



Puerto Rico Seat belt Use Campaign Attitudinal Survey

CST CAMPAIGN DATE: 2025-APR 7-14



Submitted to: Comisión para la Seguridad del Tránsito de Puerto Rico

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3. Seatbelt Use Survey

To complement the NHTSA-certified observational survey on seat belt use, a telephone-based survey will be implemented to assess behavioral drivers using the Theory of Planned Behavior (TPB). This instrument will explore attitudes, perceived norms, and control beliefs that influence seat belt use intentions. While observational data provides prevalence rates, the phone survey adds depth by capturing motivation, risk perceptions, and campaign awareness. Together, both methods offer a more complete understanding of compliance and behavior. This approach aligns with FHWA, NHTSA, and CDC recommendations, helping inform evidence-based safety messaging and future interventions in Puerto Rico's traffic safety efforts. **CST CAMPAIGN DATE: 2025-MAY 19-30**

Category	Description
Survey	Seat Belt Usage Survey
Method	Telephone Survey
Sample Size	500 Drivers
Focus	Use of seat belts by drivers and passengers
Purpose	Measure attitudes, knowledge, and behaviors related to seat belt usage
Main Content	Frequency of use, perceived risk, enforcement awareness, social norms, and campaign recall.
Participant Profile	Licensed drivers 18 and older across all regions of Puerto Rico

<https://www.surveymonkey.com/r/CST-2025-CINTURON>



Section	Description
1: Demographics	4: Laws
2: General Driving Habits	5: Advertising
3: Seat Belt Use	6: Theory of Planned Behavior

SAMPLE DISTRIBUTION

Metro	150	Sur	90	Oeste	70
Norte	100	Este	85	Central	5
< 34	200	35 to 54	150	55 >	150



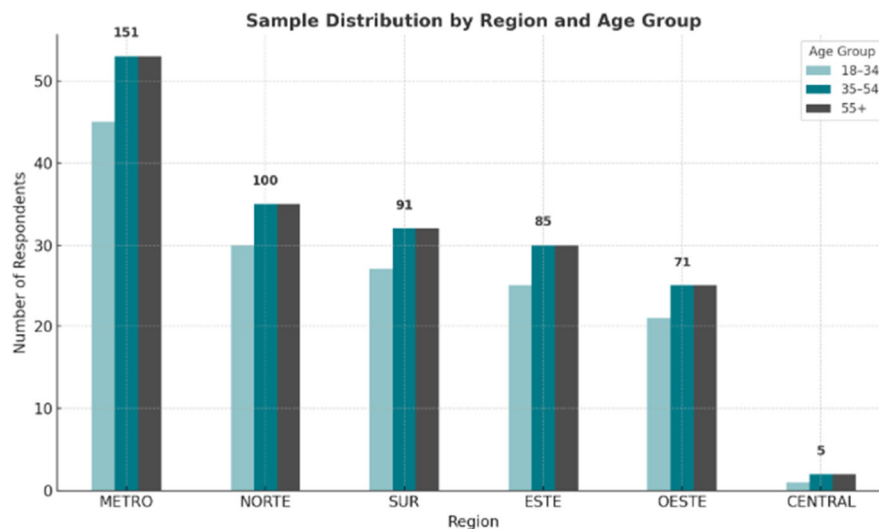
Sample distribution by Region, Gender and Age Groups.

REGION	%	SAMPLE	MEN	FEM	18-34	35-54	55+
CENTRAL	1%	6	3	3	2	2	2
ESTE	19%	93	46	47	31	32	30
METRO	33%	166	83	83	55	56	55
NORTE	17%	83	42	41	27	28	28
OESTE	17%	83	42	41	27	28	28
SUR	14%	69	35	34	23	24	22
ISLAND	100%	500	251	249	165	170	165

The table above presents the ideal sample distribution by region, sex, and age to generalize findings across Puerto Rico's driving population. However, to evaluate the impact of a targeted ad campaign, the sample was adjusted to oversample drivers aged 18 to 34—the primary audience and most exposed group to mobile phone use. Regional and age quotas were modified to ensure sufficient statistical power for measuring campaign effectiveness within this key segment, while still maintaining broad island wide representation. This targeted approach enhances the survey's ability to capture relevant insights from the group most at risk.

The following will be the targeted sampling distribution designed to evaluate the effectiveness of the seatbelt use awareness campaign among younger drivers.

REGION	%	SAMPLE	MEN	WOMEN	18-34	35-54	55+
METRO	30%	150	75	75	60	45	45
NORTE	20%	100	50	50	40	30	30
SUR	18%	90	45	45	36	27	27
ESTE	17%	85	43	42	34	26	25
OESTE	14%	70	35	35	28	21	21
CENTRAL	1%	5	3	2	2	1	2
ISLAND	100%	500	251	249	200	150	150





Sample Distribution by Primary Sampling Units (PSU).

#	PSU	REGION	SAMPLE	%
1	SAN JUAN	METRO	48	9.00%
2	BAYAMON	METRO	30	6.00%
3	CAROLINA	METRO	22	4.40%
4	PONCE	SUR	15	3.00%
5	GUAYNABO	METRO	15	3.00%
6	JUANA DIAZ	SUR	15	3.00%
7	GUAYAMA	SUR	15	3.00%
8	SALINAS	SUR	15	3.00%
9	YAUCO	SUR	15	3.00%
10	COAMO	SUR	15	3.00%
11	ARECIBO	NORTE	12	2.40%
12	VEGA BAJA	NORTE	12	2.40%
13	HATILLO	NORTE	12	2.40%
14	TRUJILLO ALTO	METRO	12	2.40%
15	MANATI	NORTE	12	2.40%
16	DORADO	NORTE	12	2.40%
17	ISABELA	NORTE	12	2.40%
18	NARANJITO	NORTE	12	2.40%
19	BARCELOENTA	NORTE	12	2.40%
20	TOA BAJA	METRO	11	2.20%
21	MAYAGÜEZ	OESTE	9	1.80%
22	AGUADILLA	OESTE	9	1.80%
23	MOCA	OESTE	9	1.80%
24	SAN SEBASTIAN	OESTE	9	1.80%
25	CABO ROJO	OESTE	9	1.80%
26	ANASCO	OESTE	9	1.80%
27	SAN GERMAN	OESTE	9	1.80%
28	AGUADA	OESTE	9	1.80%
29	CAGUAS	ESTE	8	1.60%
30	HUMACAO	ESTE	8	1.60%
31	CANOVANAS	METRO	8	1.60%
32	CAYEY	ESTE	8	1.60%
33	RIO GRANDE	ESTE	8	1.60%
34	GURABO	ESTE	8	1.60%
35	LAS PIEDRAS	ESTE	8	1.60%
36	FAJARDO	ESTE	8	1.60%
37	JUNCOS	ESTE	8	1.60%
38	SAN LORENZO	ESTE	8	1.60%
39	CIDRA	ESTE	8	1.60%
40	AGUAS BUENAS	ESTE	8	1.60%
41	TOA ALTA	METRO	4	0.80%
42	CATANO	METRO	4	0.60%
		TOTAL	500	100%



Background

Seatbelt use continues to represent a critical public safety priority in Puerto Rico, consistent with national trends in the United States. In the U.S., failure to wear seatbelts remains one of the leading contributors to traffic fatalities, with thousands of preventable deaths each year. In Puerto Rico, systematic data on seatbelt attitudes and behaviors have been limited, and past observational studies show gaps in consistent use, particularly among younger drivers and rear-seat passengers. Behavioral factors associated with non-use include lower risk perception, weaker enforcement visibility, and limited recall of safety campaign messages.

To address these gaps, the Puerto Rico Seatbelt Attitudinal Survey (2025) was developed. Guided by the Theory of Planned Behavior (TPB)—which examines attitudes, perceived norms, and perceived behavioral control—this instrument measures drivers' and passengers' beliefs about seatbelt use, awareness of laws, perceptions of enforcement, and exposure to CST's public safety campaigns. By integrating these attitudinal and social insights with crash and enforcement data, the survey provides evidence to strengthen targeted interventions and align campaign strategies with NHTSA and FHWA standards.

Survey Objectives

1. Quantify the frequency and self-reported behaviors of seatbelt use among licensed drivers and passengers in Puerto Rico.
2. Evaluate drivers' and passengers' knowledge of Puerto Rico's seatbelt laws, including requirements, penalties, and enforcement practices.
3. Assess attitudes, perceived social norms, and perceived behavioral control related to seatbelt use, applying the Theory of Planned Behavior (TPB) as the guiding framework.
4. Identify demographic and geographic groups with lower prevalence of seatbelt use and weaker perceptions of enforcement risk.
5. Measure public recall and awareness of CST's seatbelt safety campaigns and police enforcement initiatives (e.g., seatbelt checkpoints, traffic stops).

Methodology

The Puerto Rico Seatbelt Attitudinal Survey 2025 was conducted the week of September 8–12, 2025, through Computer-Assisted Telephone Interviews (CATI) with a total of 502 licensed drivers across Puerto Rico. The survey design was grounded in the Theory of Planned Behavior (TPB) and employed a stratified sampling approach by region, municipality, and age group to ensure representativeness. Coverage was achieved across Puerto Rico's six CST regions, 42 selected municipalities, and three age brackets (<34, 35–54, 55+). The standardized questionnaire was developed in alignment with CST objectives and captured key variables related to seatbelt use and enforcement.

These included:

- Self-reported seatbelt use behaviors by drivers and passengers (front and rear seats).
- Perceived behavioral control, including confidence in always wearing a seatbelt in short trips or informal settings.
- Social norms and peer influence regarding seatbelt use.
- Knowledge and awareness of Puerto Rico seatbelt laws, penalties, and enforcement practices.
- Exposure and recall of CST seatbelt safety campaigns and police enforcement (e.g., checkpoints, traffic stops).



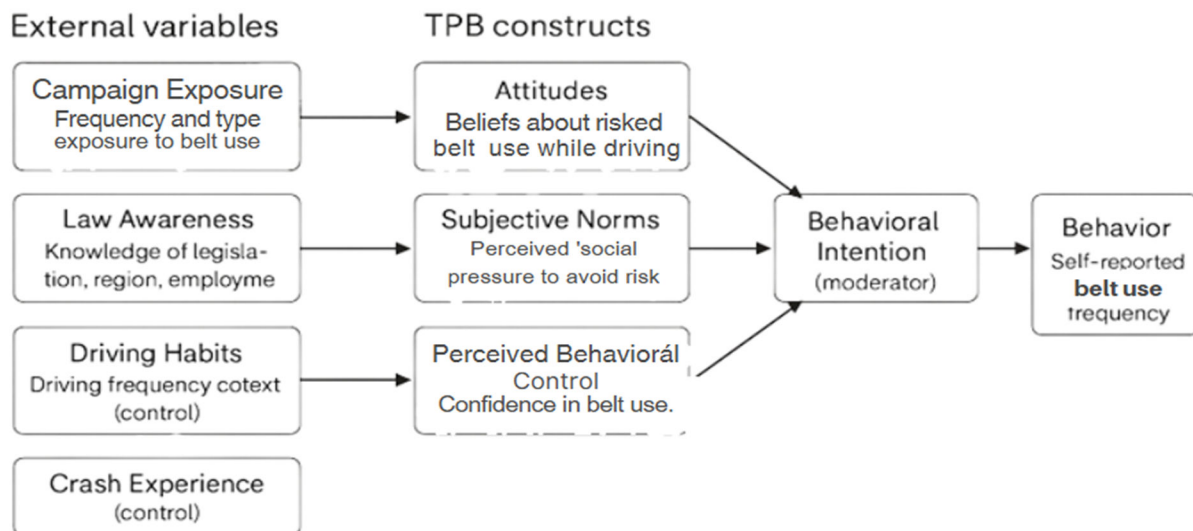
Research Objective

To analyze the factors influencing seatbelt use in Puerto Rico and evaluate the impact of educational campaigns, enforcement efforts, and legal awareness on compliance with seatbelt laws.

Conceptual Framework

Research Model

To examine the factors influencing seatbelt use behavior



The research model for the Seatbelt Attitudinal Survey 2025 is grounded in the Theory of Planned Behavior (TPB) and incorporates additional variables relevant to traffic safety, enforcement, and communication effectiveness. At its core, the model posits that a driver's and passenger's intention to consistently wear a seatbelt (behavioral intention) is shaped by three key psychological constructs:

- **Attitudes:** beliefs about the safety benefits and consequences of seatbelt use, including perceived personal protection and reduction of crash-related harm.
- **Subjective norms:** perceived social pressure from peers, family, and the community to always use a seatbelt in both front and rear seats.
- **Perceived behavioral control:** confidence in one's ability to use a seatbelt in every circumstance (e.g., during short trips, when riding in the back seat, or in situations where others may not be buckled).

These intentions are expected to predict self-reported seatbelt use behavior, specifically the frequency, consistency, and decision-making processes surrounding seatbelt use among drivers and passengers in Puerto Rico.

External variables further enrich the model by providing contextual and moderating factors. Campaign exposure—such as awareness, frequency, and recall of CST's seatbelt safety media campaigns—is hypothesized to influence attitudes and behavioral intentions directly. Legal awareness, including knowledge of Puerto Rico's seatbelt laws, penalties, and the perceived



likelihood of enforcement (e.g., seatbelt checkpoints, traffic stops), may moderate the relationship between intention and actual seatbelt use. Additional control variables include demographics (age, gender, education, employment status), driving habits (hours driven, weekday/weekend driving frequency, type of trips, vehicle use), and prior experience with crashes or enforcement actions.

Together, these variables provide a comprehensive understanding of the psychological, social, and contextual factors influencing seatbelt compliance in Puerto Rico. This model allows researchers to assess not only the psychological determinants of seatbelt use but also the effectiveness of educational and legislative interventions designed to increase compliance and reduce traffic-related injuries and fatalities in Puerto Rico.

Survey Instrument

The CST25-3 Seatbelt Attitudinal Survey was developed to evaluate driver and passenger behaviors, attitudes, and awareness related to seatbelt use in Puerto Rico. Structured around evidence-based frameworks such as the Theory of Planned Behavior (TPB), the instrument captures a comprehensive view of both individual behaviors and external influences that contribute to seatbelt compliance. The questionnaire is divided into seven key sections: Demographics, Driving Habits, Seatbelt Use Behaviors, Perceptions and Beliefs, Law Enforcement and Experience, Exposure to Public Awareness Campaigns, and TPB Constructs. Each section serves a distinct analytical purpose—ranging from identifying populations with lower compliance to measuring the effectiveness of educational and enforcement strategies—and together, they provide a holistic foundation for designing, implementing, and evaluating policies and communication strategies aimed at increasing seatbelt use and reducing injuries and fatalities across the island.

1. Demographics

This section collects basic demographic information from respondents, including sex, age, region, municipality, household composition, education level, employment status, marital status, and household income. Demographic data are essential for disaggregating results by key population segments. These variables help assess whether certain groups are less likely to use seatbelts or more responsive to public safety messages. Stratifying by demographics also supports the evaluation of targeted outreach and informs equitable policy development.

1. Demographics

- Sex, region, municipality
- Age
- Number of people in the household
- Highest educational level completed
- Current employment status
- Marital status
- Total annual household income

2. Driving Habits

This section explores respondents' driving frequency, vehicle type, fuel usage, typical driving duration during weekdays and weekends, and their usual destinations. Understanding driving behavior establishes important context for seatbelt use. Frequency and duration of driving influence



the likelihood of exposure to distractions, while trip purposes (e.g., commuting to work, running errands, or leisure activities) affect urgency and the probability of engaging in risky behaviors such as phone use. These variables are critical for identifying high-risk driving routines, segmenting driver profiles, and informing time-based enforcement strategies or tailored campaign messaging.

2. Driving Habits

- Driving frequency
- Main type of vehicle and fuel type
- Hours spent driving on weekdays and weekends
- Destinations during a typical weekday and weekend
- Rating of driving experience in Puerto Rico
- Top three concerns about road safety

3. Seatbelt Use Behaviors

This section investigates self-reported behaviors related to seatbelt use, including consistency of use by drivers, front-seat passengers, and rear-seat passengers. It also measures the frequency of seatbelt use across different trip types (short trips vs. long trips, weekdays vs. weekends) and circumstances (daytime vs. nighttime driving). These data directly identify patterns of compliance and non-compliance that compromise road safety. By focusing on both habitual use and situational lapses, this section aligns with national priorities (e.g., NHTSA) and informs interventions that address specific at-risk behaviors among different demographic groups.

3. Seatbelt Use Behaviors

- Frequency of seatbelt use by drivers (always, almost always, sometimes, rarely, never)
- Frequency of seatbelt use by front-seat passengers
- Frequency of seatbelt use by rear-seat passengers
- Differences in seatbelt use on short trips vs. long trips
- Situational use (e.g., daytime vs. nighttime, city vs. highway)

4. Perceptions and Beliefs

This section assesses drivers' and passengers' perceptions of risk, danger, and legal knowledge related to not wearing a seatbelt. It also captures awareness of enforcement visibility (e.g., likelihood of receiving a ticket). Perceptions significantly influence behavior: drivers and passengers who underestimate the danger of riding unbelted or misunderstand legal requirements are less likely to comply consistently. Measuring perceived risk, legal awareness, and enforcement credibility helps identify gaps in public understanding. These insights guide educational campaign messaging, clarify legal boundaries, and support behavior-change strategies grounded in evidence.

4. Perceptions and Beliefs

- Perceived risk of riding without a seatbelt
- Perceived danger level of not using a seatbelt in crashes
- Knowledge of Puerto Rico's seatbelt laws and penalties
- Awareness of enforcement practices (e.g., checkpoints, tickets)
- Perceived likelihood of being fined for non-compliance



5. Law Enforcement and Experience

This section documents respondents' awareness of law enforcement actions, knowledge of seatbelt fines, and any personal history of receiving citations or being in crashes related to not wearing a seatbelt. Public perception of enforcement likelihood (deterrence) and personal experiences with fines or crashes can strongly influence compliance with seatbelt laws. This data helps evaluate whether enforcement visibility is sufficient and whether it contributes to behavior modification.

5. Law Enforcement and Experience

- Perceived likelihood of being fined for not wearing a seatbelt
- Recent exposure to news or personal observation of police issuing seatbelt fines
- Knowledge of the fine amount for seatbelt violations
- History of receiving tickets for not wearing a seatbelt
- History of being involved in crashes while unbelted

6. Exposure to Public Awareness Campaigns

This section evaluates recall and recognition of seatbelt safety public service campaigns, including specific slogans, media exposure channels, and perceived message effectiveness. Campaign recall and message effectiveness are central to assessing the reach and impact of educational interventions. Understanding which media channels are most effective and which messages resonate best supports future campaign design, budget allocation, and strategic communications planning.

6. Exposure to Public Awareness Campaigns

- Recall of campaigns about seatbelt use
- Channels where the message was seen or heard (TV, radio, internet, social media, print, etc.)
- Recall of slogans or phrases promoting seatbelt safety
- Perceived effectiveness of the message

7. Theory of Planned Behavior (TPB) Constructs

This section includes items based on the Theory of Planned Behavior (TPB), measuring attitudes, subjective norms, perceived behavioral control, and behavioral intentions related to seatbelt use. TPB is a validated theoretical framework that explains behavior through intention, influenced by attitudes, norms, and perceived control. Applying TPB enables a deeper understanding of the psychological drivers behind seatbelt use and supports evidence-based strategies to increase compliance with seatbelt laws.

7. Theory of Planned Behavior (TPB) Statements

- **Attitude:** Belief that wearing a seatbelt is essential for safety
- **Subjective Norms:** Perception that important others expect and approve of seatbelt use
- **Perceived Behavioral Control:** Confidence in one's ability to always wear a seatbelt, regardless of trip length or situation
- **Intention:** Personal commitment to always using a seatbelt in the future
- **Effect of Campaigns:** Belief that public service campaigns influence one's decision to wear a seatbelt



Survey Pilot Test: July 2025

Objective: To ensure the clarity, functionality, and reliability of the instrument prior to large-scale deployment, a pilot study was conducted in July 2025 with a sample of 21 drivers in Puerto Rico. The primary objective of the pilot was to evaluate the questionnaire's ability to capture key variables related to seatbelt use behaviors, legal awareness, and campaign exposure, as well as to assess the performance of items aligned with the Theory of Planned Behavior (TPB). The pilot also allowed for testing of skip logic, response variability, and respondent burden. Insights gained from this preliminary test informed adjustments to question wording, response options, and instrument structure, ultimately strengthening the validity and reliability of the final survey tool.

Key Findings:

1. All 33 questions (plus TPB sub-items under P33) were completed with high response rates, confirming that the instrument functioned effectively.
2. The questions yielded balanced response distributions, particularly on behaviors like seatbelt use by drivers and passengers and campaign recall (P22: 37% responded "yes").
3. Complex skip patterns (e.g., seatbelt use by rear passengers, enforcement history) were functional but could benefit from refinement.
4. Sensitive questions (e.g., income in P9) were answered, though some hesitation was noted.
5. Low-prevalence events, such as citations for not wearing a seatbelt (P31–P32), were successfully captured.

Instrument Strengths:

- Captured a full range of seatbelt behaviors, perceptions, and legal awareness.
- The TPB section (P33) showed strong internal consistency across attitudes, subjective norms, behavioral control, and intention.

Statistical Validation of the Survey Instrument for Full Deployment:

Based on the results of the pilot test conducted in July 2025 with 21 respondents, the questionnaire demonstrated acceptable psychometric properties to support its full-scale implementation. Reliability analysis of the core theoretical construct—behavioral intention as measured through the Theory of Planned Behavior (TPB)—yielded a Cronbach's alpha of .80 after refinement, indicating good internal consistency among the attitudinal, normative, control, and intention-related items. In addition, the items exhibited adequate variability and item-total correlations above the .40 threshold, supporting their contribution to the overall scale. Preliminary correlation patterns among TPB components suggest construct alignment, while the absence of floor or ceiling effects affirms sensitivity to behavioral differences.

These findings statistically justify proceeding with the administration of the finalized instrument to a representative sample of 502 licensed drivers, ensuring that the tool is both valid and reliable for measuring seatbelt use behaviors, perceptions, and campaign impact in Puerto Rico.

Conclusion:

The pilot study demonstrated that the questionnaire was clear, effective, and capable of capturing relevant data on seatbelt use behaviors in Puerto Rico. The findings provided actionable insights that supported refinements to the instrument prior to its implementation with a larger, representative sample of licensed drivers.



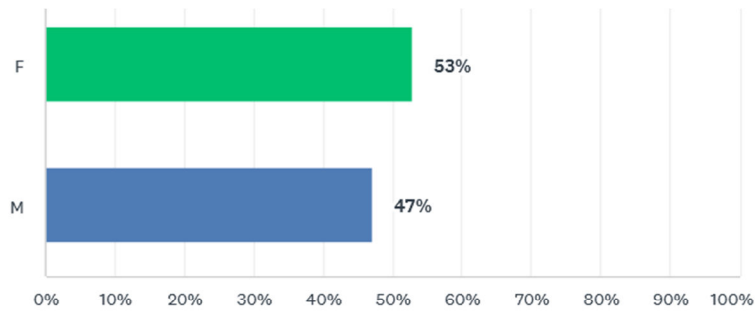
2025 Survey Results: Seatbelt Campaign

The CST25-3 Seatbelt Attitudinal Survey provides critical insights into the behaviors, perceptions, and awareness of Puerto Rican drivers and passengers regarding seatbelt use. Conducted in September 2025 with a sample of 502 licensed drivers, the survey employed a mixed-mode approach using Computer-Assisted Telephone Interviewing (CATI) and online data collection to enhance coverage and participation across diverse demographic groups.

Structured around the Theory of Planned Behavior (TPB), the instrument explores not only self-reported behaviors but also the underlying attitudes, perceived social norms, and control factors that influence consistent seatbelt use. By integrating demographic profiles, driving habits, enforcement experiences, and exposure to public awareness campaigns, the survey offers a multidimensional understanding of seatbelt compliance. These findings serve as a foundation for shaping targeted educational initiatives, enforcement efforts, and public communication strategies, ensuring that interventions are data-driven and tailored to the realities of Puerto Rico's drivers and passengers.



Q1 | DEM1 | SEX

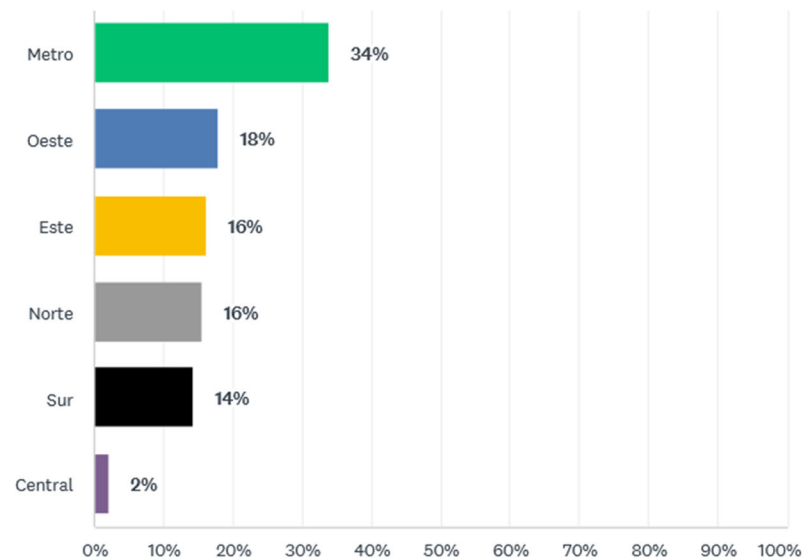


ANSWER CHOICES	RESPONSES
F	53%
M	47%
TOTAL	502

The survey, conducted in September 2025 among Puerto Rican drivers, included 502 respondents, with 53% female (n = 265) and 47% male (n = 237) participants. This slight predominance of female respondents aligns closely with the most recent U.S. Census Bureau 2024 Puerto Rico Community Survey (ACS), which estimates that approximately 53% of Puerto Rico’s population aged 18 and over is female and 47% is male. This congruence indicates that the survey’s gender distribution is consistent with the broader demographic composition of Puerto Rico’s adult population. Consequently, the sample can be considered representative in terms of gender, providing a robust basis for analyses related to seatbelt use behaviors, perceptions, and attitudes.



Q2 | DEM2 | REGION



ANSWER CHOICES	RESPONSES
Metro	34% 170
Oeste	18% 90
Este	16% 81
Norte	16% 78
Sur	14% 72
Central	2% 11
TOTAL	502

The survey, conducted in September 2025 among 502 Puerto Rican drivers, was designed to reflect regional exposure to road risk using two key indicators: traffic crashes (2020–2024) reported by the *Administración de Compensaciones por Accidentes de Automóviles* (ACAA) and traffic fatalities (2019–2023) from the Fatality Analysis Reporting System (FARS). ACAA data shows the Metro region accounted for 33% of reported crashes, followed by Este (19%), Norte (17%), Oeste (17%), Sur (14%), and Central (1%). FARS fatality data presents a similar pattern, with Metro (33%), Este (21%), Norte (18%), Oeste (14%), Sur (14%), and Central (1%).

The survey sample closely mirrors these distributions, with Metro at 34% (n = 170), followed by Oeste 18% (n = 90), Este 16% (n = 81), Norte 16% (n = 78), Sur 14% (n = 72), and Central 2% (n = 11).

This stratified allocation ensures proportional representation across regions with varying traffic risk levels, covering both urban and rural drivers. By aligning the sample with crash and fatality patterns, the survey provides a representative basis for analyzing regional differences in seatbelt use behaviors and perceptions, strengthening the relevance of findings for policy development and targeted road safety interventions across Puerto Rico.



Q3 | DEM3 | PSU / MUNICIPIO / COUNTY

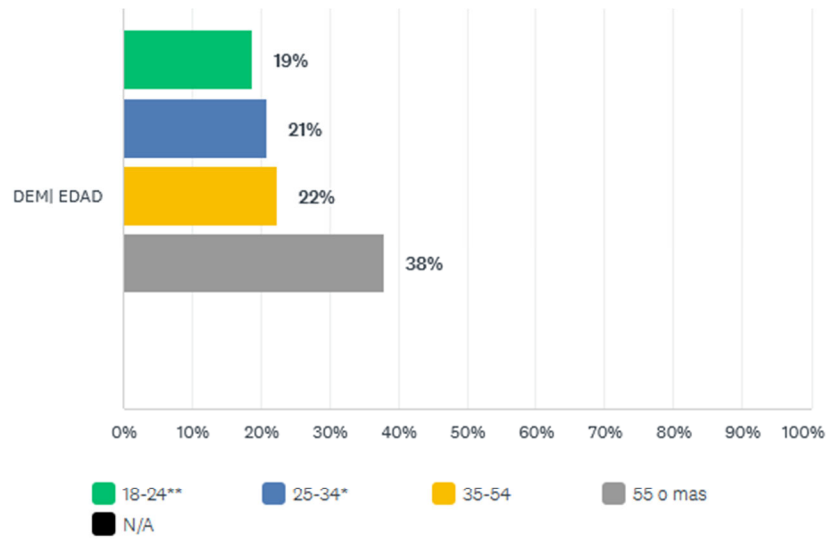
ANSWER CHOICES	RESPONSES	
▼ San Juan	13%	63
▼ Arecibo	13%	62
▼ Mayaguez	6%	31
▼ Guaynabo	6%	30
▼ Toa Baja	5%	25
▼ Corozal	4%	21
▼ Manatí	4%	20
▼ Aguada	4%	18
▼ Canovanas	3%	15
▼ Bayamon	3%	14
▼ Carolina	3%	13
▼ San German	2%	12
▼ Catano	2%	10
▼ Guayama	2%	10
▼ Las Piedras	2%	10
▼ Santa Isabel	2%	10
▼ Gurabo	2%	9
▼ Fajardo	2%	8
▼ Lajas	2%	8
▼ Maunabo	2%	8
▼ Juana Díaz	1%	7
▼ Barranquitas	1%	6
▼ Coamo	1%	6
▼ Juncos	1%	6
▼ Trujillo Alto	1%	6
▼ Orocovis	1%	5

The survey sample is representative because it was strategically designed using multiple benchmarks of road risk and population exposure. Regional quotas were based on traffic crash data from the Administración de Compensaciones por Accidentes de Automóviles (2020–2024) and fatality data from the Fatality Analysis Reporting System (2019–2023), ensuring alignment with actual crash and fatality distributions across Puerto Rico. In addition, at least one respondent was surveyed in all 78 municipalities, balancing urban and rural areas and incorporating drivers from diverse demographic and geographic contexts. This stratified, risk-informed approach enhances the sample’s validity, making the findings robust for policymaking and targeted road safety interventions.

Furthermore, the top 10 municipalities with the highest traffic fatalities—including San Juan, Bayamón, Caguas, Carolina, Ponce, Toa Baja, Mayagüez, Arecibo, Guaynabo, and Humacao—were given proportional emphasis in the sampling plan based on FARS 2019–2023 data. The survey results closely reflect this prioritization: San Juan (13%, n = 63) and Arecibo (13%, n = 62) lead the sample, with strong representation in Mayagüez (6%, n = 31), Guaynabo (6%, n = 30), Toa Baja (5%, n = 25), and Bayamón (3%, n = 14). This alignment between the planned target distribution and the actual sample collected ensures that high-risk, high-population municipalities are adequately represented, strengthening the study’s ability to analyze driver behavior in areas with the greatest road safety challenges.



Q4 | DEM4 | AGE



	18-24**	25-34*	35-54	55 O MAS	N/A	TOTAL	WEIGHTED AVERAGE
DEM4 EDAD	19% 94	21% 105	22% 112	38% 191	0% 0	502	2.80

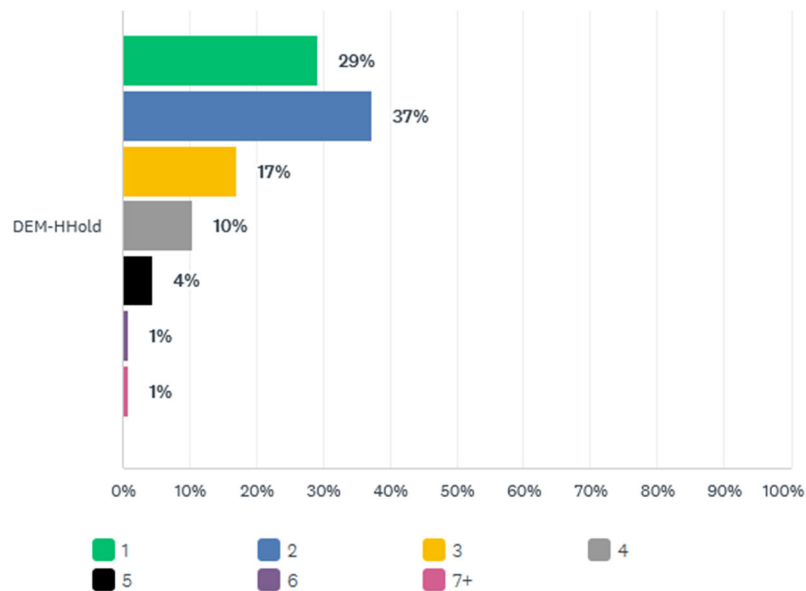
The survey's age distribution demonstrates strong representation of Puerto Rican drivers across critical adult age groups, enabling meaningful analysis of seatbelt use behaviors across generational cohorts. The largest segment consists of drivers aged 55+ (38%, n = 191), ensuring robust input from older adults, whose driving experience may be influenced by physical or cognitive considerations. Drivers aged 35–54 (22%, n = 112) and 25–34 (21%, n = 105) are both well represented, reflecting midlife and early-adult cohorts who often use vehicles heavily for work, family, and social responsibilities. Younger drivers aged 18–24 (19%, n = 94) are also present in significant numbers, capturing a group frequently associated with risk-taking and inconsistent seatbelt use. To facilitate quantitative analysis, the age categories were assigned weights from 1 to 4, allowing for the computation of average age scores across regions and subgroups. Respondents aged 18–24 were assigned a weight of 1, 25–34 a weight of 2, 35–54 a weight of 3, and 55+ a weight of 4. This weighted approach enables a more nuanced understanding of demographic trends and their influence on seatbelt use, enforcement perceptions, and campaign recall. This segmentation aligns with best practices in driver behavior and traffic safety research outlined by the National Highway Traffic Safety Administration (NHTSA) and applied in large-scale surveys such as the National Roadside Survey. The three-cohort framework—18–34, 35–54, and 55+—facilitates comparability with federally sponsored research and enhances the external validity of findings for policy and program development.

The age distribution of surveyed drivers also shows regional variation across Puerto Rico. In the Metro region (34% of respondents), nearly half are aged 25–34, while 25% are 55+, reflecting a mix of younger professionals and retirees. In Sur (14%) and Este (16%), the age profile skews younger, with over half of respondents aged 25–34. Conversely, Norte (16%), Oeste (18%), and Central (2%) show an older profile, with 55+ drivers comprising 32–40% of respondents, yielding higher weighted averages. These differences highlight that urban and coastal regions are dominated by younger drivers, while northern, western, and central areas have more older adults. Such variation is critical for developing targeted seatbelt interventions tailored to different age-related risk profiles.



Q5 | DEM5 | HOUSEHOLDS

How many people live in your household, including yourself?



	1	2	3	4	5	6	7+	TOTAL	WEIGHTED AVERAGE
DEM-HHhold	29% 139	37% 178	17% 81	10% 50	4% 21	1% 4	1% 4	477	2.30

According to the U.S. Census Bureau’s 2023/2024 American Community Survey (ACS) 1-Year Estimates for Puerto Rico, the average household size is approximately 2.48 persons per household (U.S. Census Bureau, 2024). To facilitate quantitative analysis of household size, the survey assigned weights from 1 to 7 to represent the number of people living in each respondent’s household, including themselves. Specifically, a household with one member received a weight of 1, while two- to six-person households were assigned weights from 2 to 6. Households with seven or more members were given the maximum weight of 7. This weighted approach enables the calculation of a composite household size score, providing insights into average household composition among licensed drivers.

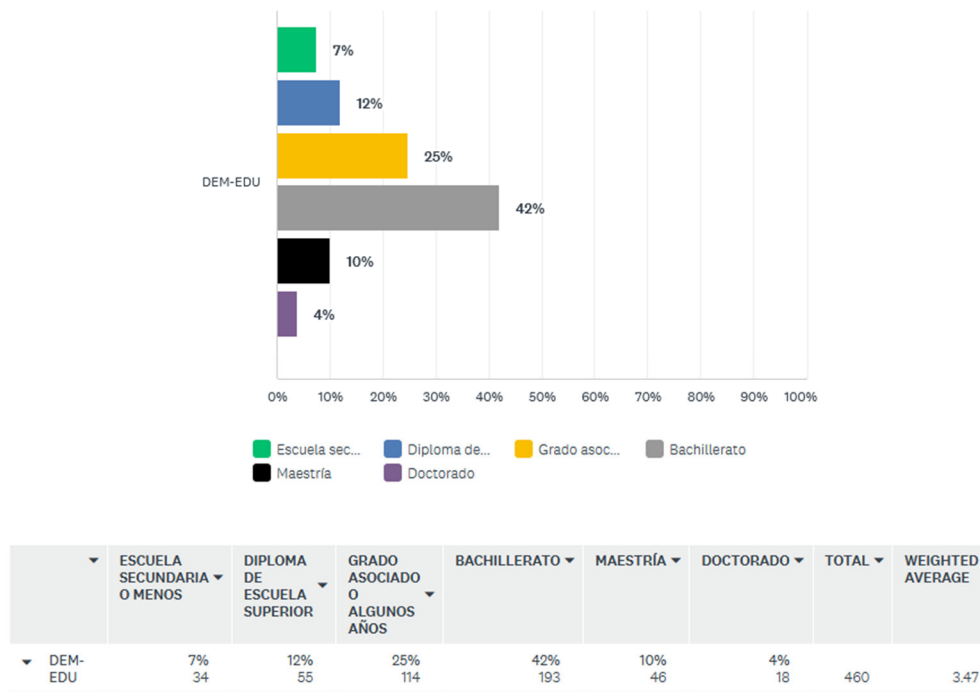
The survey results on household size show that most respondents live in small households, closely mirroring Puerto Rico’s population structure as reported in the 2024 ACS. Specifically, 37% of participants live in two-person households (n = 178), followed by 29% in one-person households (n = 139) and 17% in three-person households (n = 81). Four-person households accounted for 10% (n = 50), while larger households were much less common: five-person households (4%, n = 21), six-person households (1%, n = 4), and seven or more (1%, n = 4). The weighted average household size in the survey is 2.30, slightly lower than the ACS 2024 estimate of 2.48 persons per household.

This difference may reflect the survey’s focus on licensed drivers, who are somewhat more likely to live alone or in two-person households compared to the general population, which includes minors and elderly dependents (National Highway Traffic Safety Administration [NHTSA], 2020). Overall, the distribution aligns with ACS data trends, showing that one- and two-person households dominate Puerto Rico’s housing composition. This comparability enhances the survey’s representativeness and supports the validity of its demographic findings.



Q6 | DEM6 | EDUCATION

What is the highest level of education you have completed?



The survey results on educational attainment provide valuable insights into the profile of Puerto Rican drivers who participated in the CST25-3 Seatbelt Attitudinal Survey. Among the 460 respondents who answered this question, the largest segment—42% (n = 193)—reported holding a bachelor’s degree, indicating a highly educated sample. This was followed by 25% (n = 114) with an associate degree or some college education, and 12% (n = 55) reporting only a high school diploma. Respondents with graduate degrees included 10% (n = 46) with a master’s degree and 4% (n = 18) with a doctoral degree. A smaller portion, 7% (n = 34), reported having less than a high school education.

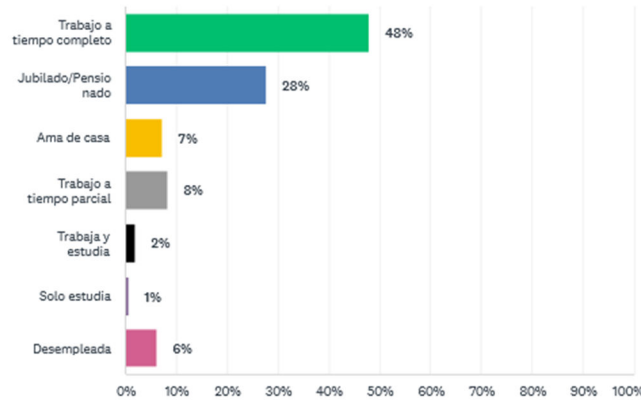
The education levels were assigned weights from 1 to 6 to calculate a composite educational attainment score, with 1 representing the lowest level (high school or less) and 6 representing the highest (doctoral degree). The weighted average educational level of respondents was 3.47, positioning the overall sample between the associate and bachelor’s degree levels on the scale used. This relatively high representation of educated drivers suggests that the survey reached a demographically engaged population likely to be receptive to educational and awareness campaigns. Understanding the education level of drivers is critical for analyzing road safety, as evidence shows a clear inverse relationship between educational attainment and crash risk. Research indicates that higher-educated individuals are less likely to be involved in fatal crashes than those with lower education levels. A systematic review found that seven of eight studies reported a significant negative association between education and traffic fatalities (Hasselberg et al., 2021). Similarly, a study from Sam Houston State University showed that each additional year of schooling reduces crash mortality by 5%, with dropouts being four times more likely to die in crashes (Gwartney-Gibbs, 2012).



Q7 | DEM7 | OCCUPATION

What is the highest level of education you have completed?

Answered: 447 Skipped: 55



ANSWER CHOICES	RESPONSES	
Trabajo a tiempo completo	48%	214
Jubilado/Pensionado	28%	124
Ama de casa	7%	32
Trabajo a tiempo parcial	8%	37
Trabaja y estudia	2%	9
Solo estudia	1%	3
Desempleada	6%	28
TOTAL		447

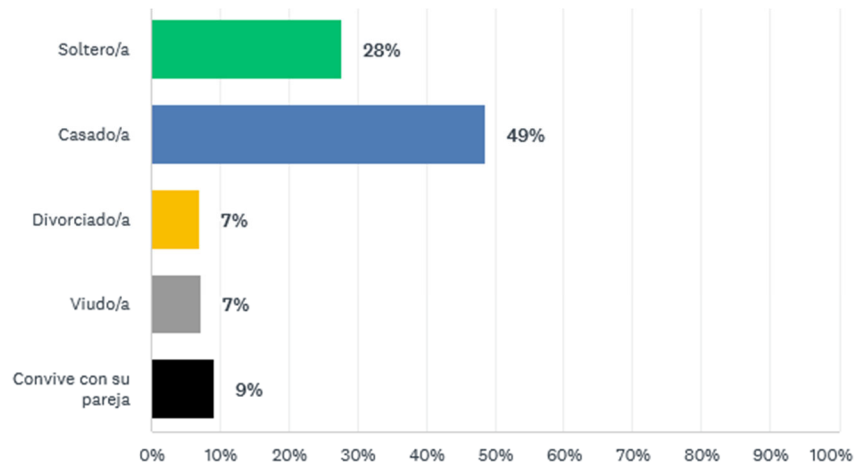
The survey results on current work status provide a clear occupational profile of Puerto Rican drivers. Among the 486 respondents, the largest segment (44%, n = 216) reported working full-time, making it the dominant category. Retirees or pensioners represent the second-largest group at 36% (n = 175), reflecting Puerto Rico's aging population of licensed drivers. Smaller proportions include part-time workers (8%, n = 38), homemakers (6%, n = 30), unemployed individuals (3%, n = 15), and a small number of respondents who both study and work (1%, n = 6) or study exclusively (1%, n = 6). When compared to the U.S. Census Bureau's 2023/2024 American Community Survey (ACS) 1-Year Estimates, the survey's findings align closely with island-wide labor force trends. The ACS reports a labor force participation rate of approximately 45% for individuals aged 15 and over in Puerto Rico, with an unemployment rate near 6%, which is consistent with the survey's reported unemployment. The higher proportion of full-time workers in the survey likely reflects the focus on licensed, active drivers, who are more likely to be employed or retired than the broader adult population, which includes non-drivers.

This alignment with ACS data strengthens the representativeness of the sample, especially for key labor force indicators. Furthermore, the significant share of retirees underscores the need to consider age-related driving behaviors and perceptions in seatbelt compliance research. By incorporating both employed and retired respondents, the survey offers a robust socioeconomic profile of Puerto Rican drivers, enhancing the validity of its findings for evidence-based policy and intervention development.



Q8 | DEM8 | CIVIL STATUS

What is your current marital status?



ANSWER CHOICES	RESPONSES	
Soltero/a	28%	129
Casado/a	49%	227
Divorciado/a	7%	33
Viudo/a	7%	34
Convive con su pareja	9%	43
TOTAL		466

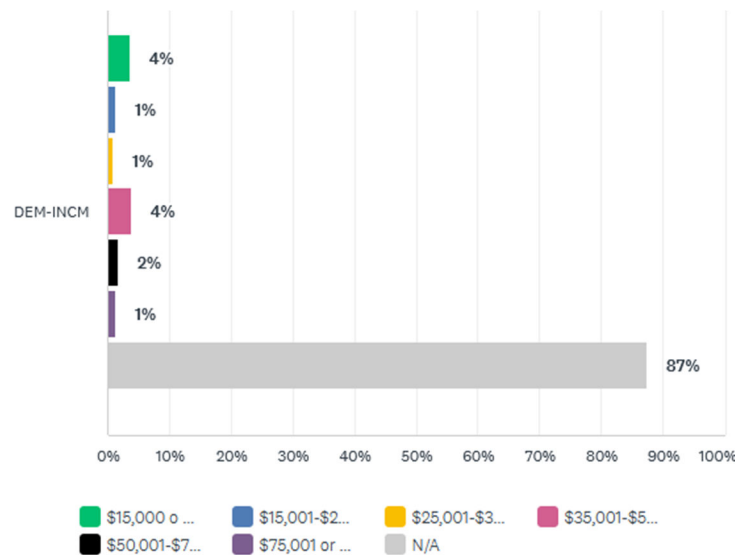
The survey (n = 466) shows the following marital status distribution: Married (49%, n = 227), Single/Never Married (28%, n = 129), Cohabiting (9%, n = 43), Divorced (7%, n = 33), and Widowed (7%, n = 34). In comparison, U.S. national data from the American Community Survey (ACS) indicates that approximately 46.4% of U.S. adults are unmarried, a category encompassing those who are never married, divorced, or widowed (U.S. Census Bureau, 2023). The survey's proportion of married respondents (49%) closely mirrors national trends, while the combined categories of single, divorced, and widowed (42%) align with the broader U.S. distribution. Research consistently shows an association between marital status and motor vehicle crash risk, even when controlling for age, sex, and driving exposure. For example, a New Zealand cohort study found that never-married individuals had more than double the risk of driver injury compared to married counterparts (Whitlock et al., 2004).

Similarly, U.S. mortality data revealed that divorced or separated individuals had a significantly higher risk of death from motor vehicle crashes than married individuals (Kposowa & Breault, 2009). Although additional factors such as sex and education also contribute to crash risk, marital status remains a meaningful predictor, potentially reflecting differences in risk-taking behaviors and the presence (or absence) of social support systems that influence driving patterns. Including marital status in seatbelt and driver behavior research therefore provides important context for designing targeted interventions aimed at populations with higher demonstrated injury risk



Q9 | DEM9 | ANNUAL INCOME

What would you say is your household's total annual income?



	\$15,000 O MENOS	\$15,001- \$25,000	\$25,001- \$35,000	\$35,001- \$50,000	\$50,001- \$75,000	\$75,001 OR MORE	N/A	TOTAL	WEIGHTED AVERAGE
DEM- INCM	4% 18	1% 6	1% 4	4% 19	2% 8	1% 6	87% 426	487	3.18

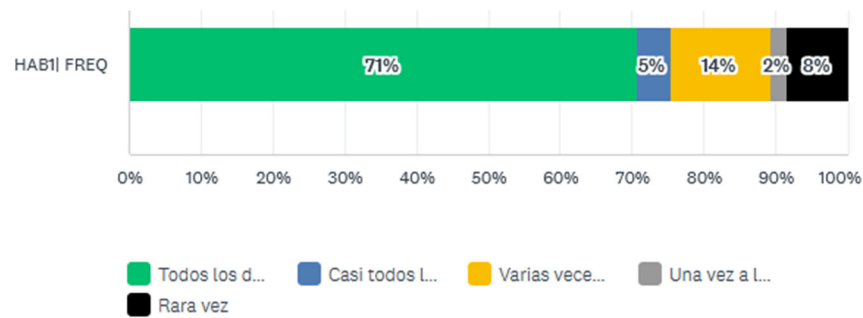
The survey measured household income using six categories, ranging from \$15,000 or less to \$75,001 or more, plus an “N/A” option for those unwilling to disclose. Each category was weighted from one to six to compute a composite income score and examine its relationship with seatbelt use behaviors. Among the 487 respondents, the vast majority—87 percent (n = 426)—did not disclose their income, underscoring the sensitivity of this question. Among those who responded (n = 61), four percent reported earning \$15,000 or less, one percent reported between \$15,001 and \$25,000, another one percent between \$25,001 and \$35,000, four percent between \$35,001 and \$50,000, two percent between \$50,001 and \$75,000, and one percent reported household income of \$75,001 or more. The weighted average income score for the sample was 3.18, though interpretation is limited by the high nonresponse rate.

This pattern is consistent with broader survey research findings, where income-related questions often yield lower response rates due to privacy concerns or uncertainty about exact amounts. Despite the limited reporting, the distribution of responses generally reflects data from the U.S. Census Bureau’s 2023 American Community Survey (ACS), which estimated a median household income of \$25,096 in Puerto Rico and showed that nearly three-quarters of households earn below \$50,000. The survey’s income findings therefore provide a reasonable socioeconomic snapshot of licensed drivers. Prior research has demonstrated that lower household income is associated with higher crash risk, as socioeconomic disadvantages can influence vehicle condition, exposure to higher-risk driving environments, and access to safety resources.



Q10 | HAB1 | DRIVING FREQUENCY

How often do you drive a vehicle?



	TODOS LOS DÍAS	CASI TODOS LOS DÍAS	VARIAS VECES A LA SEMANA	UNA VEZ A LA SEMANA	RARA VEZ	TOTAL	WEIGHTED AVERAGE
HAB1 FREQ	71% 354	5% 24	14% 70	2% 11	8% 42	501	3.27

Results show that most respondents are frequent drivers. Specifically, 71% (n = 354) reported driving every day, and 5% (n = 24) reported driving almost every day, meaning that over three-quarters of the sample uses a vehicle on a near-daily basis. Additionally, 14% (n = 70) drive several times per week, 2% (n = 11) drive once per week, and 8% (n = 42) drive rarely. The weighted average of 3.27 indicates a predominance of highly active drivers, reflecting their strong reliance on personal vehicles for commuting, errands, and other daily activities.

Driving frequency was measured using a weighted scale from 1 to 5, where 1 represented “rarely” and 5 represented “every day.” This quantification enables the inclusion of driving frequency in composite behavioral scores and supports the analysis of correlations with other survey variables, such as seatbelt use, campaign recall, and enforcement perceptions. Respondents who reported driving daily (weight = 5) or almost daily (weight = 4) contributed most to the overall score, emphasizing the predominance of high-frequency drivers within the sample.

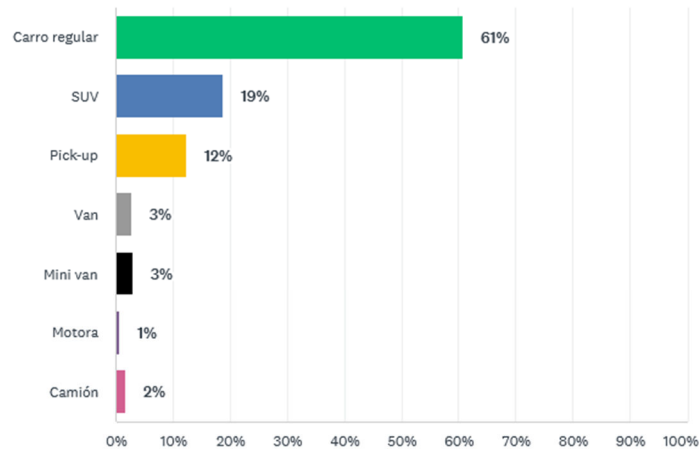
These findings highlight driving exposure as a critical factor when evaluating traffic safety behaviors. Frequent drivers are more often exposed to crash risks, making them an essential target group for seatbelt compliance campaigns and enforcement initiatives. This trend reflects Puerto Rico’s limited public transportation options, which sustain a strong reliance on personal vehicles.

Supporting these findings, prior research has shown that individuals who spend more time behind the wheel are more likely to engage in secondary tasks, which increases crash risk (Dingus et al., 2016). Similarly, Guo et al. (2017) demonstrated that frequent driving is associated with greater opportunities for risky behaviors, reinforcing the need for targeted seatbelt interventions among daily and near-daily drivers.



Q11 | HAB2 | VEHICLE TYPE

What type of vehicle do you mainly drive?



ANSWER CHOICES	RESPONSES
Carro regular	61% 303
SUV	19% 94
Pick-up	12% 62
Van	3% 14
Mini van	3% 15
Motora	1% 3
Camión	2% 8
TOTAL	499

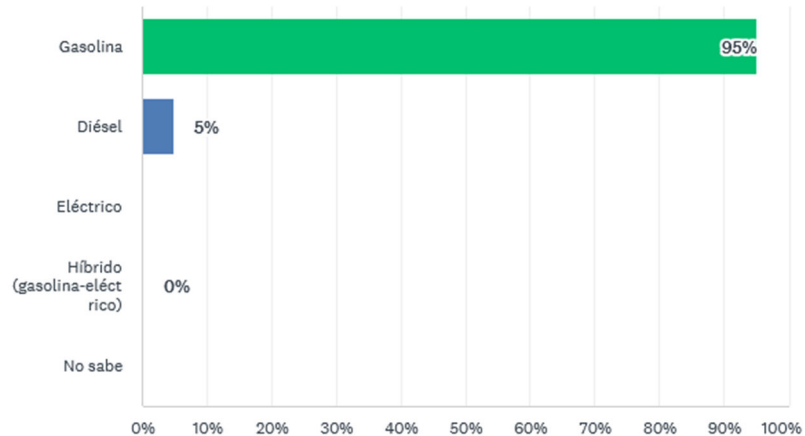
Results reveal that most respondents rely on standard passenger cars. Specifically, 61% (n = 303) reported driving a regular car, making it the dominant vehicle type in the sample. This is followed by 19% (n = 94) who drive SUVs, and 12% (n = 62) who primarily use pickup trucks. Vans and minivans account for 3% each (n = 14 and n = 15, respectively), while trucks (camiones) represent 2% (n = 8). Motorcycle use is negligible, with only 1% (n = 3) reporting it as their main vehicle.

This distribution aligns with vehicle ownership trends in Puerto Rico, where passenger cars remain the most prevalent mode of transportation due to their affordability, fuel efficiency, and suitability for urban driving conditions. The relatively smaller proportions of SUVs and pickups reflect their higher purchase and operating costs, as well as their more specialized use for families or work-related purposes. The negligible motorcycle usage underscores cultural and infrastructural factors that limit motorbike adoption on the island. The survey's findings on vehicle type also connect with research showing that vehicle choice influences both driver behavior and crash risk. Prior studies have found that drivers of larger vehicles, such as SUVs and trucks, are more likely to exhibit aggressive driving behaviors and are overrepresented in certain crash types compared to car drivers (Williams, 2003). Moreover, the perceived safety of larger vehicles may encourage riskier behaviors, such as multitasking while driving (Farmer, 2006).



Q12 | HAB2b | FUEL TYPE

What type of fuel does your primary vehicle use?



ANSWER CHOICES	RESPONSES	
Gasolina	95%	475
Diésel	5%	24
Eléctrico	0%	0
Híbrido (gasolina-eléctrico)	0%	1
No sabe	0%	0
TOTAL		500

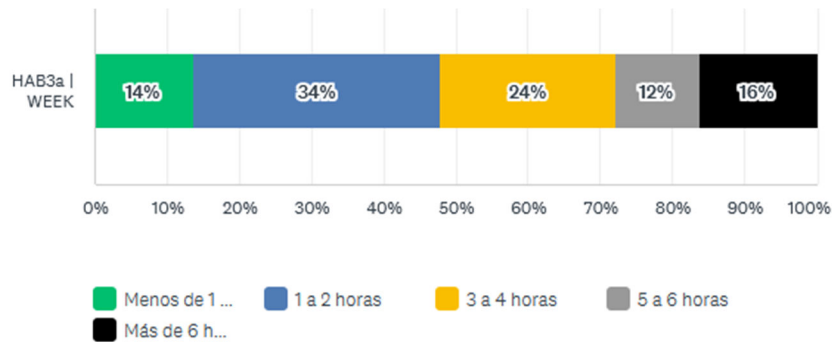
Of the 500 participants who answered, the overwhelming majority—95% (n = 475)—reported using gasoline, making it by far the most common fuel type. A small proportion (5%, n = 24) reported driving diesel-powered vehicles, while electric (0%) and hybrid gasoline-electric vehicles (0%) are nearly absent from the sample. No respondents indicated uncertainty about their vehicle’s fuel type. This distribution reflects Puerto Rico’s automotive market, which remains heavily reliant on gasoline-powered vehicles despite global trends toward electrification. The negligible representation of electric and hybrid vehicles underscores persistent challenges on the island, including limited charging infrastructure, higher upfront costs, and a lack of strong policy incentives to promote cleaner alternatives.

The results have important implications for transportation planning. Puerto Rico’s continued dependence on traditional fuels highlights a structural barrier to the adoption of autonomous vehicles (AVs), most of which are designed as electric or hybrid platforms. To enable widespread AV integration, substantial investments in charging networks, digital infrastructure, and policy initiatives will be required to create an environment supportive of both electrification and automation. By documenting the current dominance of gasoline vehicles, the survey provides a critical baseline for understanding Puerto Rico’s mobility landscape and for guiding future policy, infrastructure, and behavioral interventions that support sustainable and technologically advanced transportation.



Q13 | HAB3a | WEEKDAYS DRIVING

On a typical weekday (Monday to Friday), how many hours do you spend driving?



	MENOS DE 1 HORA	1 A 2 HORAS	3 A 4 HORAS	5 A 6 HORAS	MÁS DE 6 HORAS	TOTAL	WEIGHTED AVERAGE
HAB3a WEEK	14% 67	34% 168	24% 120	12% 58	16% 79	492	2.83

The results indicate that 34% (n = 168) of respondents drive between 1 and 2 hours daily, making this the most common category. Following this, 24% (n = 120) report driving 3 to 4 hours, while 14% (n = 67) drive less than 1 hour. A smaller portion of respondents, 16% (n = 79), drive more than 6 hours, and 12% (n = 58) spend 5 to 6 hours driving. The weighted average is 2.83, which falls between the 1–2 hour and 3–4 hour categories, indicating that the typical driver spends around 2–3 hours on the road each weekday.

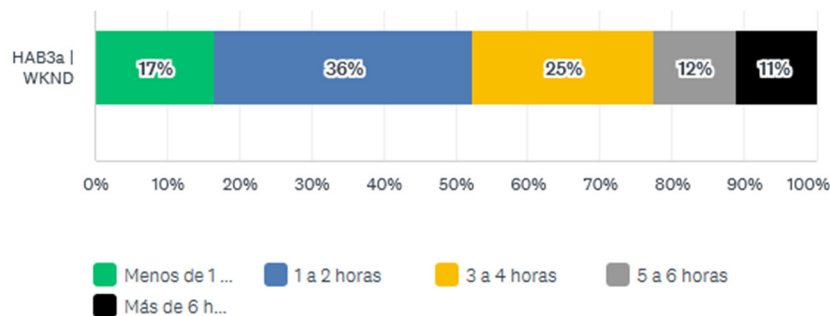
In this context, weights were assigned from 1 (“less than 1 hour”) to 5 (“more than 6 hours”), allowing for calculation of the weighted average to capture the central tendency of weekday driving exposure. This distribution highlights a significant commuting population, with nearly three-fourths (73%) driving at least 1 to 4 hours daily. The proportion of respondents driving more than 6 hours (16%) is notable, likely reflecting individuals engaged in long commutes, professional drivers, or occupations requiring extensive travel. Conversely, those who drive less than 1 hour (14%) may represent individuals with short commutes, retirees, or those with limited weekday travel needs.

These insights provide a clear picture of weekday driving patterns in Puerto Rico, which are essential for transportation planning, road safety strategies, and targeted seatbelt awareness campaigns. Frequent and long-duration drivers face higher exposure to crash risks, underscoring the importance of interventions that address both commuting populations and professional drivers.



Q14 | HAB3a | WEEKENDS DRIVING

On a typical weekend day, how many hours do you spend driving?



	MENOS DE 1 HORA	1 A 2 HORAS	3 A 4 HORAS	5 A 6 HORAS	MÁS DE 6 HORAS	TOTAL	WEIGHTED AVERAGE
HAB3a WKND	17% 75	36% 162	25% 113	12% 52	11% 50	452	2.65

The results reveal that the most common driving duration on weekends is 1 to 2 hours, reported by 36% (n = 162) of respondents. This is followed by 25% (n = 113) who reported driving 3 to 4 hours, and 17% (n = 75) who drive less than 1 hour. A smaller share of respondents reported longer driving times, with 12% (n = 52) driving 5 to 6 hours and 11% (n = 50) spending more than 6 hours on the road. The weighted average is 2.65, which falls between the 1–2 hour and 3–4 hour categories, indicating that the typical weekend driver spends about 2–3 hours on the road per day.

Weights were assigned from 1 (“less than 1 hour”) to 5 (“more than 6 hours”) to calculate the weighted average and capture the overall central tendency of weekend driving exposure. While most respondents reported relatively moderate driving times (1–4 hours), the 23% of participants who drive 5 or more hours on weekends represent a segment with notably higher exposure. These drivers may be engaging in long-distance leisure travel, family visits, or work-related trips, which increases their risk exposure.

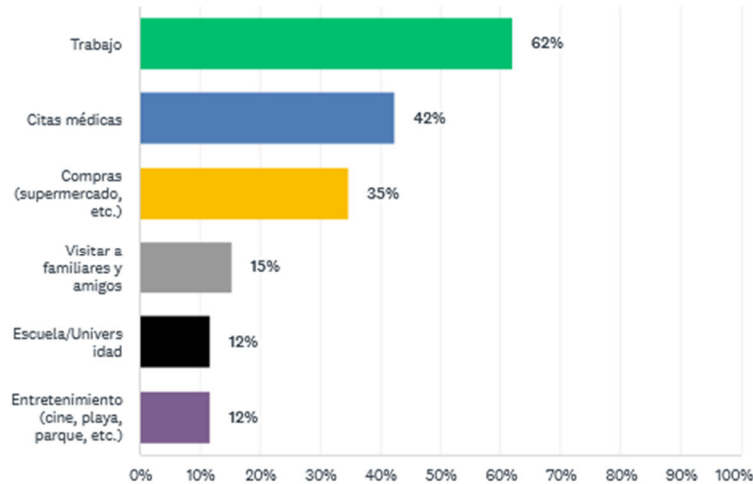
Overall, the findings suggest that weekend driving is somewhat more varied than weekday driving, with a substantial proportion of drivers engaging in extended travel.



Q15 | HAB4 | WEEKDAY DESTINATIONS

During a typical weekday, where do you drive or what places do you visit?

Answered: 483 Skipped: 19



ANSWER CHOICES	RESPONSES
Trabajo	62% 300
Citas médicas	42% 205
Compras (supermercado, etc.)	35% 168
Visitar a familiares y amigos	15% 74
Escuela/Universidad	12% 57
Entretenimiento (cine, playa, parque, etc.)	12% 57
Total Respondents: 483	

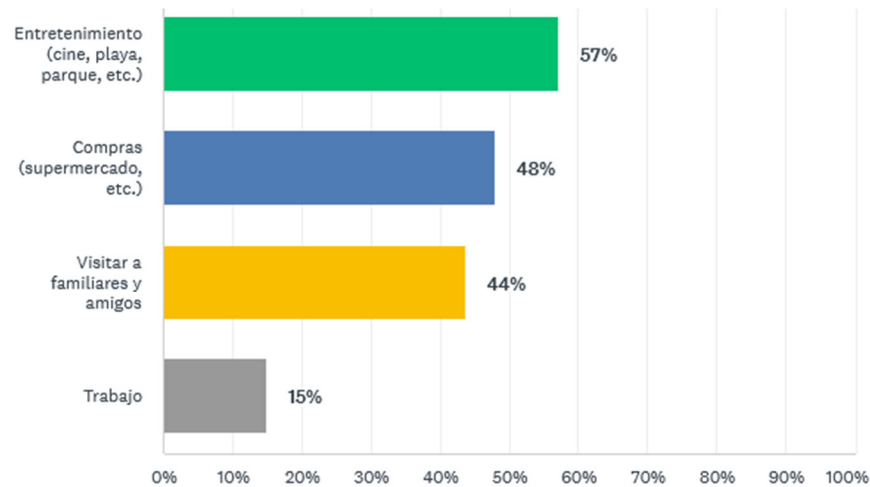
The most common destination reported by respondents is work, with 55% (n = 273) indicating that they drive to their workplace. This is followed by medical appointments, selected by 48% (n = 238), underscoring the importance of healthcare-related travel in everyday mobility. Shopping trips (such as supermarkets) account for 42% (n = 207), reflecting the frequency of essential errands. Leisure-related activities are less common: 20% (n = 96) reported driving for entertainment (e.g., cinema, beach, or parks), 18% (n = 88) for visits to family and friends, and 14% (n = 67) for school or university travel.

These findings suggest that weekday driving is largely motivated by work commuting and essential activities such as healthcare and shopping. Leisure and social visits occur at a much lower rate, likely due to weekday time constraints and structured routines. Overall, the data highlights the predominance of practical and routine trips over recreational ones, providing valuable insights for mobility planning, resource allocation, and road safety initiatives in Puerto Rico.



Q16 | HAB5 | WEEKEND DESTINATIONS

During a typical weekend day, where do you drive or what places do you visit?



ANSWER CHOICES	RESPONSES	
Entretenimiento (cine, playa, parque, etc.)	57%	256
Compras (supermercado, etc.)	48%	215
Visitar a familiares y amigos	44%	196
Trabajo	15%	67
Total Respondents: 448		

The most common weekend driving purpose is entertainment, reported by 57% (n = 256) of respondents. This includes activities such as going to the cinema, beach, or park, underscoring the recreational focus of weekend travel. Shopping trips (e.g., supermarkets or stores) were selected by 48% (n = 215), while 44% (n = 196) indicated visiting family and friends as a key weekend activity. In contrast, only 15% (n = 67) reported driving to work, showing a sharp decline in work-related commuting compared to weekdays.

These findings demonstrate that weekend driving patterns shift away from work and medical-related travel toward leisure and social interaction. The high prevalence of entertainment and social visits highlights the role of weekends as a period for relaxation, family engagement, and social activities. Shopping also remains common, reflecting the continuation of essential errands.

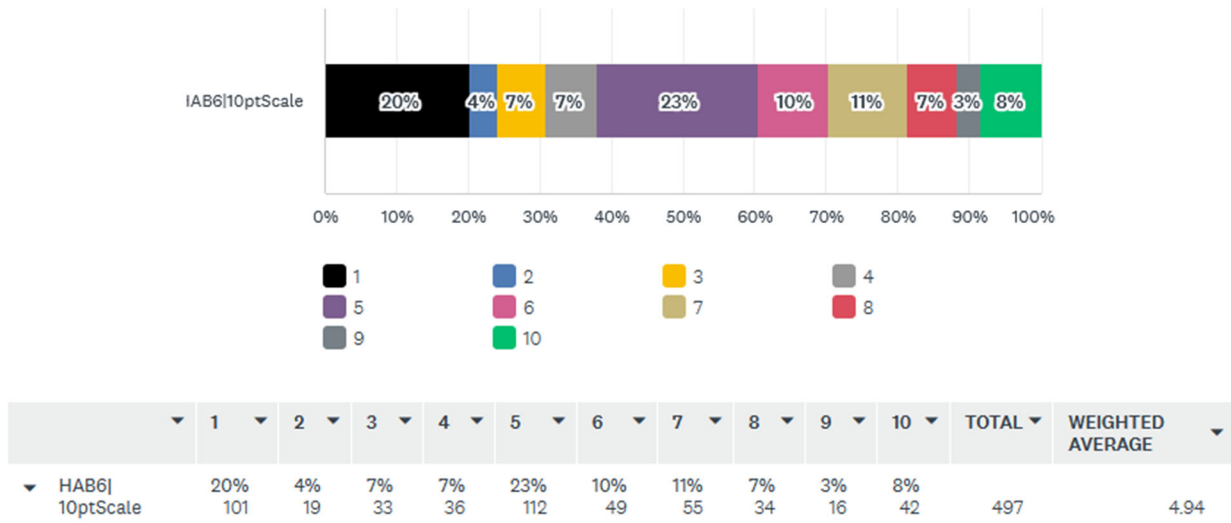
Understanding these weekend mobility patterns is crucial for transportation planning and road safety initiatives, as higher volumes of recreational travel may intersect with increased risk factors such as longer trips, fatigue, or alcohol consumption. These insights help ensure that seatbelt awareness campaigns and enforcement strategies are tailored to address the unique behaviors associated with weekend driving.



Q17 | HAB6 | PR DRIVING RATING

On a scale from 1 to 10, where 10 means 'very good' and 1 means 'very bad,' how would you rate driving in Puerto Rico based on your experience?

Answered: 497 Skipped: 5



The results reveal a mixed perception of driving conditions in Puerto Rico. The most frequent rating was 5 (neutral), selected by 23% (n = 112) of respondents, followed by 1 (very bad) at 20% (n = 101), reflecting a large share of dissatisfaction. Other mid-range responses included 4 (7%), 6 (10%), and 7 (11%), while higher ratings were less common: 8 (7%), 9 (3%), and 10 (8%). Lower ratings of 2 (4%) and 3 (7%) represented smaller segments.

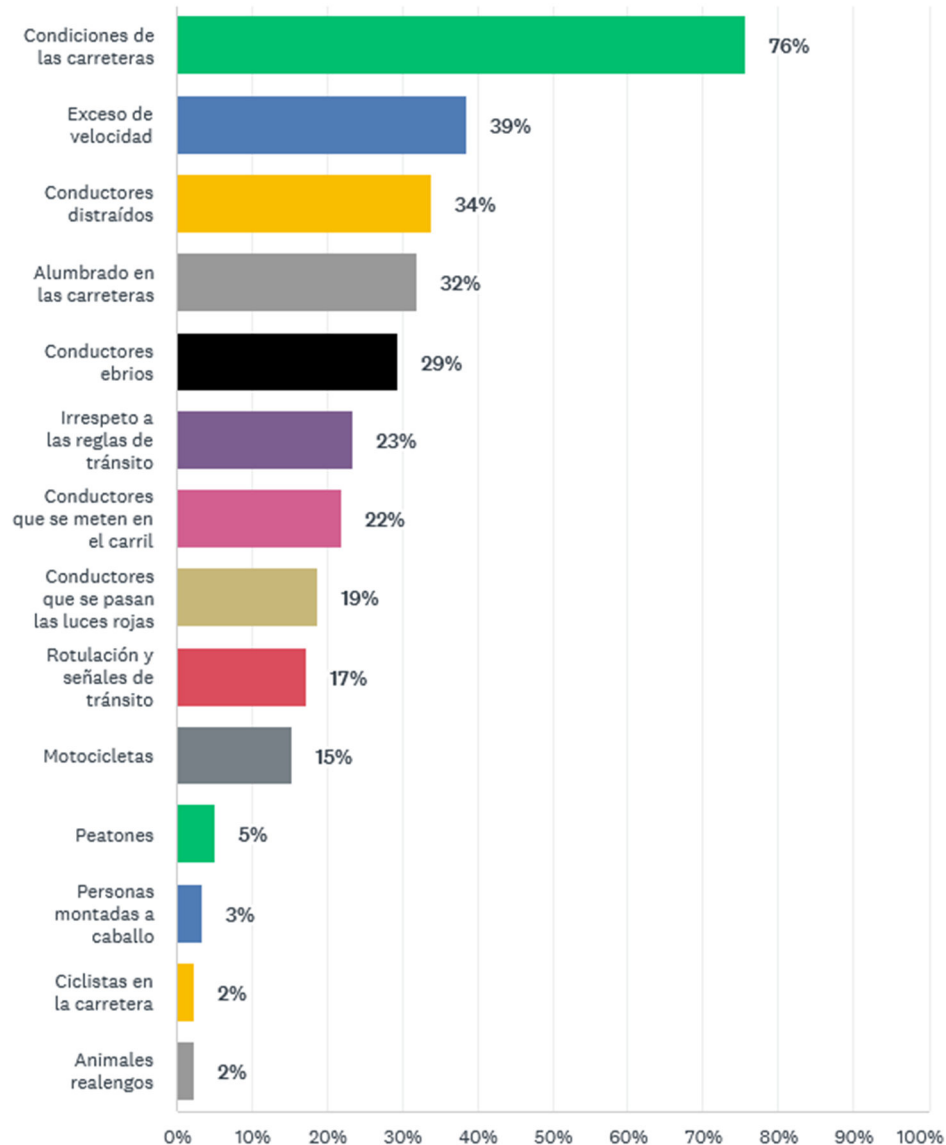
The weighted average score is 4.94, slightly below the midpoint of the 10-point scale. This indicates that overall satisfaction with driving conditions is relatively low, with a concentration of responses in the neutral to negative range. The limited proportion of high ratings (9 and 10 combined = 11%) underscores the perception that road conditions, traffic congestion, and driving culture require significant improvement.

These insights are important for shaping transportation policy, road safety initiatives, and public awareness campaigns, particularly those focused on improving infrastructure quality, traffic management, and enforcement practices to enhance the driving experience in Puerto Rico.



Q18 | HAB7 | ROAD SAFETY CONCERNS

What would you say are the three main problems that concern you regarding your safety on Puerto Rico's roads?



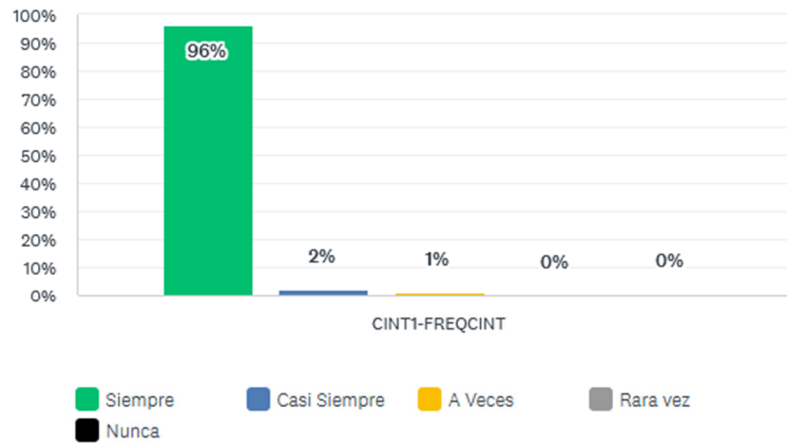
The most frequently cited issue is road conditions, selected by 76% (n = 376) of respondents, highlighting a widespread concern over the state of Puerto Rico's infrastructure. Speeding was the second most common concern, reported by 39% (n = 193), followed by distracted drivers at 34% (n = 168). Other notable issues include poor road lighting (32%, n = 158), drunk drivers (29%, n = 144), general disregard for traffic rules (23%, n = 113), drivers cutting into lanes (22%, n = 109), and drivers running red lights (19%, n = 94).

Additional concerns cited by respondents include inadequate signage (17%, n = 83), motorcyclists (15%, n = 74), and less frequently, pedestrians (5%, n = 25), people on horseback (3%, n = 16), cyclists on the road (2%, n = 10), and stray animals (2%, n = 10).



Q19 | CINT1| BELT DRIVER

How often do you wear a seatbelt when driving a motor vehicle?



	SIEMPRE	CASI SIEMPRE	A VECES	RARA VEZ	NUNCA	TOTAL	WEIGHTED AVERAGE
CINT1-FREQCINT	96% 481	2% 10	1% 5	0% 1	0% 2	499	4.94

The vast majority of respondents reported consistently wearing a seatbelt when driving. Specifically, 96% (n = 481) indicated they “Always” wear a seatbelt, while 2% (n = 10) said “Almost always.” A very small proportion reported less frequent use: 1% (n = 5) “Sometimes,” 0% (n = 1) “Rarely,” and 0% (n = 2) “Never.”

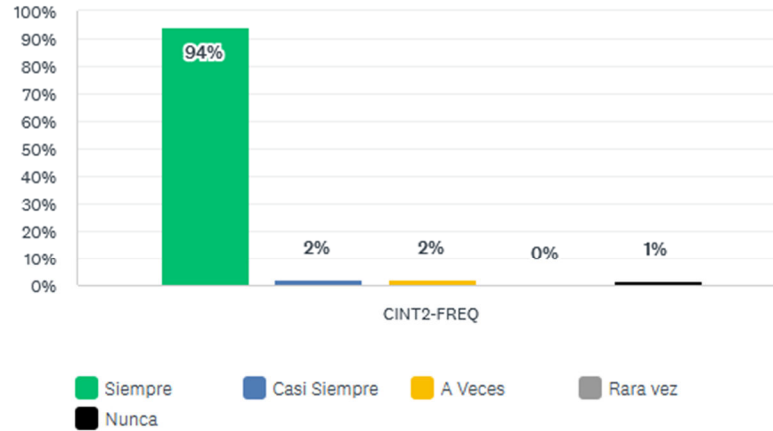
The weighted average score of 4.94 (on a 5-point scale) underscores an exceptionally high level of compliance with seat belt use among drivers in Puerto Rico. These results suggest that seatbelt-wearing is a near-universal behavior in the sample, reflecting both strong public adherence to traffic safety norms and the likely impact of enforcement and awareness campaigns.



Q20 | CINT2 | BELT FRONT

How often do you wear a seatbelt when riding in the front passenger seat?

Answered: 502 Skipped: 0



	SIEMPRE	CASI SIEMPRE	A VECES	RARA VEZ	NUNCA	TOTAL	WEIGHTED AVERAGE
CINT2-FREQ	94% 474	2% 10	2% 10	0% 1	1% 7	502	4.88

Most respondents reported consistently wearing a seatbelt when seated in the front passenger seat. Specifically, 94% (n = 474) stated they “Always” wear a seatbelt, while 2% (n = 10) said “Almost always.” Another 2% (n = 10) reported using it “Sometimes,” 0% (n = 1) “Rarely,” and 1% (n = 7) “Never.”

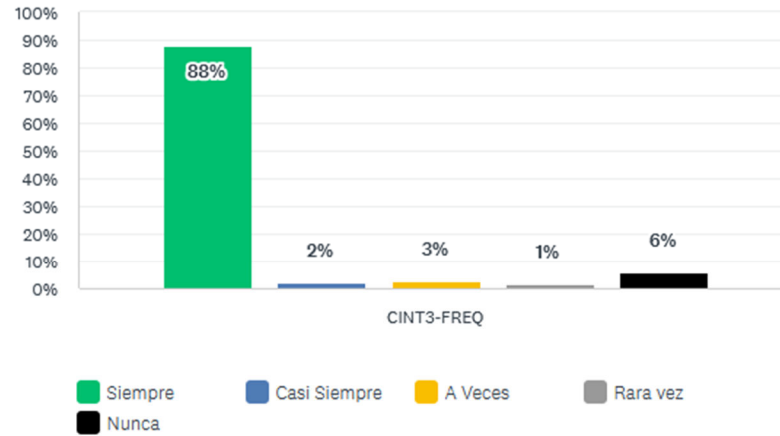
The weighted average score of 4.88 (on a 5-point scale) reflects a very high level of compliance, only slightly lower than seatbelt use when driving (CINT1). These results indicate that seatbelt-wearing is nearly universal among front-seat passengers, suggesting that both awareness and enforcement efforts have been effective in promoting this critical safety behavior.



Q21 | CINT3 | BELT REAR

How often do you wear a seatbelt when riding in the back seat as a passenger?

Answered: 501 Skipped: 1



	SIEMPRE	CASI SIEMPRE	A VECES	RARA VEZ	NUNCA	TOTAL	WEIGHTED AVERAGE
CINT3-FREQ	88% 441	2% 11	3% 14	1% 7	6% 28	501	4.66

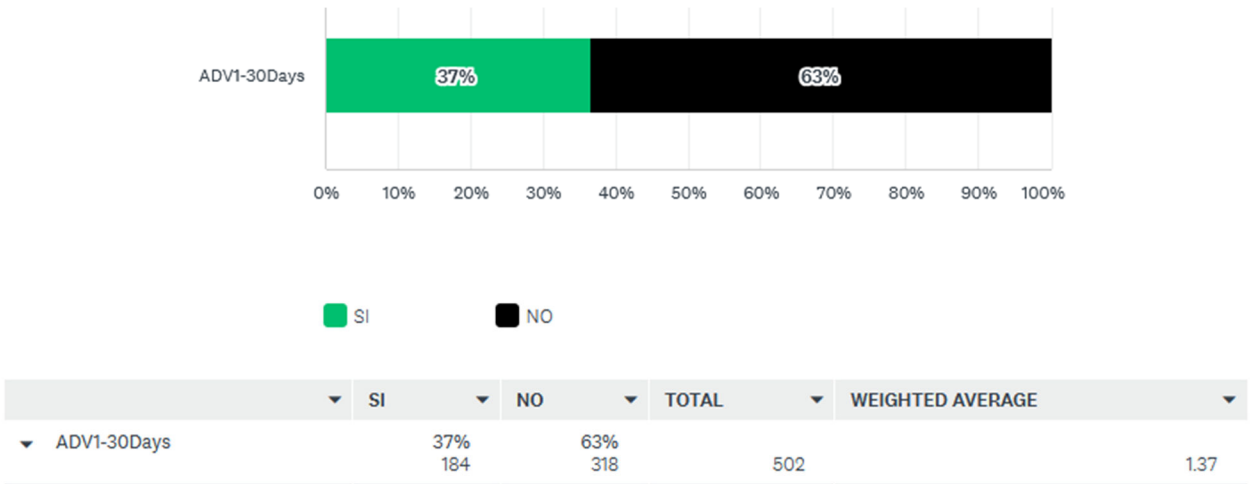
Most respondents reported consistently wearing a seatbelt when riding in the back seat, though usage is slightly lower than for drivers and front-seat passengers. Specifically, 88% (n = 441) stated they “Always” wear a seatbelt, while 2% (n = 11) said “Almost always.” Smaller proportions reported less consistent use: 3% (n = 14) “Sometimes,” 1% (n = 7) “Rarely,” and 6% (n = 28) “Never.”

The weighted average score of 4.66 (on a 5-point scale) shows a high level of compliance but highlights that back-seat passengers are less consistent in seatbelt use compared to drivers (CINT1, 4.94) and front-seat passengers (CINT2, 4.88). This gap suggests the persistence of a perception that seat belts are less necessary in the rear seat, despite evidence that unbelted rear passengers face significant injury risks and can endanger front-seat occupants in crashes.



Q22 | ADV1 | CAMPAIGN RECALL

During the past 30 days, do you recall seeing, reading, or hearing any message related to a campaign promoting seatbelt use?



When asked if they recalled seeing, reading, or hearing any seatbelt safety campaign in the past 30 days, 37% (n = 184) of respondents answered Yes, while 63% (n = 318) answered No.

The weighted average score of 1.37 (on a 2-point scale) indicates relatively low overall recall of recent seatbelt promotion messages. This suggests that despite ongoing communication efforts, most drivers are not currently exposed to or do not remember campaign messaging. These findings highlight an opportunity for the Commission for Traffic Safety (CST) to increase visibility, frequency, and reach of campaign initiatives to ensure stronger public awareness and message retention.



Q23 | ADV2 | MEDIA MIX

In what way did you hear, see, or read the message about seatbelt use?

ANSWER CHOICES	RESPONSES	
▼ Televisión	78%	145
▼ Redes Sociales	16%	29
▼ Radio	9%	17
▼ Internet	6%	11
▼ Noticias en Línea	5%	10
▼ Publicidad Exterior	5%	10
▼ Rótulos / Vallas Publicitarias	3%	6
▼ Prensa Escrita	2%	3
▼ Eventos (festivales, fiestas patronales, etc.)	1%	2
▼ Televisión Local	1%	1
▼ Televisión Paga (cable o satélite)	1%	1
▼ Plataformas de Vídeo (streaming)	1%	1
▼ Radio por Internet	1%	1
▼ Cine	1%	1
▼ Conciertos	1%	1
Total Respondents: 185		

Among the 185 respondents who recalled a seatbelt safety campaign in the last 30 days, the overwhelming majority—78% (n = 145)—reported seeing the message on television, confirming it as the dominant communication channel. Social media followed at a distant second with 16% (n = 29), while radio was mentioned by 9% (n = 17). Smaller shares reported internet sources (6%, n = 11), online news (5%, n = 10), and outdoor advertising (5%, n = 10).

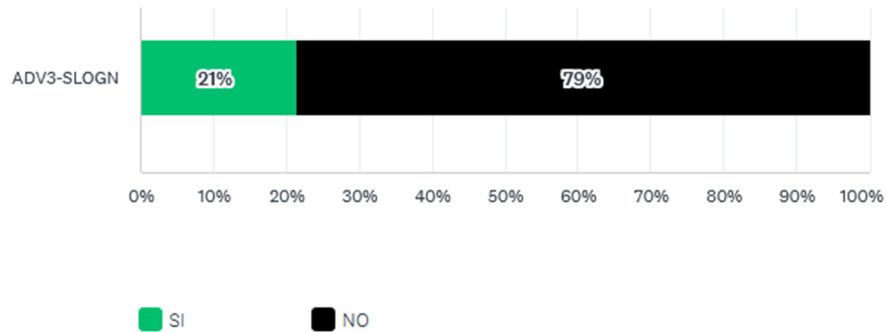
Other channels had minimal reach, including billboards (3%), print media (2%), events such as festivals (1%), local television (1%), cable/satellite TV (1%), streaming platforms (1%), internet radio (1%), cinema (1%), and concerts (1%).

These results highlight that television remains the most powerful medium for seatbelt campaign messaging in Puerto Rico, far surpassing digital and alternative platforms. However, the presence of recall across diverse channels—particularly social media and radio—suggests that a multi-platform strategy can reinforce reach and improve message retention across different demographics.



Q24 | ADV3 | SLOGAN RECALL

Do you recall any slogan or phrase that you have seen, heard, or read as part of the seatbelt use campaign?



	SI	NO	TOTAL	WEIGHTED AVERAGE
ADV3-SLOGN	21% 101	79% 369	470	1.21

When asked if they recalled any slogan or phrase from a seatbelt safety campaign, only 21% (n = 101) of respondents answered Yes, while the vast majority—79% (n = 369)—answered No.

The weighted average score of 1.21 (on a 2-point scale) reflects very low message retention. This indicates that while some exposure exists, most drivers either did not encounter or did not remember specific campaign slogans. The lack of recall suggests a need to strengthen branding, consistency, and repetition of campaign messages to ensure higher retention and recognition among the driving population.



Q25 | ADV4 | SLOGAN TITLES

What slogans or phrases do you recall from this campaign about seatbelt use?

	0-NADA EFECTIVO	1	2	3	4-MUY EFECTIVO	TOTAL	WEIGHTED AVERAGE
▼ Los que saben se amarran ¿y tú?	12% 48	1% 4	5% 21	2% 8	80% 324	405	3.37
▼ Recuerda, no le puedes dar rewind al tiempo ¡cumple con la ley!	11% 45	2% 7	5% 20	3% 13	79% 318	403	3.37
▼ De día o de noche si no te amarras, pagas	9% 36	0% 2	5% 20	3% 11	83% 334	403	3.50

Respondents were asked to rate the effectiveness of three seatbelt safety campaign slogans on a scale from 0 (Not effective at all) to 4 (Very effective).

- **“Los que saben se amarran ¿y tú?”** was rated very effective by 80% (n = 324) of respondents, with a weighted average of 3.37, showing strong resonance with the audience.
- **“Recuerda, no le puedes dar rewind al tiempo ¡cumple con la ley!”** was rated very effective by 79% (n = 318), with a weighted average of 3.37, reflecting a comparable level of impact.
- **“De día o de noche si no te amarras, pagas”** received the highest effectiveness rating, with 83% (n = 334) marking it as very effective and the highest weighted average of 3.50, making it the most impactful slogan overall.

Summary Insight:

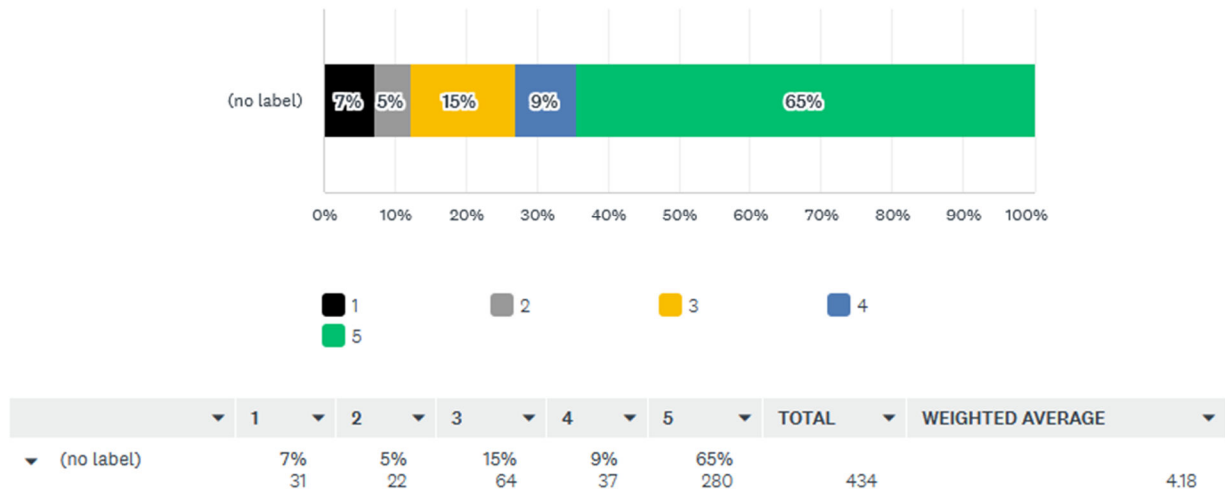
All three slogans were perceived as highly effective, with over three-quarters of respondents rating them positively. The strongest-performing slogan was *“De día o de noche si no te amarras, pagas”*, suggesting that clear, consequence-focused messaging resonates most with the public. These findings highlight the importance of direct and memorable phrasing in road safety campaigns to maximize recall and behavioral impact.



Q26 | ADV5 | MESSAGE EFFECTIVENESS

On a scale from 1 to 5, where 5 means "very effective" and 1 means "not effective at all," how effective do you consider the message you recall seeing, reading, or hearing about seatbelt use?

Answered: 434 Skipped: 68



When asked to rate the effectiveness of the seatbelt campaign messages they recalled on a scale from 1 (Not effective at all) to 5 (Very effective), most respondents gave high ratings.

- 65% (n = 280) rated the messages as very effective (5).
- 9% (n = 37) rated them as effective (4).
- 15% (n = 64) gave a mid-level rating (3).
- 5% (n = 22) rated them as slightly effective (2).
- 7% (n = 31) rated them as not effective at all (1).

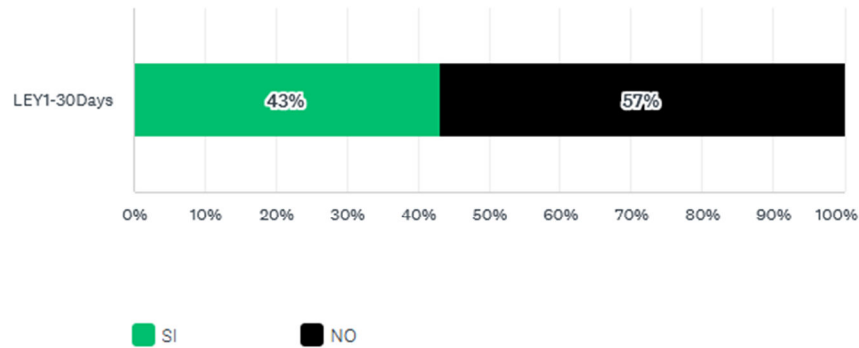
The weighted average score is 4.18, indicating that overall, respondents perceived the seatbelt campaign messages as highly effective. While a minority expressed skepticism (12% rating them 1 or 2), the large majority (74% rating them 4 or 5) suggests that the campaign messages were impactful and resonated well with the public.



Q27 | LEY1 | 30DAY RECALL

During the past 30 days, do you recall seeing, reading, or hearing anything about Puerto Rico Police Department officers giving traffic tickets to people who were not wearing a seatbelt?

Answered: 496 Skipped: 6



	SI	NO	TOTAL	WEIGHTED AVERAGE
LEY1-30Days	43% 214	57% 282	496	1.43

When asked if they recalled seeing, reading, or hearing about Puerto Rico Police Department officers giving tickets to drivers not wearing seatbelts in the past 30 days, 43% (n = 214) of respondents answered Yes, while 57% (n = 282) answered No.

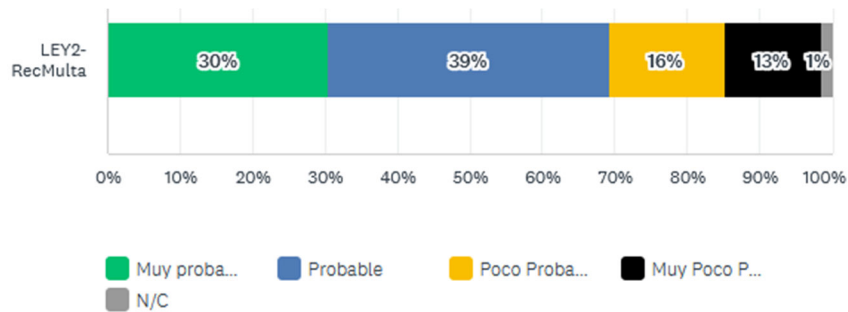
The weighted average score is 1.43 (on a 2-point scale), indicating relatively limited recall of enforcement activity. Although nearly half of respondents remembered some type of enforcement messaging, the majority did not, suggesting that awareness of police enforcement actions is not consistently reaching or resonating with the public.

This finding highlights the importance of increasing visibility and communication of enforcement activities, as public perception of enforcement likelihood is a critical factor influencing compliance with seatbelt laws.



Q28 | LEY2 | TICKET LIKELIHOOD

How likely do you think it is to receive a traffic ticket for not wearing a seatbelt?



	MUY PROBABLE	PROBABLE	POCO PROBABLE	MUY POCO PROBABLE	N/C	TOTAL	WEIGHTED AVERAGE
LEY2-RecMult	30% 152	39% 195	16% 79	13% 67	1% 7	500	2.88

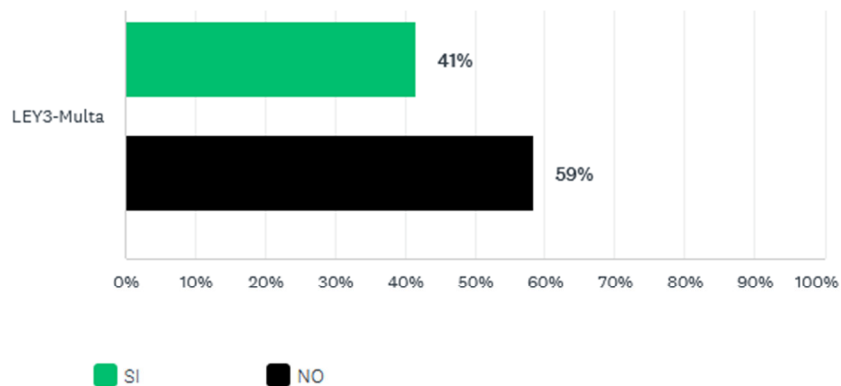
The results of LEY2 show that perceptions of seatbelt enforcement in Puerto Rico are mixed, though leaning toward moderate expectations of being fined. A total of 30% of respondents (n = 152) considered it very likely that a driver would receive a ticket for not wearing a seatbelt, while 39% (n = 195) said it was likely. In contrast, 16% (n = 79) viewed it as somewhat unlikely and 13% (n = 67) as very unlikely, with 1% (n = 7) not providing an opinion. The weighted average score of 2.88 (on a 4-point scale) places public perception just above the midpoint, reflecting a belief that enforcement occurs with some frequency but is not guaranteed.

While nearly seven in ten drivers perceive enforcement as probable, almost one in three remain skeptical, suggesting that the visibility and consistency of police ticketing may not be sufficient to fully deter risky behaviors. This highlights the importance of reinforcing the perception of certainty in enforcement, a well-established factor in promoting compliance with traffic safety laws.



Q29 | LEY3 | FINE KNOWLEDGE

Do you know the amount of the fine for driving without wearing a seatbelt?



	SI	NO	TOTAL	WEIGHTED AVERAGE
LEY3-Multa	41% 207	59% 292	499	1.41

When asked if they knew the amount of the fine for driving without a seatbelt, 41% (n = 207) of respondents answered Yes, while a majority of 59% (n = 292) answered No.

The weighted average score is 1.41 (on a 2-point scale), showing that awareness of the specific fine is relatively low among drivers. While most respondents understand that not wearing a seatbelt is punishable, fewer than half know the actual penalty amount.

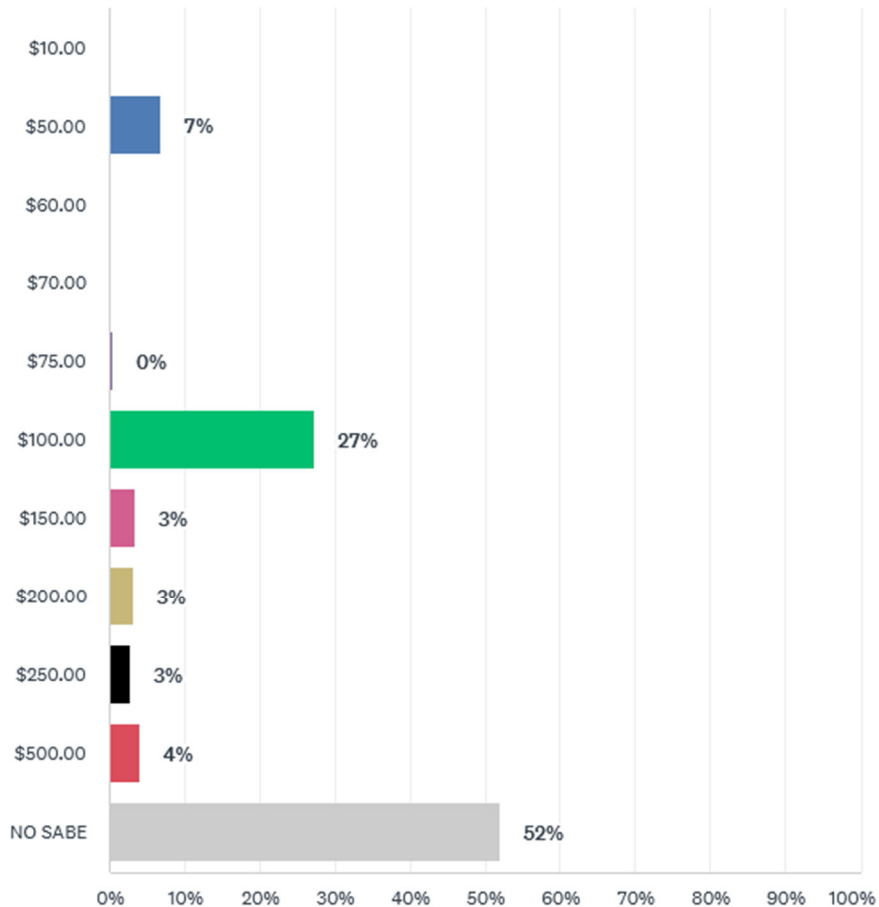
This lack of detailed knowledge suggests that while compliance may be driven by general awareness of enforcement, public information campaigns could be strengthened by emphasizing the financial consequences of violations, making the cost of noncompliance more salient to drivers.



Q30 | LEY4 | FINE AMOUNT KNOWLEDGE

Could you tell me the amount of the fine for driving without wearing a seatbelt?

Answered: 429 Skipped: 73



When asked to state the amount of the fine for driving without wearing a seatbelt, more than half of respondents—52% (n = 222)—answered “Don’t know”, indicating limited awareness of the actual penalty. Among those who gave a specific amount, the most common response was \$100, reported by 27% (n = 116) of participants. Smaller proportions cited other amounts, including \$50 (7%), \$150 (3%), \$200 (3%), \$250 (3%), and \$500 (4%). Virtually no one selected \$75.

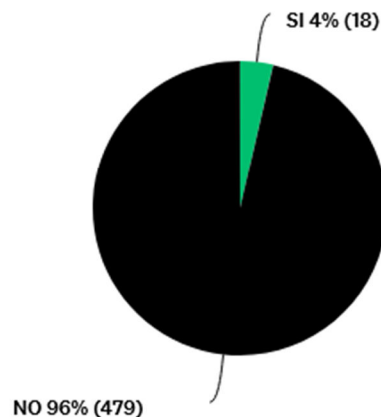
These findings underscore a significant gap in public knowledge of the actual penalty for seatbelt violations. While a portion of drivers overestimated the fine, the majority either did not know or misidentified the amount. This suggests that enforcement campaigns should place stronger emphasis on clarifying the specific monetary consequences of non-compliance, as financial penalties can serve as a strong deterrent when clearly understood by the public.



Q31 | LEY6 | TICKET PASTYEAR

During the past 12 months, have you received a traffic ticket for driving without wearing a seat belt?

Answered: 497 Skipped: 5



When asked if they had received a traffic ticket for not wearing a seatbelt in the past year, the overwhelming majority of respondents—96% (n = 479)—answered No, while only 4% (n = 18) reported having received a ticket.

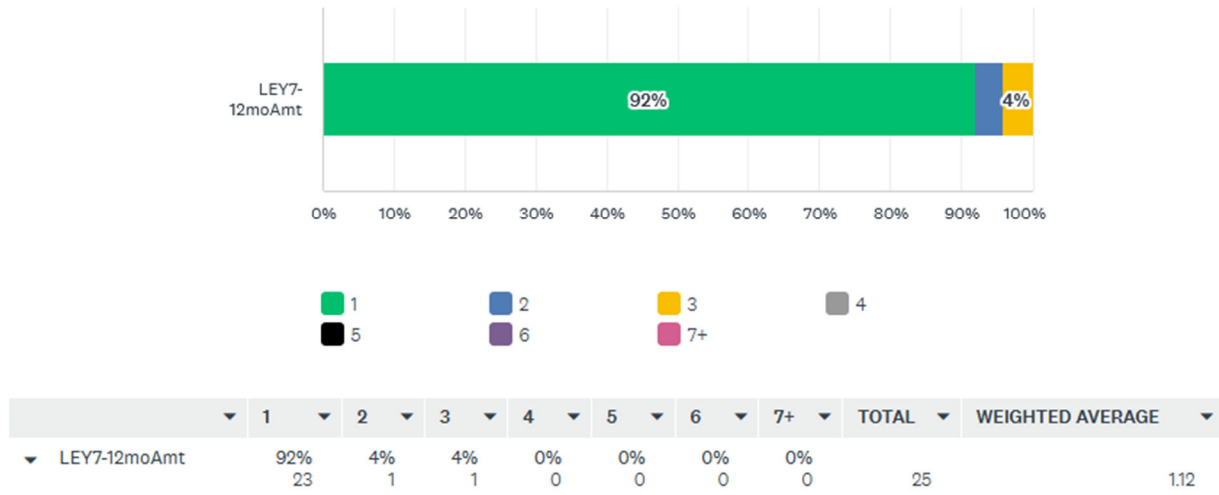
This extremely low rate of enforcement experience contrasts with the relatively higher levels of self-reported seatbelt non-use in some contexts, suggesting that the actual likelihood of being fined remains minimal. The data reinforces earlier findings (LEY2) that many drivers perceive enforcement as inconsistent and infrequent. To strengthen deterrence, authorities may need to increase the visibility and consistency of enforcement efforts, ensuring that the risk of receiving a ticket becomes a more credible factor in influencing compliance.



Q32 | LEY7 | TICKET COUNT

How many times in the past 12 months have you received a traffic ticket for driving without wearing a seatbelt?

Answered: 25 Skipped: 477



Among the small subset of respondents (n = 25) who reported having received a seatbelt-related ticket in the past year, the vast majority—92% (n = 23)—indicated they had been fined once. A smaller proportion—4% (n = 1)—reported receiving two tickets, while another 4% (n = 1) said they had been fined three times. No respondents reported receiving four or more tickets.

The weighted average is 1.12, reflecting that nearly all enforcement cases involve a single citation within a year.

This finding reinforces that seatbelt enforcement is infrequent and typically limited to isolated events, even among those who have been penalized. Combined with LEY6 (where 96% reported no tickets at all), the data illustrates that the risk of repeated enforcement is extremely low, which may reduce the overall deterrent effect of the law.



Q33 | TPB | TPB SCALES

How much do you agree with the following statements?

	TOTALMENTE EN DESACUERDO	EN DESACUERDO	NI DE ACUERDO NI EN DESACUERDO	DE ACUERDO	TOTALMENTE DE ACUERDO	TOTAL	WEIGHTED AVERAGE
▼ ATT-Usted considera que usar el cinturón de seguridad al conducir es beneficioso para su seguridad.	0% 1	0% 2	2% 9	61% 299	36% 178	489	4.33
▼ SUB-Usted cree que las personas importantes en su vida piensan que debe usar el cinturón de seguridad cada vez que conduce.	0% 1	1% 3	2% 8	62% 301	36% 174	487	4.32
▼ CTL-Usted se siente capaz de usar el cinturón de seguridad cada vez que conduce.	0% 1	0% 2	1% 4	62% 301	37% 178	486	4.34
▼ INT-Usted tiene la intención firme de usar siempre el cinturón de seguridad, incluso en trayectos cortos.	0% 1	0% 1	1% 6	62% 299	37% 178	486	4.34
▼ ATT-Usted considera que las campañas publicitarias influyen positivamente en su decisión de usar el cinturón de seguridad.	2% 9	6% 28	7% 36	58% 281	27% 130	484	4.02

Overall, the TPB results show **very strong attitudes, norms, control, and intentions toward seatbelt use**, while **campaign influence, though positive, is less powerful**.



Theory of Planned Behavior (TPB) construct results:

TT – Perceived Benefit of Seatbelt Use

An overwhelming majority of respondents recognize the benefits of seatbelt use. **61% agreed** and **36% strongly agreed** that wearing a seatbelt improves safety, yielding a high **weighted average of 4.33**. Virtually no one disagreed. This shows strong attitudinal support for seatbelt use as a safety measure.

SUB – Subjective Norms (Social Expectations)

Respondents indicated strong perceived social pressure. **62% agreed** and **36% strongly agreed** that important people in their lives believe they should always wear a seatbelt. With a **weighted average of 4.32**, this reflects strong social reinforcement of seatbelt compliance.

CTL – Perceived Behavioral Control (Self-Efficacy)

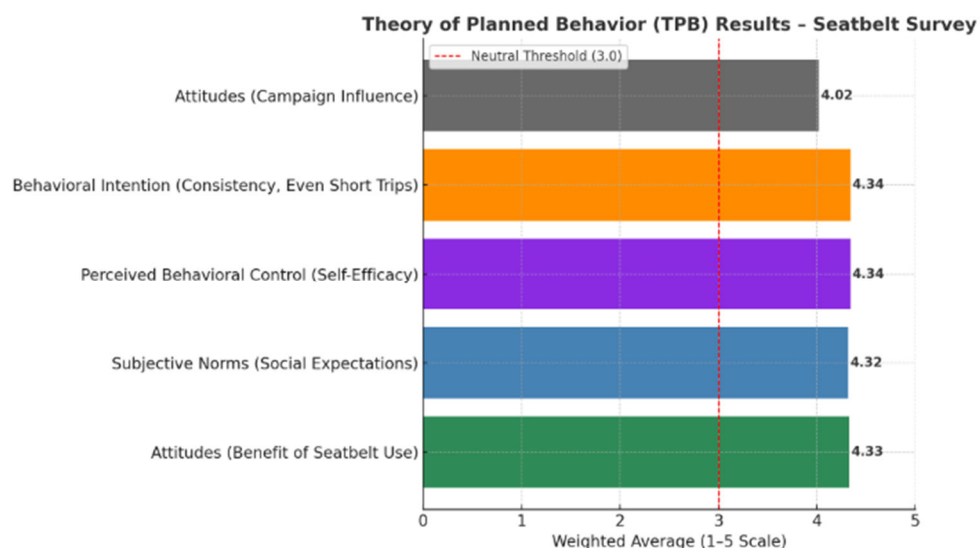
Most respondents feel fully capable of using a seatbelt consistently. **62% agreed** and **37% strongly agreed** they can always wear it, producing a **weighted average of 4.34**, the highest among the constructs. This suggests high confidence in the ability to comply.

INT – Behavioral Intention

A strong intention to use seatbelts was observed. **62% agreed** and **37% strongly agreed** they intend to wear a seatbelt even on short trips, with a **weighted average of 4.34**. This underscores consistency of intent across different driving scenarios.

ATT – Influence of Advertising Campaigns

Perceptions of campaign influence were somewhat weaker compared to other constructs. While **58% agreed** and **27% strongly agreed** that campaigns positively influence their decision, **15% expressed neutrality or disagreement**. The **weighted average of 4.02** remains positive but is slightly lower, suggesting campaigns have an impact but not as strong as attitudes, norms, or intentions.





APPENDIX 1 = SUMMARY OF SURVEY RESULTS

Q#	VARIABLE	Summary Results
Q1	GENDER SPLIT	53% Female, 47% Male.
Q2	REGION SHARE	Metro 34%, West 18%, East 16%, North 16%, South 14%, Central 2%.
Q3	COUNTIES	Top counties: San Juan 13%, Arecibo 13%, Mayagüez 6%, Guaynabo 6%, Toa Baja 5% (others ≤4%).
Q4	AGE BANDS	18–24: 19%, 25–34: 21%, 35–54: 22%, 55+: 38%.
Q5	HH SIZE	1: 29%, 2: 37%, 3: 17%, 4: 10%, 5: 4%, 6: 1%, 7+: 1%.
Q6	EDUCATION LEVEL	≤HS 7%, HS diploma 12%, Associate/Some college 25%, Bachelor 42%, Master 10%, Doctorate 4%.
Q7	WORK STATUS	Full-time 44%, Retired 36%, Homemaker 6%, Part-time 8%, Work+Study 1%, Student 1%, Unemployed 3%.
Q8	MARITAL STATUS	Married 49%, Single 28%, Widowed 7%, Divorced 7%, Cohabiting 9%.
Q9	INCOME BRACKETS	\$≤15k 4%, \$15–25k 1%, \$25–35k 1%, \$35–50k 4%, \$50–75k 2%, ≥\$75k 1%, N/A 87%.
Q10	DRIVING FREQ	Every day 71%, Almost every day 5%, Several times/week 14%, Once/week 2%, Rarely 8%.
Q11	VEHICLE TYPE	Car 61%, SUV 19%, Pick-up 12%, Van 3%, Minivan 3%, Motorcycle 1%, Truck 2%.
Q12	FUEL TYPE	Gasoline 95%, Diesel 5%, Electric 0%, Hybrid 0%, Don't know 0%.
Q13	WEEKDAY HOURS	<1h 14%, 1–2h 34%, 3–4h 24%, 5–6h 12%, >6h 16% (mean≈2.83).
Q14	WEEKEND HOURS	<1h 17%, 1–2h 36%, 3–4h 25%, 5–6h 12%, >6h 11% (mean≈2.65).
Q15	WEEKDAY TRIPS	Work 55%, Medical 48%, Shopping 42%, Entertainment 20%, Visit family/friends 18%, School/Univ 14%.
Q16	WEEKEND TRIPS	Entertainment 57%, Shopping 48%, Visit family/friends 44%, Work 15%.
Q17	DRIVING RATING	Mean ≈4.94/10; modal values around 5 (23%) and 1 (20%).
Q18	SAFETY CONCERNS	Road conditions 76%, Speeding 39%, Distracted drivers 34%, Drunk drivers 29%, Lighting 32%, Rule noncompliance 23%, Pedestrians 17%, others ≤22%.
Q19	BELT DRIVER	Always 96%, Almost always 2%, Sometimes 1%, Rarely 0%, Never 0% (w.avg 4.94).
Q20	BELT FRONT	Always 94%, Almost always 2%, Sometimes 2%, Rarely 0%, Never 1% (w.avg 4.88).
Q21	BELT REAR	Always 88%, Almost always 2%, Sometimes 3%, Rarely 1%, Never 6% (w.avg 4.66).
Q22	CAMPAIGN RECALL	Yes 37%, No 63%.
Q23	MEDIA MIX	TV 78%, Social 16%, Radio 9%, Internet 6%, Online news 5%, OOH 5%, Billboards 3%, Print 2%, others ≤1%.
Q24	SLOGAN RECALL	Yes 21%, No 79%.
Q25	SLOGAN TITLES	Top mentions included: “Los que saben se amarran ¿y tú?”; “Recuerda, no le puedes dar rewind al tiempo ¡cumple con la ley!”; “De día o de noche si no te amarras, pagas.”
Q26	MESSAGE EFFECT	5=65%, 4=9%, 3=15%, 2=5%, 1=7% (w.avg 4.18).
Q27	30 DAY RECALL	Yes 43%, No 57%.



Q#	VARIABLE	Summary Results
Q28	TICKET LIKELIHOOD	Very likely 30%, Likely 39%, Somewhat likely 16%, Very unlikely 13%, DK 1% (w.avg 2.88).
Q29	FINE KNOWLEDGE	Yes 41%, No 59%.
Q30	FINE AMOUNT	Don't know 52% (top); \$200 27%; \$10 7%; other amounts each ≤4%.
Q31	TICKET PASTYEAR	Yes 4%, No 96%.
Q32	TICKET COUNT	1 time 92%, 2 times 4%, 3 times 4% (n=25).
Q33	TPB SCALES	ATT (seatbelt beneficial): 36% Strongly Agree + 61% Agree (w.avg 4.33). SUB (important others think you should belt): 36% + 62% (4.32). CTL (able to always use belt): 37% + 62% (4.34). INT (firm intention to always use): 37% + 62% (4.34). ATT (campaigns influence decision): 27% + 58% (4.02).
Q33	TPB-ATT	36% Strongly Agree, 61% Agree → 92% total agreement (Mean=4.33)
Q33	TPB-SUB	36% Strongly Agree, 62% Agree → 98% total agreement (Mean=4.32)
Q33	TPB-CTL	37% Strongly Agree, 62% Agree → 99% total agreement (Mean=4.34)
Q33	TPB-INT	37% Strongly Agree, 62% Agree → 99% total agreement (Mean=4.34)
Q33	TPB-CAMP	27% Strongly Agree, 58% Agree → 85% total agreement (Mean=4.02)



APPENDIX 2 = STATISTICAL ANALYSIS

To better understand the factors influencing drivers' **intention to always wear a seatbelt**, a series of statistical tests were conducted comparing all survey variables against Q33–TPB-Intention (“You firmly intend to always wear a seatbelt, even on short trips”). This question reflects the central construct of **behavioral intention** within the **Theory of Planned Behavior (TPB)**, which posits that intention is the most direct predictor of actual behavior.

By statistically testing its relationship with attitudes, perceptions, enforcement awareness, campaign exposure, and demographic characteristics captured throughout the survey, we can identify which factors most strongly contribute to — or detract from — the intention to comply with seatbelt use.

Three key statistical measures were employed. **P values (P)** were used to assess the statistical significance of each relationship, helping to distinguish meaningful associations from those likely due to chance. **Correlation coefficients (R)** measured the strength and direction of these associations, with positive values indicating variables that increase intention (e.g., stronger beliefs in safety benefits) and negative values identifying behaviors or beliefs that reduce intention (e.g., inconsistent seatbelt habits). Finally, **Levene's test values (L)** were used to evaluate the homogeneity of variance across different respondent groups. This measure highlights whether responses are consistent or vary significantly across demographics, such as age, gender, driving frequency, or region, which is crucial for tailoring interventions.

These statistical tests identify key predictors of drivers' intention to avoid cellphone use and reveal variability patterns, providing actionable insights for policymakers, educators, and safety professionals to increase seatbelt use.

Variable	Description	Survey item	P	R	L
ADV1	Campaign Influence	You believe that advertising campaigns positively influence your decision to use a seat belt.	0	0.36	21.31
CINT1	Safety Benefit	You believe that wearing a seat belt while driving is beneficial for your safety.	0	0.907	14.51
TPB-CTL	Self-Efficacy	You feel capable of wearing a seat belt every time you drive.	0	0.957	39.34
ADV4	Slogan Impact	Slogan – By day or by night, if you don't buckle up, you pay.	0.079	0.089	2.04
DEM-SEX0	Gender Effect	DEM–GENDER	0.012	0.114	24.07
DEM-VEH	Vehicle Type	What type of vehicle do you mainly drive?	0.006	-0.124	1.56
DEM-HH	Household Size	How many people live in your household, including yourself?	0	-0.186	6.87
DEM-INC	Income Level	What would you say is the total annual household income?	0.008	0.122	6.18
DEM-HRS1	Weekday Hours	Hours driving on a typical weekday.	0	0.234	1.18
DEM-HRS2	Weekend Hours	Hours driving on a typical weekend day.	0	0.186	0.98
Q17-HAB6	Driving Rating	How would you rate driving in Puerto Rico?	0.041	0.093	2.01
CINT1a	Seatbelt Use	Frequency of seat belt use.	0.001	0.153	95.76
CINT2	Passenger Use	Frequency of seat belt use as a passenger.	0.018	-0.107	33.61
ADV2	Campaign Messages	Messages about campaigns promoting seat belt use.	0	0.171	12.4
ADV3	Slogan Recall	Do you recall any slogan about seat belt use?	0	0.226	33.03
ADV5	Message Effect	How effective do you consider the messages about seat belt use?	0.044	0.098	2.49
LEY1	Police Fines	Have you recently heard about fines issued by the police for not wearing a seat belt?	0.003	0.136	14.53
LEY6	Fine Received	In the last year, have you received a fine for not wearing a seat belt?	0.087	0.078	8.13
TPB-SUB	Social Norms	You believe that the important people in your life think you should wear a seat belt every time you drive.	0	0.912	14.01

**Data Analysis Based on Results for the Question Q33–TPB-Intention:****YOU FIRMLY INTEND TO ALWAYS WEAR A SEATBELT, EVEN ON SHORT TRIPS.****1. Variables with Higher Positive Correlation (High R and significant p-value)**

These variables are strongly associated with a greater intention to use a seatbelt:

The analysis shows that feeling capable of always using a seatbelt (TPB-CTL, $R = 0.957$) is the strongest predictor of intention, highlighting the central role of self-efficacy. Perceived social norms (TPB-SUB, $R = 0.912$) and believing that seatbelt use is beneficial for safety (CINT1, $R = 0.907$) are also very strong predictors, consistent with the Theory of Planned Behavior (TPB). Campaign exposure variables also show positive influence: recall of slogans (ADV3, $R = 0.226$), messages about campaigns (ADV2, $R = 0.171$), and hearing about police fines (LEY1, $R = 0.136$) reinforce behavioral intention. These results indicate that interventions should focus on strengthening self-efficacy, social reinforcement, positive attitudes, and campaign visibility.

2. Variables with Negative Correlation (Negative R and significant p-value)

These variables are associated with a lower intention to use a seatbelt — risk indicators:

Household size (DEM-HH, $R = -0.186$) and being a passenger with inconsistent seatbelt use (CINT2, $R = -0.107$) both correlate with lower intention, suggesting that larger households and passengers may normalize lapses in compliance. Vehicle type (DEM-VEH, $R = -0.124$) also showed a negative relationship, possibly reflecting cultural or situational differences among SUV, truck, or van drivers. These results highlight the need to target passenger behaviors, larger families, and specific vehicle user groups.

3. Levene's Homogeneity (L) – Additional Analysis

Higher Levene values indicate heterogeneity in variance, meaning diverse responses among groups, possibly due to age, experience, vehicle type, or urban/rural differences:

The Levene analysis reveals high variance in some predictors. For example, seatbelt frequency (driver) ($L = 95.76$) and seatbelt use as a passenger ($L = 33.61$) showed wide variability, suggesting differences across demographic and regional groups that may require tailored interventions. Gender ($L = 24.07$) and recall of slogans ($L = 33.03$) also showed dispersion, meaning these factors may resonate differently depending on subgroups. By contrast, attitudes (safety benefit, $R = 0.907$, $L = 14.51$) and social norms ($R = 0.912$, $L = 14.01$) were strong predictors with relatively consistent responses, making them highly reliable anchors for universal campaigns

Evidence-Based Strategies for Safer Driving Campaigns

The practical implications of this analysis suggest that campaigns should prioritize strengthening drivers' confidence (CTL), reinforcing social norms (SUB), and emphasizing safety benefits (ATT) to maximize compliance. Campaign visibility through slogans and message recall (ADV2, ADV3, ADV5) should be expanded, while enforcement visibility (LEY1, LEY2) needs to be more prominent to enhance deterrent credibility. Interventions should also specifically address groups with negative or weaker correlations, such as household passengers, certain vehicle drivers, and families with more members, where lapses in seatbelt use are more common.



APPENDIX 3 = EVIDENCE BASED SUGGESTIONS

Based on the findings from the Theory of Planned Behavior (TPB) variables, correlation results, and Levene's homogeneity analysis, several evidence-based strategies are recommended to enhance the effectiveness of seatbelt use campaigns in Puerto Rico.

1. Strengthen Legal Deterrence Messaging

Knowledge of the fine amount for not wearing a seatbelt (LEY3/LEY4) was low, and awareness of penalties showed significant gaps across respondents. Campaigns should emphasize the **certainty and severity of legal consequences**, including the exact fine and potential consequences of repeat violations. Messaging should highlight **real enforcement cases and personal testimonies** from survivors or law enforcement to enhance credibility and strengthen deterrence.

2. Increase Police Visibility and Enforcement

Awareness of enforcement actions (LEY1) and perceptions of the likelihood of being fined (LEY2) emerged as important but inconsistent predictors of intention. Campaigns should actively **publicize seatbelt enforcement checkpoints** and increase **visible patrol presence** on high-risk roads. Emphasizing a **high probability of detection and ticketing** can be a powerful deterrent, particularly when paired with public reports on the number of fines issued.

3. Reinforce Memorable and Consistent Campaign Slogans

Recall of seatbelt slogans (ADV3) and perceived effectiveness of campaign messages (ADV5) varied significantly across respondents. To improve consistency, campaigns should adopt **short, emotionally resonant, and widely distributed messages** such as *"By day or by night, if you don't buckle up, you pay."* Repetition across multiple media channels - television, radio, billboards, and especially **social media** - will increase recall and strengthen normative influence on behavior.

4. Emphasize Benefits and Social Norms

The strongest positive associations with intention came from TPB constructs: **self-efficacy (TPB-CTL)**, **social norms (TPB-SUB)**, and **attitudes toward safety benefits (CINT1)**. Campaigns should reinforce these by: 1) Showing how **easy and automatic** it is to buckle up (boosting self-efficacy). 2) Highlighting that **"everyone important in your life expects you to wear a seatbelt"** (strengthening social norms). 3) Using **visual demonstrations of seatbelt effectiveness** in saving lives during crashes (reinforcing safety attitudes).

5. Segment Messaging by Passenger Role and Household Context

Levene's analysis revealed high variance in seatbelt use across **passenger roles (CINT2)** and **household size (DEM-HH)**. Campaigns should tailor messaging for: 1) **Rear-seat passengers**, where compliance is lower. 2) **Larger households**, where normalization of lapses may occur (e.g., "Make sure the whole family buckles up"). 3) **Specific vehicle types (DEM-VEH)**, especially SUVs and pickups, where negative correlations with intention were observed.

This segmentation ensures that interventions remain relevant for different driver and passenger groups, maximizing the overall impact of the messaging.