Estudios Técnicos Inc.

Investigación | Estrategias | Soluciones

Puerto Rico Observational Survey of Seat Belt Use, 2022

Final Report

Submitted to: Traffic Safety Commission of Puerto Rico

September 28, 2022

TABLE OF CONTENT

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 2022. 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 a new road selection was made following the Uniform Criteria for State Observational Surveys of Seat Belt Use, approved by NHTSA on March 30, 2022.

The fieldwork team was composed of eleven (11) members. All team members participated in a one-day training session on August 16, 2022. The session 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, 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 23 to September 7, 2022. 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 2022 a new road selection was made following the Uniform Criteria for State Observational Surveys of Seat Belt Use, approved by NHTSA on March 30, 2022.

Two main units were considered in the sample design. The primary sample unit (PSU) is composed by counties, and 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 roads segments were selected in each county, including at least one road for each road type in every 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 ensure that sample units were represented, and that standard error did 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 county selected for the sample). The number of observations per segment was 100 vehicles, for a total of 6,800 observed vehicles and 8,611 occupants (6,800 drivers and 1,811 front passengers).

The 68 segments visited were the same as 2020 (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 roads segments used in 2017, 2018, 2019 and 2020.

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

TABLE 1: QUALITY CONTROL BY ROAD SEGMENTS

County	Type	Road Segment	Latitude	Longitude	Date	Hour
San Juan	Secondary	Pr- 3	18.418069	-66.077594	August 24,2022	10:00
Guaynabo	Primary	Pr- 20	18.33471	-66.10046	August 27,2022	11:30
Fajardo	Primary	Expreso Jose Celso	18.296501	-65.648822	September 1,2021	13:30
Fajardo	Local	Ave el Conquistador	18.347661	-65.658336	September 1,2021	15:00

Observers recorded the belt use information of 6,573 drivers and 1,418 front seat passengers. The number of occupants with unknown belt use was 244 (227 drivers and 17 front passengers) for a nonresponse rate of 2.96% (nonresponse rate =227/8235). Table two on the next page 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	**1,915**	**350**	**2,265**
Barceloneta	383	73	456
Dorado	390	72	462
Manatí	385	56	441
Toa Baja	375	62	437
Vega Baja	382	87	469
West Region	**1,178**	**281**	**1,459**
Aguadilla	393	92	485
Cabo Rojo	392	93	485
San Germán	393	96	489
South Region	**772**	**188**	**960**
Cayey	391	103	494
Ponce	381	85	466
East Region	**1,550**	**342**	**1,892**
Caguas	373	56	429
Fajardo	390	86	476
Humacao	400	103	503
Río Grande	387	97	484
Metropolitan Región	**1,158**	**257**	**1,415**
Bayamón	386	104	490
Guaynabo	385	95	480
San Juan	387	58	445
Total	**6,573**	**1,418**	**7,991**

The overall belt use measured by combining drivers and passengers (once weights were applied as indicated in the sample design) was 91.77 percent, with a standard error of 0.74 percent.

TABLE 3: WEIGHTED SEAT BELT USE RATE FOR PUERTO RICO 2021

Rate of belt use	Standard Error	95 Percent Confidence Interval	
91.77%	0.74%	90.32%	93.22%
	n = 7,991		

Significant[1] difference was found in belt use by region. In the Metropolitan Area (92.5%), and East (92.2%) regions belt use is more intense than the other regions, especially in the West (90.5%).

[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
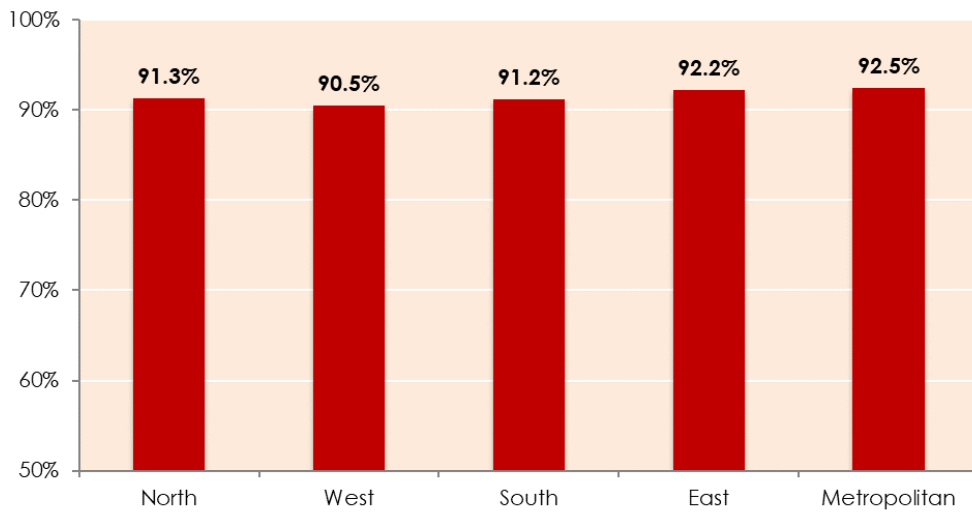
The belt use measurements by county showed that San Juan is the county with the highest belt use with 95.9%. In contrast, the lowest level of belt use was recorded in Vega Baja (83.3%) and San Germán (88%).

GRAPH 2: OBSERVED BELT USE BY COUNTY
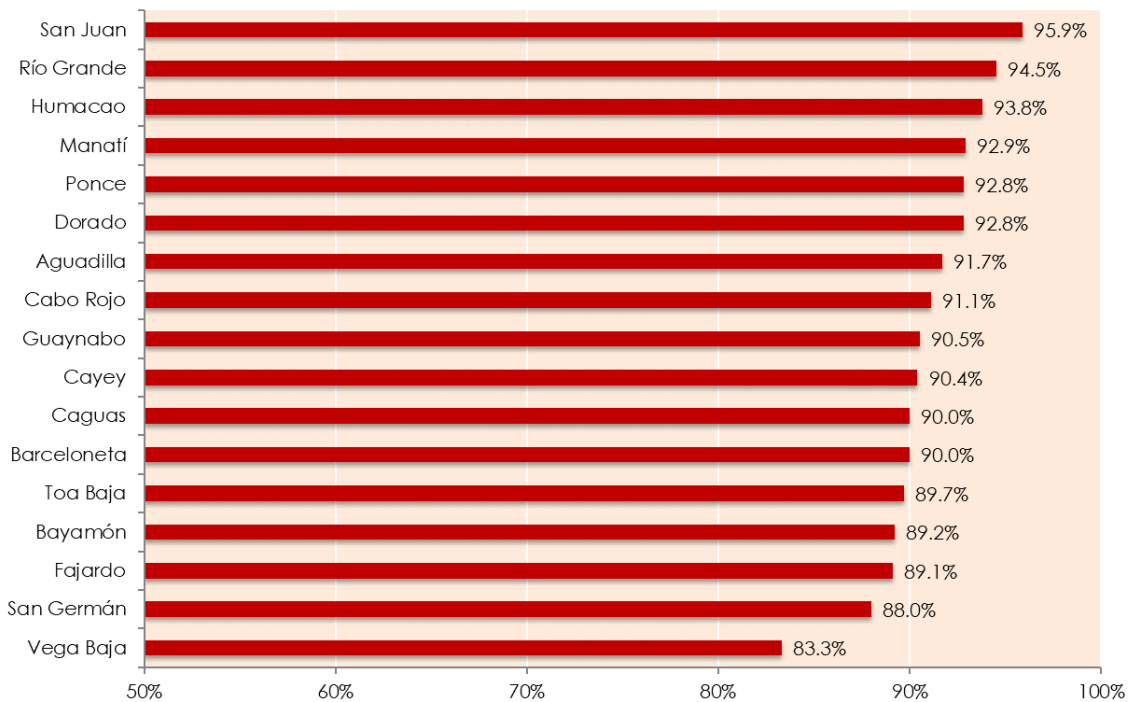
Differences were observed by road type. The lowest percentage of seat belt use (89.4%) was found in Local Road types.

GRAPH 3: OBSERVED BELT USE BY ROAD TYPE
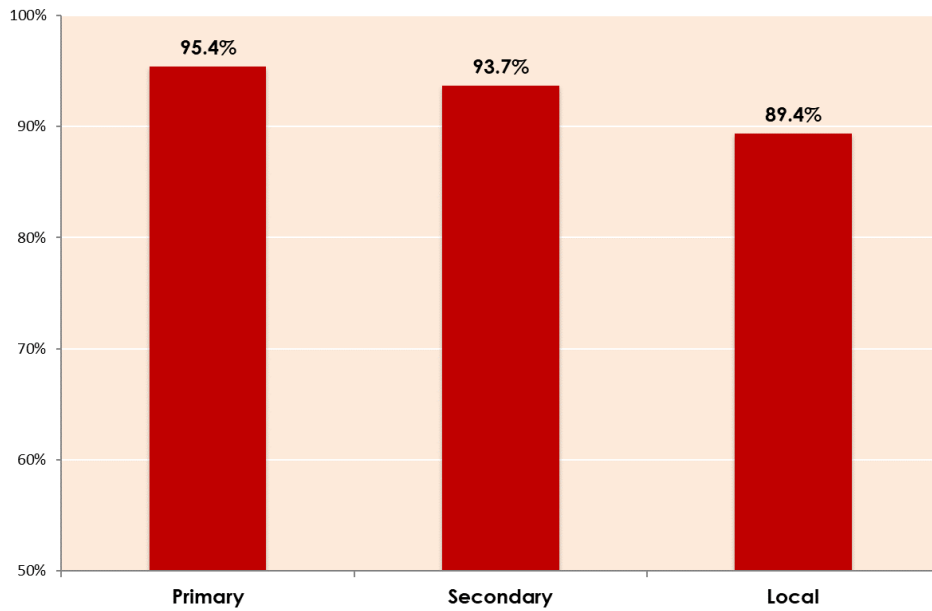
A difference was observed between drivers and passengers. Belt use is higher in passengers (95.3%) than in drivers (91.1%).

GRAPH 4: OBSERVED BELT USE BY SEATING POSITION
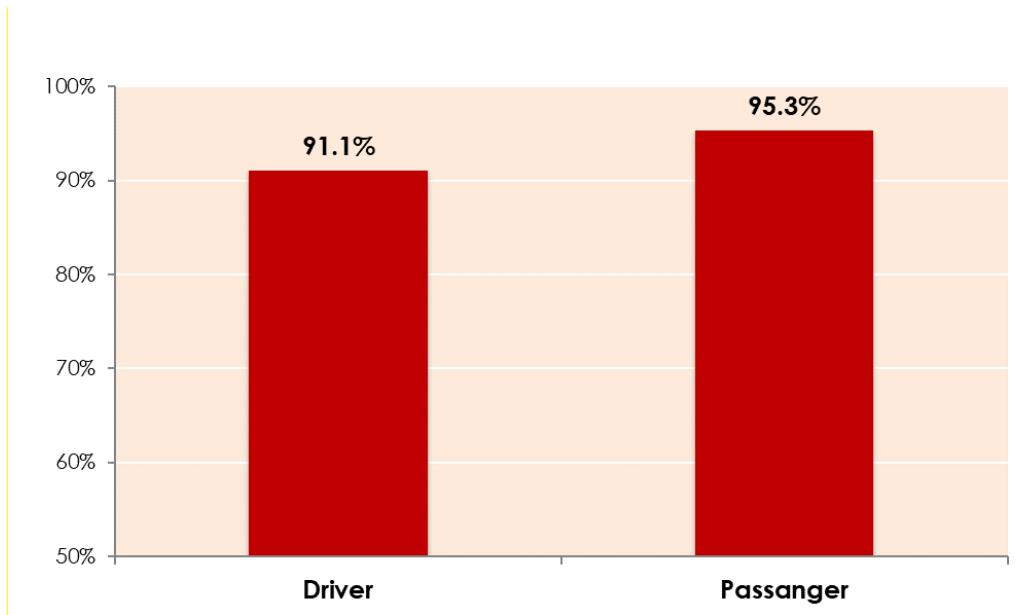
The survey results showed a higher percentage in belt use by females compared to males (93.5 percent and 90.9 percent, respectively).

GRAPH 5: OBSERVED BELT USE BY GENDER
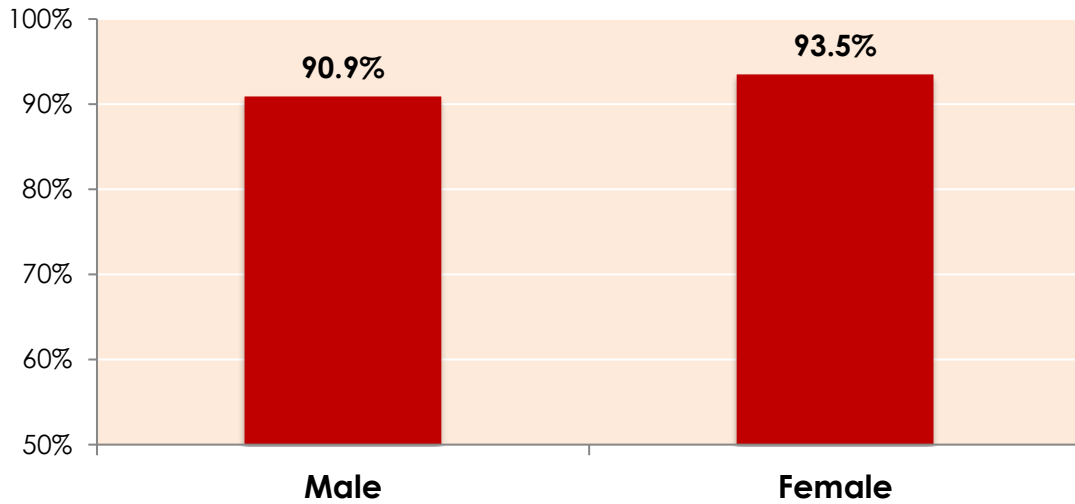
Statistical difference was found related to the use of seat belt and age group, between the 16 to 59 group (90.8%) and 60 years or older group (94.1%).

GRAPH 6: OBSERVED BELT USE BY AGE
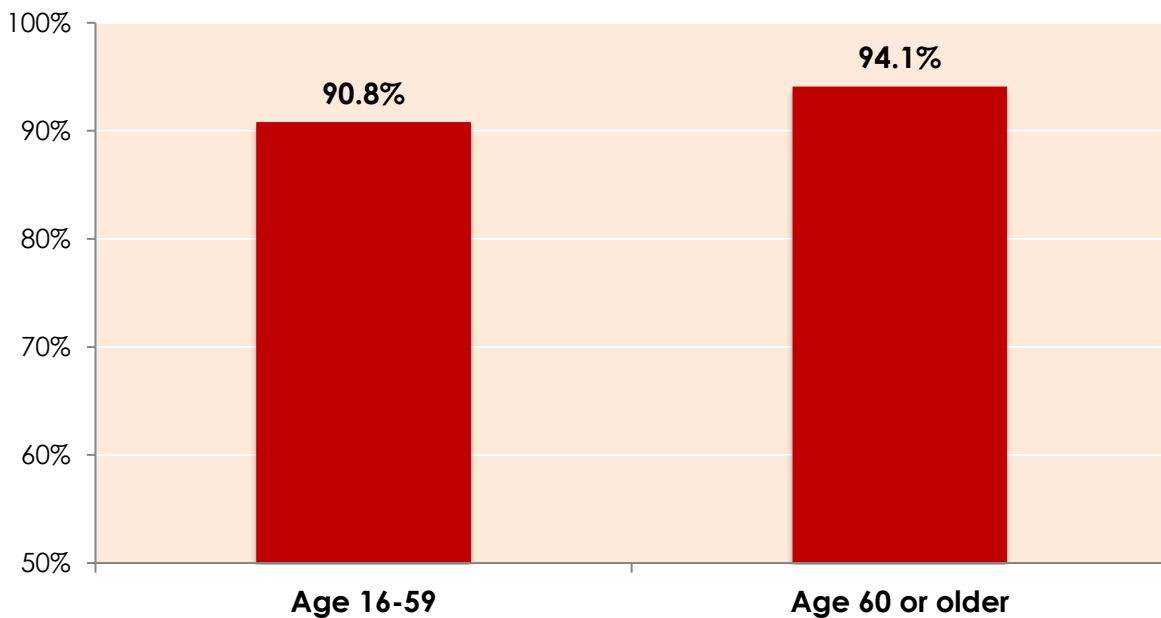
A significant difference of belt use was observed by vehicle type. As Graph 7 shows, 92 percent of belt use was registered on SUVs, while 93.2 percent on cars, 89.4 percent on minivan and 87.1 percent on trucks.

GRAPH 7: OBSERVED BELT USE BY VEHICLE TYPE
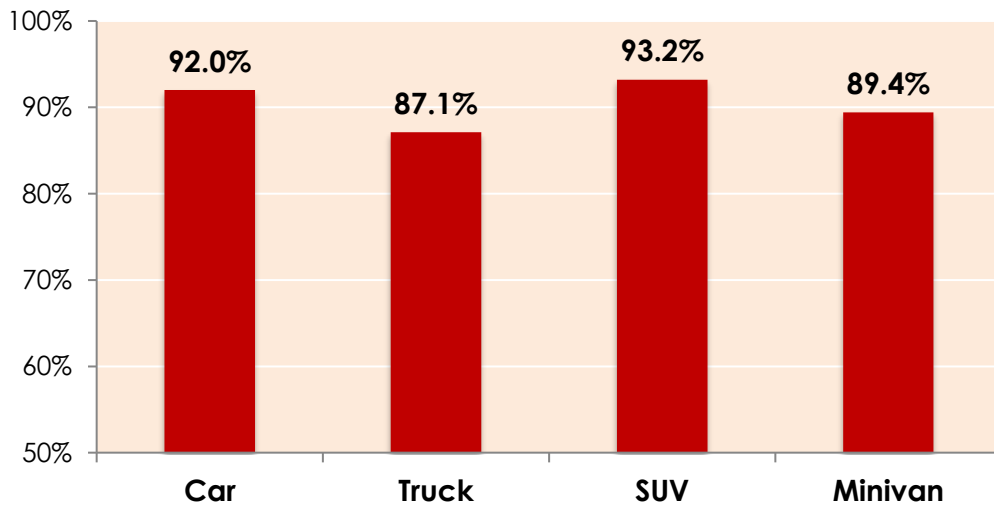
The days of the week that recorded a higher belt use were Sunday and Wednesday, with 93.9 percent and 92.9 percent, respectively. The days of the week that recorded the lowest belt use were Thursday and Saturday, with 88.9 and 90.4 percent, respectively. Those results are associated with the municipalities visited those days.

GRAPH 8: OBSERVED BELT USE BY DAY OF THE WEEK
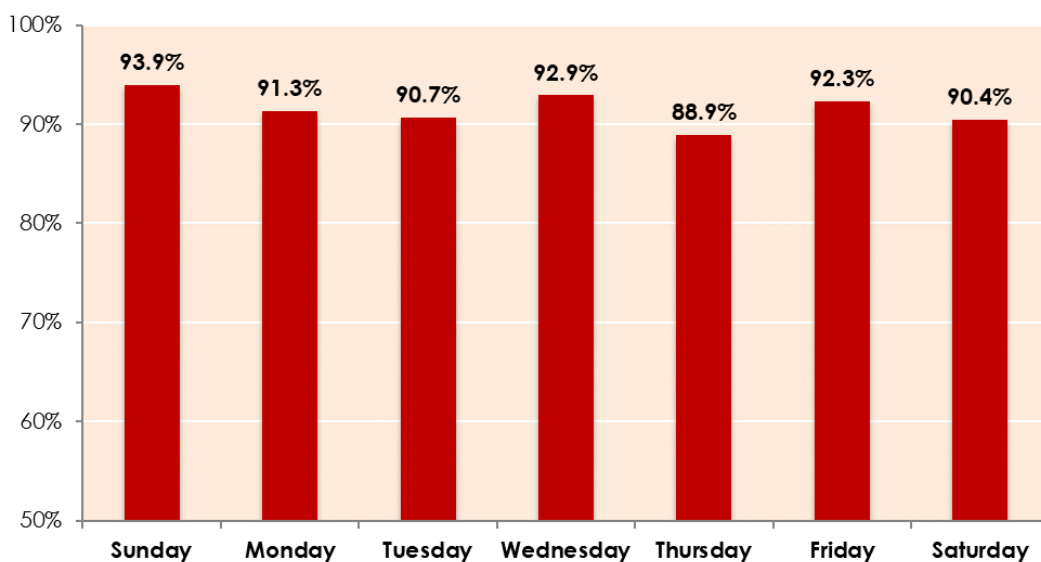
The time interval corresponding from 9:15 AM to 11:29 AM (93.5%) reflected higher belt use.

GRAPH 9: OBSERVED BELT USE BY TIME INTERVALS
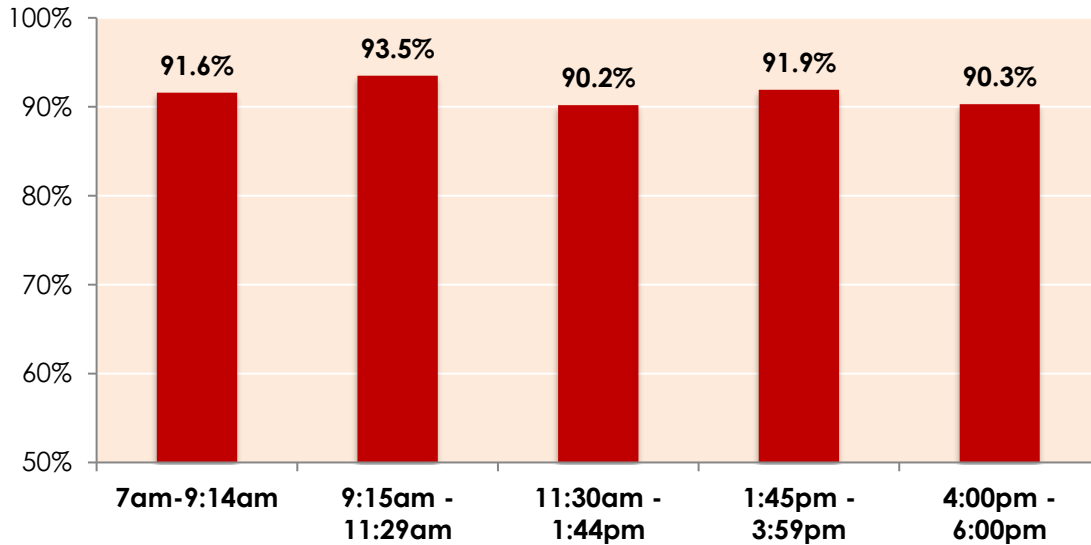
Information by Seating Position

Regarding the measurements in belt use by seating position by region, it should be noted that the West and South regions showed a very visible difference between driver and passengers 6.4% and 5.9%, respectively.

GRAPH 10: OBSERVED BELT USE BY REGION PER SEATING POSITION
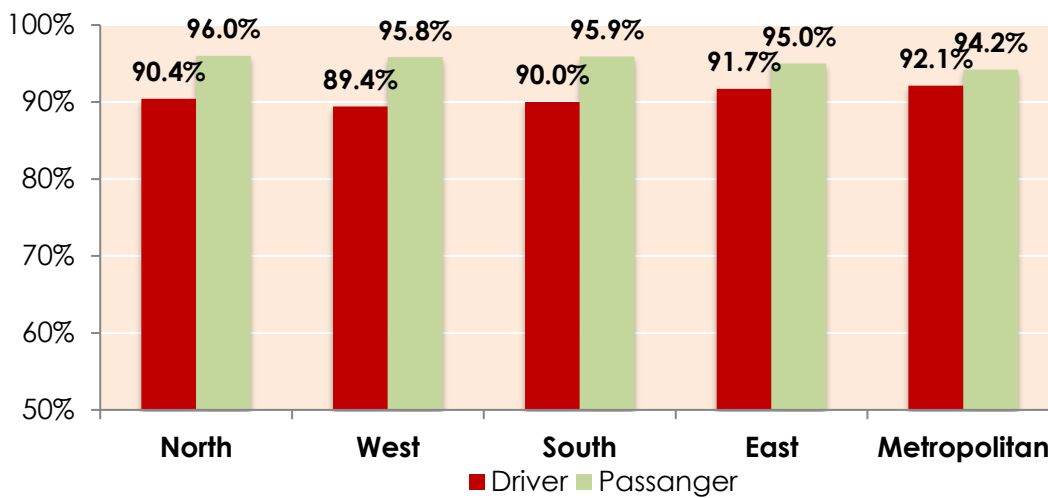
As Graph 11 shows, differences in belt use were observed when counties are considered separately. The counties that recorded the biggest differences between drivers and passengers were Toa Baja, Caguas and Aguadilla. Toa Baja recorded a belt use of 100 percent for passengers, while drivers recorded a belt use of 88 percent, for a difference of 12 percentage points. In the case of Caguas, passengers recorded 99.2 percent of belt use, while drivers recorded 88.8 percent, for a difference of 10.4 percentage points. In Aguadilla, the difference in belt use between drivers (89.9 percent) and passengers (100 percent) was of 10.1 percentage points.

GRAPH 11: OBSERVED BELT USE BY COUNTY PER SEATING POSITION

County	Passanger	Driver
Toa Baja	100.0%	88.0%
Caguas	99.2%	88.8%
Aguadilla	100.0%	89.9%
Vega...	90.6%	81.8%
Barcelo...	97.3%	88.5%
Fajardo	94.8%	87.8%
Cayey	95.8%	88.9%
Dorado	98.0%	91.6%
Bayamón	93.9%	87.9%
San...	92.1%	87.0%
Ponce	96.1%	92.2%
San Juan	98.8%	95.4%
Humac...	95.7%	93.3%
Cabo...	91.6%	91.1%
Manatí	93.2%	92.7%
Guayn...	89.8%	90.7%
Río...	93.3%	94.7%

■ Passanger ■ Driver
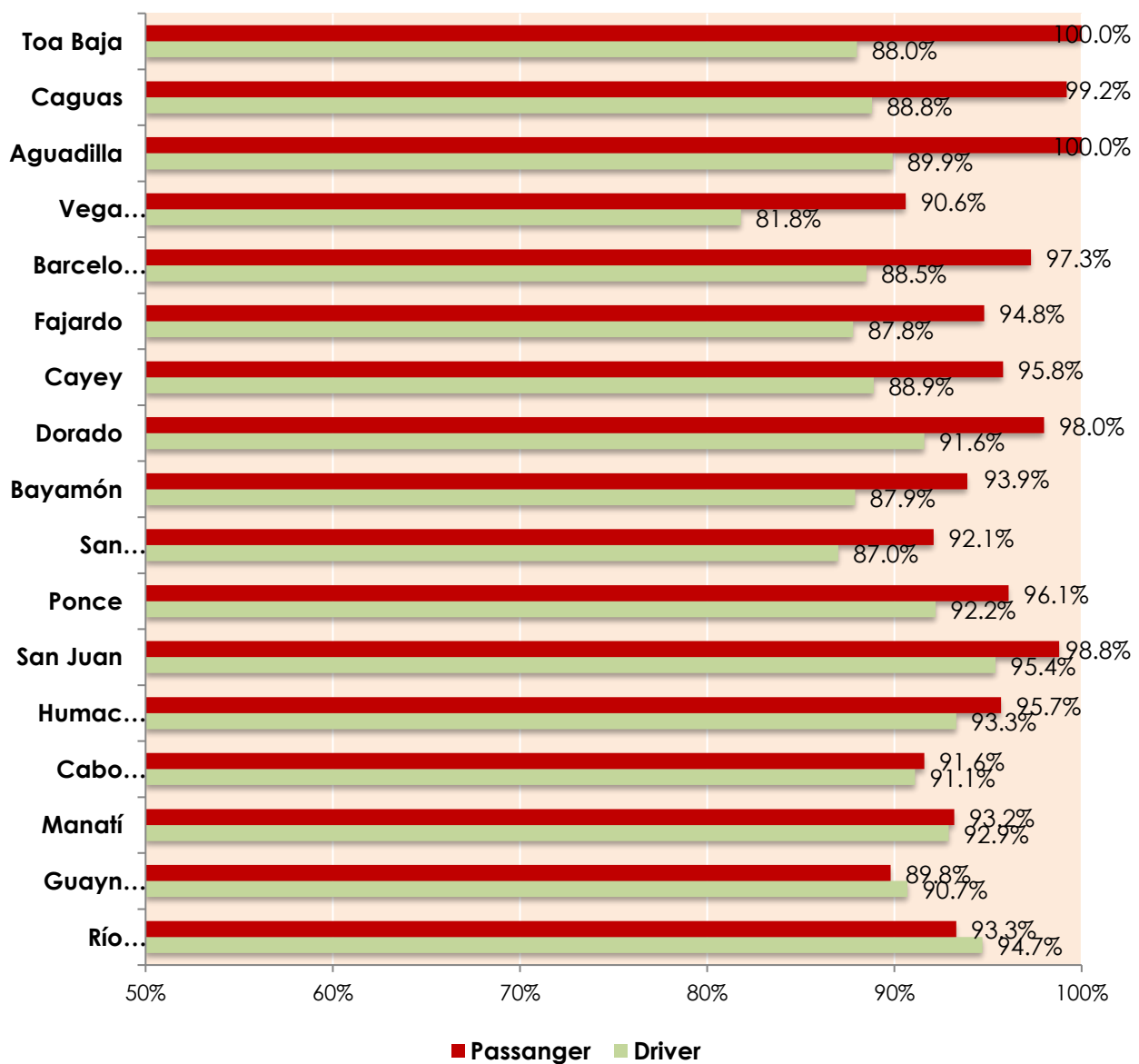
The biggest difference of belt use between drivers and passengers by road type was observed in the local roads. Passengers recorded 95.7 percent of belt use, while drivers recorded 88.1 percent, for a difference of 7.6 percentage points.

GRAPH 12: OBSERVED BELT USE BY ROAD TYPE PER SEATING POSITION
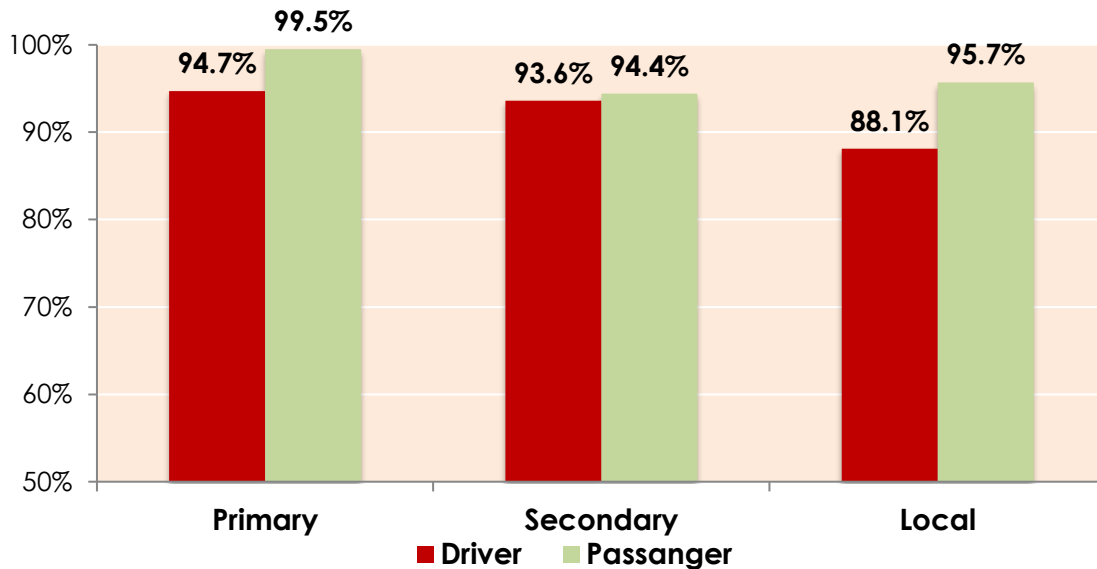
In relation to belt use by type of vehicle, the biggest difference of belt use between drivers and passengers was observed in Minivans. Passengers recorded 98.5 percent of belt use, while drivers recorded 88.1 percent, for a difference of 10.4 percentage points.

GRAPH 13: OBSERVED BELT USE BY VEHICLE TYPE PER SEATING POSITION
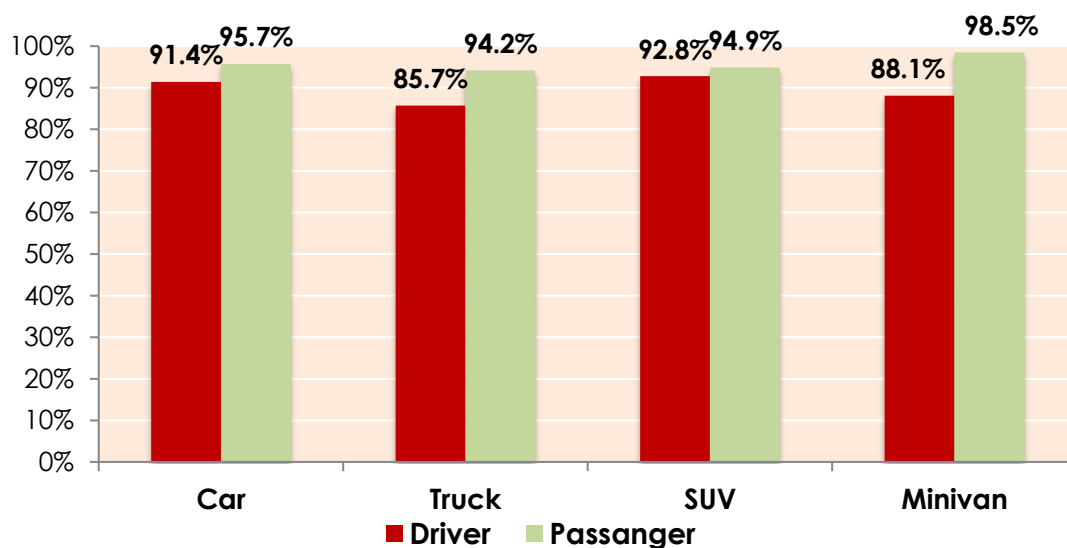
As Graph 5 shows, more females than males were observed using the belt. This tendency, as Graph 14 shows, is similar for drivers and passengers. The biggest difference of belt use between drivers and passengers was observed in males. Passengers recorded 94.2 percent of belt use, while drivers recorded 90.5 percent, for a difference of 3.7 percentage points.

GRAPH 14: OBSERVED BELT USE BY GENDER PER SEATING POSITION
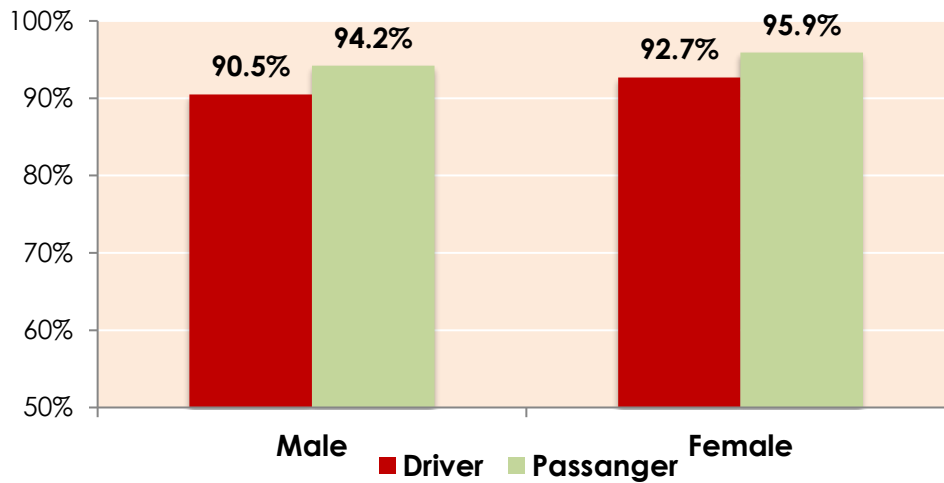
Regarding the people of 60 years or older a 4.5 percentage point difference was registered in belt use between drivers (with 93.3 percent) and passengers (97.8 percent). For persons between 16 and 59 years old drivers recorded 90.4 percent, while passengers recorded 93.6 percent, for a difference of 3.2 percentage point.

GRAPH 15: OBSERVED BELT USE BY AGE PER SEATING POSITION
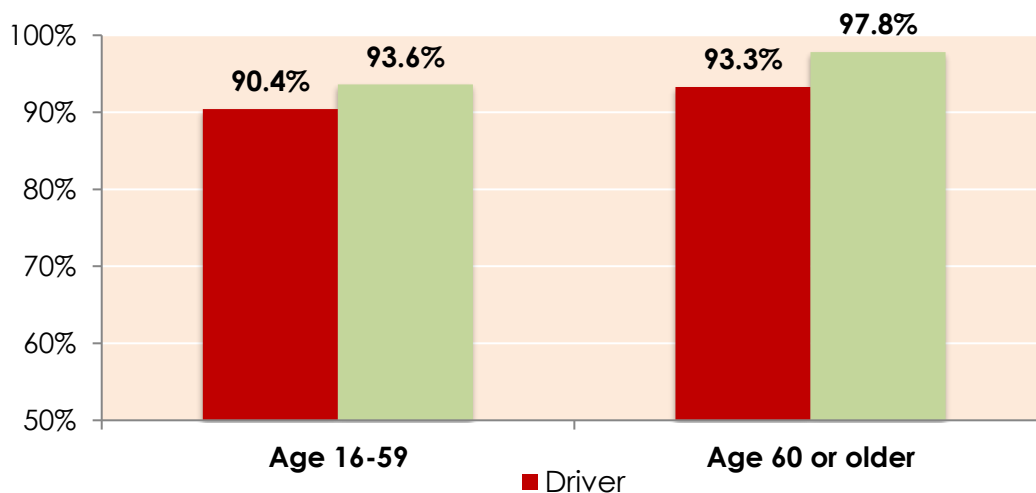
Conclusions

In Puerto Rico, the belt use rate has been similar and consistent throughout recent studies. The last valid study was conducted in 2021 and the general belt use rate was 88.2%, being 87.1.8% for drivers and 92.1% for passengers. In the present study (2022), the belt use recorded a 91.8%; being 91.1% for drivers and 95.3% for passengers, with a standard error of 0.74%. As shown in Graph 16, with a 95 percent confidence level, the belt use rate difference between 2021 and 2022 is not statistically significant.

GRAPH 16: 2021-2022 RATE OF BELT USE WITH A 95 PERCENT CONFIDENCE LEVEL.
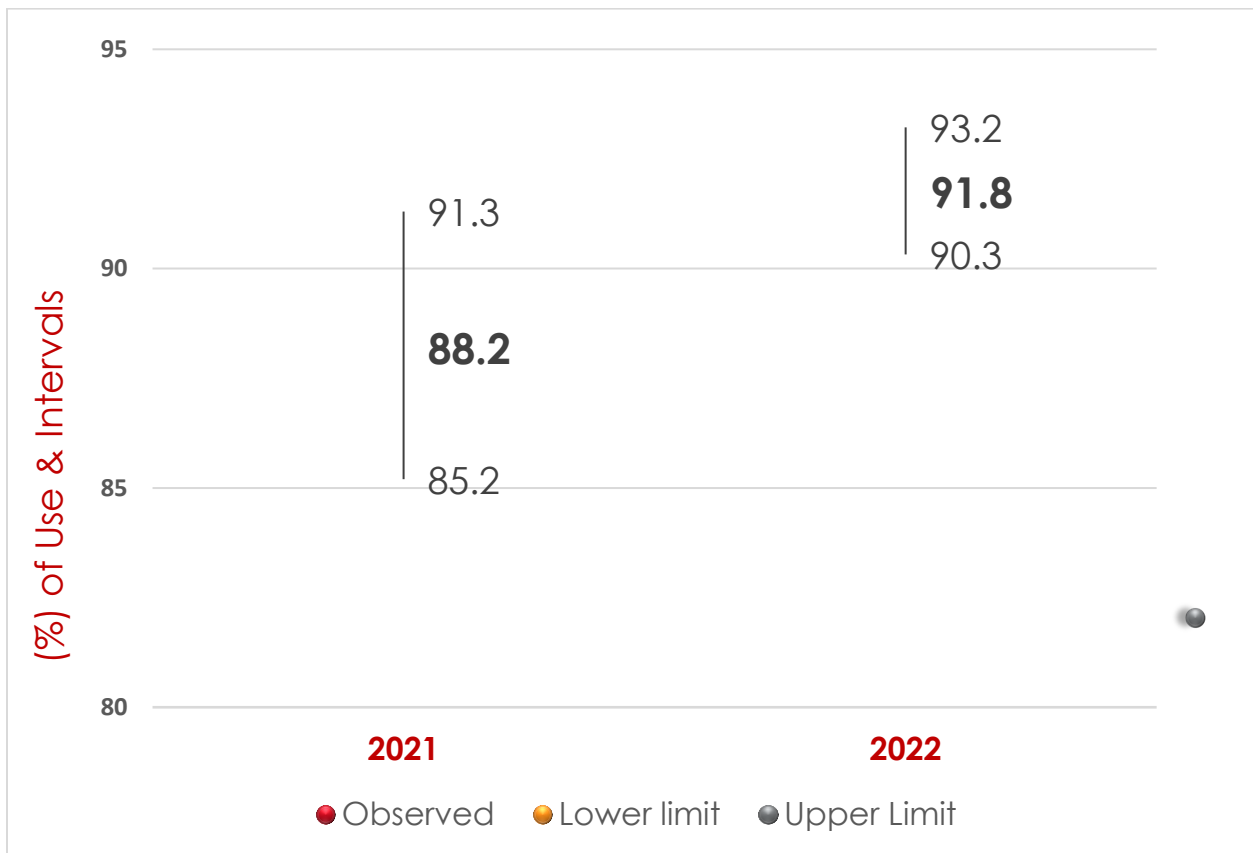
APPENDIX 1: LIST AND MAP OF SAMPLED ROAD SEGMENTS

Region	County	Type	Road Segment	X Coordinate	Y Coordinate	Day	Time	Belt use percentage
West	Aguadilla	Secondary	Pr- 2	18.460770	-67.057284	Friday	13:30	94.2%
West	Aguadilla	Local	Pr- 442	18.422780	-67.155678	Friday	12:00	93.7%
West	Aguadilla	Local	P R - 465	18.457772	-67.089146	Friday	15:00	97.5%
West	Aguadilla	Local	P R - 110	18.484296	-67.111081	Friday	16:30	87.8%
North	Barceloneta	Primary	Expreso Jose de Diego	18.441542	-66.543267	Tuesday	14:30	92.9%
North	Barceloneta	Secondary	Pr- 2	18.433924	-66.549318	Tuesday	10:00	96.4%
North	Barceloneta	Local	Cll 10	18.415867	-66.571022	Tuesday	13:00	89.5%
North	Barceloneta	Local	Cll Dorada	18.434149	-66.559151	Tuesday	11:30	86.3%
Metropolitan	Bayamón	Primary	Expreso Jose de Diego	18.422606	-66.150574	Sunday	12:00	95.9%
Metropolitan	Bayamón	Secondary	Ave Comerio	18.375570	-66.176408	Sunday	9:00	86.5%
Metropolitan	Bayamón	Local	Ave Betances	18.394357	-66.167119	Sunday	10:30	83.5%
Metropolitan	Bayamón	Local	Ave Santa Ana	18.380259	-66.119165	Sunday	13:30	91.7%
West	Cabo Rojo	Secondary	Pr- 100	18.103492	-67.158912	Wednesday	14:30	97.1%
West	Cabo Rojo	Local	Pr- 3311	18.122287	-67.160583	Wednesday	11:30	80.2%
West	Cabo Rojo	Local	Cll Legion Americana	18.035570	-67.178365	Wednesday	13:00	83.2%
West	Cabo Rojo	Local	Comunidad del Toro	18.040376	-67.189276	Wednesday	10:00	86.1%
East	Caguas	Primary	Expreso Cruz Ortiz Stella	18.248212	-66.014559	Monday	13:30	93.8%
East	Caguas	Secondary	Ave Zafiro	18.242520	-66.051656	Monday	10:30	82.6%
East	Caguas	Local	Ave Turabo	18.218204	-66.058903	Monday	12:00	76.5%
East	Caguas	Local	Cll Via Grande	18.240440	-66.070892	Monday	9:00	90.8%
South	Cayey	Primary	Autopista Luis A Ferre	18.155193	-66.094892	Saturday	11:30	93.2%
South	Cayey	Secondary	Pr- 1	18.119356	-66.141937	Saturday	13:00	89.2%
South	Cayey	Local	Ave Jesus T Pinero	18.103682	-66.166954	Saturday	14:30	96.2%
South	Cayey	Local	Ave Luis Munoz Rivera Sur	18.106398	-66.168142	Saturday	16:00	67.5%
North	Dorado	Primary	Expreso Jose de Diego	18.426050	-66.286620	Wednesday	13:30	90.7%

Region	County	Type	Road Segment	X Coordinate	Y Coordinate	Day	Time	Belt use percentage
North	Dorado	Secondary	Pr- 2	18.405314	-66.271671	Wednesday	9:00	94.2%
North	Dorado	Local	Pr- 6693	18.453455	-66.260850	Wednesday	12:00	88.3%
North	Dorado	Local	100 Fairways Village Dr	18.469043	-66.306672	Wednesday	10:30	68.3%
East	Fajardo	Primary	Expreso Jose Celso Barbosa	18.296501	-65.648822	Thursday	13:30	91.2%
East	Fajardo	Secondary	Pr- 3	18.345385	-65.672313	Thursday	12:00	86.4%
East	Fajardo	Local	Ave el Conquistador	18.347661	-65.658336	Thursday	15:00	89.4%
East	Fajardo	Local	Cll Principal	18.338149	-65.661828	Thursday	16:30	84.3%
Metropolitan	Guaynabo	Primary	Pr- 20	18.334709	-66.100457	Saturday	11:30	93.7%
Metropolitan	Guaynabo	Secondary	Pr- 165	18.413701	-66.105528	Saturday	14:30	96.0%
Metropolitan	Guaynabo	Local	Ave Washington	18.367668	-66.096259	Saturday	10:00	89.6%
Metropolitan	Guaynabo	Local	Expreso 834	18.319710	-66.101755	Saturday	13:00	93.3%
East	Humacao	Primary	Expreso Jose Celso Barbosa	18.161914	-65.798668	Tuesday	15:30	99.2%
East	Humacao	Secondary	Pr- 3	18.110220	-65.821798	Tuesday	12:30	89.2%
East	Humacao	Local	Cll Dufresne	18.151063	-65.825858	Tuesday	11:00	86.5%
East	Humacao	Local	Ave Boulevard Nicanor	18.148948	-65.829138	Tuesday	14:00	96.1%
North	Manatí	Primary	Expreso Jose de Diego	18.440586	-66.502546	Monday	13:30	97.1%
North	Manatí	Secondary	Pr- 2	18.439591	-66.449596	Monday	9:00	93.9%
North	Manatí	Local	Cll Vendig	18.428708	-66.488125	Monday	12:00	91.1%
North	Manatí	Local	Pr- 686	18.468558	-66.459016	Monday	10:30	84.7%
South	Ponce	Primary	Pr- 52	18.038795	-66.540464	Friday	12:30	99.2%
South	Ponce	Secondary	Pr- 10	18.037743	-66.612264	Friday	14:00	93.8%
South	Ponce	Local	Cll Torre	18.007485	-66.616128	Friday	15:30	91.4%
South	Ponce	Local	Ave Tito Castro	18.020997	-66.606179	Friday	11:00	84.6%
East	Río Grande	Primary	Pr-66	18.368179	-65.850177	Sunday	8:00	98.5%
East	Río Grande	Secondary	Pr- 3	18.375442	-65.824366	Sunday	9:30	94.6%

Region	County	Type	Road Segment	X Coordinate	Y Coordinate	Day	Time	Belt use percentage
East	Río Grande	Local	Ave Cambalache	18.375809	-65.868122	Sunday	12:30	94.1%
East	Río Grande	Local	Cll Rescate	18.356917	-65.860525	Sunday	11:00	71.2%
West	San Germán	Primary	Pr- 2	18.085033	-67.021718	Thursday	13:30	95.1%
West	San Germán	Secondary	Pr- 166	18.080080	-67.043558	Thursday	12:00	89.7%
West	San Germán	Local	Cll Retiro	18.077330	-67.034131	Thursday	15:00	80.6%
West	San Germán	Local	Pr- 321	18.059589	-67.039174	Thursday	10:30	95.9%
Metropolitan	San Juan	Primary	Expreso Roman Baldorioty	18.446574	-66.043024	Wednesday	13:00	99.0%
Metropolitan	San Juan	Secondary	Pr- 3	18.397024	-66.012280	Wednesday	10:00	94.8%
Metropolitan	San Juan	Local	Ave Dr Jose N Gandara	18.401647	-66.045744	Wednesday	11:30	96.6%
Metropolitan	San Juan	Local	Cll Nemesio Canales	18.418069	-66.077594	Wednesday	8:30	91.6%
North	Toa Baja	Primary	Expreso Jose de Diego	18.418181	-66.250367	Thursday	10:00	96.2%
North	Toa Baja	Secondary	Pr- 165	18.421744	-66.251495	Thursday	7:00	95.5%
North	Toa Baja	Local	Pr- 863	18.390260	-66.198407	Thursday	11:30	87.2%
North	Toa Baja	Local	Pr- 866	18.423500	-66.189362	Thursday	8:30	86.4%
North	Vega Baja	Primary	Expreso Jose de Diego	18.427587	-66.370392	Wednesday	16:00	97.3%
North	Vega Baja	Secondary	Pr- 2	18.443829	-66.412935	Wednesday	17:30	97.3%
North	Vega Baja	Local	Cll Inocencio Rey	18.428538	-66.407952	Wednesday	13:00	72.7%
North	Vega Baja	Local	Ave Jesus M Armaiz	18.428360	-66.410257	Wednesday	14:30	83.9%

APPENDIX 2: TABLE B

Region	County	Road type	ID_RS	Road Segment	Direction	Site Tipe	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	Aguadilla	Secondary	1	Pr- 2	E	Original	Friday, 8-26-2022	86287469.17	100	23	123	114	7	2
West	Aguadilla	Local	2	Pr- 442	E & W	Original	Friday, 8-26-2022	17824794.40	100	28	128	119	8	1
West	Aguadilla	Local	3	P R - 465	E	Original	Friday, 8-26-2022	5658699.81	100	24	124	119	3	2
West	Aguadilla	Local	4	P R - 110	E	Original	Friday, 8-26-2022	78813334.49	100	17	117	101	14	2
North	Barceloneta	Primary	5	Expreso Jose de Diego	W	Original	Tuesday, 8-23-2022	96089266.17	100	20	120	105	8	7
North	Barceloneta	Secondary	6	Pr- 2	E	Original	Tuesday, 8-23-2022	88447414.52	100	18	118	108	4	6
North	Barceloneta	Local	7	CII 10	N	Original	Tuesday, 8-30-2022	14575901.36	100	16	116	102	12	2
North	Barceloneta	Local	8	CII Dorada	N & S	Original	Tuesday, 8-23-2022	219541828.15	100	22	122	101	16	5
Metropolitan	Bayamón	Primary	9	Expreso Jose de Diego	W	Original	Sunday, 8-28-2022	3635252.72	100	26	126	117	5	4
Metropolitan	Bayamón	Secondary	10	Ave Comerio	E	Original	Sunday, 8-28-2022	25636027.30	100	31	131	109	17	5
Metropolitan	Bayamón	Local	11	Ave Betances	N & S	Original	Sunday, 8-28-2022	33853501.32	100	15	115	91	18	6
Metropolitan	Bayamón	Local	12	Ave Santa Ana	E & W	Original	Sunday, 8-28-2022	80884492.14	100	34	134	122	11	1
West	Cabo Rojo	Secondary	13	Pr- 100	E & W	Original	Wednesday, 8-24-2022	71683140.36	100	9	109	102	3	4
West	Cabo Rojo	Local	14	Pr- 3311	E & W	Original	Wednesday, 8-31-2022	24740981.65	100	21	121	97	24	0
West	Cabo Rojo	Local	15	CII Legion Americana	N & S	Original	Wednesday, 8-31-2022	3987125.16	100	37	137	114	23	0
West	Cabo Rojo	Local	16	Comunidad del Toro	N & S	Original	Wednesday, 8-31-2022	13052981.18	100	26	126	105	17	4
East	Caguas	Primary	17	Expreso Cruz Ortiz Stella	W	Original	Monday, 8-29-2022	85560414.38	100	18	118	90	6	22
East	Caguas	Secondary	18	Ave Zafiro	W	Original	Monday, 8-29-2022	8756212.94	100	14	114	90	19	5
East	Caguas	Local	19	Ave Turabo	W	Original	Monday, 8-29-2022	42421720.95	100	18	118	88	27	3
East	Caguas	Local	20	CII Via Grande	W	Original	Monday, 8-29-2022	478934593.20	100	12	112	99	10	3
South	Cayey	Primary	21	Autopista Luis A Ferre	W	Original	Saturday. 8-27-2022	8939915.65	100	22	122	109	8	5
South	Cayey	Secondary	22	Pr- 1	W	Original	Saturday. 8-27-2022	262245232.91	100	21	121	107	13	1
South	Cayey	Local	23	Ave Jesus T Pinero	E & W	Original	Saturday. 8-27-2022	139584333.54	100	34	134	126	5	3
South	Cayey	Local	24	Ave Luis Munoz Rivera Sur	N & S	Original	Saturday. 8-27-2022	24861531.23	100	26	126	85	41	0
North	Dorado	Primary	25	Expreso Jose de Diego	W	Original	Wednesday, 8-31-2022	2608486.23	100	11	111	98	10	3
North	Dorado	Secondary	26	Pr- 2	E	Original	Wednesday, 8-31-2022	193930856.14	100	23	123	113	7	3
North	Dorado	Local	27	Pr- 6693	S	Original	Wednesday, 8-31-2022	34779440.66	100	14	114	98	13	3
North	Dorado	Local	28	100 Fairways Village Dr	E & W	Original	Wednesday, 8-31-2022	4711041.18	100	24	124	84	39	1
East	Fajardo	Primary	29	Expreso Jose Celso Barbosa	E	Original	Thursday, 9-1-2022	1181470.04	100	19	119	104	10	5
East	Fajardo	Secondary	30	Pr- 3	E	Original	Thursday, 9-1-2022	24171227.61	100	23	123	102	16	5
East	Fajardo	Local	31	Ave el Conquistador	S	Original	Thursday, 9-1-2022	428121817.71	100	24	124	110	13	1
East	Fajardo	Local	32	CII Principal	S	Original	Thursday, 9-1-2022	18441879.49	100	22	122	102	19	1
Metropolitan	Guaynabo	Primary	33	Pr- 20	S	Original	Saturday, 8-27-2022	11328200.12	100	16	116	104	7	5
Metropolitan	Guaynabo	Secondary	34	Pr- 165	S	Original	Saturday, 8-27-2022	10122137.72	100	30	130	120	5	5
Metropolitan	Guaynabo	Local	35	Ave Washington	N	Original	Saturday, 8-27-2022	128988147.75	100	27	127	112	13	2
Metropolitan	Guaynabo	Local	36	Expreso 834	S	Original	Saturday, 8-27-2022	11246665.77	100	25	125	111	8	6
East	Humacao	Primary	37	Expreso Jose Celso Barbosa	S	Original	Tuesday, 8-23-2022	13715506.12	100	20	120	119	1	0
East	Humacao	Secondary	38	Pr- 3	S	Original	Tuesday, 8-23-2022	15459583.60	100	30	130	116	14	0
East	Humacao	Local	39	CII Dufresne	E & W	Original	Tuesday, 8-23-2022	14118707.14	100	26	126	109	17	0
East	Humacao	Local	40	Ave Boulevard Nicanor	E	Original	Tuesday, 8-23-2022	47009586.63	100	27	127	122	5	0
North	Manatí	Primary	41	Expreso Jose de Diego	W	Original	Monday, 8-29-2022	30068036.53	100	10	110	100	3	7
North	Manatí	Secondary	42	Pr- 2	E	Original	Monday, 8-29-2022	221958810.50	100	17	117	108	7	2
North	Manatí	Local	43	CII Vendig	N & S	Original	Monday, 8-29-2022	177834937.97	100	14	114	102	10	2
North	Manatí	Local	44	Pr- 686	E & W	Original	Monday, 8-29-2022	413644.36	100	15	115	94	17	4
South	Ponce	Primary	45	Pr- 52	E	Original	Friday, 8-26-2022	31979795.75	100	25	125	119	1	5
South	Ponce	Secondary	46	Pr- 10	W	Original	Friday, 8-26-2022	129446807.53	100	16	116	106	7	3
South	Ponce	Local	47	CII Torre	E & W	Original	Friday, 9-2-2022	24961803.08	100	20	120	106	10	4
South	Ponce	Local	48	Ave Tito Castro	E	Original	Friday, 8-26-2022	35729710.82	100	25	125	99	18	8
East	Río Grande	Primary	49	Pr-66	E	Original	Sunday, 8-28-2022	354967.53	100	41	141	134	2	5
East	Río Grande	Secondary	50	Pr- 3	W	Original	Sunday, 8-28-2022	1206052761.46	100	15	115	106	6	3
East	Río Grande	Local	51	Ave Cambalache	N & S	Original	Sunday, 8-28-2022	6804634.80	100	19	119	111	7	1
East	Río Grande	Local	52	CII Rescate	N & S	Original	Sunday, 8-28-2022	8619641.27	100	22	122	84	34	4
West	San Germán	Primary	53	Pr- 2	W	Original	Thursday, 8-25-2022	4878217.14	100	25	125	116	6	3
West	San Germán	Secondary	54	Pr- 166	E & W	Original	Thursday, 8-25-2022	23851020.26	100	19	119	105	12	2
West	San Germán	Local	55	CII Retiro	E & W	Original	Thursday, 8-25-2022	44803009.00	100	29	129	104	25	0
West	San Germán	Local	56	Pr- 321	E & W	Original	Thursday, 8-25-2022	34934145.06	100	23	123	116	5	2
Metropolitan	San Juan	Primary	57	Expreso Roman Baldorioty	W	Original	Wednesday, 8-24-2022	53763831.78	100	8	108	103	1	4
Metropolitan	San Juan	Secondary	58	Pr- 3	W	Original	Wednesday, 8-24-2022	48258623.63	100	19	119	110	6	3
Metropolitan	San Juan	Local	59	Ave Dr Jose N Gandara	W	Original	Wednesday, 8-24-2022	111221950.66	100	21	121	114	4	3
Metropolitan	San Juan	Local	60	CII Nemesio Canales	N	Original	Wednesday, 8-24-2022	47860310.00	100	10	110	98	9	3
North	Toa Baja	Primary	61	Expreso Jose de Diego	E	Original	Thursday, 8-25-2022	48557793.72	100	14	114	102	4	8
North	Toa Baja	Secondary	62	Pr- 165	N	Original	Thursday, 8-25-2022	9960641.38	100	18	118	107	5	6
North	Toa Baja	Local	63	Pr- 863	W	Original	Thursday, 8-25-2022	19232381.06	100	15	115	95	14	6
North	Toa Baja	Local	64	Pr- 866	N	Original	Thursday, 8-25-2022	12642352.29	100	15	115	95	15	5
North	Vega Baja	Primary	65	Expreso Jose de Diego	W	Original	Wednesday, 8-31-2022	3636286.27	100	20	120	108	3	9
North	Vega Baja	Secondary	66	Pr- 2	E	Original	Wednesday, 8-31-2022	18045110.71	100	18	118	110	3	5
North	Vega Baja	Local	67	CII Inocencio Rey	N & S	Original	Wednesday, 9-7-2022	26811671.17	100	22	122	88	33	1
North	Vega Baja	Local	68	Ave Jesus M Armaiz	N & S	Original	Wednesday, 8-31-2022	3705835.26	100	27	127	104	20	3
								TOTAL	6800	1435	8235	7188	803	244

Nonresponse rate: **2.96%**
Ratio estimator: **91.77%**
Standard error: **0.74% (SUDAAN Software)**