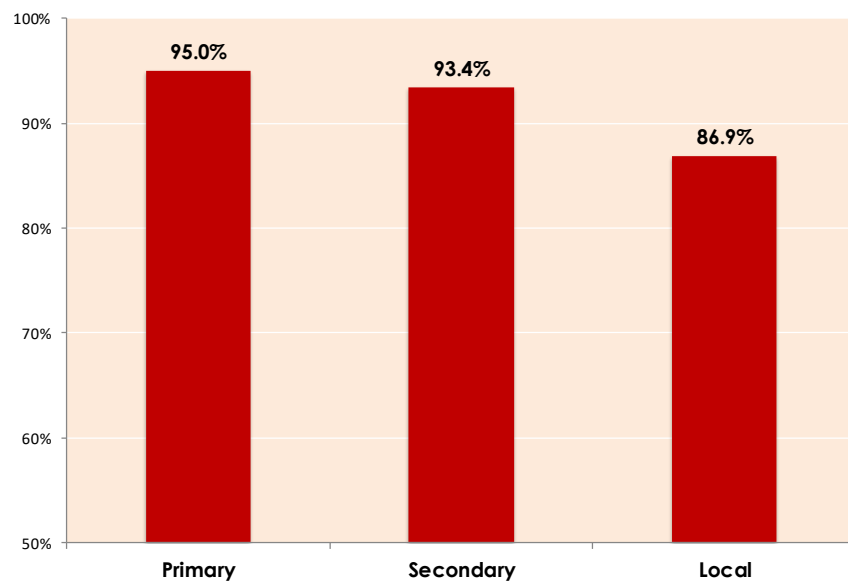
Isabela, Hatillo and Caguas. In contrast, the lowest level of belt use was recorded in: Canóvanas (68.5%) and Arecibo (74%).

GRAPH 2: OBSERVED BELT USE BY COUNTY



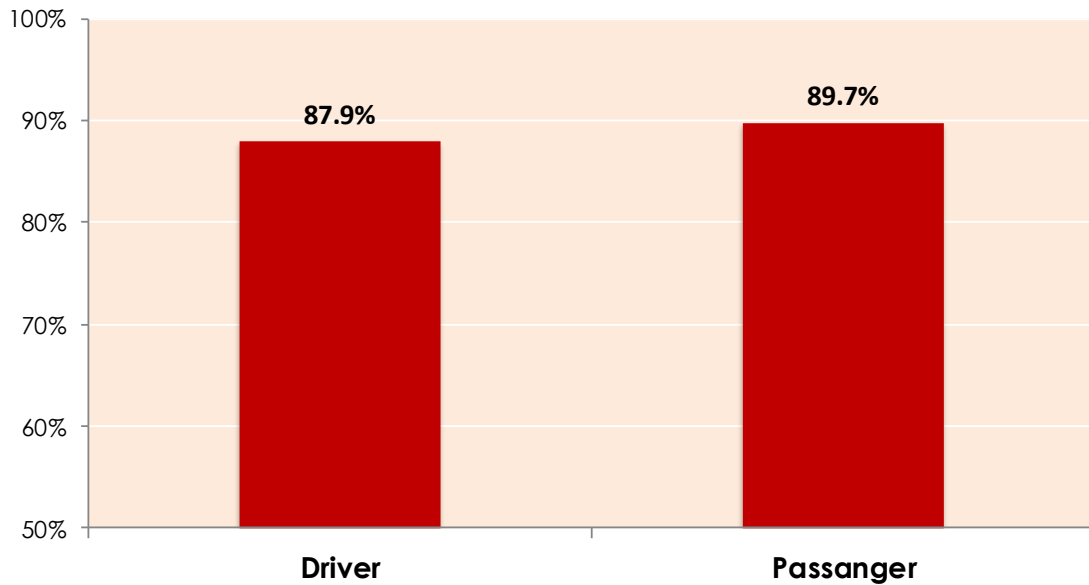
Differences were observed by road type. The lowest percentage of seat belt use (86.9%) was found on Local road types.

GRAPH 3: OBSERVED BELT USE BY ROAD TYPE



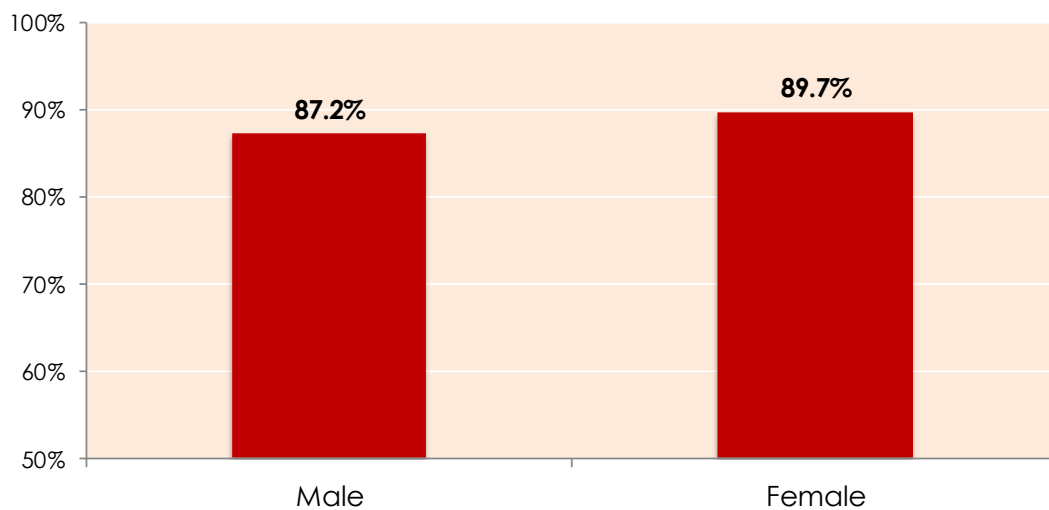
A difference was observed between drivers and passengers. Belt use is higher by passengers (89.7%) than drivers (87.9%).

GRAPH 4: OBSERVED BELT USE BY SEATING POSITION



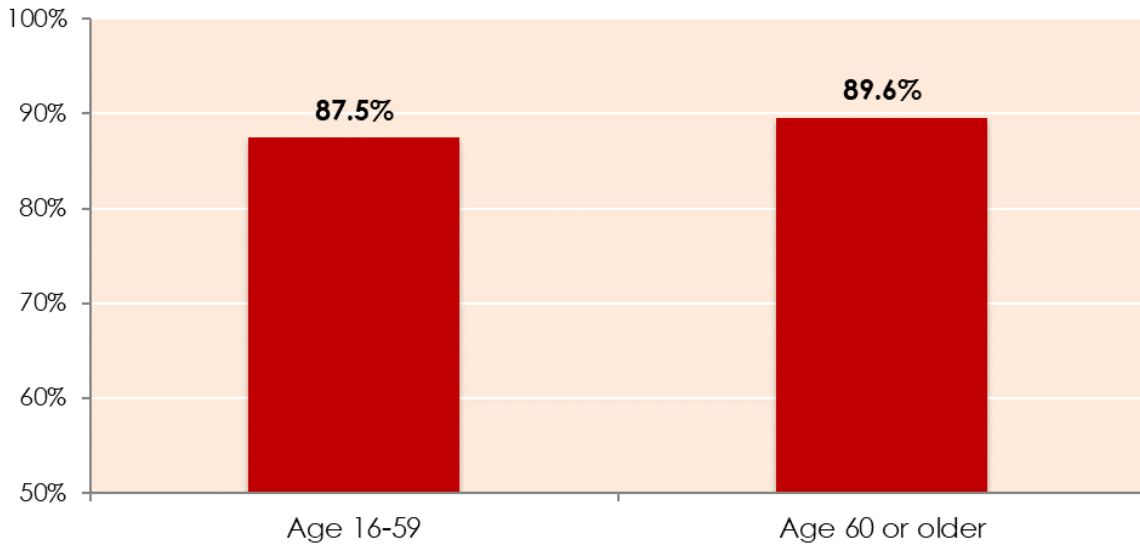
The survey results showed that female's belt use has a higher percentage compared to males (89.7 percent and 87.2 percent, respectively). This difference is statistically significant (using a Chi Square Test of Independence).

GRAPH 5: OBSERVED BELT USE BY GENDER



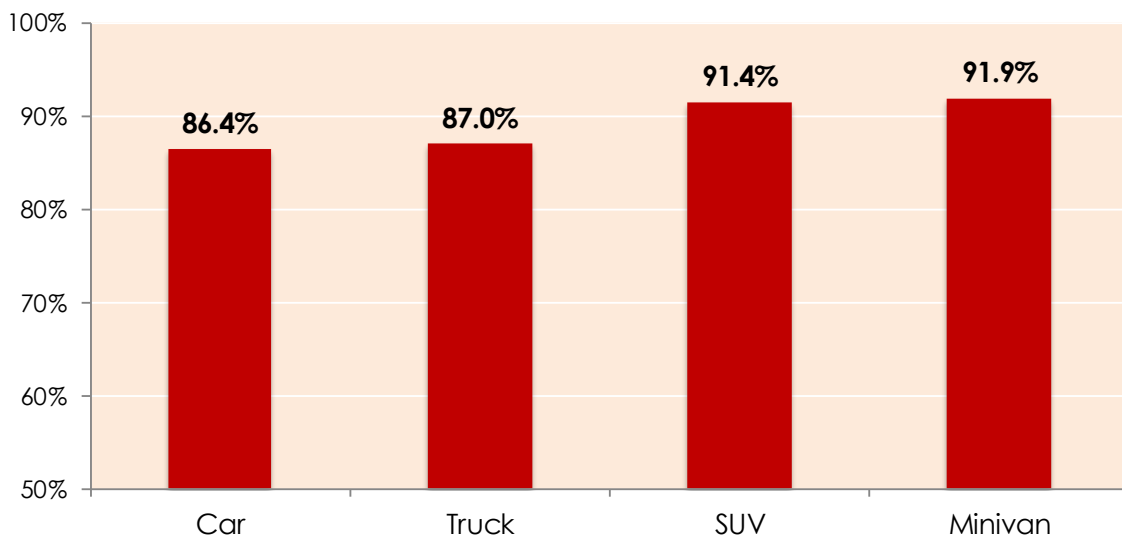
No statistical difference was found related to the use of seat belt and age group. Age group 16 to 59 (87.5%) and 60 years or older (89.6%)

GRAPH 6: OBSERVED BELT USE BY AGE



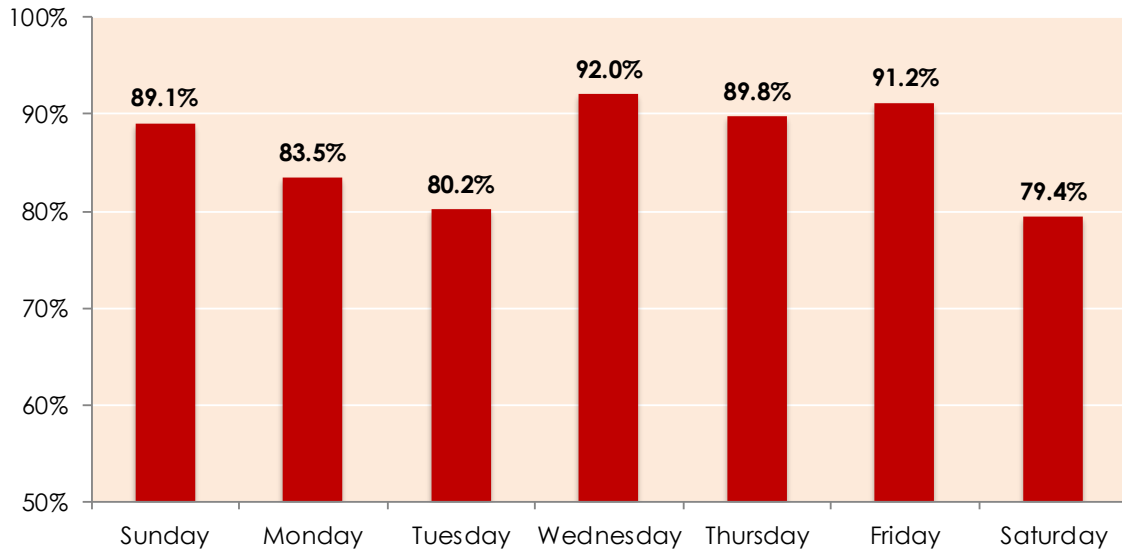
A significant difference of belt use was observed by vehicle type. As Graph 7 shows, 86.4 percent of belt use was registered on cars, while 91.4 percent on SUVs and 91.9 percent on Minivans.

GRAPH 7: OBSERVED BELT USE BY VEHICLE TYPE



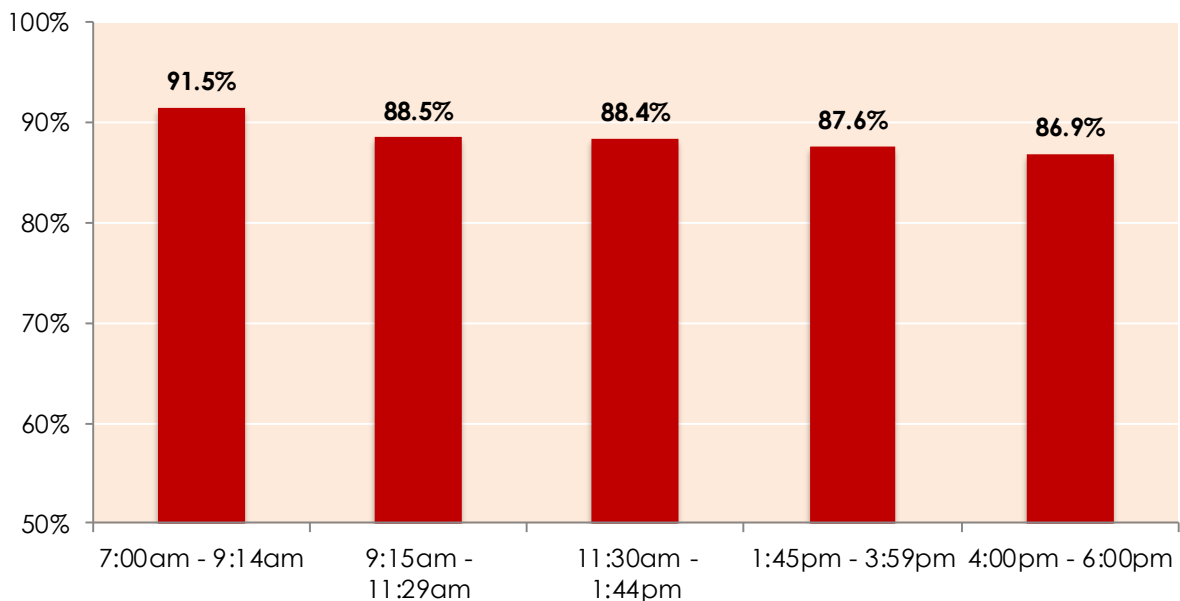
The days of the week that measured a higher belt use were Wednesday and Friday with 92 percent and 91.2 percent, respectively. The days of the week that measured the lowest belt use were Tuesday and Saturday, with 80.2% and 79.4 percent respectively. Those results are associated with the municipalities that were visited in those days.

GRAPH 8: OBSERVED BELT USE BY DAY OF THE WEEK



The time interval corresponding from 7:00 AM to 9:14 AM (91.5%) reflected higher belt use.

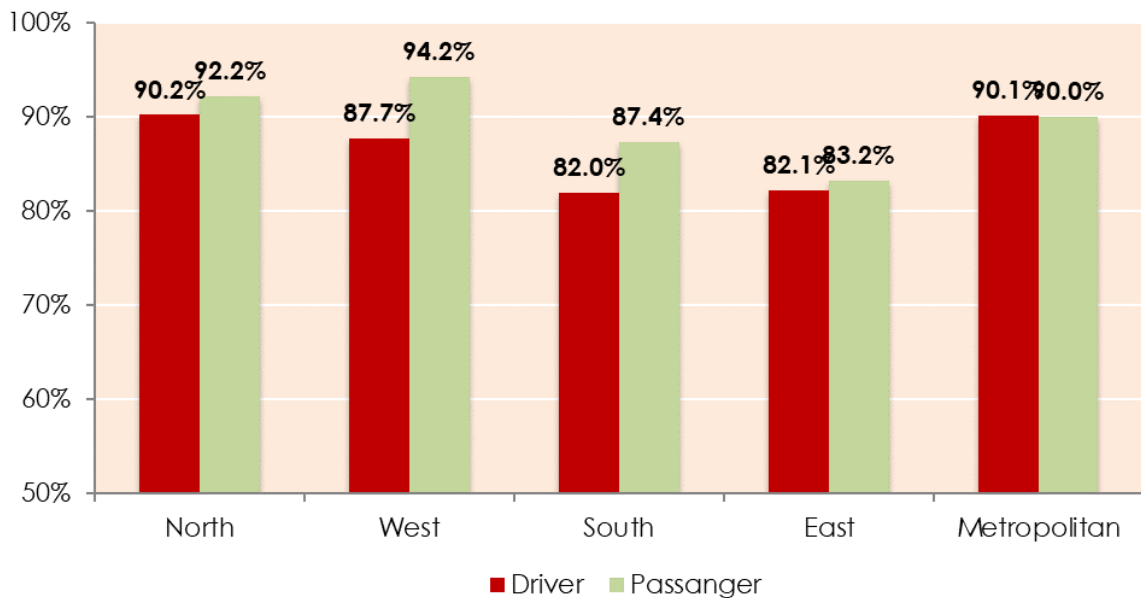
GRAPH 9: OBSERVED BELT USE BY TIME INTERVALS



Information by Seating Position

The measurements of belt use by seating position by region were similar to the ones by region in general. The East Region and South Regions recorded the lowest belt use. It should be noted, that in the West Region there is a very visible difference (7%) between driver and passengers (87.7% and 94.7%, respectively).

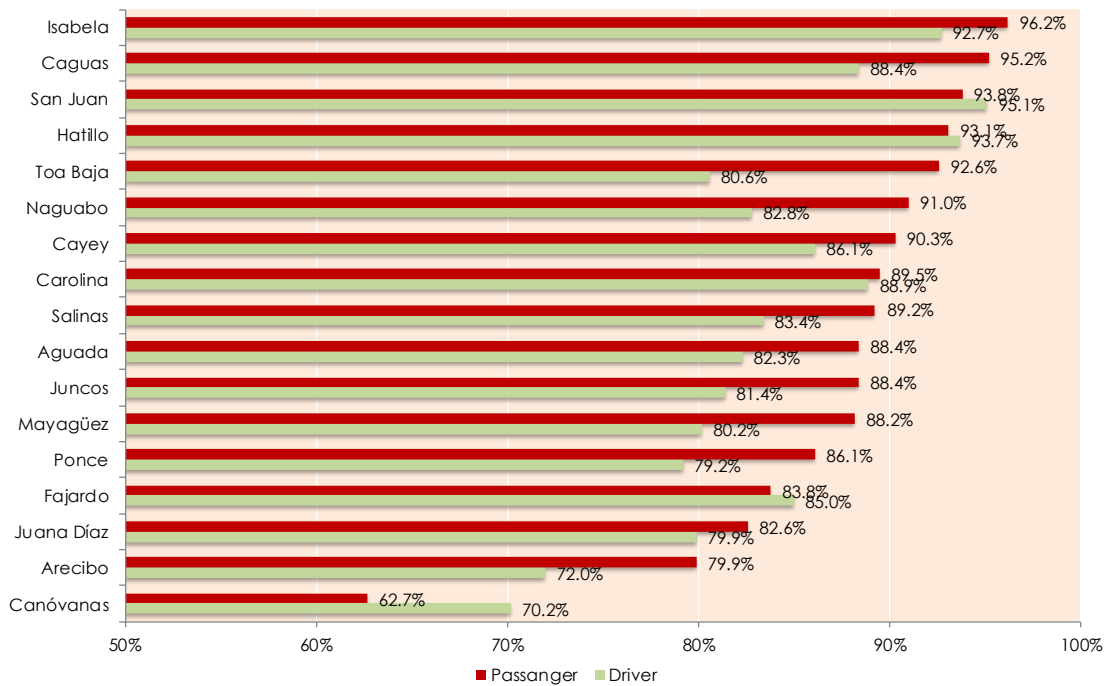
GRAPH 10: OBSERVED BELT USE BY REGION PER SEATING POSITION



As Graph 11 shows, differences in belt use can be observed when counties are considered separately. The counties that measured the biggest differences between drivers and passengers were:

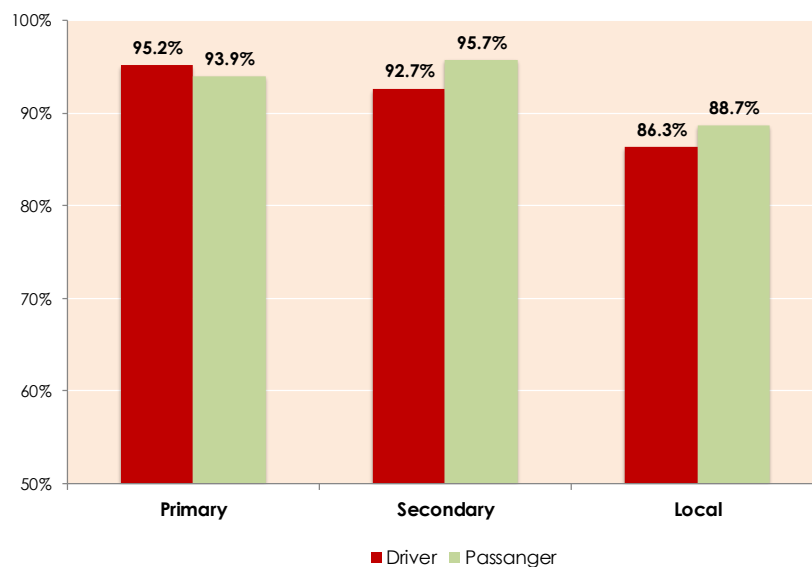
Toa Baja, Naguabo and Mayagüez. Toa Baja measured a belt use of 92.6 percent for passengers, while drivers measured a belt use of 80.6 percent, for a difference of 12.0 percentage points. In the case of Naguabo, passengers measured 91 percent of belt use, while drivers recorded 82.8 percent, for a difference of 8.2 percentage points. In Mayagüez, the difference in belt use between drivers (80.2 percent) and passengers (88.2 percent) was of 8.0 percentage points.

GRAPH 11: OBSERVED BELT USE BY COUNTY PER SEATING POSITION



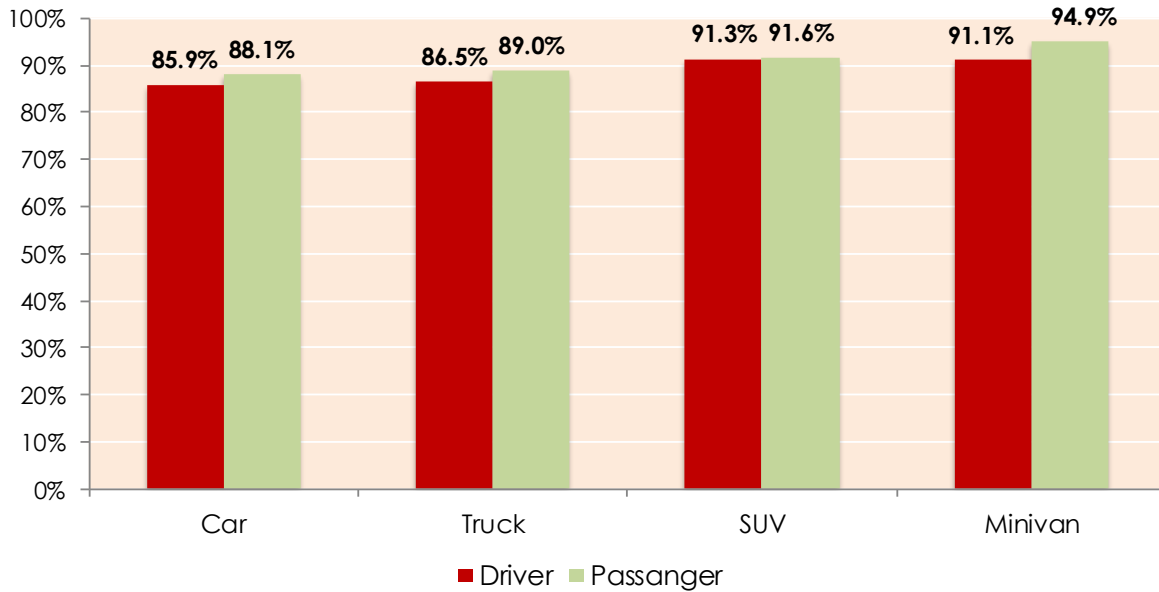
The biggest difference of belt use between drivers and passengers by road type was observed in secondary roads. Passengers measured 95.7 percent of belt use, while drivers measured 92.7 percent, for a difference of 3 percentage points. A smaller difference was measured in primary roads, consisting of 1.3 percentage points between drivers (95.2 percent) and passengers (93.9 percent).

GRAPH 12: OBSERVED BELT USE BY ROAD TYPE PER SEATING POSITION



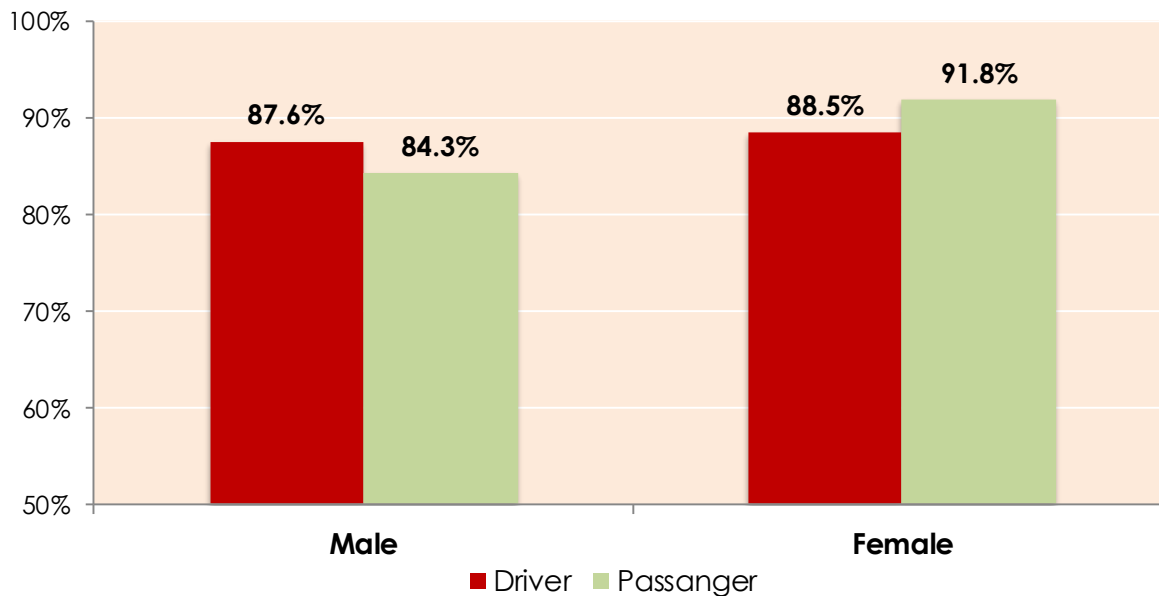
Related to belt use by type of vehicle, differences were found between drivers and passengers. Drivers recorded a higher belt use in SUVs (91.3%), while passengers have a higher use in Minivans (94.9%).

GRAPH 13: OBSERVED BELT USE BY VEHICLE TYPE PER SEATING POSITION



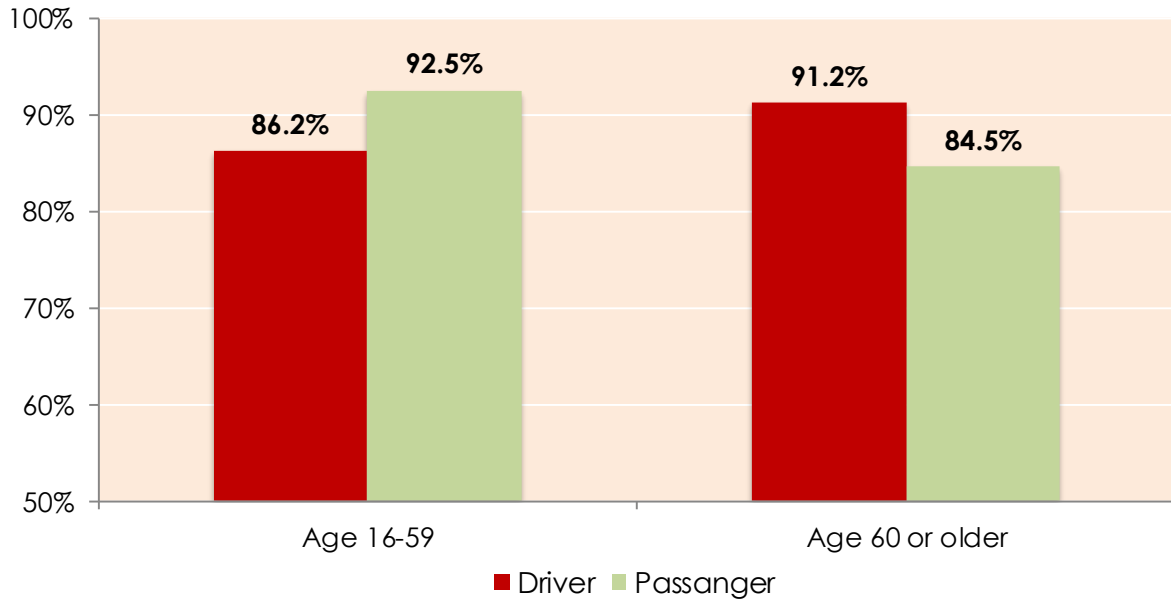
As Graph 5 showed, more females were observed using the belt than males. This tendency, as Graph 14 shows, is similar for drivers and passengers.

GRAPH 14: OBSERVED BELT USE BY GENDER PER SEATING POSITION



A 6.3 percentage point difference was registered in belt use between drivers (with 86.2 percent) and passengers (92.5 percent) regarding persons between 16 and 59 years old. However, for people of 60 years or older, drivers measured 91.2 percent, while passengers measured 84.5 percent, for a difference of 6.7 percentage point.

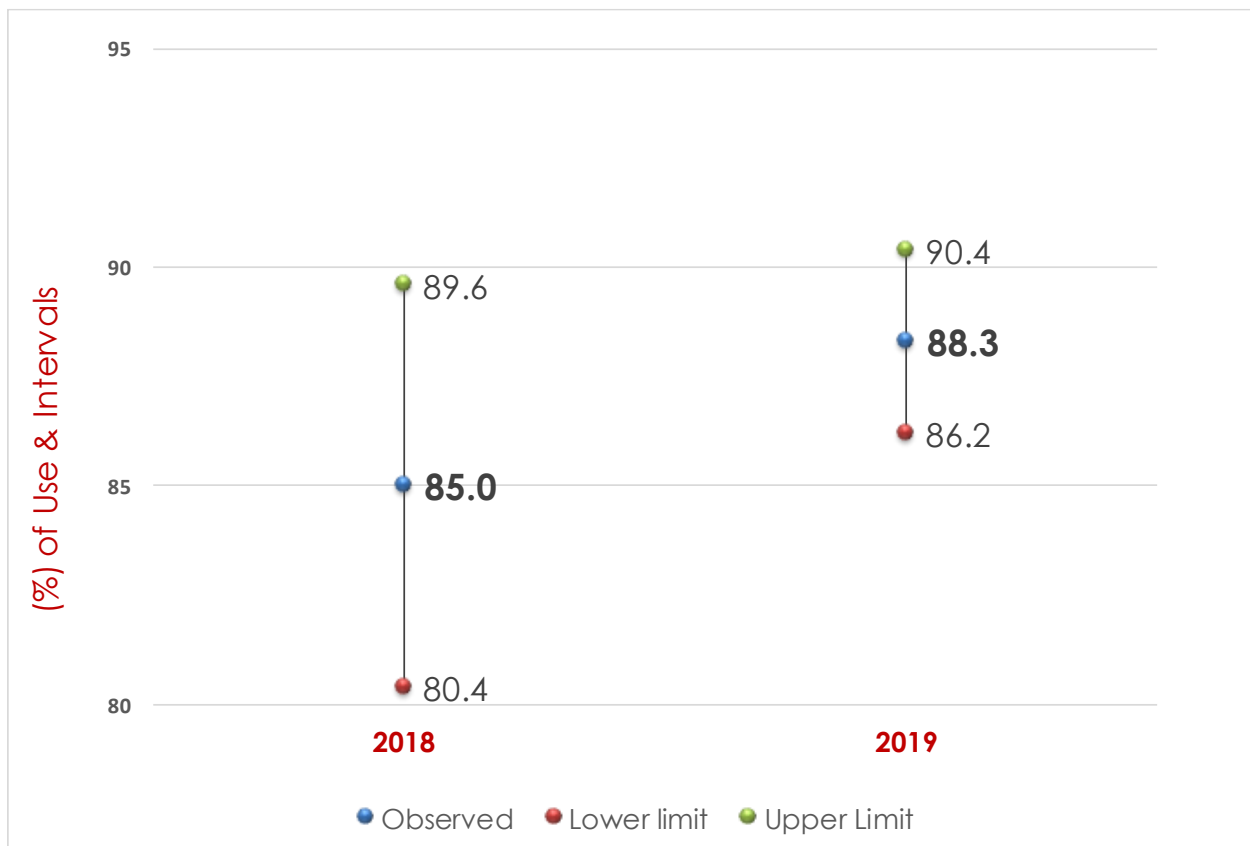
GRAPH 15: OBSERVED BELT USE BY AGE PER SEATING POSITION



Conclusions

In Puerto Rico the belt use rate has been similar and consistent throughout recent studies. The last valid study was conducted in 2018 and the general belt use rate was 85.0%, being 84.2% for drivers and 88.1% for passengers. In the present study (2019), the belt use was measured at 88.3%; being 87.9% for drivers and 89.7% for passengers, and with a standard error of 1.07%. As shown in graph 16, at 95 percent confidence level, the belt use rate difference between 2018 and 2019 is not statistically significant.

GRAPH 16: 2018-2019 RATE OF BELT USE AND 95 PERCENT CONFIDENCE LEVEL.



APPENDIX 1: LIST AND MAP OF SAMPLED ROAD SEGMENTS

Region	County	Type	Road Segment	X Coordinate	Y Coordinate	Day	Time	Belt use percentage
West	Aguada	Secondary	Pr- 417	18.360792	-67.141408	Wednesday	12:30	72.4%
West	Aguada	Local	Pr- 419	18.326512	-67.152832	Wednesday	11:00	77.0%
West	Aguada	Local	Marginal 2	18.356027	-67.162926	Wednesday	8:00	58.7%
West	Aguada	Local	PR-4416	18.354545	-67.166826	Wednesday	9:30	89.6%
North	Arecibo	Primary	Expreso Jose de Diego	18.436628	-66.586889	Saturday	14:30	94.2%
North	Arecibo	Secondary	Pr- 656	18.420692	-66.684354	Saturday	10:00	66.4%
North	Arecibo	Local	Cll Las Carolinas	18.403766	-66.595401	Saturday	13:00	73.5%
North	Arecibo	Local	Cll Municipal	18.459663	-66.590922	Saturday	11:30	72.7%
East	Caguas	Primary	Autopista Luis A Ferre	18.297559	-66.044480	Sunday	13:30	94.5%
East	Caguas	Secondary	Pr- 789	18.222181	-66.022902	Sunday	9:00	83.9%
East	Caguas	Local	Ave. Gautier Benitez	18.212775	-66.045942	Sunday	12:00	89.7%
East	Caguas	Local	Ave Degetau	18.222341	-66.039008	Sunday	10:30	90.4%
East	Canovanas	Primary	Pr- 66	18.367641	-65.886149	Tuesday	12:00	93.2%
East	Canovanas	Secondary	Pr- 185	18.313359	-65.891835	Tuesday	10:30	88.6%
East	Canovanas	Local	Cll 12	18.394256	-65.888067	Tuesday	13:30	67.2%
East	Canovanas	Local	Cll 1	18.339961	-65.894689	Tuesday	9:00	58.6%
Metropolitan	Carolina	Primary	Pr- 26	18.400937	-65.981510	Sunday	14:30	95.2%
Metropolitan	Carolina	Secondary	Pr- 874	18.395630	-65.934822	Sunday	11:30	91.9%
Metropolitan	Carolina	Local	Carr. Boca Cangrejos	18.443467	-66.006781	Sunday	13:00	90.7%
Metropolitan	Carolina	Local	Ave Iturregui	18.417931	-66.000311	Sunday	10:00	88.7%
South	Cayey	Primary	Autopista Luis A Ferre	18.104720	-66.161588	Monday	12:00	93.9%
South	Cayey	Secondary	Pr- 1	18.132996	-66.128660	Monday	13:30	92.6%
South	Cayey	Local	Cll Nuñez Romeu	18.113004	-66.164986	Monday	15:00	83.0%
South	Cayey	Local	Pr- 7722	18.108191	-66.209815	Monday	16:30	91.3%
East	Fajardo	Primary	Pr- 53	18.285711	-65.649759	Tuesday	13:30	95.6%

Region	County	Type	Road Segment	X Coordinate	Y Coordinate	Day	Time	Belt use percentage
East	Fajardo	Secondary	P R- 195	18.332613	-65.632474	Tuesday	9:00	68.5%
East	Fajardo	Local	Pr- 3	18.296082	-65.642378	Tuesday	12:00	86.6%
East	Fajardo	Local	Ave el Conquistador	18.339485	-65.656198	Tuesday	10:30	80.7%
North	Hatillo	Primary	Pr- 2	18.488131	-66.799438	Thursday	13:30	97.9%
North	Hatillo	Secondary	Ave Dr Susoni	18.487730	-66.824029	Thursday	12:00	97.7%
North	Hatillo	Local	Calle E	18.487776	-66.789458	Thursday	15:00	93.7%
North	Hatillo	Local	Marg.Cll Comercio	18.485504	-66.818322	Thursday	16:30	87.4%
West	Isabela	Secondary	Pr- 2	18.468321	-67.031808	Wednesday	11:30	95.6%
West	Isabela	Local	Cll Dr Gonzalez	18.501772	-67.020247	Wednesday	14:30	90.8%
West	Isabela	Local	Cll Lamela	18.500950	-67.026652	Wednesday	10:00	86.1%
West	Isabela	Local	Cll la Sierra	18.504912	-67.061166	Wednesday	13:00	85.0%
South	Juana Díaz	Primary	Autopista Luis A Ferre	18.032402	-66.434595	Monday	15:30	96.6%
South	Juana Díaz	Secondary	Pr- 14	18.052872	-66.521361	Monday	12:30	87.4%
South	Juana Díaz	Local	Cll Ext Munoz Rivera	18.053821	-66.504846	Monday	11:00	82.1%
South	Juana Díaz	Local	Avecamino Real	18.011116	-66.493727	Monday	14:00	74.3%
East	Juncos	Primary	Expreso Cruz Ortíz Stella	18.244460	-65.940350	Thursday	13:30	97.4%
East	Juncos	Secondary	Pr- 189	18.240805	-65.932685	Thursday	12:00	86.6%
East	Juncos	Local	Cll Martínez	18.228180	-65.921854	Thursday	9:00	93.1%
East	Juncos	Local	Cll Algarin	18.227368	-65.927396	Thursday	10:30	72.7%
West	Mayagüez	Secondary	P R - 105	18.203182	-67.145643	Thursday	12:30	87.0%
West	Mayagüez	Local	Cll Simon Carlos	18.202173	-67.149470	Thursday	14:00	72.9%
West	Mayagüez	Local	Calle M Columbus Lndg	18.198214	-67.150428	Thursday	15:30	63.2%
West	Mayagüez	Local	Cll Nenadich E	18.197356	-67.143562	Thursday	11:00	91.7%
East	Naguabo	Primary	Pr- 53	18.214525	-65.718318	Friday	8:00	93.5%
East	Naguabo	Secondary	Pr- 3	18.201024	-65.711556	Friday	9:30	83.7%

Region	County	Type	Road Segment	X Coordinate	Y Coordinate	Day	Time	Belt use percentage
East	Naguabo	Local	Cll Goyco	18.212429	-65.734183	Friday	12:30	76.7%
East	Naguabo	Local	Cll 7	18.206030	-65.737460	Friday	11:00	80.3%
South	Ponce	Primary	Autopista Luis A Ferré	18.002135	-66.583322	Thursday	14:00	90.5%
South	Ponce	Secondary	Pr- 2	17.974190	-66.680717	Thursday	12:30	93.3%
South	Ponce	Local	Ave Padre Noel	17.982400	-66.622295	Thursday	15:30	79.0%
South	Ponce	Local	Cll 2	18.018618	-66.604890	Thursday	11:00	68.9%
South	Salinas	Primary	Autopista Luis A Ferre	17.993180	-66.261345	Friday	13:30	86.3%
South	Salinas	Secondary	Pr- 1	18.039239	-66.240620	Friday	12:00	91.5%
South	Salinas	Local	Cll Miguel Ten	17.976603	-66.297964	Friday	15:00	77.2%
South	Salinas	Local	Cll Victoria Mateo Serrano	17.977954	-66.296859	Friday	16:30	87.2%
Metropolitan	San Juan	Primary	Expreso Las Americas	18.389778	-66.071626	Friday	10:00	95.6%
Metropolitan	San Juan	Secondary	Ave John F Kennedy	18.431885	-66.089463	Friday	7:00	95.3%
Metropolitan	San Juan	Local	Cll Hoare	18.450362	-66.081601	Friday	11:30	93.4%
Metropolitan	San Juan	Local	Cll 7 S	18.401591	-66.090262	Friday	8:30	86.8%
North	Toa Baja	Primary	Pr- 22	18.415249	-66.207233	Saturday	16:00	91.5%
North	Toa Baja	Secondary	Pr- 2	18.403435	-66.216572	Saturday	17:30	88.5%
North	Toa Baja	Local	Pr- 866	18.416051	-66.200846	Saturday	13:00	80.6%
North	Toa Baja	Local	Cll Canarios	18.425498	-66.172550	Saturday	14:30	64.4%

APPENDIX 2: TABLE B

Seat Belt Usage: Final Report

Region	County	Road type	ID_RS	Road Segment	Direction	Site Type	Date	W _{gchijklm}	Number of Drivers	Number of front Passengers	Number of occupants	Numbers de occupants belted	Numbers de occupants unbelted	Numbers de occupants with unknown belt use
West	Aguada	Secondary	1	Pr-417	E & W	Original	Wednesday, 9-4-2019	2541536.33	100	27	127	89	34	4
West	Aguada	Local	2	Pr-419	N & S	Original	Wednesday, 8-21-2019	9074309.20	100	16	116	87	26	3
West	Aguada	Local	3	Marginal 2	N & S	Original	Wednesday, 9-4-2019	8205889.89	100	13	113	64	45	4
West	Aguada	Local	4	PR-4416	N & S	Original	Wednesday, 8-21-2019	43572217.39	100	19	119	103	12	4
North	Arecibo	Primary	5	Expreso Jose de Diego	W	Original	Saturday, 8-24-2019	5557506.56	100	27	127	113	7	7
North	Arecibo	Secondary	6	Pr- 556	N & S	Original	Saturday, 8-31-2019	3915599.24	100	40	140	91	46	3
North	Arecibo	Local	7	Cl Las Carolinas	E & W	Original	Saturday, 8-31-2019	26162534.28	100	39	139	100	36	3
North	Arecibo	Local	81	Cl Municipal	E & W	Original	Saturday, 8-24-2019	46206071.56	100	31	131	93	35	3
East	Caguas	Primary	9	Autopista Luis A Ferre	S	Original	Sunday, 8-25-2019	2587513.00	100	49	149	137	8	4
East	Caguas	Secondary	10	Pr- 789	N & S	Original	Sunday, 8-25-2019	1565834.16	100	28	126	104	20	2
East	Caguas	Local	111	Ave. Gautier Benitez	N	Original	Sunday, 8-25-2019	37012758.08	100	30	130	113	13	4
East	Caguas	Local	121	Ave Degetau	W	Original	Sunday, 8-25-2019	64768817.23	100	36	136	122	13	1
East	Canovanas	Primary	13	Pr- 66	S	Original	Tuesday, 8-27-2019	467699.25	100	17	117	109	8	0
East	Canovanas	Secondary	14	Pr- 185	N	Original	Tuesday, 8-27-2019	16734028.26	100	27	127	109	14	4
East	Canovanas	Local	151	Cl 12	E	Original	Tuesday, 8-27-2019	122859620.87	100	28	128	84	41	3
East	Canovanas	Local	16	Cl 11	E & W	Original	Tuesday, 9-3-2019	169896001.01	100	34	134	78	55	1
Metropolitan	Carolina	Primary	17	Pr- 26	S	Original	Sunday, 8-25-2019	94147273.90	100	25	125	118	6	1
Metropolitan	Carolina	Secondary	18	Pr- 874	E	Original	Sunday, 8-25-2019	12037526.57	100	26	126	113	10	3
Metropolitan	Carolina	Local	191	Carr. Boca Cangrejos	E	Original	Sunday, 8-25-2019	71789185.50	100	24	124	107	11	6
Metropolitan	Carolina	Local	201	Ave Iturregui	E	Original	Sunday, 8-25-2019	227282838.77	100	28	128	110	14	4
South	Cayey	Primary	21	Autopista Luis A Ferre	N	Original	Monday, 8-26-2019	4806413.69	100	21	121	108	7	6
South	Cayey	Secondary	221	Pr-1	N	Original	Monday, 8-26-2019	24631075.24	100	25	125	113	9	3
South	Cayey	Local	231	Cl Nuñez Romeu	N	Original	Monday, 8-26-2019	57011939.99	100	38	138	112	23	3
South	Cayey	Local	24	Pr-7722	N	Original	Monday, 8-26-2019	21052277.86	100	26	126	115	11	0
East	Fajardo	Primary	25	Pr-53	N	Original	Tuesday, 8-27-2019	1221657.37	100	15	115	108	5	2
East	Fajardo	Secondary	26	P R- 195	E	Original	Tuesday, 8-27-2019	2964284.75	100	29	129	87	40	2
East	Fajardo	Local	271	Pr- 3	E	Original	Tuesday, 8-27-2019	295643226.89	100	19	119	103	16	0
East	Fajardo	Local	28	Ave el Conquistador	N	Original	Tuesday, 8-27-2019	122527363.02	100	18	118	92	22	4
North	Hatillo	Primary	29	Pr-2	E	Original	Thursday, 8-29-2019	21234266.45	100	40	140	137	3	0
North	Hatillo	Secondary	30	Ave Dr Susoni	E	Original	Thursday, 8-29-2019	38335936.20	100	33	133	130	3	0
North	Hatillo	Local	31	Calle E	N	Original	Thursday, 8-29-2019	633469921.81	100	43	143	134	9	0
North	Hatillo	Local	321	Marg.Cl Comercio	W	Original	Thursday, 8-29-2019	55686920.26	100	35	135	118	17	0
West	Isabela	Secondary	33	Pr-2	W	Original	Wednesday, 8-21-2019	226305746.21	100	40	140	130	6	4
West	Isabela	Local	34	Cl Dr Gonzalez	N & S	Original	Wednesday, 8-21-2019	20334074.93	100	32	132	119	12	1
West	Isabela	Local	351	Cl Lamela	N & S	Original	Wednesday, 9-4-2019	31172732.61	100	24	124	105	17	0
West	Isabela	Local	36	Cl la Sierra	N & S	Original	Wednesday, 8-21-2019	21612213.58	100	29	129	108	19	2
South	Juana Diaz	Primary	37	Autopista Luis A Ferre	E	Original	Monday, 8-26-2019	1714641.69	100	16	116	112	4	0
South	Juana Diaz	Secondary	38	Pr- 14	E	Original	Monday, 8-26-2019	10471450.86	100	24	124	104	15	5
South	Juana Diaz	Local	39	Cl Ex Munoz Rivera	N & S	Original	Monday, 8-26-2019	81701995.58	100	21	121	96	21	4
South	Juana Diaz	Local	40	Aecaminio Real	E & W	Original	Monday, 9-9-2019	45675186.28	100	11	111	78	27	6
East	Juncos	Primary	41	Expreso Cruz Stilla	E	Original	Thursday, 8-22-2019	11597531.63	100	17	117	114	3	0
East	Juncos	Secondary	42	Pr- 189	W	Original	Thursday, 8-22-2019	5973940.86	100	22	122	103	16	3
East	Juncos	Local	43	Cl Martinez	E	Original	Thursday, 8-22-2019	42068031.84	100	21	121	108	8	5
East	Juncos	Local	441	Cl Algarin	E & W	Original	Thursday, 8-22-2019	60721036.90	100	24	124	88	33	3
West	Mayagüez	Secondary	45	P R - 105	W	Original	Thursday, 8-22-2019	1598422.15	100	14	114	94	14	6
West	Mayagüez	Local	46	Cl Simon Carlos	N & S	Original	Thursday, 8-29-2019	51355006.10	100	19	119	86	32	1
West	Mayagüez	Local	47	Calle M Columbus Lndg	N & S	Original	Thursday, 8-29-2019	14755252.68	100	39	139	86	50	3
West	Mayagüez	Local	481	Cl Nenadich E	W	Original	Thursday, 8-22-2019	70046444.30	100	14	114	99	9	6
East	Naguabo	Primary	49	Pr-53	E	Original	Friday, 8-23-2019	45663372.61	100	25	125	115	8	2
East	Naguabo	Secondary	50	Pr-3	N & S	Original	Friday, 8-23-2019	26843583.70	100	26	126	103	20	3
East	Naguabo	Local	51	Cl Goyco	E & W	Original	Friday, 8-23-2019	32053814.43	100	24	124	92	28	4
East	Naguabo	Local	52	Cl 7	N & S	Original	Friday, 8-23-2019	38355283.03	100	24	124	98	24	2
South	Ponce	Primary	53	Autopista Luis A Ferré	E	Original	Thursday, 9-5-2019	9928655.17	100	12	112	95	10	7
South	Ponce	Secondary	541	Pr-2	E	Original	Thursday, 9-12-2019	17034699.81	100	12	112	98	7	7
South	Ponce	Local	55	Ave Padre Noel	E	Original	Thursday, 9-12-2019	101505872.69	100	25	125	98	26	1
South	Ponce	Local	56	Cl 2	E & W	Original	Thursday, 9-5-2019	9378604.39	100	35	135	93	42	0
South	Salinas	Primary	57	Autopista Luis A Ferre	E	Original	Friday, 8-23-2019	10087856.01	100	21	121	101	16	4
South	Salinas	Secondary	58	Pr-1	N	Original	Friday, 8-23-2019	10764727.18	100	30	130	118	11	1
South	Salinas	Local	59	Cl Miguel Ten	N	Original	Friday, 8-30-2019	47038324.48	100	25	125	95	28	2
South	Salinas	Local	601	Cl Victoria Mateo Serrano	E	Original	Friday, 8-23-2019	92698781.66	100	20	120	102	15	3
Metropolitan	San Juan	Primary	61	Expreso Las Americas	N	Original	Friday, 8-30-2019	444830047.63	100	14	114	108	5	1
Metropolitan	San Juan	Secondary	62	Ave John F Kennedy	S	Original	Friday, 8-30-2019	93621085.36	100	12	112	101	5	6
Metropolitan	San Juan	Local	63	Cl Hoare	N	Original	Friday, 8-30-2019	22667216.25	100	23	123	114	8	1
Metropolitan	San Juan	Local	64	Cl 7 S	N	Original	Friday, 8-30-2019	43559731.72	52	5	57	48	8	1
Metropolitan	San Juan	Local	64	Cl 7 S	S	Original	Friday, 8-30-2019	28858322.26	48	2	52	46	6	0
North	Toa Baja	Primary	65	Pr- 22	E	Original	Saturday, 8-24-2019	43812493.50	100	38	138	118	11	9
North	Toa Baja	Secondary	66	Pr- 2	E	Original	Saturday, 8-24-2019	8924597.94	100	39	139	123	16	0
North	Toa Baja	Local	67	Pr- 866	E	Original	Saturday, 8-24-2019	64322378.95	100	13	113	87	21	5
North	Toa Baja	Local	68	Cl Canarias	N & S	Original	Saturday, 8-31-2019	16738826.21	100	26	126	76	42	8
TOTAL									6800	1722	8524	7060	1262	202

Nonresponse rate: 2.4%
 Ratio estimator: 88.3%
 Standard error: 1.07% (SUDAAN Software)