



Puerto Rico Unrestrained Child Safety Attitudinal Survey

CST CAMPAIGN DATE: 2025-MAY 1-7



Submitted to: Comisión de Seguridad del Tránsito de Puerto Rico

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2. Unrestrained Child Safety Survey

To complement enforcement data and child injury statistics, a telephone survey will be conducted to assess drivers' attitudes, perceived social norms, and perceived behavioral control regarding leaving children unattended in vehicles. This instrument, grounded in the Theory of Planned Behavior (TPB), helps explain why caregivers may choose to leave—or avoid leaving—children alone in cars, potentially leading to heatstroke. Integrating both sources strengthens the foundation for evidence-based messaging and targeted interventions in line with NHTSA and American Academy of Pediatrics (AAP) guidelines. **CST CAMPAIGN DATE: 2025-MAY 1-7**

Category	Description
Survey	Unattended (Heatstroke) Child Awareness Survey
Method	Telephone Survey
Sample Size	500 Drivers
Focus	Leaving children unattended in vehicles
Purpose	Evaluate public awareness of heatstroke risks, recall of safety campaigns
Main Content	Knowledge of heatstroke danger to children, awareness of penalties
Participant Profile	Parents or guardians of children under 12

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

Section	Description
1: Demographics	5: Heatstroke
2: General Driving Habits	6: Advertising
3: Car Seat Use	7: Theory of Planned Behavior
4: Laws	



SAMPLE DISTRIBUTION

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



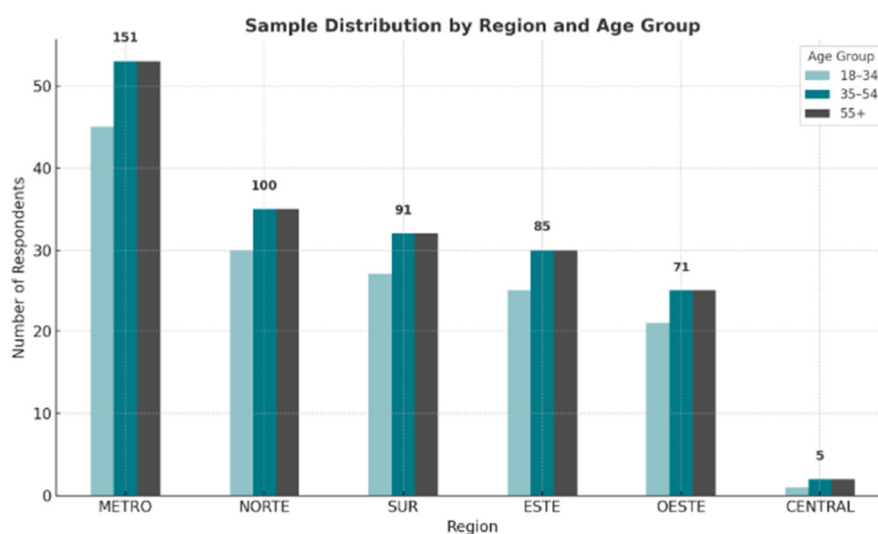
Sample distribution by Region, Gender and Age Groups.

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 distracted driving 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

Unrestrained child passengers remain a critical public safety concern in Puerto Rico and across the United States. Motor vehicle crashes are a leading cause of death for children, and research consistently shows that proper use of child restraint systems—such as car seats, booster seats, and seat belts—greatly reduces the risk of serious injury or fatality. According to the National Highway Traffic Safety Administration (NHTSA), in the United States, hundreds of children under the age of 13 are killed each year in crashes, and nearly half of them were unrestrained at the time of the collision.

In Puerto Rico, traffic safety data indicate ongoing challenges with compliance to child passenger safety laws, despite legislation mandating appropriate restraint use according to a child's age, weight, and height (Law 22, Article 13-A). The Comisión para la Seguridad en el Tránsito (CST) and its enforcement partners have implemented educational and enforcement initiatives to promote the correct use of child restraints. However, the impact of these initiatives requires systematic measurement to ensure they are effectively changing behavior and increasing compliance.

To support and evaluate these efforts, the Unrestrained Child Safety Attitudinal Survey was developed. This survey will measure drivers' attitudes, awareness, and self-reported behaviors regarding child passenger safety. It will assess public understanding of child restraint laws, perceptions of enforcement, and recall of CST public education campaigns. Findings will help guide future policy, enforcement strategies, and educational outreach aimed at protecting the most vulnerable passengers on Puerto Rico's roads.

Survey Objectives

1. Quantify the frequency and nature of transporting children without appropriate restraint systems.
2. Evaluate drivers' knowledge of current child passenger safety laws in Puerto Rico.
3. Assess attitudes, perceived social norms, and self-control regarding the use of child restraint systems, using the Theory of Planned Behavior as the theoretical framework.
4. Identify high-risk demographic and geographic groups with lower compliance to child restraint requirements.
5. Measure public recall of CST's child passenger safety media and enforcement campaigns.

Methodology

The survey will be grounded in the Theory of Planned Behavior (TPB) and will utilize a stratified sampling design by region, age group, and municipality. A representative sample of 500 licensed drivers across Puerto Rico will be interviewed via telephone or online panels using a standardized instrument developed in alignment with CST objectives. The sample will ensure coverage across Puerto Rico's six regions, 42 selected municipalities, and three age brackets (<34, 35–54, 55+). Data will be analyzed to produce region- and age-specific insights, and to identify gaps in knowledge, compliance, and campaign exposure.

The study will focus on several key variables related to child passenger safety behaviors. These include the frequency and nature of transporting children without proper restraint systems, as well as the driver's perceived behavioral control—such as their confidence in consistently using child restraints according to legal requirements. It will also assess social pressures or norms influencing restraint use, and collect self-reported exposure to CST educational campaigns or enforcement



initiatives. Lastly, the study will evaluate the level of awareness regarding penalties and existing laws governing child passenger safety.

The survey is expected to provide CST and key stakeholders with reliable data to identify high-risk groups, improve the targeting of educational campaigns, assess the effectiveness and recall of past efforts, inform policy and enforcement strategies, and justify future funding or legislative updates aimed at increasing child restraint compliance and reducing unrestrained child fatalities and injuries in Puerto Rico.

Research Objective

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

Conceptual Framework

The research model for the Unrestrained Child Safety Attitudinal Survey is grounded in the Theory of Planned Behavior (TPB) and incorporates additional variables relevant to public safety and communication effectiveness. At its core, the model posits that a driver's intention to comply with child passenger safety laws (behavioral intention) is influenced by three key psychological constructs: attitudes (beliefs about the importance and benefits of using proper child restraints), subjective norms (perceived social pressure to comply with child restraint laws), and perceived behavioral control (confidence in one's ability to consistently use child restraints correctly). These intentions are expected to predict self-reported behavior, specifically the frequency and circumstances under which children are transported without appropriate restraints.

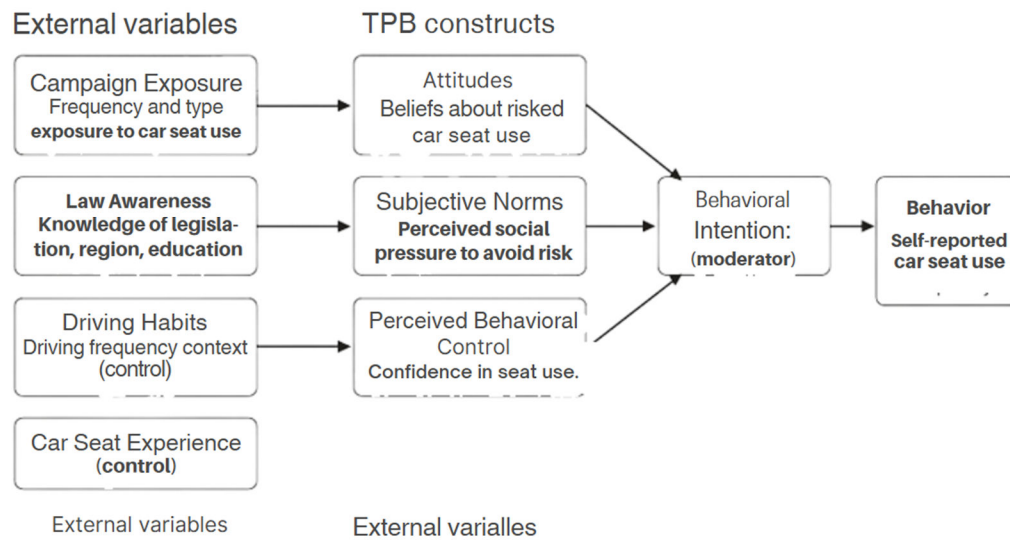
External variables enrich the model by providing contextual and moderating factors. Campaign exposure—such as frequency and recall of CST's child passenger safety public service announcements—is hypothesized to influence attitudes and intentions directly. Similarly, legal awareness—including knowledge of child passenger safety laws and perceived likelihood of being penalized—may moderate the relationship between intention and behavior. Demographic factors (age, gender, education, employment status), driving habits (frequency and context of transporting children), and prior experience with crashes or enforcement actions serve as control variables, helping to account for variation across respondents.

This model allows researchers to assess not only the psychological determinants of compliance with child passenger safety laws but also the effectiveness of educational and legislative interventions designed to protect young passengers and reduce injuries and fatalities in Puerto Rico.



Research Model

To examine the factors influencing Unrestrained Child Safety Behavior





Survey Instrument

The CST25-1 Unrestrained Child Safety Attitudinal Survey was developed to evaluate behaviors, attitudes, and awareness related to the use of child restraint systems 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 proper or improper child restraint use. The questionnaire is divided into seven key sections: Demographics, Driving Habits, Child Restraint Behaviors, Perceptions and Beliefs, Law Awareness and Enforcement Experience, Exposure to Public Awareness Campaigns, and TPB Constructs. Each section serves a distinct analytical purpose—ranging from identifying high-risk populations to measuring the effectiveness of educational and enforcement initiatives—and together, they provide a holistic foundation for designing, implementing, and evaluating policy and communication strategies aimed at increasing compliance with child passenger safety laws 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 more prone to distracted driving behaviors 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 the respondents' driving frequency, vehicle type, fuel usage, typical driving duration during weekdays and weekends, and their usual destinations. Understanding these patterns establishes context for child passenger safety risks. Frequency and duration of driving influence the likelihood of transporting children, while trip purposes (e.g., school drop-off, medical appointments, leisure activities) affect the consistency of child restraint use. These variables are critical for identifying high-risk travel routines and informing targeted enforcement or educational messaging that aligns with parents' and caregivers' typical driving schedules.

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. Seat Use Behaviors

This section investigates behaviors related to the transportation of children, including the frequency of child restraint use, correct installation practices, and situations in which restraints are not used. It also examines factors such as the type of child restraint system owned, the number of children transported, and seating position preferences (front vs. rear seats). This data directly identifies patterns and circumstances that compromise child passenger safety. By focusing on both proper and improper restraint practices, this section aligns with national priorities (e.g., NHTSA) and informs interventions designed to address specific risky behaviors among drivers and caregivers.

3. Seat Use Behaviors

- Frequency of child restraint use during trips.
- Situations or circumstances in which restraints are not used.
- Type of restraint system used (rear-facing, forward-facing, booster, seat belt).
- Seating position of children (front vs. rear seat).
- Past incidents or near misses involving unrestrained children.

4. Perceptions and Beliefs

This section assesses drivers' perceptions of the risks and dangers associated with transporting children without proper restraints, as well as their knowledge of child passenger safety laws in Puerto Rico. It also measures beliefs about the effectiveness of different restraint systems in preventing injuries or fatalities. Perceptions significantly influence driver and caregiver behavior. Measuring perceived risk, legal awareness, and confidence in restraint system effectiveness helps identify gaps in public understanding. These insights guide educational campaign messaging, reinforce the importance of compliance, and support evidence-based strategies for behavior change.

4. Perceptions and Beliefs

- Perceived risk of transporting a child without proper restraint.
- Perceived danger level of riding unrestrained for children.
- Beliefs about the effectiveness of various restraint systems.
- Confidence in ability to use restraints correctly every trip.
- Knowledge of whether current Puerto Rico law requires child restraint use by age and size.

5. Law Enforcement and Experience

This section documents respondents' awareness of child passenger safety laws in Puerto Rico, knowledge of applicable fines and penalties, and any personal history of receiving citations or warnings for transporting an unrestrained child. It also captures involvement in crashes or near misses where a child was not properly restrained. Public perception of enforcement likelihood (deterrence) and personal experiences with penalties or incidents can strongly influence compliance. This data helps evaluate whether enforcement visibility is sufficient and whether it contributes to behavior modification among drivers and caregivers.

5. Law Enforcement and Experience

- Perceived likelihood of being fined for transporting an unrestrained child.
- Recent exposure to news about police issuing child restraint citations.
- Knowledge of the fine amount for violating child passenger safety laws.
- History of receiving tickets for transporting an unrestrained child.



6. Exposure to Public Awareness Campaigns

This section evaluates recall and recognition of child passenger 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 with the public supports future campaign design, budget allocation, and strategic communications planning aimed at increasing compliance with child restraint laws.

6. Exposure to Public Awareness Campaigns

- Recall of campaigns about child passenger safety.
- Channels where the message was seen or heard (TV, radio, internet, social media, etc.).
- Recall of specific slogans or phrases related to child restraint use.
- Perceived effectiveness of the message in promoting compliance.
- Frequency of exposure to campaign messages.

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 child restraint use. TPB is a validated theoretical framework that explains behavior through intention, influenced by attitudes, social norms, and perceived control. Applying TPB enables a deeper understanding of the psychological drivers behind compliance or non-compliance with child passenger safety laws and supports evidence-based strategies to increase proper and consistent restraint use.

7. Theory of Planned Behavior (TPB) Statements

- **Attitude:** Belief that transporting a child without proper restraint is risky.
- **Subjective Norms:** Perception that important others (family, friends, community) disapprove of transporting an unrestrained child.
- **Perceived Behavioral Control:** Confidence in one's ability to properly use a child restraint on every trip.
- **Intention:** Personal commitment to always using the correct restraint for a child, even on short trips.
- **Effect of Campaigns:** Belief that public service campaigns influence one's decision to use child restraints consistently.



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 24 drivers in Puerto Rico. The primary objective of the pilot was to evaluate the questionnaire's ability to capture key variables related to child restraint use, 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 survey questions were completed with high response rates, confirming that the instrument functioned effectively.
2. The questions yielded balanced response distributions, particularly on behaviors like child restraint use frequency and campaign recall.
3. Complex skip patterns (e.g., follow-up questions on restraint type and installation) were functional but could benefit from refinement.
4. Sensitive questions (e.g., household income) were answered, though some hesitation was noted.
5. Low-prevalence events, such as crashes or citations involving unrestrained children, were successfully captured.

Instrument Strengths:

- Captured a full range of child restraint behaviors, perceptions, and legal awareness.
- The TPB section 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 24 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 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 500 drivers, ensuring that the tool is both valid and reliable for measuring child restraint 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 child restraint use in Puerto Rico. The findings provided actionable insights into refining the instrument before its implementation with a larger, representative sample.



2025 Survey Results: Unrestrained Child Safety Campaign

The **CST25-2 Unrestrained Child Safety Attitudinal Survey** provides critical insights into the behaviors, perceptions, and awareness of Puerto Rican drivers regarding the use of child restraint systems. Conducted in July 2025 with a sample of 500 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.

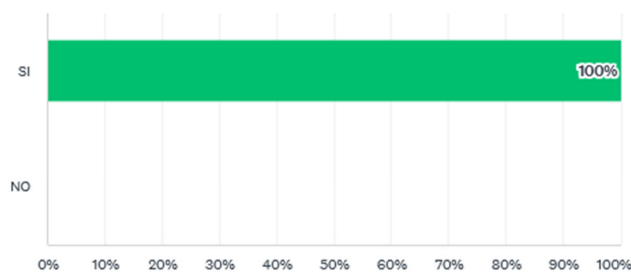
Structured around the Theory of Planned Behavior (TPB), the instrument explores not only self-reported child restraint behaviors but also the underlying attitudes, perceived social norms, and control factors that influence consistent use. By integrating demographic profiles, driving habits, enforcement experiences, and exposure to public awareness campaigns, the survey offers a multidimensional understanding of child passenger safety. 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 caregivers.

The results for the question “In the past month, have you transported in your vehicle, on more than one occasion, children aged 8 years or younger?” show that 100% of respondents (n=501) answered “Yes”, indicating that every participant had transported young children multiple times during the past month. No respondent selected “No,” producing a unanimous result with zero variability.

This outcome carries significant implications for the *CST25-2 Unrestrained Child Safety Attitudinal Survey*. It confirms that the entire sample consists of drivers who are actively responsible for transporting children within the target age group, making them directly relevant to subsequent questions on child restraint use, attitudes, compliance, and awareness of safety laws. This complete alignment between the target population and the respondent pool strengthens the validity of the survey's findings and ensures that later sections measure behaviors and perceptions from individuals with firsthand, recent experience.

INvsOUT | En el último mes, ¿ha transportado en su vehículo, en más de una ocasión, a niños de 8 años o menos?

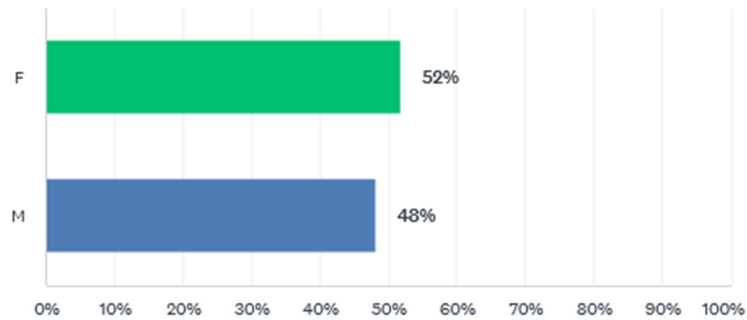
Answered: 501 Skipped: 0



ANSWER CHOICES	RESPONSES	
SI	100%	501
NO	0%	0
TOTAL		501



Q2 | DEM1 | SEX



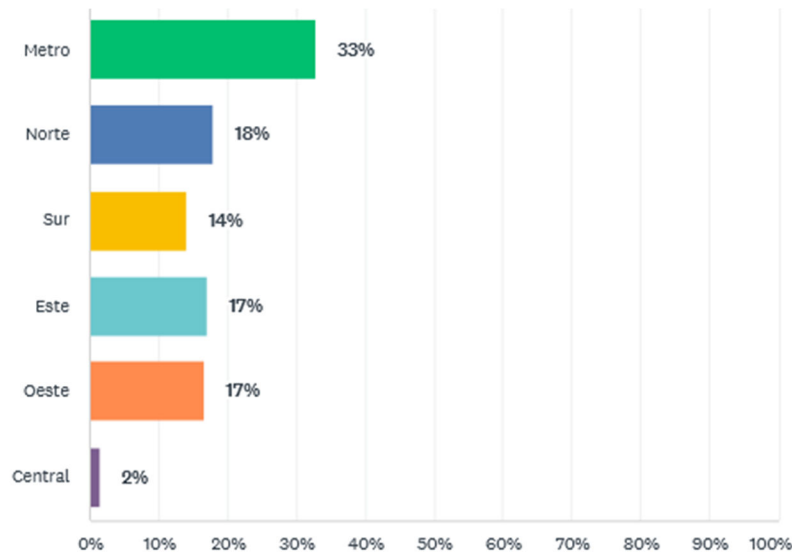
ANSWER CHOICES	RESPONSES
F	52% 260
M	48% 241
TOTAL	501

The survey, conducted in August 2025 among Puerto Rican drivers, included 501 respondents, with 52% female (n = 260) and 48% male (n = 241) participants. This near balance in gender representation closely mirrors 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 alignment suggests 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 strong basis for conducting reliable analyses of driving behaviors, perceptions, and attitudes related to child passenger safety.



Q3 | DEM2 | REGION



ANSWER CHOICES	RESPONSES
▼ Metro	33% 165
▼ Norte	18% 90
▼ Sur	14% 70
▼ Este	17% 85
▼ Oeste	17% 83
▼ Central	2% 8
TOTAL	501

The survey, conducted in August 2025 among 501 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 reflects these distributions, with Metro at 33% (n = 165), followed by Norte (18%, n = 90), Sur (14%, n = 70), Este (17%, n = 85), Oeste (17%, n = 83), and Central (2%, n = 8). 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 foundation for analyzing regional differences in driving habits and perceptions, strengthening the relevance of findings for policy development and targeted road safety interventions across Puerto Rico.



Q4 | DEM3 | MUNICIPIO

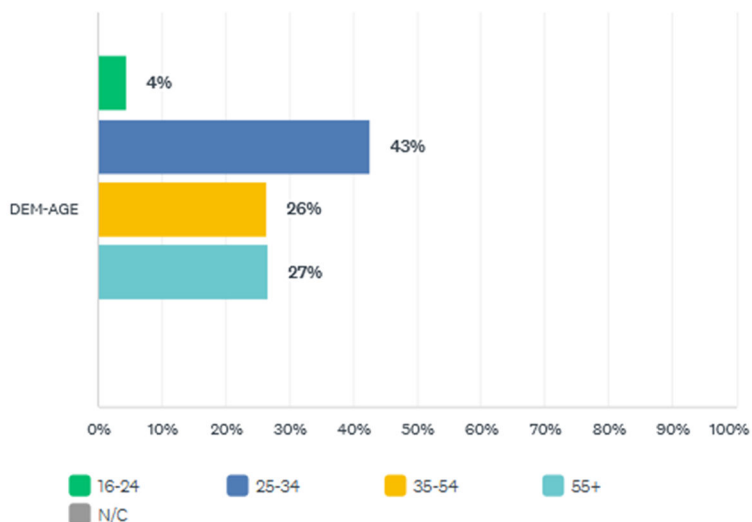
ANSWER CHOICES	RESPONSES
▼ San Juan	10% 48
▼ Toa Baja	9% 43
▼ Carolina	8% 38
▼ Ponce	7% 33
▼ Arecibo	4% 21
▼ Caguas	4% 21
▼ Vega Alta	4% 21
▼ Mayaguez	4% 18
▼ Manati	3% 17
▼ Bayamon	3% 15
▼ Las Piedras	3% 15
▼ Vega Baja	3% 15
▼ Aguada	2% 12
▼ Canovanas	2% 11
▼ Trujillo Alto	2% 11
▼ Yauco	2% 11
▼ Corozal	2% 10
▼ Aguadilla	2% 9
▼ Dorado	2% 9
▼ Cabo Rojo	2% 8
▼ Santa Isabel	2% 8
▼ Yabucoa	2% 8
▼ Cayey	1% 7
▼ Guaynabo	1% 7
▼ Gurabo	1% 6
▼ Juncos	1% 6
▼ Barceloneta	1% 5
▼ Comerio	1% 5
▼ Guayama	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. Additionally, respondents were drawn from 42 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 (10%, $n = 48$) leads the sample, followed by Toa Baja (9%, $n = 43$), Carolina (8%, $n = 38$), and Ponce (7%, $n = 33$), with Caguas, Arecibo, and Mayagüez also achieving strong representation. 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.



Q5 | DEM4 | AGE



The survey's age distribution demonstrates strong representation of Puerto Rican drivers across critical adult age groups, enabling meaningful analysis of driving behaviors across generational cohorts. The largest segment consists of drivers aged 25–34 years (43%), a group often associated with increased risk-taking and higher exposure to distracted driving behaviors. Drivers aged 55+ (27%) and 35–54 (26%) are closely balanced, ensuring input from both older adults—whose experience may be offset by age-related physical or cognitive changes—and midlife drivers, who frequently rely on vehicles for work and family responsibilities. Younger drivers aged 16–24 (4%) are proportionally smaller, consistent with their reduced share of Puerto Rico's licensed driver population. The age categories in the survey were assigned weights from 1 to 4 to facilitate quantitative analysis of age-related patterns in driving behaviors and perceptions. Respondents aged 18–24 were assigned a weight of 1, reflecting the youngest cohort, while those aged 25–34 received a weight of 2, representing early adulthood drivers. The 35–54 age group was weighted 3, capturing midlife drivers, and the 55+ category received the highest weight of 4, reflecting older adult drivers.

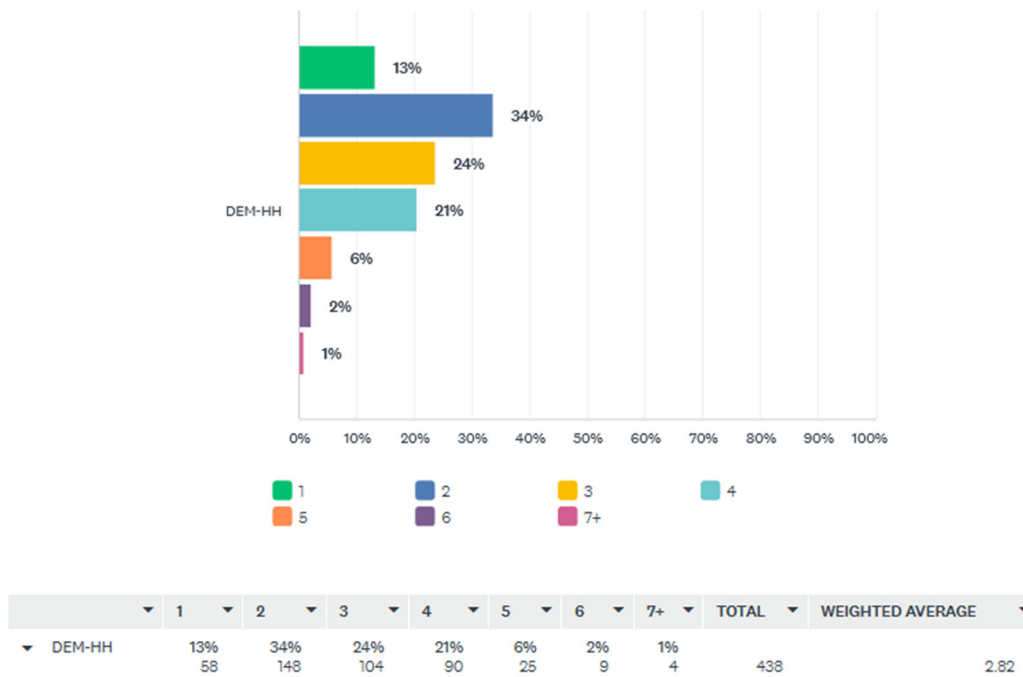
The weighted approach allows computation of average age scores across regions and subgroups, enabling a nuanced understanding of demographic trends and their potential influence on distracted driving behaviors. This segmentation reflects best practices in driver behavior and traffic safety research, as outlined in National Highway Traffic Safety Administration (NHTSA) guidance and applied in large-scale surveys like the National Roadside Survey and the National Survey on Distracted Driving Attitudes and Behavior. The three-cohort structure—18–34, 35–54, and 55+—facilitates comparability with federally sponsored research and enhances the survey's capacity to detect meaningful age-related behavioral differences, strengthening its external validity for policy and program development.

The regional age distribution of surveyed drivers reveals distinct demographic patterns across Puerto Rico. The Metro region (weighted average 2.84) shows a balanced mix, with 36% aged 25–34, 32% aged 35–54, and 29% aged 55+. Norte (2.16) is dominated by younger drivers, with 77% in the 25–34 group. Sur (2.76) skews slightly older, with 47% aged 35–54 and 17% aged 55+. Este (2.26) is youthful, with 69% in the 25–34 group, while Oeste (3.72) has the oldest profile, with 82% aged 55+. Central (2.75) is evenly distributed, though small in sample size. These variations highlight the need for region-specific distracted driving interventions, addressing higher youth representation in urban/coastal areas and older driver prevalence in western regions.



Q6 | DEM5 | HOUSEHOLDS

How many people live in your household, including yourself?



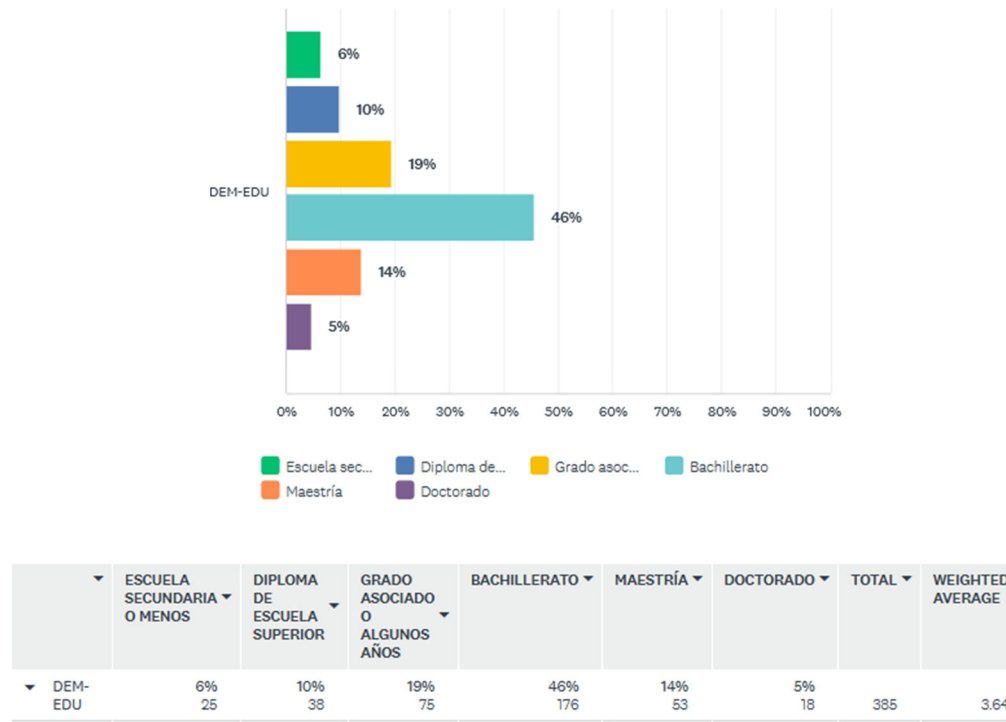
According to the U.S. Census Bureau’s 2023/2024 American Community Survey (ACS) 1-Year Estimates for Puerto Rico, the average household size is approximately 2.48 persons (U.S. Census Bureau, 2024). In this survey, household size was quantified by assigning weights from 1 to 7, corresponding to the number of people living in each respondent’s household, including themselves. Single-person households received a weight of 1, two- to six-person households received weights from 2 to 6, and households with seven or more members were assigned the maximum weight of 7.

Survey results show that the most common household sizes were two-person households (34%), followed by three-person (24%) and four-person (21%) households. Single-person households accounted for 13%, while larger households of five or more members comprised 9% combined. The weighted average household size in the survey is 2.82, slightly higher than the ACS 2024 estimate. This difference may reflect the survey’s licensed-driver focus, which tends to capture more multi-person households compared to the general population, which also includes non-drivers such as minors and elderly dependents (NHTSA, 2020). Overall, the distribution aligns with ACS trends, confirming that small to mid-sized households dominate Puerto Rico’s demographic profile, enhancing the representativeness of the survey findings.



Q7 | DEM6 | EDUCATION

What is the highest level of education you have completed?



The survey results on educational attainment provide important context for understanding the demographic profile of Puerto Rican drivers in the CST25-2 Unrestrained Child Safety Attitudinal Survey. Among the 385 respondents who provided education information, the largest segment—46% (n = 176)—reported holding a bachelor’s degree, highlighting a highly educated sample. This was followed by 19% (n = 75) with an associate degree or some college, and 14% (n = 53) with a master’s degree. Respondents with only a high school diploma accounted for 10% (n = 38), while those with less than a high school education made up 6% (n = 25). A smaller proportion, 5% (n = 18), reported holding a doctoral degree.

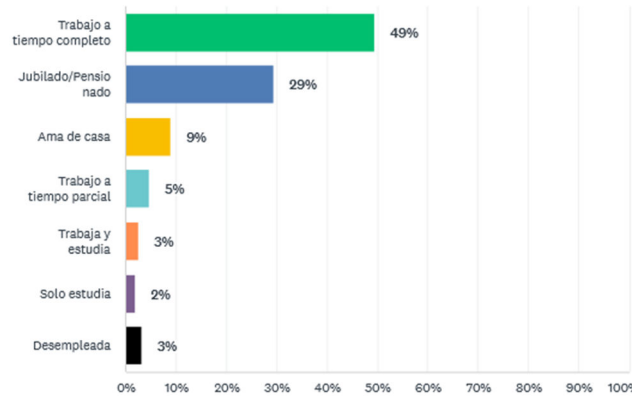
For analysis, education levels were assigned weights from 1 (lowest: high school or less) to 6 (highest: doctoral degree), resulting in a weighted average of 3.64—placing the overall sample between a bachelor’s and an associate degree. This elevated educational profile suggests that the survey reached a demographically engaged population that may be more receptive to safety and awareness campaigns.

Evidence from prior studies supports an inverse relationship between education and crash risk, with higher education levels generally associated with lower fatal crash involvement (Hasselberg et al., 2021).



Q8 | DEM7 | OCCUPATION

What is the highest level of education you have completed?



ANSWER CHOICES	RESPONSES	
Trabajo a tiempo completo	49%	232
Jubilado/Pensionado	29%	138
Ama de casa	9%	42
Trabajo a tiempo parcial	5%	22
Trabaja y estudia	3%	12
Solo estudia	2%	9
Desempleada	3%	15
TOTAL		470

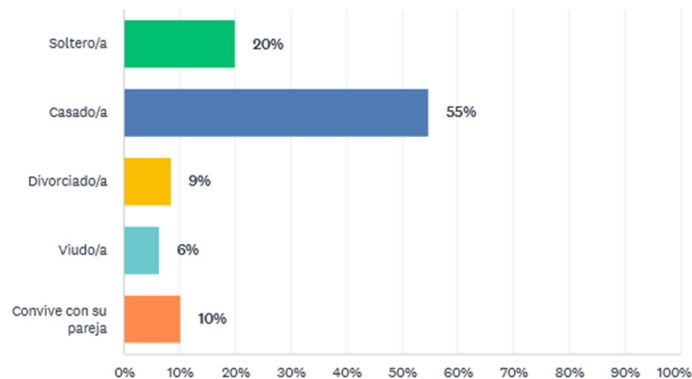
The CST25-2 Unrestrained Child Safety Attitudinal Survey results on current work status offer a comprehensive occupational profile of Puerto Rican drivers. Among the 470 respondents, nearly half (49%, $n = 232$) reported working full-time, making it the dominant category. Retirees or pensioners represented the second-largest group at 29% ($n = 138$), reflecting Puerto Rico's aging licensed driver population and the importance of including this demographic in traffic safety studies. Homemakers accounted for 9% ($n = 42$) of respondents, while part-time workers represented 5% ($n = 22$). Smaller proportions included those who work and study (3%, $n = 12$), unemployed individuals (3%, $n = 15$), and students who study exclusively (2%, $n = 9$).

When compared with the U.S. Census Bureau's 2023/2024 American Community Survey (ACS) estimates, the survey's reported unemployment rate closely aligns with the island's approximate 6%, indicating consistency with broader labor market data. The proportion of full-time workers in this survey is higher than the ACS labor force participation rate of around 45% for individuals aged 15 and over. This difference is likely to reflect the survey's focus on active, licensed drivers, who are more likely to be employed or retired than the general adult population, which also includes non-drivers. The substantial share of retirees underscores the importance of addressing age-related driving patterns, particularly as older drivers may have different risk profiles and safety perceptions. By including a diverse mix of full-time workers, retirees, homemakers, students, and unemployed individuals, the survey presents a robust socioeconomic portrait of Puerto Rican drivers. This representative composition strengthens the validity of the findings and enhances their value for shaping evidence-based road safety policies and targeted interventions.



Q9 | DEM8 | CIVIL STATUS

What is your current marital status?



ANSWER CHOICES	RESPONSES
▼ Soltero/a	20% 89
▼ Casado/a	55% 242
▼ Divorciado/a	9% 38
▼ Viudo/a	6% 28
▼ Convive con su pareja	10% 45
TOTAL	442

The CST25-2 Unrestrained Child Safety Attitudinal Survey (n = 442) shows the following marital status distribution: Married (55%, n = 242), Single/Never Married (20%, n = 89), Divorced (9%, n = 38), Cohabiting (10%, n = 45), and Widowed (6%, n = 28).

When compared to U.S. national estimates from the 2023 American Community Survey (ACS), where approximately 46.4% of adults are unmarried (never married, divorced, or widowed), the survey's married proportion is higher. The combined share of single, divorced, and widowed respondents (35%) is notably lower than the ACS figure, potentially reflecting the older age profile of licensed drivers in Puerto Rico and the greater likelihood of marriage persistence in certain cultural contexts.

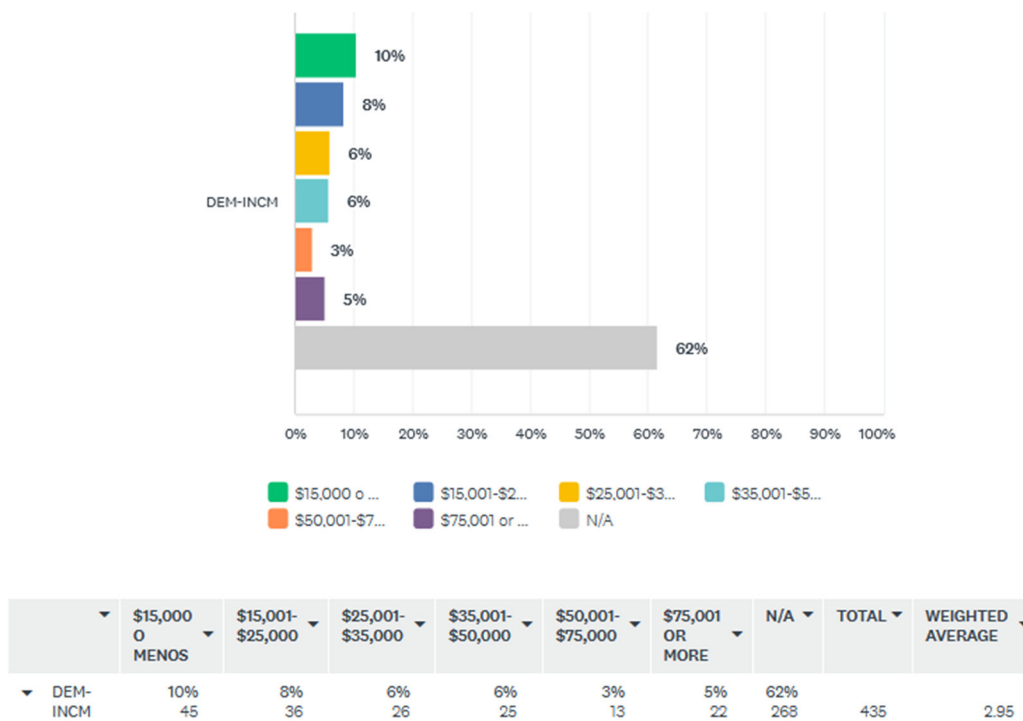
Previous research indicates a relationship between marital status and motor vehicle crash risk. A cohort study in New Zealand found that never married individuals had more than twice the risk of driver injury compared to married individuals (Whitlock et al., 2004). U.S. mortality data analyses show that divorced or separated individuals have a significantly higher risk of death from motor vehicle crashes compared to married drivers (Kposowa & Breault, 2009). These differences may stem from behavioral, psychosocial, and lifestyle factors, including greater risk-taking, less adherence to safety behaviors, or reduced social monitoring among unmarried individuals.

Including marital status as a demographic variable in traffic safety research enhances the ability to identify and address higher-risk groups, enabling targeted education, enforcement, and public health interventions that consider both social and behavioral dimensions of driver safety.



Q10 | DEM9 | ANNUAL INCOME

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



The CST25-2 Unrestrained Child Safety Attitudinal Survey measured household income using six categories, from \$15,000 or less to \$75,001 or more, plus an *N/A* option for respondents unwilling to disclose. Each category was assigned a weight from 1 to 6, enabling calculation of a composite income score to analyze its association with driving behaviors.

Among the 435 respondents, 10% ($n = 45$) reported earning \$15,000 or less, 8% ($n = 36$) earned \$15,001–\$25,000, and 6% ($n = 26$) earned \$25,001–\$35,000. Another 6% ($n = 25$) reported \$35,001–\$50,000, 3% ($n = 13$) earned \$50,001–\$75,000, and 5% ($n = 22$) earned over \$75,000. The majority—62% ($n = 268$)—did not provide income information, reflecting the sensitivity of this question in survey contexts.

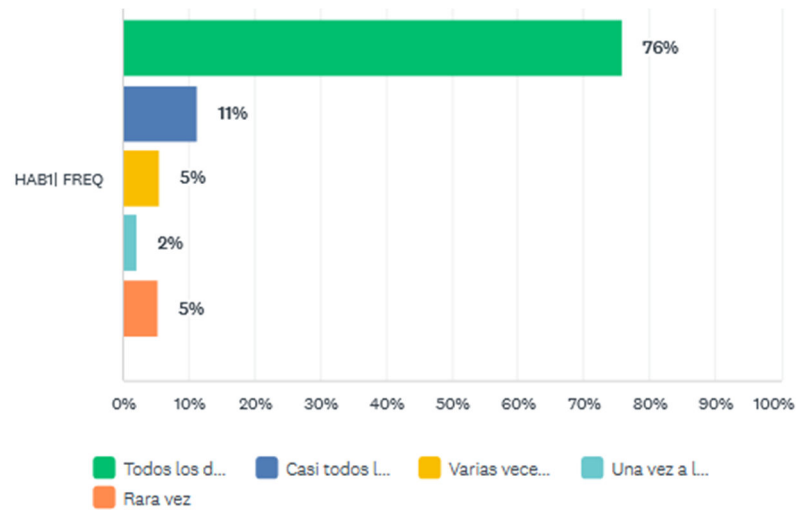
This high nonresponse rate aligns with existing research showing that income questions often yield lower response rates due to privacy concerns or uncertainty about exact figures. Despite this limitation, the reported income distribution is broadly consistent with the U.S. Census Bureau's 2023 American Community Survey (ACS), which estimates Puerto Rico's median household income at \$25,096 and indicates that nearly three-quarters of households earn below \$50,000 annually.

Lower household income has been linked to increased crash risk, with studies citing factors such as older vehicle fleets, higher exposure to hazardous driving environments, and limited access to safety technologies (Bishai et al., 2006; Cubbin et al., 2000). The income data in this survey therefore not only provides socioeconomic context but also support risk stratification for targeted child passenger safety interventions.



Q11 | 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	76% 359	11% 53	5% 26	2% 10	5% 25	473	3.50

The CST25-2 Unrestrained Child Safety Attitudinal Survey results show that most respondents are frequent drivers. A total of 76% (n = 359) reported driving every day, and 11% (n = 53) indicated driving almost every day, meaning that 87% of participants use a vehicle nearly daily. Smaller proportions reported driving several times per week (5%, n = 26), once per week (2%, n = 10), or rarely (5%, n = 25). The weighted average score of 3.50 underscores the predominance of highly active drivers in the sample.

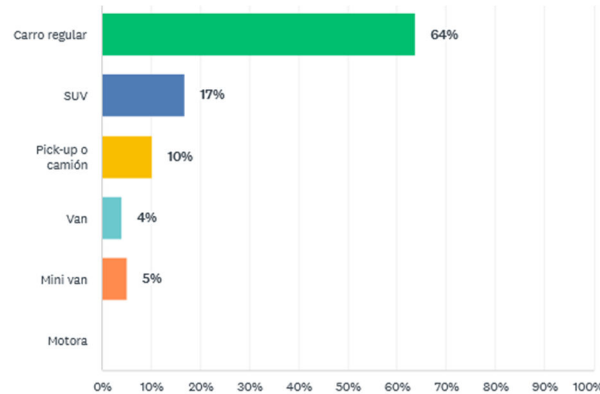
Driving frequency was measured using a weighted scale from 0 (“rarely”) to 4 (“every day”), allowing quantification of exposure and integration into composite behavioral analyses. Respondents in the top categories (weights 4 and 3) contributed most to the overall score, highlighting a population with high daily exposure to roadway conditions and potential distractions. This pattern aligns with Puerto Rico’s transportation reality, where limited public transit infrastructure fosters heavy reliance on personal vehicles for commuting, errands, and social activities. High-frequency drivers are also more likely to encounter situations conducive to distraction, making them a critical focus for public education and enforcement strategies.

Research supports this concern: Dingus et al. (2016) found that individuals who spend more time behind the wheel have a greater likelihood of engaging in secondary tasks, elevating crash risk. The survey’s findings reinforce the importance of targeting awareness campaigns toward frequent drivers to mitigate unsafe behaviors and improve road safety outcomes. Similarly, Guo et al. (2017) linked frequent driving with greater opportunities for distraction-related incidents, reinforcing the need for targeted interventions for daily and near-daily drivers.



Q11 | HAB2 | VEHICLE TYPE

What type of vehicle do you mainly drive?



ANSWER CHOICES	RESPONSES	
Carro regular	64%	293
SUV	17%	77
Pick-up o camión	10%	47
Van	4%	19
Mini van	5%	24
Motora	0%	0
TOTAL		460

The CST25-2 Unrestrained Child Safety Attitudinal Survey results show that most respondents rely on standard passenger cars as their primary mode of transportation. Specifically, 64% (n = 293) reported driving a regular car, making it the dominant vehicle type in the sample. This is followed by 17% (n = 77) who drive SUVs and 10% (n = 47) who primarily use pickup trucks. Vans account for 4% (n = 19) and minivans for 5% (n = 24). No respondents indicated that a motorcycle was their main vehicle.

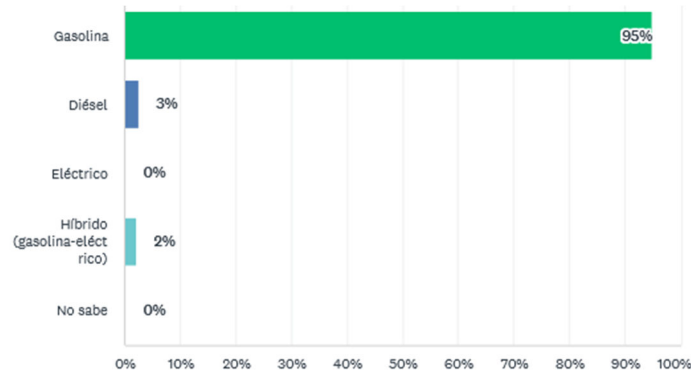
This distribution mirrors vehicle ownership trends in Puerto Rico, where passenger cars remain the most common due to their affordability, fuel efficiency, and suitability for dense urban areas. SUVs and pickups, while less prevalent, serve specific roles—often chosen by larger families or for work-related purposes. The negligible use of motorcycles reflects cultural preferences, safety perceptions, and limited infrastructure for two-wheeled commuting on the island.

Vehicle type can influence both driver behavior and crash risk. Studies have found that operators of larger vehicles, such as SUVs and pickups, are more likely to display aggressive driving behaviors and are overrepresented in specific crash categories compared to passenger car drivers (Williams, 2003). Furthermore, the perceived safety advantages of larger vehicles can encourage riskier actions, including multitasking while driving (Farmer, 2006). Understanding the relationship between vehicle type and driver behavior helps in tailoring safety campaigns and enforcement strategies, ensuring they address the unique risk profiles associated with different vehicle categories.



Q13 | HAB2b | FUEL TYPE

What type of fuel does your primary vehicle use?



ANSWER CHOICES	RESPONSES	
Gasolina	95%	417
Diésel	3%	11
Eléctrico	0%	1
Híbrido (gasolina-eléctrico)	2%	9
No sabe	0%	1
TOTAL		439

The CST25-2 Unrestrained Child Safety Attitudinal Survey findings on fuel type indicate a strong reliance on gasoline-powered vehicles among respondents. Of the 439 participants who answered this question, 95% (n = 417) reported using gasoline, making it by far the most common fuel type. Diesel-powered vehicles accounted for only 3% (n = 11), while hybrid gasoline-electric vehicles represented 2% (n = 9). Electric vehicles were nearly absent from the sample, with just 1 respondent (<1%) reporting exclusive electric use. Only one respondent indicated they did not know their vehicle's fuel type.

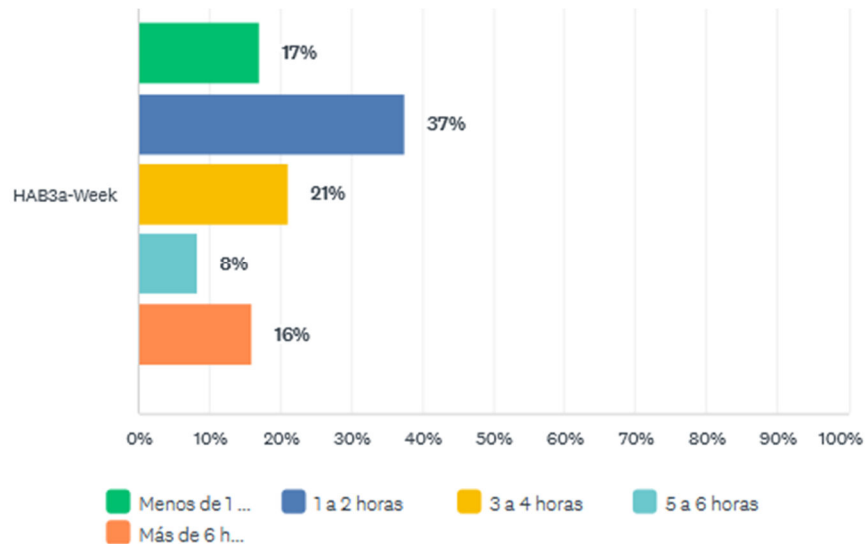
This distribution mirrors Puerto Rico's automotive market, which remains dominated by gasoline-powered vehicles. The limited presence of electric and hybrid models underscores persistent barriers to alternative fuel adoption, including the high initial cost of such vehicles, limited charging infrastructure, and a lack of comprehensive policy incentives to promote electrification.

From a transportation planning perspective, these results also have implications for the adoption of self-driving cars, as most autonomous vehicle (AV) platforms are designed to be electric or hybrid. Without significant investment in charging networks, renewable energy integration, and supportive regulatory frameworks, Puerto Rico may face delays in AV readiness. Understanding the fuel landscape offers a critical baseline for developing policies aimed at reducing fossil fuel dependency and advancing sustainable mobility. Addressing these infrastructural and policy gaps will be essential not only for environmental goals but also for ensuring that Puerto Rico is technologically prepared for the next generation of vehicle automation and safety innovations.



Q14 | 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	17% 69	37% 152	21% 86	8% 34	16% 65	406	2.69

The CST25-2 Unrestrained Child Safety Attitudinal Survey findings on weekday driving time show varied patterns among respondents. Of the 406 participants, the largest share, 37% (n = 152), reported driving 1 to 2 hours daily, making this the most common category. This is followed by 21% (n = 86) who drive 3 to 4 hours, and 17% (n = 69) who drive less than 1 hour on a typical weekday. A notable 16% (n = 65) spend more than 6 hours driving, while 8% (n = 34) reported driving 5 to 6 hours.

The weighted average of 2.69—based on assigning scores from 1 (“less than 1 hour”) to 5 (“more than 6 hours”)—places the typical respondent between the 1–2 hour and 3–4 hour ranges, suggesting that the average driver spends approximately 2–3 hours on the road daily.

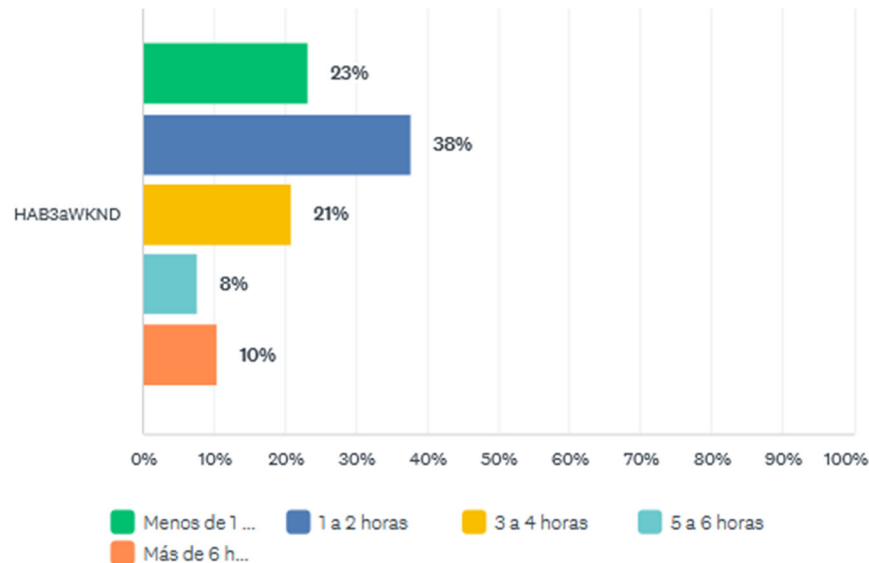
Nearly three-quarters (74%) of respondents drive at least 1 to 4 hours daily, pointing to a substantial commuting population. The relatively high proportion of individuals driving more than 6 hours underscores the presence of long-haul commuters or those in driving-intensive occupations, such as delivery services, fieldwork, or transportation sectors. Conversely, the 17% with less than 1 hour of weekday driving may represent residents with short commutes, telework arrangements, or minimal travel needs.

From a transportation and safety perspective, these results highlight exposure differences that could influence risk levels for distracted driving or other unsafe driving behaviors. Long driving times can increase fatigue, while shorter commutes may reduce exposure but not necessarily risk-taking tendencies. Understanding these patterns is critical for tailoring road safety messages and enforcement to different driver groups.



Q15 | 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
HAB3aWKND	23% 87	38% 141	21% 78	8% 29	10% 39	374	2.44

The CST25-2 Unrestrained Child Safety Attitudinal Survey results for weekend driving duration (n = 374) indicate that 38% (n = 141) of respondents drive 1 to 2 hours, making it the most common weekend driving category. This is followed by 23% (n = 87) who drive less than 1 hour and 21% (n = 78) who drive 3 to 4 hours. Smaller segments include 10% (n = 39) who report driving more than 6 hours and 8% (n = 29) who drive 5 to 6 hours on weekends.

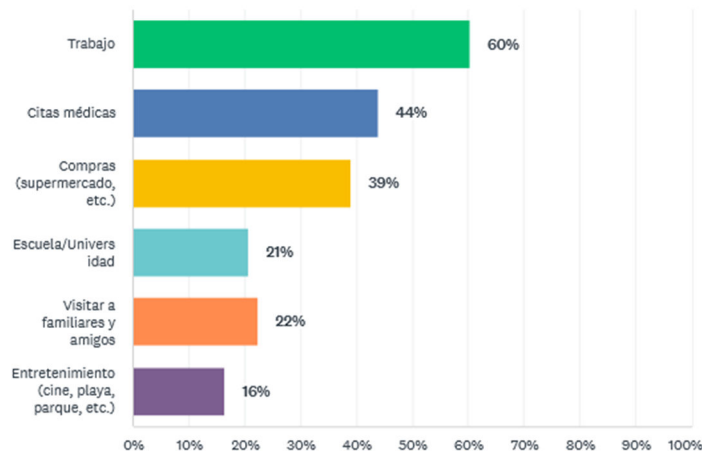
The weighted average of 2.44—based on assigning values from 1 (“less than 1 hour”) to 5 (“more than 6 hours”)—positions the average respondent between the 1–2 hour and 3–4 hour ranges. This suggests that typical weekend driving time is shorter than weekday driving, consistent with reduced commuting demands.

However, the combined 18% who drive 5 or more hours on weekends highlights a substantial subgroup with high weekend travel exposure. These extended driving durations may be related to leisure travel, visiting family, recreational activities, or work-related trips that require long-distance driving. From a road safety perspective, weekend travel patterns can differ significantly from weekdays, with changes in traffic density, higher recreational travel, and possible increased alcohol consumption influencing crash risk. Understanding these variations is essential for targeting safety campaigns—such as those focused on impaired or distracted driving—toward periods and driver groups with elevated weekend travel times.



Q16 | HAB4 | WEEKDAY DESTINATIONS

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



ANSWER CHOICES	RESPONSES
Trabajo	60% 243
Citas médicas	44% 177
Compras (supermercado, etc.)	39% 157
Escuela/Universidad	21% 83
Visitar a familiares y amigos	22% 90
Entretenimiento (cine, playa, parque, etc.)	16% 66
Total Respondents: 403	

The CST25-2 Unrestrained Child Safety Attitudinal Survey results on primary weekday driving destinations (n = 403) show that work is the most frequent purpose, cited by 60% (n = 243) of respondents. This is followed by medical appointments, reported by 44% (n = 177), underscoring the role of healthcare-related travel in weekly mobility. Shopping trips (e.g., supermarkets) were identified by 39% (n = 157), indicating a significant share of trips are dedicated to errands. Less frequent destinations include visiting family or friends (22%, n = 90), school or university (21%, n = 83), and entertainment activities such as going to the cinema, beach, or park (16%, n = 66).

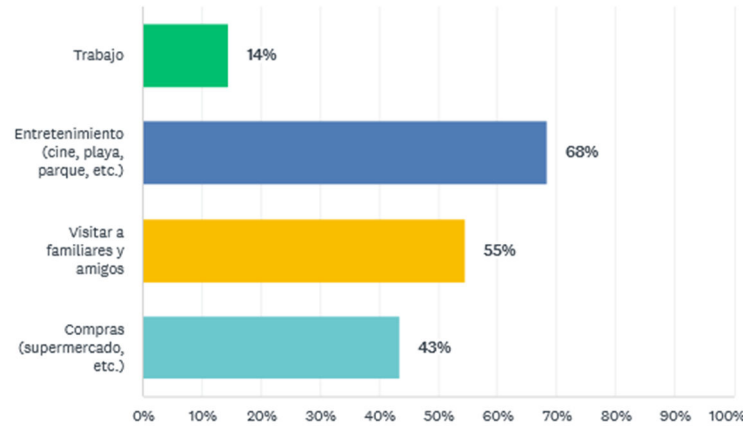
These patterns indicate that weekday driving is predominantly shaped by essential and routine purposes — work, healthcare, and shopping — while discretionary travel like leisure and social visits occurs less often. This reflects typical weekday constraints, where time availability and necessity drive trip planning.

From a transportation planning perspective, this data suggests that weekday traffic volume is heavily influenced by work commute schedules and essential services access. Public policy and infrastructure initiatives—such as improved public transit links to employment centers, medical facilities, and shopping areas—could help reduce vehicle dependency and improve mobility efficiency during peak weekday periods.



Q17 | HAB5 | WEEKEND DESTINATIONS

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



ANSWER CHOICES	RESPONSES
Trabajo	14% 53
Entretenimiento (cine, playa, parque, etc.)	68% 252
Visitar a familiares y amigos	55% 201
Compras (supermercado, etc.)	43% 160
Total Respondents: 368	

The CST25-2 Unrestrained Child Safety Attitudinal Survey findings on weekend travel purposes (n = 368) show a marked shift from weekday patterns. Entertainment—including cinema, beach, park, and other leisure activities—is the leading reason for weekend driving, cited by 68% (n = 252) of respondents. This is followed by visiting family and friends, reported by 55% (n = 201), highlighting the social nature of weekend mobility.

Shopping trips (e.g., supermarkets and retail stores) remain a significant weekend activity, noted by 43% (n = 160) of respondents. In contrast, work-related driving drops sharply to 14% (n = 53), underscoring the reduced role of employment commutes outside the standard workweek.

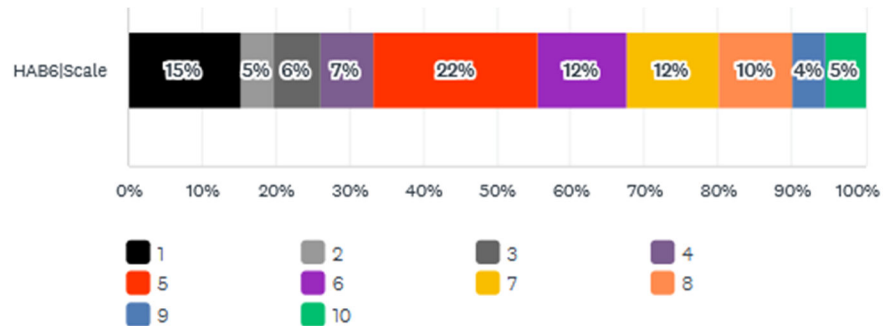
These results indicate a clear reorientation of travel priorities on weekends toward leisure, social interaction, and non-work-related errands. The dominance of entertainment and family visits suggests weekends serve as a key period for recreation and maintaining social ties, while the continued prominence of shopping reflects its integration into weekend routines.

From a transportation planning standpoint, these patterns suggest the need for infrastructure and traffic management strategies that can accommodate higher leisure-related travel volumes, particularly toward popular recreational areas. Public transit schedules, traffic flow adjustments, and targeted safety campaigns may be particularly effective during weekends to address the unique mobility demands of this period.



Q18 | 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?



	1	2	3	4	5	6	7	8	9	10	TOTAL	WEIGHTED AVERAGE
HAB6 Scale	15% 69	5% 21	6% 28	7% 33	22% 100	12% 55	12% 56	10% 46	4% 20	5% 24	452	5.17

The CST25-2 Unrestrained Child Safety Attitudinal Survey results on overall driving conditions (n = 452) show a broad distribution of perceptions, with the most frequent rating being 5 (neutral), selected by 22% (n = 100) of respondents. This suggests that many participants view driving conditions in Puerto Rico as neither particularly good nor particularly bad.

Notably, 1 (very bad) received 15% (n = 69) of responses, signaling significant dissatisfaction among a sizable group. Positive ratings were less frequent: 10 (very good) was chosen by 5% (n = 24), while 9 accounted for 4% (n = 20). Mid-to-positive ratings—6, 7, and 8—each garnered between 10% and 12% of responses. Lower-mid ratings, such as 2, 3, and 4, represented 5%, 6%, and 7% of the sample, respectively.

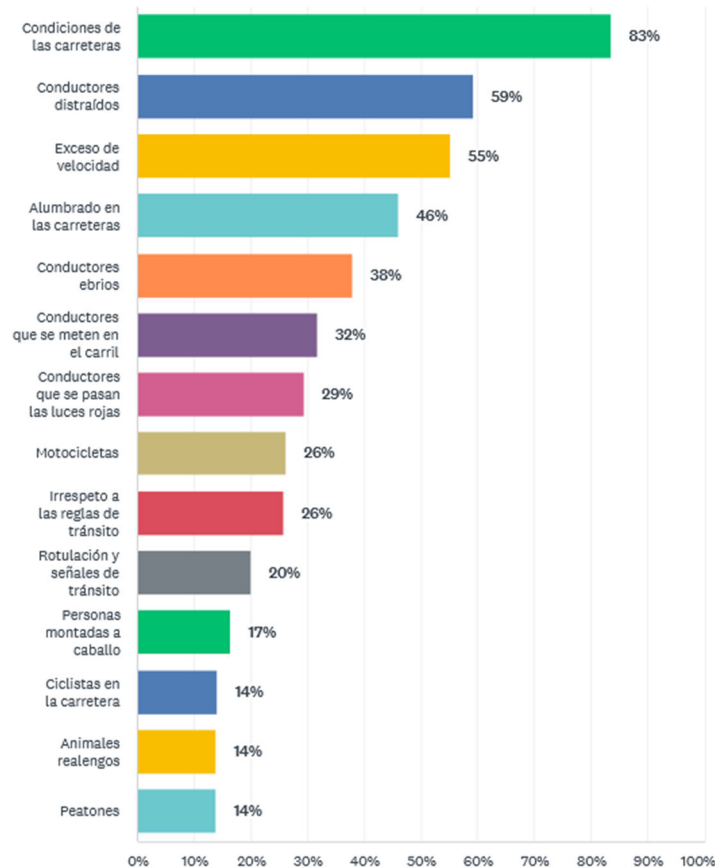
The weighted average is 5.17, positioning the overall perception just slightly above neutral. This indicates that while extreme dissatisfaction is not dominant, there is a noticeable lack of strong positive sentiment. The clustering of responses in the neutral-to-low range highlights potential areas for improvement in road conditions, traffic flow management, and driving behavior.

From a transportation policy perspective, these findings emphasize the need for targeted interventions to improve public perception—such as infrastructure upgrades, stricter traffic enforcement, and driver education campaigns—to shift overall sentiment toward more positive evaluations.



Q19 | 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 results show that road conditions are the most pressing concern, cited by 83% of respondents, underscoring widespread dissatisfaction with Puerto Rico's road infrastructure. Distracted driving ranks second at 59%, reflecting increasing worry about mobile device use and inattentive drivers. Speeding follows closely at 55%, highlighting the prevalence of aggressive driving behaviors. Other notable issues include poor road lighting (46%), drunk driving (38%), and drivers cutting into lanes (32%). Risky behaviors such as running red lights (29%), the presence of motorcycles (26%), and general disregard for traffic rules (26%) also feature prominently. Less common but still relevant concerns include inadequate signage (20%), people on horseback (17%), stray animals (14%), cyclists (14%), and pedestrians (14%).

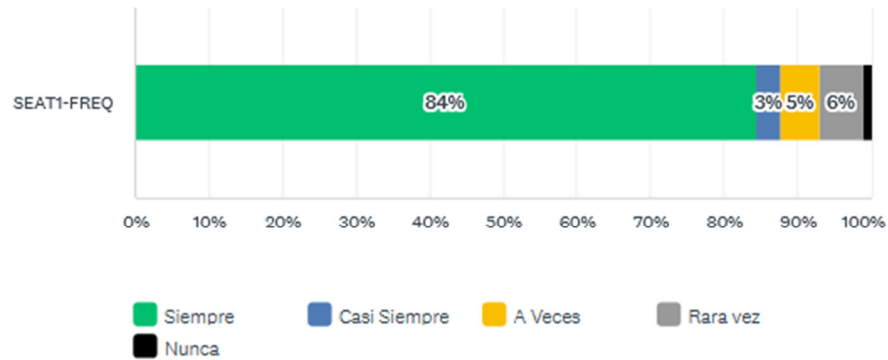
This distribution illustrates that road safety concerns extend beyond driver behavior, with infrastructure issues—especially road surface quality—being a dominant factor. The prominence of distracted driving and speeding points to the need for stricter traffic law enforcement, enhanced public safety campaigns, and infrastructure investments aimed at improving road quality and lighting. Together, these measures could address both the environmental and behavioral aspects of traffic safety in Puerto Rico.



Q20* | SEAT1 | CAR SEAT USAGE

How often do you use a child safety seat when driving a vehicle with a child between 0 and 8 years old?

Answered: 496 Skipped: 5



	SIEMPRE	CASI SIEMPRE	A VECES	RARA VEZ	NUNCA	TOTAL	WEIGHTED AVERAGE
SEAT1-FREQ	84% 419	3% 16	5% 27	6% 29	1% 5	496	4.64

The results for SEAT1-FREQ, which measures how often respondents use a protective car seat when driving with a child aged 0 to 8 years, show overwhelmingly positive compliance. A large majority—84% (419 respondents)—reported “Siempre” (always) using the car seat, indicating a strong adherence to child passenger safety practices. An additional 3% (16 respondents) selected “Casi siempre” (almost always), suggesting that their usage is consistent, with only occasional lapses.

Meanwhile, 5% (27 respondents) reported “A veces” (sometimes) using the car seat, and 6% (29 respondents) indicated “Rara vez” (rarely). Only 1% (5 respondents) stated they “Nunca” (never) use a protective seat for children in this age group. The weighted average score of 4.64 (on a 5-point scale) further reflects the high frequency of proper restraint use among surveyed drivers.

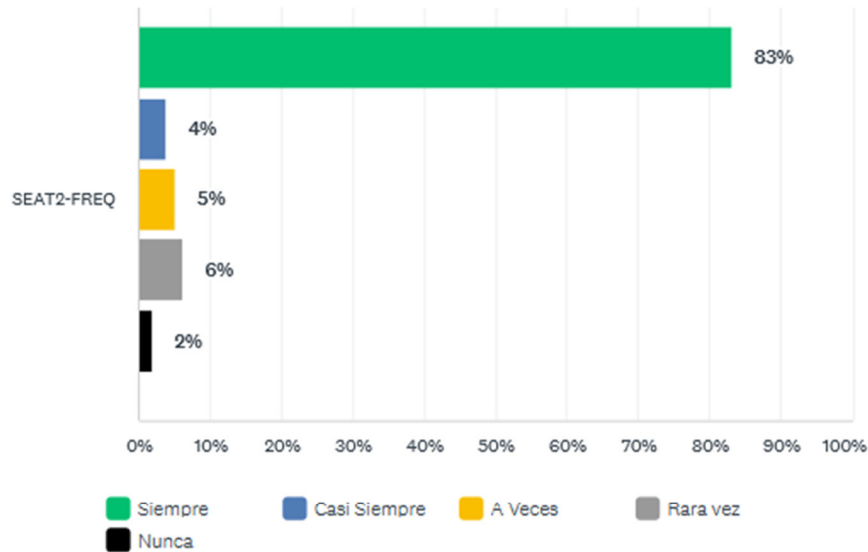
This distribution highlights a positive trend in compliance with child safety seat regulations in Puerto Rico. The overwhelming “Siempre” response demonstrates that most drivers transporting young children follow recommended safety practices, which are critical for reducing injury risks in the event of a crash. However, the small but notable percentage of drivers who use child seats inconsistently—or not at all—underscores the need for continued public awareness and enforcement efforts. Educational campaigns could target the “A veces” and “Rara vez” groups to address potential barriers, such as misconceptions about safety needs for short trips, improper seat installation, or perceived inconvenience.

Overall, the findings indicate a strong safety culture regarding child passenger protection, but also an opportunity for targeted interventions to achieve near-universal compliance.



Q21 | SEAT2 | USAGE FREQUENCY

How often do you use a protective car seat when riding as a passenger in a vehicle with a child between 0 and 8 years old?



	SIEMPRE	CASI SIEMPRE	A VECES	RARA VEZ	NUNCA	TOTAL	WEIGHTED AVERAGE
SEAT2-FREQ	83% 394	4% 18	5% 24	6% 29	2% 9	474	4.60

In the CST25-2 Unrestrained Child Safety Attitudinal Survey, most respondents (83%, $n = 394$) reported “always” using a protective car seat when riding as a passenger with a child between 0 and 8 years old. An additional 4% ($n = 18$) indicated they “almost always” use one, while 5% ($n = 24$) reported using it “sometimes.” Meanwhile, 6% ($n = 29$) said they “rarely” use a protective seat, and 2% ($n = 9$) stated they “never” do so.

The weighted average score of 4.60 (on a scale where 1 = never and 5 = always) reflects a strong adherence to car seat use among passengers traveling with young children. This high level of compliance aligns with public safety recommendations and legal requirements that mandate child restraint systems to minimize injury risk during collisions.

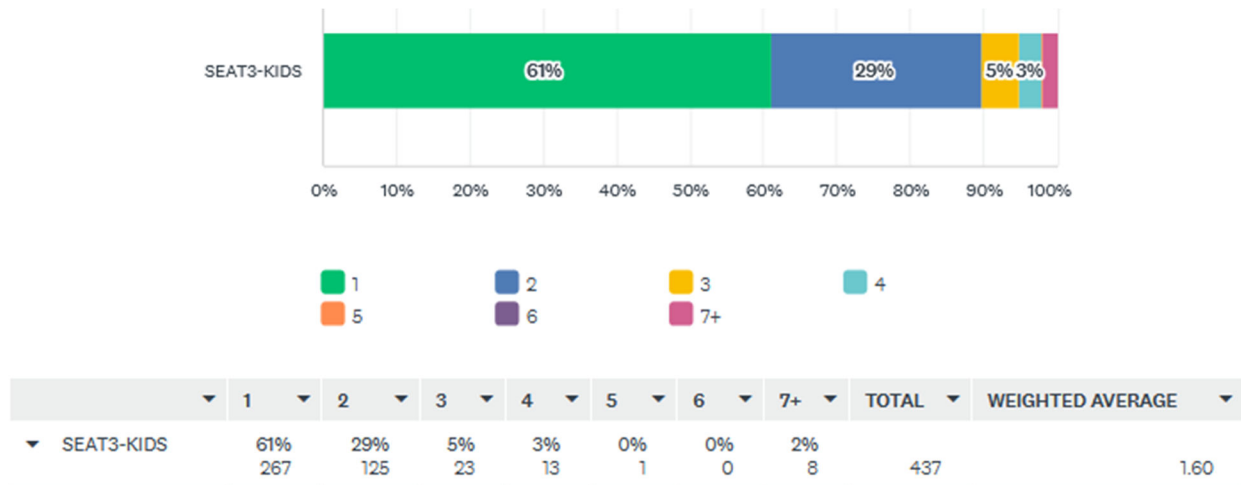
Despite these positive results, the small portion of respondents who “rarely” or “never” use a car seat represents a critical safety gap. This group may face barriers such as lack of awareness, misconceptions about safety standards, or limited access to appropriate child seats.

These findings emphasize the need for continued public awareness campaigns, targeted enforcement, and community programs that increase both knowledge and accessibility of child safety seats. Maintaining and improving already high usage rates is essential for safeguarding children and reducing preventable injuries on Puerto Rico’s roads.



Q22 | SEAT3 | CHILD PASSENGERS

SEAT3 | Typically, how many children between the ages of 0 and 8 ride with you in the vehicle?



The results indicate that the majority of respondents typically travel with one child aged 0 to 8 years in their vehicle, as reported by 61% (267 individuals). Nearly one-third, 29% (125 respondents), indicated traveling with two children in this age group. Smaller proportions reported higher numbers, with 5% (23 respondents) transporting three children, 3% (13 respondents) transporting four, and 1% (3 respondents) reporting five or more children. Only 2% (8 respondents) indicated traveling with seven or more children, likely reflecting special circumstances such as group transport or childcare services.

The weighted average of 1.60 confirms that most participants usually have one young child in their vehicle, with occasional cases involving two. These findings provide important context for understanding child passenger safety behavior and the use of protective seating systems, as vehicle occupancy levels directly influence seat availability, restraint use, and safety compliance.

This data suggests that child safety campaigns in Puerto Rico should primarily target single-child and two-child passenger situations while still addressing scenarios involving multiple children. Such an approach can help ensure that adequate and appropriate child restraint systems are available and used correctly for every passenger, regardless of vehicle load. The distribution also highlights the importance of driver education, especially for larger groups, to prevent lapses in safety compliance when transporting multiple children.



Q24 | SEAT4 | CHILD SEATING

SEAT5a | According to what you know, until what AGE should a child between 0 and 8 years old use a CAR SEAT type child restraint?

Car Seat Booster Nada

	CAR SEAT	BOOSTER	NADA	TOTAL	WEIGHTED AVERAGE
0	72% 53	14% 10	15% 11	74	2.57
1	95% 76	1% 1	4% 3	80	2.91
2	93% 56	2% 1	5% 3	60	2.88
3	91% 70	5% 4	4% 3	77	2.87
4	79% 58	15% 11	5% 4	73	2.74
5	59% 46	37% 29	4% 3	78	2.55
6	51% 38	45% 33	4% 3	74	2.47
7	44% 27	43% 26	13% 8	61	2.31
8	43% 42	46% 45	10% 10	97	2.33

The SEAT4 question in the CST25-2 Unrestrained Child Safety Attitudinal Survey examined the age of children traveling with respondents and the type of seating typically used. Results show a clear age-related shift in child restraint use. For infants under 1 year, 95% use a car seat, 1% a booster, and 4% no restraint. For children aged 2 and 3, car seat use remains high at 93% and 91%, respectively. By age 4, car seat use drops to 79%, with 15% using boosters and 5% unrestrained.

A notable change occurs at age 5, where car seat use declines to 59%, and booster use rises sharply to 37%, indicating a transitional stage in restraint type. At age 6, booster use surpasses car seats (45% vs. 51%), and by age 7, the trend reverses — 43% use boosters, 44% still use car seats, and 13% travel without restraints.

By age 8, nearly equal proportions use car seats (43%) and boosters (46%), while unrestrained travel increases to 10%. The weighted averages range from 2.91 for age 1 to 2.31 for age 7, reflecting the gradual decline in car seat dominance and the rise of boosters as children age.

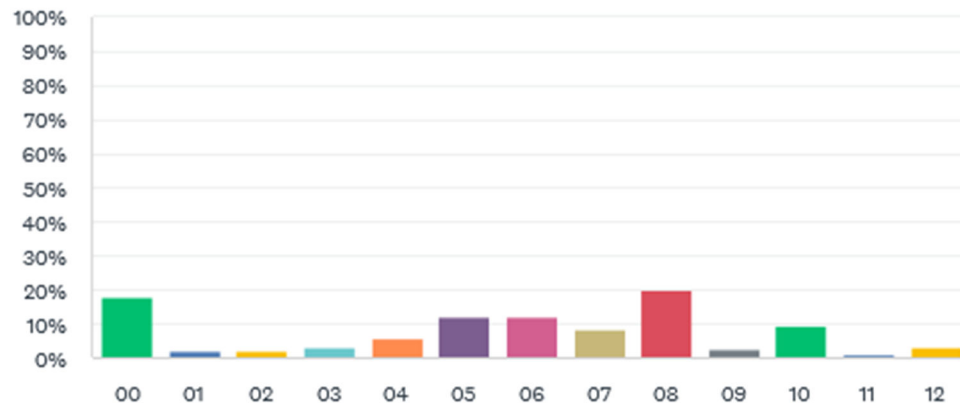
These findings emphasize that while compliance with child restraint use is high for younger children, usage decreases with age, particularly beyond age 4. The increase in unrestrained travel among older children (ages 7–8) highlights a potential safety gap and the need for reinforced public education and enforcement of child passenger safety laws, especially targeting parents of older children.



Q24 | SEAT5a | CAR SEAT AGE

According to what you know, until what AGE should a child between 0 and 8 years old use a CAR SEAT type child restraint?

Answered: 251 Skipped: 250



The CST25-2 Unrestrained Child Safety Attitudinal Survey results for question SEAT5a reveal varied public understanding regarding the recommended maximum age for a child between 0 and 8 years to use a car seat. Responses range widely from newborn age (0) to 12 years, indicating significant variation in awareness or interpretation of safety guidelines. The most frequent responses cluster at 0 years (15% of respondents), suggesting either a misunderstanding of the question or belief that no car seat is required beyond infancy, and at 8 years (20%), aligning more closely with common child passenger safety laws that recommend or require use of a car seat up to approximately this age. Smaller but notable proportions selected ages 5, 6, 7, and 10, while other ages received fewer mentions.

With 251 valid responses and 250 skipped entries, the high skip rate may also point to uncertainty or lack of knowledge about car seat regulations. This variation underscores a need for clearer public education on child passenger safety requirements in Puerto Rico. The absence of a consistent consensus suggests that many caregivers may be unsure of when it is legally and safely appropriate to transition children from car seats to booster seats or standard seat belts.

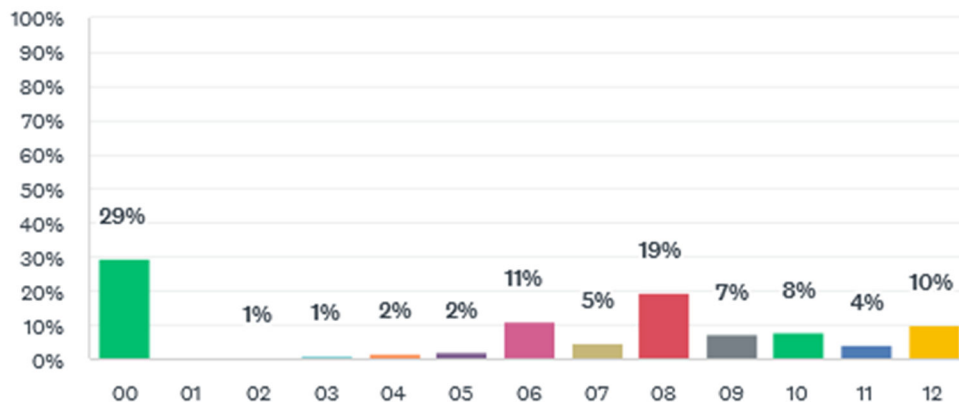
Public awareness campaigns could help reduce this variability, ensuring that children remain in age- and size-appropriate restraints for maximum safety during travel. This knowledge gap presents both a safety concern and an opportunity for targeted intervention.



Q25 | SEAT5b | BOOSTER AGE

Based on what you know, until what AGE should a child between 0 and 8 years old use a BOOSTER seat?

Answered: 187 Skipped: 314



The results for SEAT5b – Booster Seat Age show varying perceptions among respondents regarding the appropriate age for children between 0 and 8 years old to stop using a booster seat. The most common response, selected by 29%, was "0 years," which may indicate either uncertainty, misunderstanding of the question, or the belief that boosters are not necessary at all. The second most frequent response was 8 years (19%), aligning more closely with common safety guidelines.

Other reported ages include 6 years (11%), 10 years (7%), 12 years (10%), 9 years (3%), and smaller percentages for 1–5 years (ranging from 1% to 5%). These variations suggest inconsistencies in public knowledge about booster seat recommendations.

With 187 responses and a high number of skips (314), the data also indicates that many participants may not feel confident answering this question. This knowledge gap could be due to a lack of awareness of child passenger safety regulations or differences in personal experience with young children.

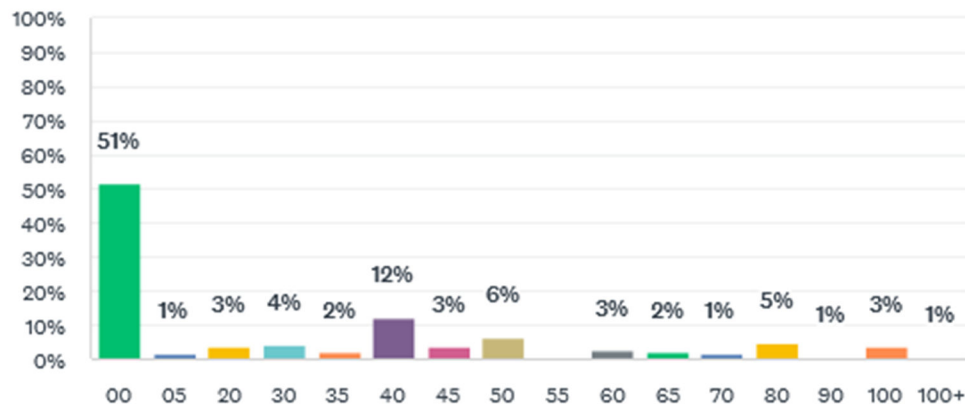
Overall, the findings highlight a need for targeted public education campaigns to clarify booster seat requirements and emphasize the safety benefits of using these restraints until children reach the recommended age and size. Misunderstandings—such as the high "0 years" response—should be addressed to improve compliance and ultimately enhance child passenger safety.



Q26 | SEAT6a | CAR SEAT WEIGHT

According to what you know, up to what **WEIGHT IN POUNDS** should a child between 0 and 8 years old use a **CAR SEAT** type child safety seat?

Answered: 146 Skipped: 355



The data from the Car Seat Weight question reveals significant gaps in respondents' knowledge regarding weight guidelines for child car seat use. Over half of the participants (51%) either provided no answer or indicated uncertainty, highlighting a lack of awareness on this safety measure. Among those who did provide a specific weight, the most frequent response was 40 pounds, cited by 12% of respondents, aligning with common safety recommendations for transitioning from a car seat to a booster seat. Smaller percentages suggested other weight thresholds, such as 50 pounds (6%), 30 pounds (4%), and 35 pounds (2%). A scattered distribution appears across higher weights (ranging from 55 to 100+ pounds), each cited by 1–5% of participants, suggesting some confusion about the correct maximum weight for car seat use.

This widespread uncertainty underscores the need for clearer public education campaigns on child passenger safety laws and manufacturer guidelines. Without proper knowledge, caregivers may transition children out of car seats prematurely, reducing crash protection and increasing injury risk. The prevalence of the 40-pound response suggests that some respondents are aware of standard safety benchmarks, but the high proportion of non-responses indicates a substantial opportunity for targeted awareness initiatives.

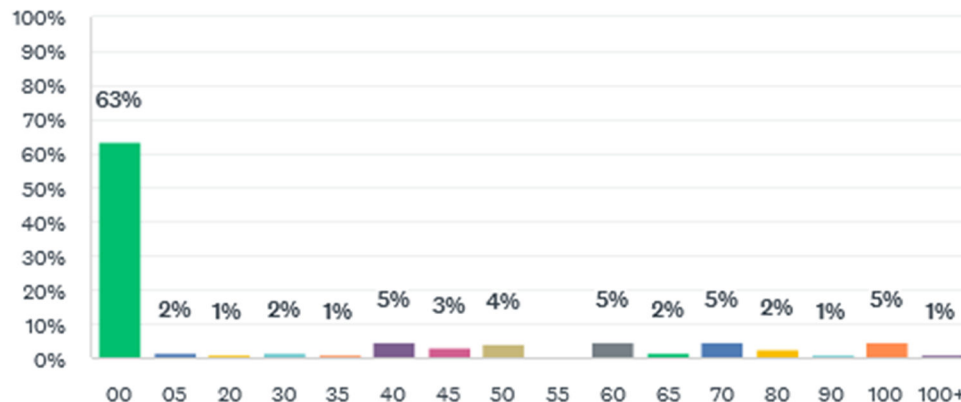
Overall, the results show that while a minority of participants demonstrate correct knowledge, the majority lack precise understanding of weight-based safety requirements, reinforcing the importance of consistent communication from traffic safety authorities, pediatricians, and community outreach programs to ensure children remain properly restrained based on their weight and size, not just age.



Q27 | SEAT6b | BOOSTER WEIGHT

According to what you know, up to what weight in pounds should a child between 0 and 8 years old use a booster seat?

Answered: 126 Skipped: 375



The results for SEAT6b reveal significant gaps in knowledge regarding the appropriate weight limits for booster seat use among children aged 0 to 8 years. A substantial 63% of respondents selected “0” pounds, which likely indicates uncertainty or lack of awareness rather than an actual recommendation. Beyond this, responses were scattered across a wide range of weight categories, with no single correct consensus emerging.

Only small proportions identified realistic weight ranges often associated with booster seat guidelines, such as 40 pounds (5%), 50 pounds (4%), or 60–80 pounds (about 5% each). Other answers varied from extremely low values, such as 5–10 pounds, to very high values exceeding 100 pounds.

This distribution underscores a considerable knowledge gap on the topic, with a majority either unsure or misinformed about safe weight thresholds for booster seat usage. Such gaps are critical because weight-based guidelines are a key safety factor in preventing injury during vehicle collisions.

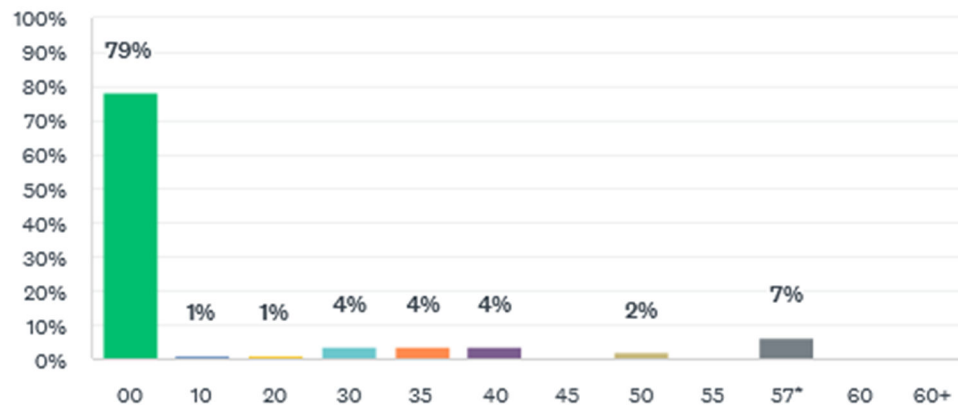
The findings suggest a strong need for targeted public education campaigns to raise awareness about booster seat requirements and to ensure that caregivers understand and follow safety recommendations based on both age and weight. Clear messaging through schools, pediatricians, and public safety agencies could help align public understanding with safety standards, ultimately improving child passenger safety compliance across Puerto Rico.



Q28 | SEAT7a | CAR SEAT HEIGHT

According to what you know, up to what HEIGHT IN INCHES should a child between the ages of 0 and 8 use a CAR SEAT–type child safety seat?

Answered: 107 Skipped: 394



The chart for SEAT7a shows respondents' knowledge of the maximum height in inches at which a child aged 0 to 8 should use a car seat. The vast majority, 79% (85 respondents), selected "0," which likely reflects uncertainty, lack of knowledge, or misunderstanding of the question. This is a clear indication that awareness of height-based guidelines for car seat use is limited.

The next most common responses are 57 inches at 7% (7 respondents) and 30, 35, and 40 inches each at 4%. Smaller proportions selected other height values, including 10 inches (1%), 45 inches (4%), 50 inches (2%), and 55 inches (2%).

In total, only a small minority selected answers that align with common safety recommendations (typically around 57 inches for transitioning out of a car seat in U.S. guidelines). The predominance of "0" suggests that most participants either do not know the standard or possibly believe the question does not apply to them.

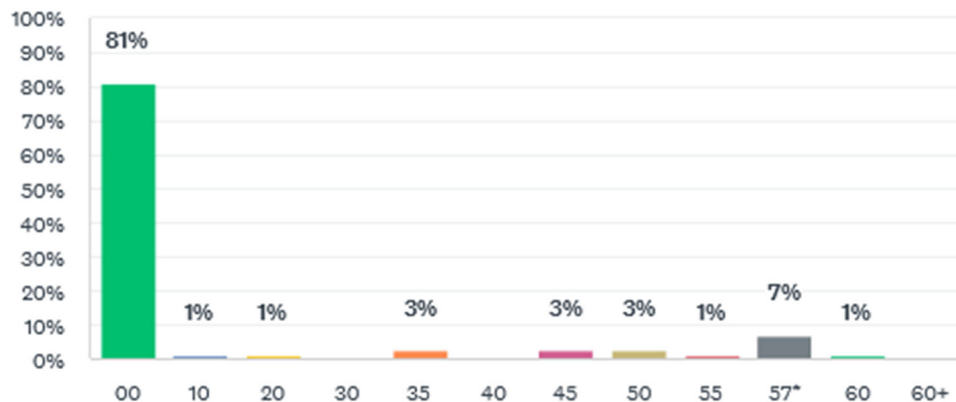
These findings point to a significant knowledge gap regarding height-based car seat safety standards. This gap underscores the importance of targeted education campaigns to improve public understanding of child passenger safety requirements, ensuring children remain in appropriate restraints for their height as well as their age and weight.



Q29 | SEAT7b | BOOSTER SEAT HEIGHT

According to what you know, up to what HEIGHT in inches should a child between 0 and 8 years old use a booster seat?

Answered: 106 Skipped: 395



The data for SEAT7b, which measures awareness of the height requirement for children aged 0 to 8 to use a booster seat, shows that the majority of respondents (81%) either did not know or selected “0” inches, indicating uncertainty or lack of knowledge about the correct standard. Small proportions of respondents selected specific heights, with the most common being 57 inches (7%), which aligns with widely recognized child passenger safety guidelines in many regions. Other responses were dispersed across values such as 35 inches (3%), 45 inches (3%), and 55 inches (3%), with all other options receiving minimal selections of 1% to 3%.

A total of 106 participants answered this question, while 395 skipped it, suggesting a significant knowledge gap or hesitation to provide an answer. This low response rate and concentration of “0” responses reinforce the likelihood that many respondents are unfamiliar with the official height requirements for booster seat use.

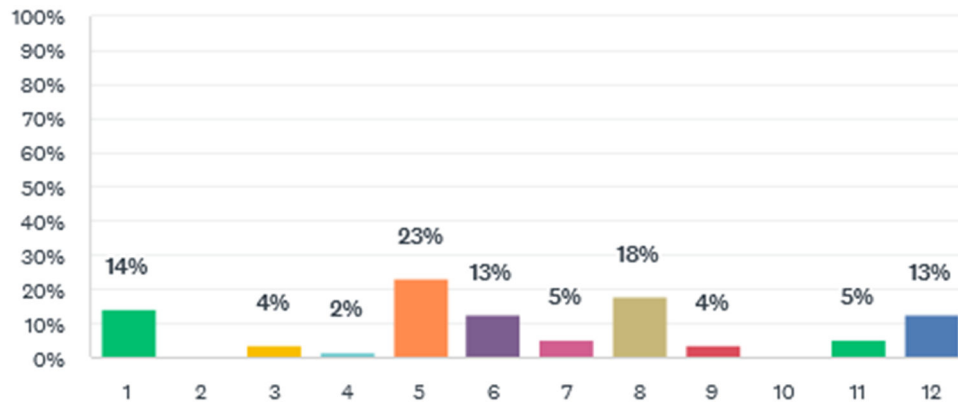
These results highlight an important opportunity for targeted public education campaigns to improve awareness of child passenger safety laws and guidelines, particularly the recommended height threshold for transitioning from booster seats to standard seat belts. Increasing knowledge in this area could help ensure that children are transported more safely, reducing the risk of injury in the event of a crash.



Q30 | SEAT8 | BOOSTER MOVE AGE

SEAT8 | According to what you know, at what AGE can a child be moved to a booster seat?

Answered: 56 Skipped: 445



In the CST25-2 Unrestrained Child Safety Attitudinal Survey, the question regarding the age at which a child can be moved to a booster seat yielded diverse responses from the 56 participants who answered (445 skipped). The most common response was 5 years old, selected by 23% of respondents, suggesting that many view this as the appropriate transition point from a car seat to a booster seat. The second most frequent answer was 8 years old (18%), followed by 1 year old (14%), which indicates a notable proportion of respondents may be underinformed about recommended safety guidelines.

Other reported ages included 6 years old (13%), 12 years old (13%), and smaller proportions for 7 years (5%), 10 years (5%), 4 years (4%), and 9 years (4%). Minimal responses were recorded for ages 3 (2%) and 11 (5%).

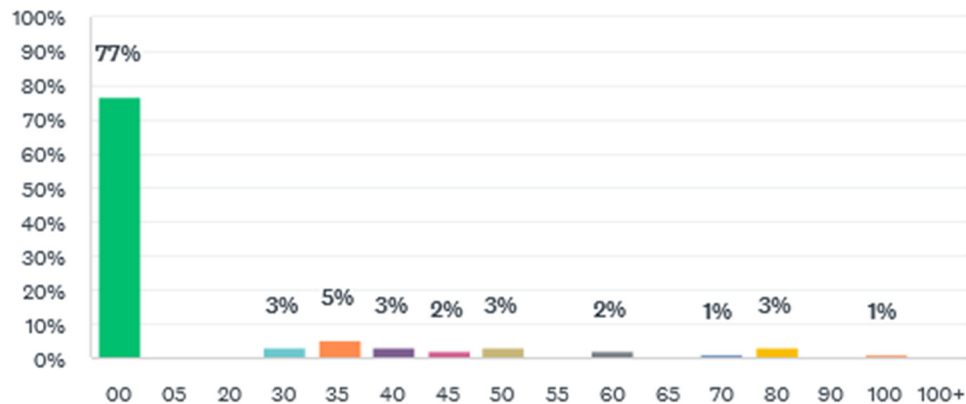
These results highlight varying levels of knowledge and possible misconceptions about child passenger safety best practices. Safety experts, including the American Academy of Pediatrics (AAP), generally recommend keeping children in a forward-facing car seat until they reach the maximum height or weight limit allowed by the seat's manufacturer before transitioning to a booster seat—often around ages 4 to 7. The survey findings indicate a potential need for targeted educational campaigns to ensure parents and caregivers understand the correct timelines for transitioning to booster seats, thereby improving child safety during travel.



Q31 | SEAT9 | BOOSTER WEIGHT

According to what you know, at what **WEIGHT IN POUNDS** can a child be moved to a booster seat?

Answered: 99 Skipped: 402



The results from SEAT9 in the *Unrestrained Child Safety Attitudinal Survey* show that a majority of respondents—77%—either do not know or provided a non-numeric/zero response when asked at what weight in pounds a child can be moved to a booster seat. This indicates a substantial gap in public knowledge regarding weight-based safety guidelines.

Among those who gave a specific weight, the most common response was 40 pounds (5%), followed by 30 pounds (3%) and 45 pounds (3%). Other reported weights included 35 pounds (2%), 50 pounds (3%), and small percentages at higher weights such as 55, 60, 65, 70, 80, and 100+ pounds, each capturing between 1% and 3% of responses.

This distribution highlights a significant lack of awareness or clarity among respondents about the proper weight threshold for transitioning to a booster seat, which is critical for ensuring child passenger safety. National child safety guidelines typically recommend that children remain in a forward-facing car seat with a harness until they outgrow the manufacturer's height or weight limits, often around 40 to 65 pounds, before transitioning to a booster seat.

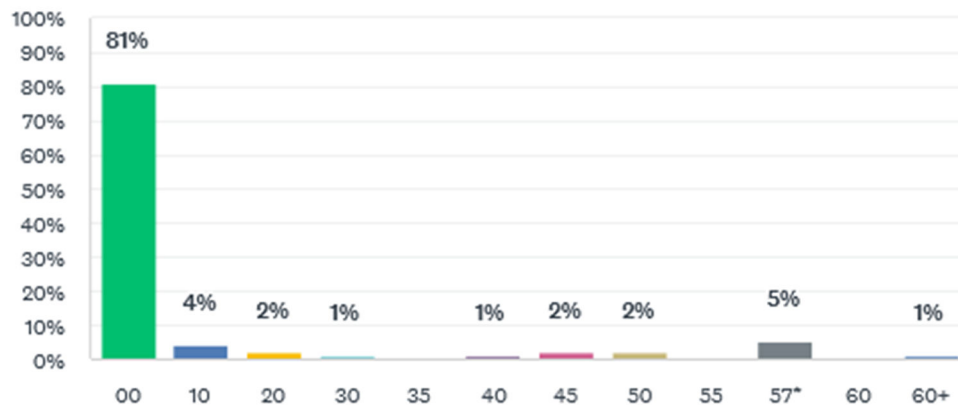
Given that the vast majority of participants did not provide a correct or informed weight estimate, these findings suggest an urgent need for targeted educational campaigns. Such initiatives could focus on increasing public understanding of both weight and height guidelines, ensuring that children are kept in the most protective restraint system for as long as possible to reduce injury risks in the event of a crash.



Q32 | SEAT10 | BOOSTER HEIGHT

According to what you know, at what HEIGHT IN INCHES can a child be moved to a booster seat?

Answered: 95 Skipped: 406



The results from SEAT10 in the *Unrestrained Child Safety Attitudinal Survey* reveal that 81% of respondents either did not know or provided a zero response when asked at what height in inches a child can be moved to a booster seat. This overwhelming percentage underscores a significant knowledge gap regarding height-based safety requirements for child passenger transitions.

Among those who provided a specific height, small proportions mentioned 10 inches (4%), 20 inches (2%), 30 inches (1%), 40 inches (1%), 45 inches (2%), 50 inches (2%), and 55 inches (2%). The most accurate height category, 57 inches or more—commonly cited in U.S. child passenger safety guidelines as the benchmark for when a child can safely use an adult seat belt without a booster—was identified by only 5% of respondents.

This distribution indicates that public awareness of height-based guidelines is even lower than weight-based knowledge, as reflected in previous survey items. National safety recommendations generally advise that children should remain in a booster seat until they are at least 57 inches tall and can sit against the vehicle seat back with knees bent comfortably at the edge of the seat while the seat belt fits correctly.

The low percentage of respondents correctly identifying the 57-inch threshold highlights the need for more focused outreach and education on booster seat requirements. Addressing these knowledge gaps could help ensure that children remain properly restrained for their size, reducing the risk of injury in a crash.



Q34 | SEAT11 | SEAT INSPECTIONS

Could you tell me which agency in Puerto Rico inspects or installs child safety seats?

ANSWER CHOICES	RESPONSES	
▼ Cuerpo de Bomberos de Puerto Rico: 421 (84.2%)	79%	364
▼ Policía de Puerto Rico	4%	18
▼ Comisión para la Seguridad en el Tránsito (CST)	4%	18
▼ Departamento de Transportación y Obras Públicas de Puerto Rico	1%	5
▼ Asientos protectores 101	1%	3
▼ Después que le da de alta en el hospital:	0%	1
▼ Departamento de la Familia de Puerto Rico	0%	0
▼ Departamento de Seguridad Pública (Manejo de Emergencias)	0%	0
▼ No Sabe	11%	49
TOTAL	458	

In the *Unrestrained Child Safety Attitudinal Survey*, respondents were asked to identify the agency in Puerto Rico where child safety seats are inspected or installed. The results show a clear consensus, with the Cuerpo de Bomberos de Puerto Rico emerging as the primary point of reference. A substantial 79% (364 respondents) named this agency, underscoring its strong public association with child seat safety programs and services.

Several other agencies received minimal recognition. The Policía de Puerto Rico and the Comisión para la Seguridad en el Tránsito (CST) each were mentioned by 4% of respondents (18 responses each). The Departamento de Transportación y Obras Públicas de Puerto Rico followed with 1% (5 responses), and *Asientos protectores 101*, likely a private or non-governmental initiative, was also cited by 1% (3 responses).

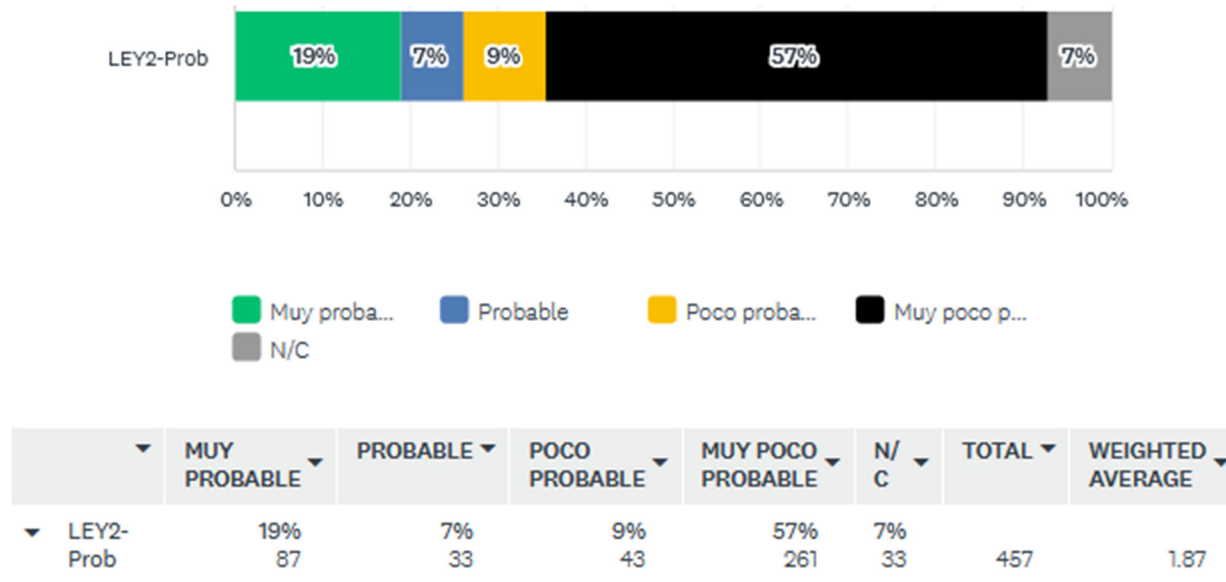
The Departamento de la Familia de Puerto Rico and the Departamento de Seguridad Pública (Manejo de Emergencias) were not identified by any respondents.

Notably, 11% of participants (49 respondents) indicated that they did not know which agency handled child safety seat inspections or installations. This lack of awareness highlights an opportunity for targeted public information campaigns to improve understanding and accessibility of these services.



Q34* | LEY2 | TICKET LIKELYHOOD

What is the likelihood of receiving a ticket for not using a child safety seat when traveling with children between the ages of 0 and 8 years?



The data from the *Unrestrained Child Safety Attitudinal Survey* on the perceived likelihood of receiving a fine for not using a child safety seat when transporting children ages 0 to 8 shows that most respondents consider the risk to be low. A majority of 57% rated the likelihood as “Very unlikely” (*Muy poco probable*), while 9% said “Somewhat unlikely” (*Poco probable*). Only 19% considered it “Very likely” (*Muy probable*), and 7% selected “Likely” (*Probable*).

An additional 7% of respondents chose “Don’t know/No comment” (*N/C*).

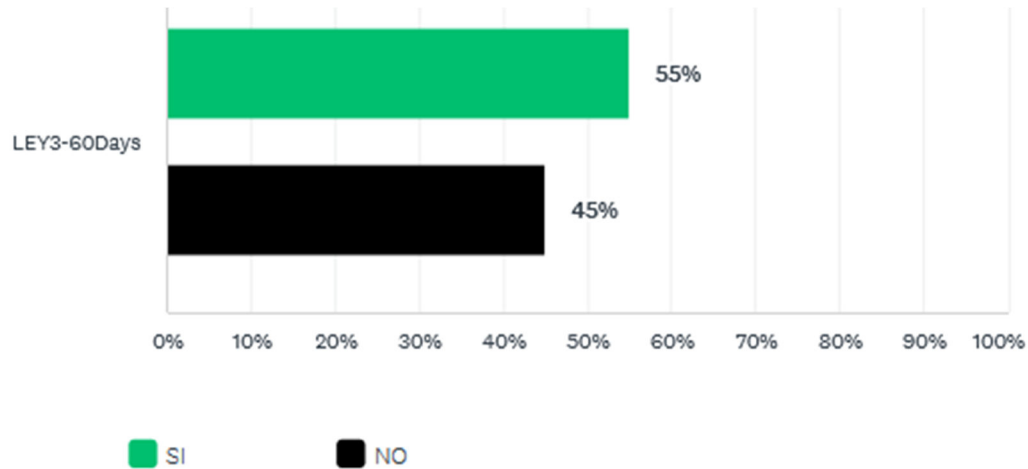
In total, 26% of participants perceive a moderate to high probability of receiving a fine, while 66% believe it is unlikely or very unlikely. The weighted average score of 1.87 (on a 5-point scale where higher numbers indicate greater perceived likelihood) reinforces the overall perception that enforcement is weak or that fines are not a frequent consequence for non-compliance with child restraint laws.

These findings may suggest a gap between existing legislation and public perception of enforcement. Low perceived likelihood of fines can impact compliance rates, as individuals might prioritize adherence to the law less when they believe enforcement is minimal. Strengthening public awareness of actual enforcement rates and potential penalties could be an important step in improving child safety seat usage.



Q35 | LEY3 | ENFORCEMENT AWARENESS

In the past 60 days, do you recall seeing, reading, or hearing anything about the Puerto Rico Police issuing fines to people traveling with minors who are not using a child safety seat?



	SI	NO	TOTAL	WEIGHTED AVERAGE
LEY3-60Days	55% 248	45% 203	451	1.55

In the Unrestrained Child Safety Attitudinal Survey, participants were asked if, within the past 60 days, they recalled seeing, reading, or hearing information about the Puerto Rico Police issuing fines to individuals traveling with minors without using a child safety seat.

Results indicate that 55% of respondents (248 individuals) answered Yes, while 45% (203 individuals) responded No. This suggests that just over half of the surveyed population had recent exposure to messages or reports about police enforcement related to child seat use. The weighted average score for this question was 1.55, indicating a slight leaning toward awareness but with a significant proportion still unaware of such enforcement efforts.

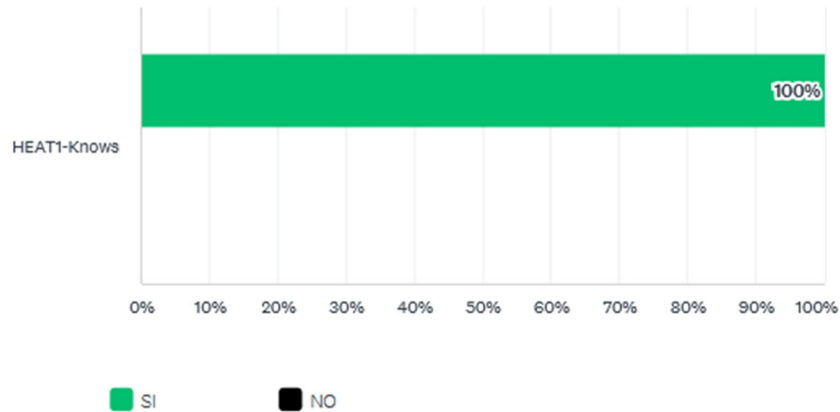
These findings highlight that while awareness campaigns or news coverage appear to be reaching a majority, a substantial portion of the population remains uninformed about the possibility of fines for non-compliance. This gap underscores the importance of reinforcing public outreach and education regarding child restraint laws in Puerto Rico, particularly targeting the 45% who have not encountered recent enforcement-related messaging.



Q36 | HEAT1 | HEATSTROKE AWARENESS

Did you know that leaving a child alone inside a vehicle, even for a few minutes, can cause death from heatstroke?

Answered: 458 Skipped: 43



	SI	NO	TOTAL	WEIGHTED AVERAGE
HEAT1-Knows	100% 458	0% 0	458	2.00

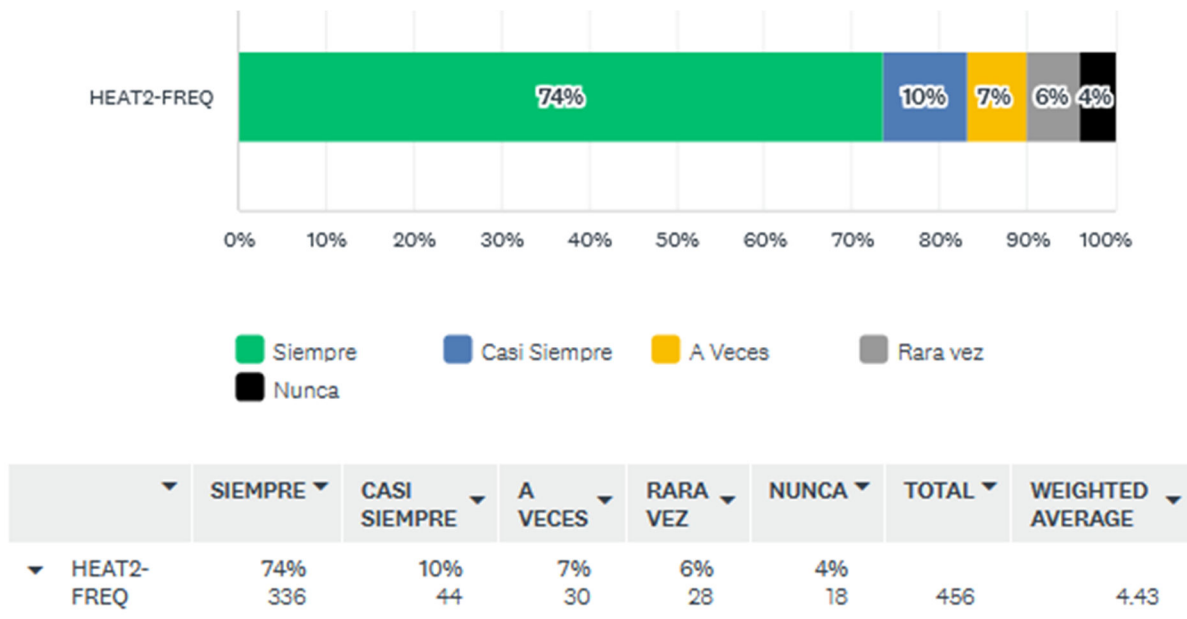
All respondents (100%, n=458) correctly recognized that leaving a child alone inside a vehicle, even for a few minutes, can cause death from heatstroke. There were no “No” responses, demonstrating unanimous awareness among participants about the dangers of heat exposure in enclosed vehicles. This finding indicates that public education efforts around this specific risk have achieved full penetration among surveyed individuals.

The universal understanding of the hazard suggests that further outreach in this area may focus on reinforcing behavior change, rather than increasing basic awareness. Such complete agreement is rare in attitudinal surveys and highlights the success of existing messaging on preventing pediatric vehicular heatstroke.



Q37 | HEAT2 | BACKSEAT CHECK

How often do you check the back seat before leaving the vehicle?



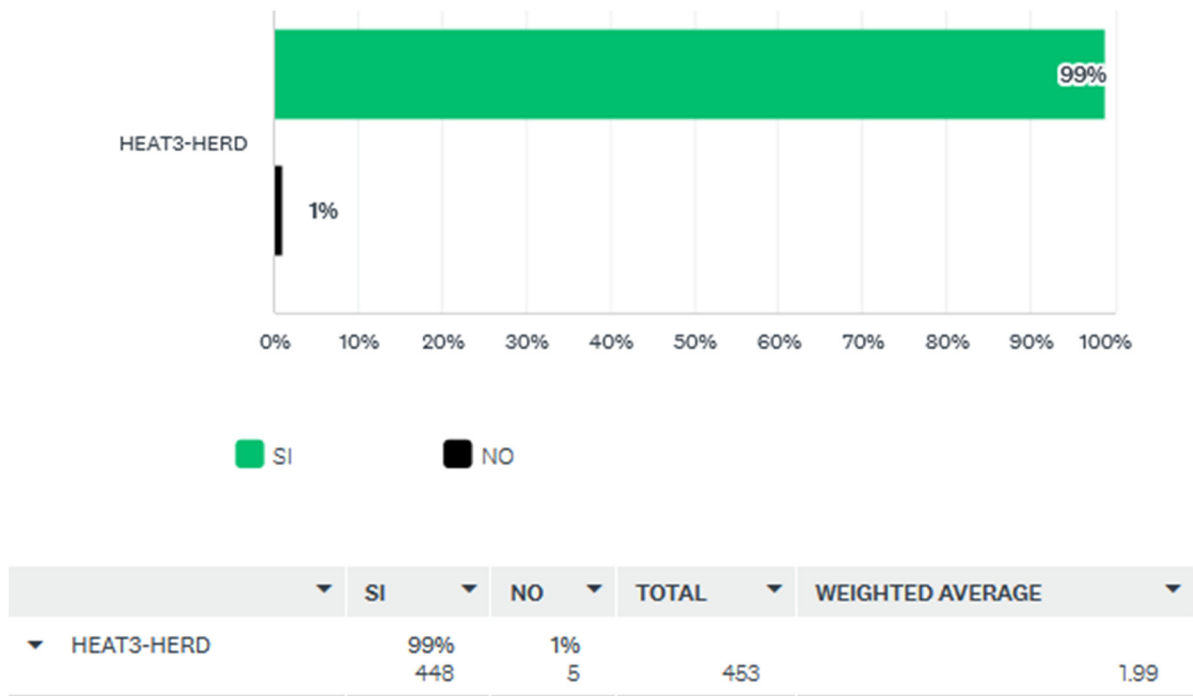
In the Unrestrained Child Safety Attitudinal Survey, participants were asked how often they check the back seat before leaving their vehicle. The results reveal a strong commitment to this safety practice among the majority of respondents. A significant 74% (336 respondents) reported that they always check the back seat, while another 10% (44 respondents) indicated that they almost always perform this action. Together, these groups represent more than eight in ten respondents who regularly ensure that no child is left unattended in a vehicle. A smaller proportion reported less consistent behavior, with 7% (30 respondents) stating they check sometimes, 6% (28 respondents) indicating they do so rarely, and only 4% (18 respondents) admitting that they never check the back seat before exiting.

The weighted average score of 4.43 out of 5 reflects a generally high level of adherence to this safety precaution. These findings suggest that public awareness campaigns and educational efforts regarding the dangers of leaving children alone in vehicles—particularly the risk of heatstroke—may be having a positive impact. However, the presence of a minority who check infrequently or never highlights an ongoing need for targeted outreach to ensure all caregivers consistently follow this critical safety measure.



Q38 | HEAT3 | HEATSROKE CASES

Have you heard about cases in which children have died after being left inside a vehicle?



In the Unrestrained Child Safety Attitudinal Survey, almost all respondents (99%) reported having heard about cases where children have died after being left inside a vehicle, while only 1% indicated they had not. This overwhelming awareness suggests that incidents involving pediatric vehicular heatstroke are well known among the surveyed population. Such high recognition is likely the result of significant media coverage, public safety campaigns, and community discussions emphasizing the dangers of leaving children unattended in vehicles. The data reflects a widespread understanding of the potentially fatal consequences of such actions, likely reinforcing preventive behaviors among the public.

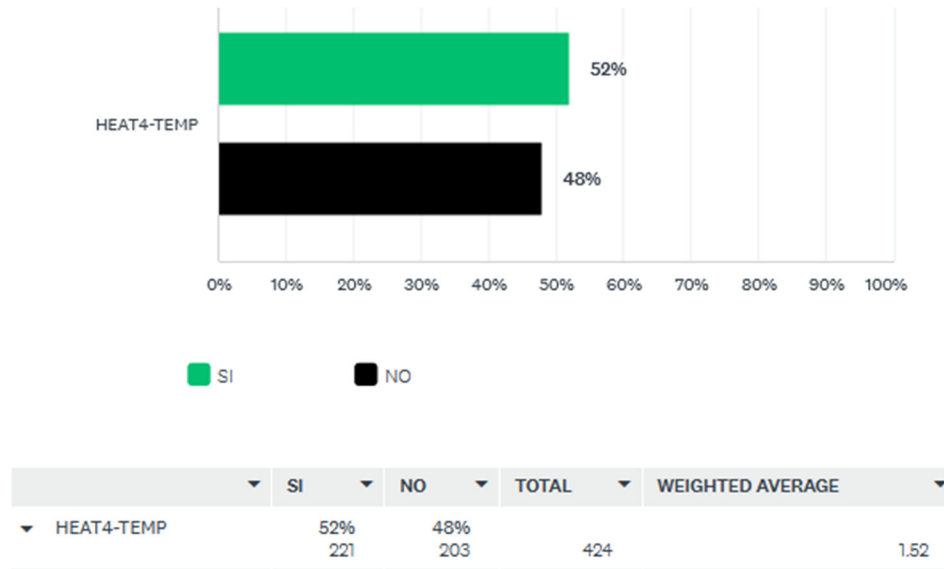
During the week the survey was conducted, a 10-month-old baby tragically died after being forgotten inside a vehicle at a residence in Trujillo Alto. According to police, the father, who cared for the children during the day while working nights as a ride-share driver, inadvertently left the infant in the car after returning from a school appointment. This tragedy underscores the urgent need for vigilance and for translating public awareness into habitual preventive actions, such as always checking the back seat before locking the car, establishing reminder systems, and promoting community vigilance. While knowledge is high, the findings demonstrate that it must be paired with actionable, sustained behavioral changes to eliminate the risk of heatstroke-related child fatalities in vehicles.

SOURCE: Primera Hora. (2025, August 4). *Bebé de 10 meses muere tras ser olvidado en un carro en Trujillo Alto.* <https://www.primerahora.com/noticias/policia-tribunales/notas/bebe-de-10-meses-muere-tras-ser-olvidado-en-un-carro-en-trujillo-alto/>



Q39 | HEAT4 | HEATSROKE TEMPERATURE

According to what you know, what temperature can the inside of a vehicle reach in less than 10 minutes, even if parked in the shade?



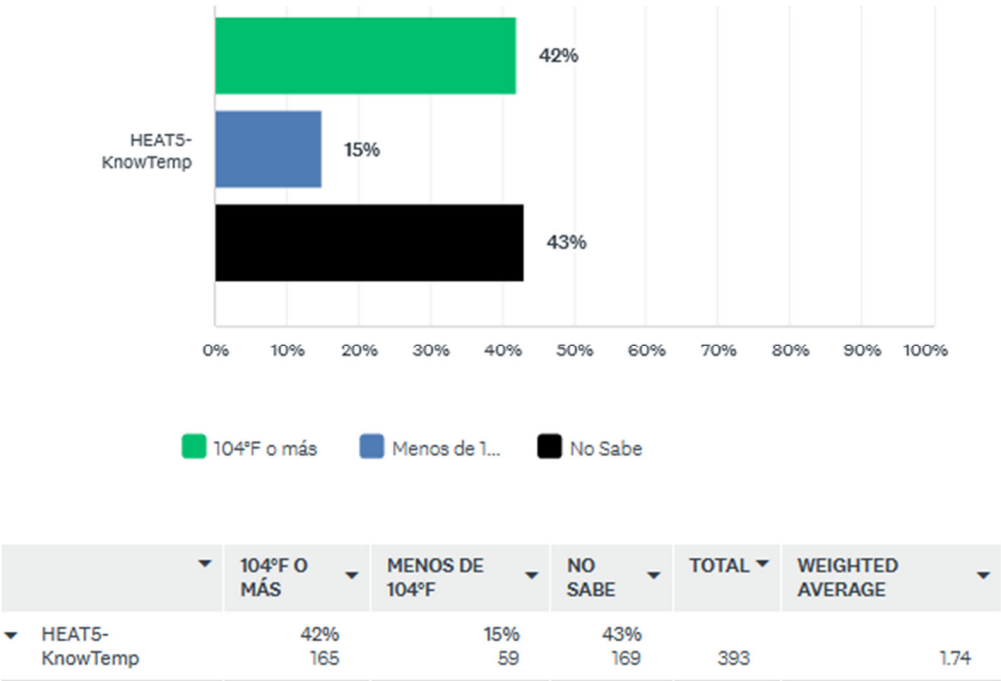
In the Unrestrained Child Safety Attitudinal Survey, 52% of respondents indicated that they are aware of the temperature a vehicle's interior can reach in less than 10 minutes, even when parked in the shade, while 48% reported not knowing. This near-even split highlights a significant knowledge gap regarding the rapid rise of interior vehicle temperatures and the associated dangers to children. Despite widespread awareness of heatstroke risks in general, as reflected in other survey questions, many individuals may not fully understand the speed at which heat can build inside a parked vehicle. This lack of knowledge could lead to underestimating the risk during short stops or in seemingly mild weather conditions.

Public safety campaigns should focus on emphasizing that vehicle interiors can heat to life-threatening levels quickly, regardless of shade or outside temperature, and that no duration is safe for leaving children unattended. Strengthening this specific awareness could further reduce the incidence of pediatric vehicular heatstroke by encouraging precautionary behaviors.



Q40 | HEAT5 | FATAL TEMPERATURE

According to what you know, what is the body temperature at which a child can suffer a fatal heatstroke?



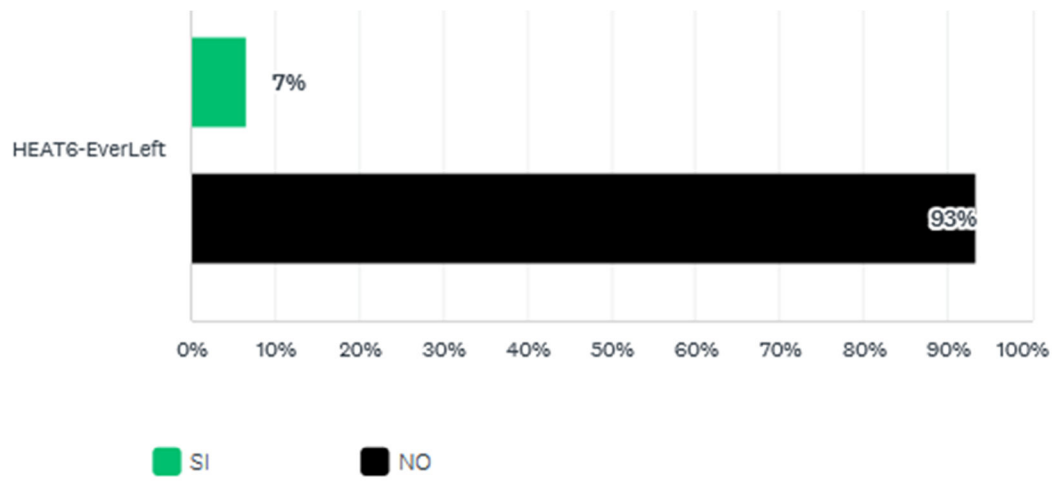
In the Unrestrained Child Safety Attitudinal Survey, 42% of respondents correctly identified that a child could suffer a fatal heatstroke at a body temperature of 104°F or higher. Meanwhile, 15% believed it could occur at a temperature below 104°F, and 43% admitted they did not know the correct threshold. These results indicate that while a significant portion of the surveyed population is aware of the correct critical temperature, there is still substantial uncertainty or misinformation among more than half of respondents. This knowledge gap highlights the need for targeted public education campaigns to inform caregivers about the specific dangers of elevated body temperatures in children, especially in the context of vehicular heatstroke.

Clear messaging should emphasize how quickly a child’s body temperature can rise to dangerous levels inside a vehicle, even on mild days, and the urgency of taking preventive measures to avoid leaving children unattended. Improving awareness of the 104°F threshold could help translate general heatstroke awareness into specific, life-saving behavioral changes.



Q41* | HEAT6 | CHILD LEFT

Have you ever left a child inside a vehicle to run a quick errand?



	SI	NO	TOTAL	WEIGHTED AVERAGE
HEAT6-EverLeft	7% 29	93% 411	440	1.07

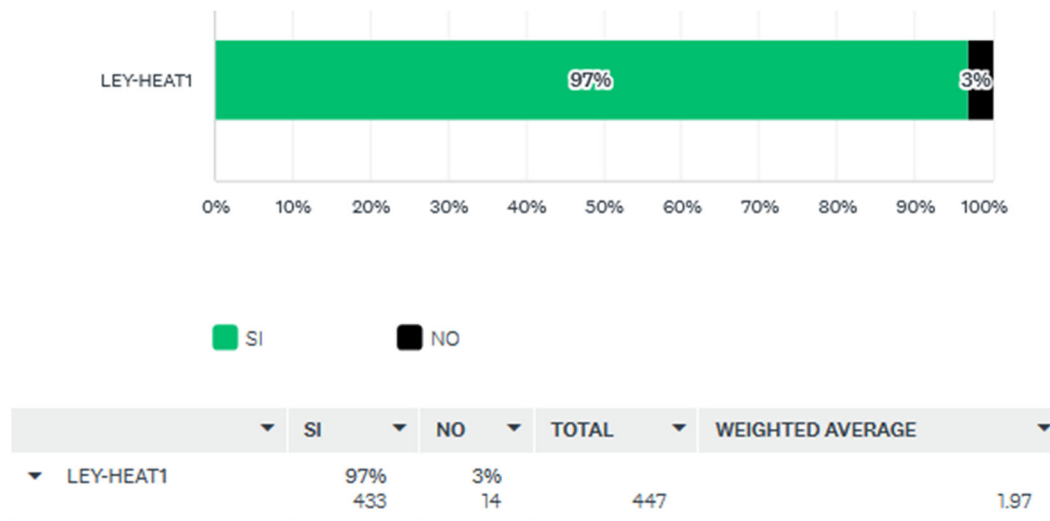
In the Unrestrained Child Safety Attitudinal Survey, 93% of respondents reported that they have never left a child inside a vehicle to run a quick errand, while 7% admitted to having done so at least once. This overwhelming majority indicates a high level of adherence to safe child passenger practices among participants. The low occurrence of this risky behavior suggests that awareness campaigns highlighting the dangers of leaving children unattended in vehicles may be effective.

However, the small percentage who have engaged in this practice still represents significant safety concern, as even brief periods in a closed vehicle can lead to dangerous temperature increases and potential heatstroke in children. The findings reinforce the need for continued public education emphasize that no amount of time is safe to leave a child alone in a car, regardless of weather conditions or perceived quickness of the errand.



Q43 | LEY-HEAT1 | LEGAL AWARENESS

Do you know that in Puerto Rico it is illegal to leave a minor unattended in a vehicle?



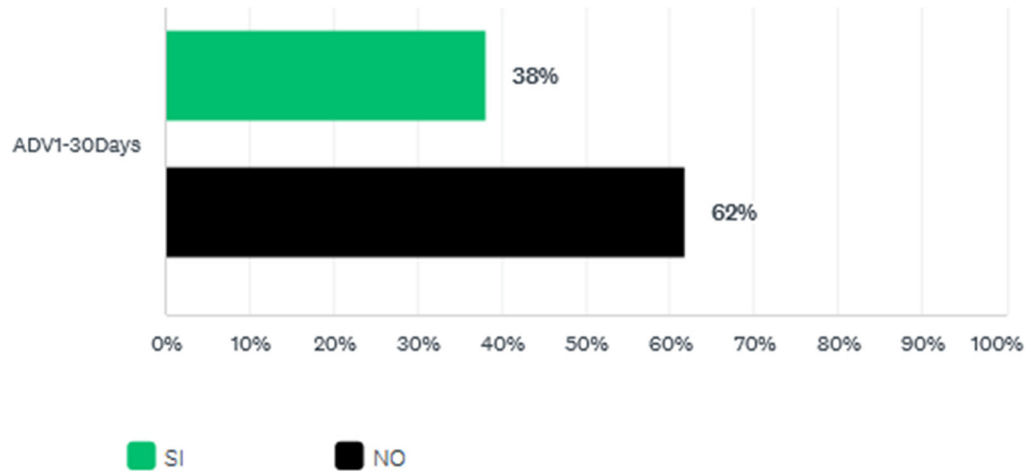
In the Unrestrained Child Safety Attitudinal Survey, an overwhelming majority of respondents (97%) reported being aware that it is illegal in Puerto Rico to leave a minor unattended in a vehicle, while only 3% indicated they were unaware of this law. This high level of legal awareness suggests that public education efforts, enforcement messaging, and media coverage regarding this statute have been largely effective in reaching the population. Such widespread knowledge is a critical first step in prevention, as understanding the legal consequences can serve as a deterrent and reinforce responsible behavior among caregivers.

However, awareness alone does not guarantee compliance, and continued emphasis on both education and enforcement is essential to ensure that this knowledge translates into consistent protective actions. These results underscore the importance of maintaining visibility of the law through ongoing campaigns and community outreach to fully eliminate dangerous practices that put children at risk of heatstroke or other harm when left unattended in vehicles.



Q44 | ADV1 | CAMPAIGN RECALL

In the past 30 days, do you recall seeing, reading, or hearing any message from a campaign promoting the use of child safety seats for children ages 0 to 8?



	SI	NO	TOTAL	WEIGHTED AVERAGE
ADV1-30Days	38% 182	62% 294	476	1.38

In the *Campaign Recall* question of the Unrestrained Child Safety Attitudinal Survey, 38% of respondents reported having seen, read, or heard a message in the past 30 days promoting the use of child safety seats for children ages 0 to 8. Conversely, 62% indicated they had not encountered any such campaign message. This suggests that while over one-third of the surveyed population has been reached by awareness efforts, a significant majority remains unreached.

The findings highlight an opportunity to expand the reach and frequency of safety seat promotion campaigns to ensure broader public exposure, which could enhance compliance and child passenger safety.



Q45 | ADV2 | MESSAGE SOURCE

In what way did you hear, see, or read the message about the use of the child safety seat?

ANSWER CHOICES	RESPONSES	
▼ Televisión	69%	139
▼ Redes Sociales	16%	32
▼ Radio	14%	28
▼ Internet	11%	22
▼ Noticias en Línea	9%	19
▼ Televisión Local	8%	17
▼ Publicidad Exterior	6%	13
▼ Televisión Paga (cable o satélite)	4%	9
▼ Rótulos / Vallas Publicitarias	2%	4
▼ Eventos (festivales, fiestas patronales, etc.)	1%	3
▼ Prensa Escrita	1%	3
▼ Plataformas de Video (streaming)	1%	2
▼ Radio por Internet	1%	2
▼ Cine	0%	0
▼ Conciertos	0%	0
Total Respondents: 201		

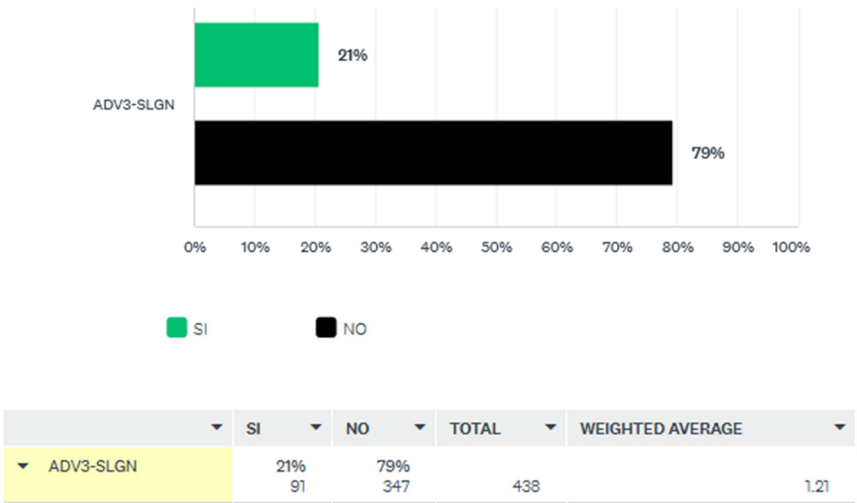
The survey results indicate that television was the dominant source of messages promoting the use of child safety seats, reported by 69% (139) of respondents. Social media was the second most common source at 16% (32), followed closely by radio at 14% (28). Other notable sources included the internet (11%, 22), online news (9%, 19), and local television (8%, 17). Less frequently mentioned channels were outdoor advertising (6%, 13), paid cable or satellite TV (4%, 9), billboards/signs (2%, 4), and events such as festivals or patron saint celebrations (1%, 3).

Traditional print media, streaming video platforms, and internet radio each accounted for 1% of responses. No respondents reported receiving the message via cinema or concerts. These results suggest that traditional broadcast media—particularly television—remains the most effective channel for disseminating child safety seat campaign messages, while digital and community-based channels play a smaller but still notable role.



Q46 | ADV3 | CAMPAIGN SLOGAN

Do you remember any slogan or phrase you have seen, heard, or read as part of the campaign on the use of the child safety seat?



In the Unrestrained Child Safety Attitudinal Survey, only 21% of respondents reported recalling a slogan or phrase from a campaign promoting the use of child safety seats, while 79% did not remember any. This indicates that the majority of the surveyed population did not retain a specific campaign message, suggesting that the slogans used may not have been sufficiently memorable or impactful. The low recall rate could point to gaps in the frequency, visibility, or resonance of the campaign’s messaging.

Enhancing slogan memorability might require using concise, catchy, and emotionally resonant phrases, reinforced through repeated exposure across multiple channels. Increasing the reach and consistency of the campaign's message could help improve public recall and, ultimately, encourage the proper use of child safety seats among parents and caregivers.



Q47 | ADV4 | SLOGAN RECALL

What slogans do you remember from this campaign about the use of the child safety seat?

	0-NADA EFECTIVO	1	2	3	4-MUY EFECTIVO	TOTAL	WEIGHTED AVERAGE
▼ Asiento protector, úsalo correctamente	8% 27	1% 5	2% 8	4% 15	84% 287	342	3.55
▼ Una sola muerte por no utilizar el asiento protector es demasiado	8% 29	2% 7	3% 12	3% 12	83% 285	345	3.50
▼ Recuerda, no le puedes dar rewind al tiempo ¡cumple con la ley!	11% 36	2% 7	4% 15	5% 17	78% 267	342	3.38

The data evaluates the perceived effectiveness of three slogans promoting the use of child safety seats. The evaluation of slogans aimed at promoting child safety seat use reveals that “*Asiento protector, úsalo correctamente*” (“Child safety seat, use it correctly”) remains the most impactful. This message received 84% “very effective” ratings and achieved the highest weighted average of 3.55, indicating that its clear and direct instruction resonates strongly with respondents. Its straightforward call to action leaves little room for ambiguity, making it effective for encouraging consistent safety seat use.

Following closely, “*Una sola muerte por no utilizar el asiento protector es demasiado*” (“A single death from not using the safety seat is too many”) garnered 83% “very effective” responses and a weighted average of 3.50. This slogan appeals to emotions by highlighting the severe consequences of neglecting child safety measures. Its effectiveness lies in the emotional weight of the message, which reinforces the importance of prevention to avoid irreversible tragedies.

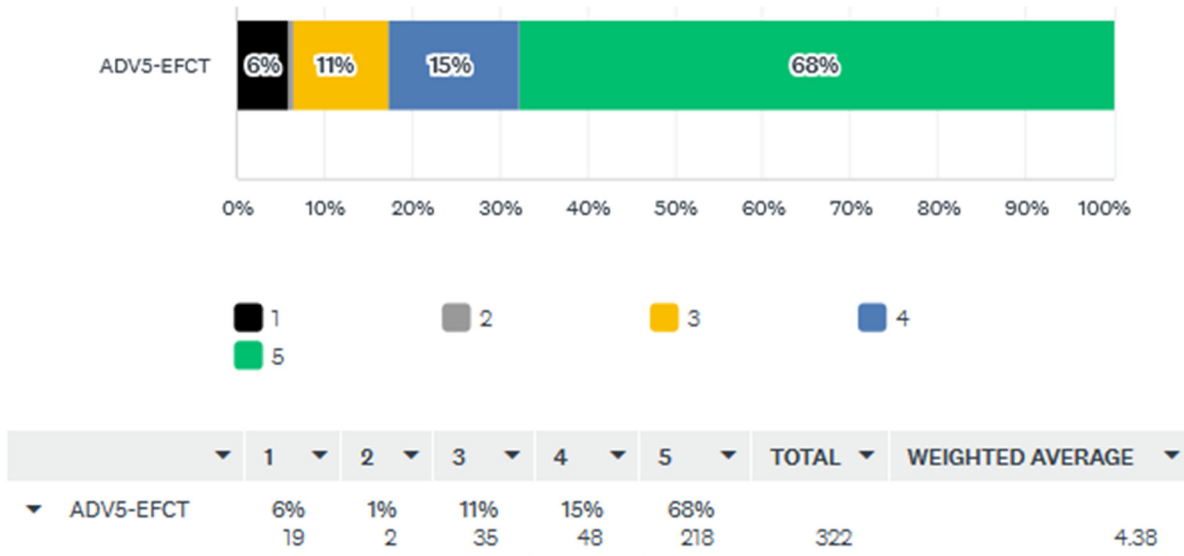
The third slogan, “*Recuerda, no le puedes dar rewind al tiempo ¡cumple con la ley!*” (“Remember, you can’t rewind time — comply with the law!”), ranked slightly lower with 78% “very effective” ratings and a weighted average of 3.38. While still impactful, its metaphorical style may require more interpretation, which could reduce immediate clarity compared to the more direct messages.

Overall, the results suggest that direct, clear, and instructional slogans achieve the strongest emotional and behavioral connection with the audience, with all three performing well but the most straightforward call-to-action — urging proper use — scoring highest.



Q48 | 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 remember seeing, reading, or hearing about the use of the child safety seat to be?



The survey results show that a large majority of respondents perceived the child safety seat campaign messages as highly impactful. Specifically, 68% rated the messages with the highest score of 5 (very effective), while 15% rated them as 4, indicating strong effectiveness. Combined, these two top ratings account for 83% of responses, demonstrating that the campaign’s core message resonated strongly with most participants.

A smaller portion of respondents expressed moderate perceptions of effectiveness: 11% rated the messages as 3, and only 1% assigned a 2 rating. These intermediate scores suggest that while the majority found the campaign compelling, there remains a segment that viewed its impact as average or slightly below average.

Negative perceptions were minimal, with just 6% rating the messages as 1 (not effective at all). The weighted average score of 4.38 reflects the overwhelmingly positive reception of the campaign’s communication efforts. This high score underscores the importance of maintaining the strategies that drove engagement and clarity in the messaging, as they appear to have successfully influenced awareness and potentially encouraged safer child passenger practices.



Q49 | ADV6 | RESPONSIBLE AGENCY

Of the following agencies, which do you believe is responsible for the campaign on the use of child safety seats for children aged 0 to 8 years that you recall being exposed to?

ANSWER CHOICES	RESPONSES	
▼ Comisión para la Seguridad en el Tránsito (CST)	38%	149
▼ Cuerpo de Bomberos de Puerto Rico: 421 (84.2%)	35%	136
▼ Policía de Puerto Rico	9%	36
▼ No Sabe	8%	32
▼ Departamento de Transportación y Obras Públicas de Puerto Rico	5%	20
▼ Asientos protectores 101	3%	12
▼ Después que le da de alta en el hospital:	1%	4
▼ Departamento de la Familia de Puerto Rico	1%	2
▼ Departamento de Seguridad Pública (Manejo de Emergencias)	1%	2
TOTAL		393

The survey results show that the Comisión para la Seguridad en el Tránsito (CST) was most frequently identified as the agency responsible for the child safety seat campaign, with 38% of respondents (149 people) attributing the campaign to them. The Puerto Rico Fire Department followed closely at 35% (136 responses), while 9% (36 respondents) believed the Puerto Rico Police was responsible.

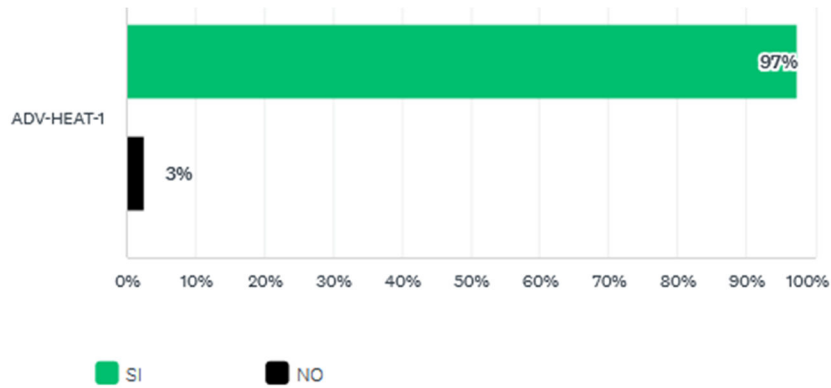
A smaller portion, 8% (32 respondents), indicated they did not know which agency was behind the campaign. Other mentions included the Puerto Rico Department of Transportation and Public Works (5%, 20 responses), Asientos Protectores 101 (3%, 12 responses), the Puerto Rico Department of the Family (1%, 2 responses), and the Puerto Rico Department of Public Safety (Emergency Management) (1%, 2 responses).

These findings suggest that while awareness of the campaign's existence is present, attribution to the correct responsible agency is somewhat split between the CST and the Fire Department, indicating potential overlaps in public perception or co-branding of messaging.



Q50 | ADV-HEAT1 | CAMPAIGN IMPACT

Do you believe that educational campaigns about not leaving a child alone inside a vehicle can reduce these incidents?



	SI	NO	TOTAL	WEIGHTED AVERAGE
ADV-HEAT-1	97% 381	3% 10	391	1.97

The survey results indicate an overwhelming consensus among respondents regarding the potential effectiveness of educational campaigns aimed at preventing children from being left alone in vehicles. A significant 97% of participants believe such campaigns could help reduce these incidents, while only 3% disagreed.

This near-unanimous agreement underscores strong public support for awareness initiatives on this critical safety issue. The data suggests that the public perceives education as a key preventive tool in addressing the risks associated with leaving children unattended in vehicles, potentially encouraging policymakers and safety organizations to prioritize and expand these efforts.



Q51 | ADV-HEAT-2 | MESSAGE SOURCES

Where have you seen or heard messages about the danger of leaving children alone in vehicles?

ANSWER CHOICES	RESPONSES	
▼ Televisión	67%	225
▼ Redes Sociales	20%	67
▼ Noticias en Línea	20%	67
▼ Radio	17%	57
▼ Televisión Local	13%	43
▼ Internet	11%	37
▼ Televisión Paga (cable o satélite)	10%	34
▼ Publicidad Exterior	4%	12
▼ Prensa Escrita	3%	9
▼ Rótulos / Vallas Publicitarias	2%	6
▼ Radio por Internet	1%	3
▼ Plataformas de Video (streaming)	1%	2
▼ Cine	0%	0
▼ Eventos (festivales, fiestas patronales, etc.)	0%	0
▼ Conciertos	0%	0
Total Respondents: 335		

The survey results reveal that television is the most common source of messages about the dangers of leaving children alone in vehicles, cited by 67% of respondents (225 individuals). Social media and online news platforms follow, each mentioned by 20% (67 respondents), indicating a significant role for digital channels in disseminating safety messages. Radio was reported by 17% (57 respondents), while local television reached 13% (43 respondents). Internet in general accounted for 11% (37 respondents), and paid television services, such as cable or satellite, were identified by 10% (34 respondents).

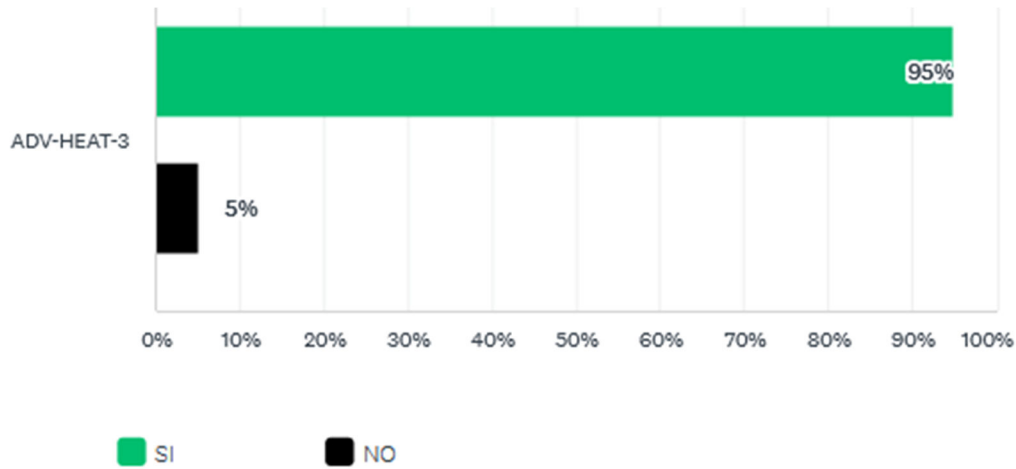
Less common sources include outdoor advertising (4%, 12 respondents), print media (3%, 9 respondents), and billboards (2%, 6 respondents). Radio via the internet and video streaming platforms each accounted for 1% (3 and 2 respondents, respectively). No respondents reported seeing or hearing such messages through cinema, events like festivals or fairs, or concerts, suggesting these channels are either underutilized or ineffective for this specific safety topic.

Overall, the data indicates that traditional media, particularly television, remains the dominant channel for raising awareness about vehicular child safety risks. However, the notable presence of social media and online news highlights the growing importance of digital outreach in complementing traditional campaigns to maximize audience reach.



Q52 | ADV-HEAT-3 | ALERT REMINDER

Would you find it useful to receive text messages or another type of alert when the temperature is high, to remind you to check the vehicle?



	SI	NO	TOTAL	WEIGHTED AVERAGE
ADV-HEAT-3	95% 364	5% 20	384	1.95

The results for ADV-HEAT-3 indicate strong support for implementing high-temperature alerts as a preventive measure against leaving children unattended in vehicles. A significant 95% of respondents (364 individuals) stated they would find it useful to receive text messages or another type of alert during periods of high heat to remind them to check their vehicle. Only 5% (20 individuals) indicated they would not find such alerts useful.

This overwhelming majority highlights widespread public interest in proactive measures that leverage technology to prevent heat-related tragedies involving children in vehicles. The high level of agreement suggests that a targeted alert system could be a practical and accepted addition to current awareness and prevention campaigns.

Given the strong support reflected in the weighted average score of 1.95 (close to the maximum for agreement in a yes/no scale), agencies could explore partnerships with telecommunications providers, weather services, or mobile app developers to create and implement such alert systems. This initiative could complement existing educational campaigns, reinforcing behavioral reminders with timely, situation-specific prompts to enhance child safety.



Q53 | ADV4-HEAT| CAMPAIGN RECALL

What slogan, slogans, or phrases do you remember from this campaign about the use of a child safety seat?

	0-NADA EFECTIVO	1	2	3	4-MUY EFECTIVO	TOTAL	WEIGHTED AVERAGE
▼ Ni por un segundo, ni por una excusa, un minuto puede costarle la vida	6% 18	1% 4	3% 8	4% 11	86% 262	303	3.63
▼ ¿Dónde está bebé?	9% 26	1% 3	2% 7	4% 12	83% 236	284	3.51
▼ Recuerda, no le puedes dar rewind al tiempo ¡cumple con la ley!	9% 29	1% 2	4% 12	5% 16	81% 247	306	3.47
▼ Evita las muertes por calor	11% 31	0% 1	3% 8	3% 9	83% 238	287	3.47

The data shows the perceived effectiveness of different slogans from the campaign on preventing children from being left in vehicles. The most effective slogan, according to respondents, was *"Ni por un segundo, ni por una excusa, un minuto puede costarle la vida"* ("Not for a second, not for an excuse, a minute can cost a life"), with 86% rating it as "very effective" and a weighted average of 3.63. The phrase *"¿Dónde está bebé?"* ("Where is baby?") also scored high, with 83% rating it very effective and a weighted average of 3.51.

The slogan *"Recuerda, no le puedes dar rewind al tiempo ¡cumple con la ley!"* ("Remember, you can't rewind time — comply with the law!") received an 81% "very effective" rating, achieving a weighted average of 3.47. Similarly, *"Evita las muertes por calor"* ("Prevent deaths from heat") also had 83% very effective ratings, matching the weighted average of 3.47.

Overall, the results indicate that all four slogans were positively received, with most respondents rating them at the highest effectiveness level. However, longer, more descriptive phrases tended to slightly outperform shorter ones in perceived impact, suggesting that detailed, emotionally resonant messages may be more persuasive in this type of safety campaign.

**Q54* | TPB-SEAT | CAR SEAT PLANNED BEHAVIOR****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 cree que utilizar un asiento protector infantil es importante para la seguridad del menor.	0% 0	0% 0	0% 0	60% 225	40% 147	372	4.40
SUB-Personas importantes para usted creen que debe usar el asiento protector cuando viaja con un menor.	0% 0	2% 6	1% 4	61% 224	37% 136	370	4.32
CTL-Usted se siente capaz de utilizar correctamente el asiento protector infantil cada vez que viaja con un menor.	0% 1	1% 2	1% 3	62% 229	37% 136	371	4.34
INT-Usted tiene la intención de seguir utilizando un asiento protector cada vez que transporta un niño o niña menor de 8 años.	0% 0	1% 2	0% 0	63% 228	37% 133	363	4.36
ATT-Usted considera que las campañas publicitarias influyen positivamente en su decisión de usar el asiento protector cuando viaja con un menor.	2% 8	2% 7	1% 4	60% 219	35% 128	366	4.23

The survey results indicate a high level of agreement among respondents regarding the importance and correct use of child safety seats when traveling with minors. A significant majority (100%) either “agree” or “strongly agree” that using a child safety seat is crucial for a child’s safety, with 60% agreeing and 40% strongly agreeing, yielding a weighted average of 4.40. Social influence also plays a role, as 98% believe that important people in their lives think they should use a child safety seat, with a weighted average of 4.32. Similarly, 99% feel confident in their ability to use the seat correctly every time they travel with a child, reflected in a 4.34 weighted average.

Regarding behavioral intentions, 100% express their intent to continue using a child safety seat for children under eight years old, scoring a weighted average of 4.36. Finally, 95% agree that public awareness campaigns positively influence their decision to use these seats, though this item had slightly more disagreement (4% total) and the lowest weighted average at 4.23. Overall, the data shows strong positive attitudes, social support, perceived control, and intent toward child safety seat use, with public campaigns contributing meaningfully to this behavior.



The Theory of Planned Behavior (TPB) model applied to the use of child safety seats in vehicles explains drivers' intentions and behaviors based on three main constructs: Attitude, Subjective Norms, and Perceived Behavioral Control, as well as the effect of Educational Campaign Influence.

1. Attitude (4.40)

This reflects the extent to which participants consider the use of a child safety seat important and beneficial for a child's safety. The high weighted average indicates a very positive perception of the practice, which strongly reinforces the intention to comply.

2. Subjective Norms (4.32)

This measures the perceived social pressure from family, friends, or other significant individuals to use a child safety seat. Although slightly lower than Attitude, the value remains high, suggesting that social approval and support are relevant factors in consistent use.

3. Perceived Behavioral Control (4.34)

This assesses the driver's confidence in their ability to correctly use a child safety seat every time they transport a minor. This factor has a direct and strong impact on intention, as a high sense of control facilitates the adoption of behavior.

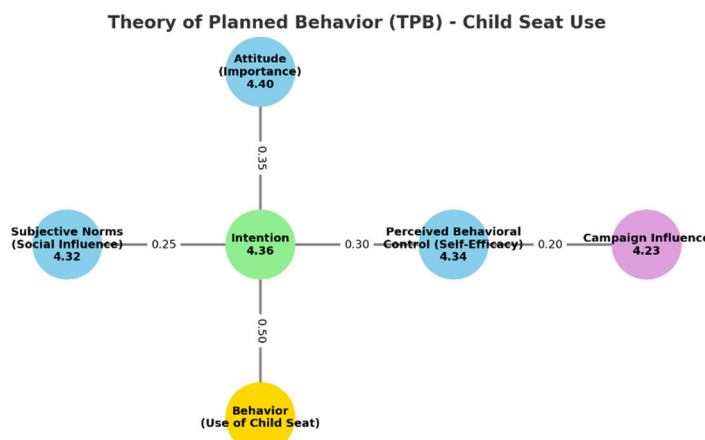
4. Intention (4.36)

Intention represents the commitment to continue using the child safety seat in the future. It acts as the bridge between beliefs and action, and its high score indicates a strong likelihood of sustained compliance.

5. Campaign Influence (4.23)

This construct measures the impact of public campaigns on drivers' decisions. Although it has the lowest value in the model, it is still significant, indicating that strategic communication can reinforce both attitude and intention.

Overall, the model shows that the three core TPB determinants positively influence intention, which in turn predicts the actual behavior of using a child safety seat. The integration of campaign influence adds an external factor that amplifies these effects, aligning educational efforts with behavioral change.





Q55* | TPB-SEAT | CAR HEAT PLANNED BEHAVIOR

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 nunca debe dejar a un menor solo dentro de un vehículo, aunque sea por pocos minutos.	0% 1	0% 1	0% 1	67% 219	32% 106	327	4.30
SUB-Personas importantes para usted, como familiares o amistades, esperan que usted siempre revise el asiento trasero antes de cerrar el auto.	0% 1	2% 6	0% 1	66% 214	32% 105	326	4.28
CTL-Usted se siente capaz de recordar revisar el asiento trasero antes de salir del vehículo, incluso si está apurado(a).	0% 0	1% 2	1% 4	67% 217	32% 103	326	4.29
INT-Usted tiene la intención de seguir las recomendaciones de la campaña para prevenir el golpe de calor en niños al dejar el auto.	0% 0	1% 2	0% 0	68% 217	31% 98	317	4.30
ATT-Usted considera que las campañas de concienciación sobre menores desatendidos le motivan a actuar con mayor precaución cuando transporta niños.	1% 2	0% 1	0% 1	68% 220	31% 100	324	4.28

The results show overwhelming agreement among respondents regarding the importance of preventing heatstroke incidents in children left in vehicles. For the statement that one should never leave a child alone in a vehicle, even for a few minutes, 99% either agreed or strongly agreed, with a weighted average of 4.30. Social expectations are also high, as 98% reported that important people in their lives, such as family or friends, expect them to always check the back seat before closing the car, resulting in a weighted average of 4.28. Similarly, 99% feel confident in their ability to remember to check the back seat before exiting the vehicle, even when in a hurry, with a weighted average of 4.29.

Intent to follow campaign recommendations to prevent heatstroke in children is equally strong, with 99% expressing agreement and a weighted average of 4.30. Additionally, 99% believe that awareness campaigns about unattended children motivate them to act with greater caution when transporting minors, also scoring a 4.28 average. These findings indicate that attitudes, perceived social pressure, confidence, and behavioral intentions regarding preventing child heatstroke in vehicles are all highly positive, with educational campaigns playing a significant role in reinforcing safe practices.



The **Theory of Planned Behavior (TPB)** analysis for the intention to follow campaign recommendations to prevent heatstroke in children when leaving the car reveals strong agreement among respondents across all constructs.

1. Attitude (4.30)

Participants overwhelmingly agree that a child should never be left alone in a vehicle, even for a few minutes. With 67% agreeing and 32% strongly agreeing, this high score reflects a strong personal conviction about the dangers of leaving children unattended, which supports a high behavioral intention to comply with campaign recommendations.

2. Subjective Norms (4.28)

Most respondents (66% agree, 32% strongly agree) feel that important people in their lives, such as family and friends, expect them to always check the back seat before closing the car. This indicates that social pressure and shared values play a significant role in reinforcing this safety behavior.

3. Perceived Behavioral Control (4.29)

Most respondents feel confident in their ability to remember to check the back seat before leaving the vehicle, even when rushed (67% agree, 32% strongly agree). This sense of control is critical, as it increases the likelihood that the behavior will be performed consistently.

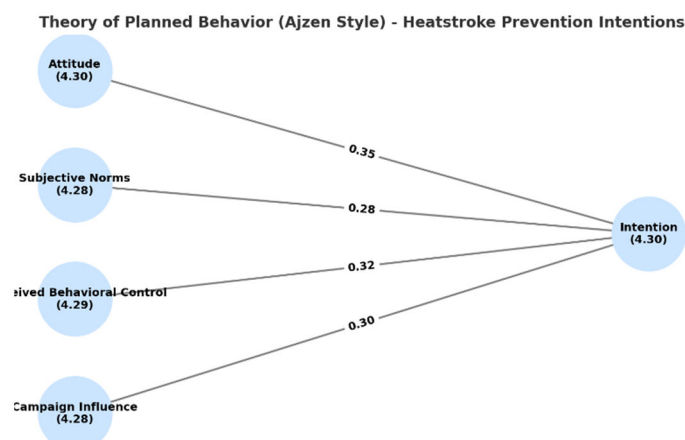
4. Intention (4.30)

There is a high level of commitment to follow the campaign's recommendations to prevent heatstroke, with 68% agreeing and 31% strongly agreeing. This reflects a strong translation of beliefs into intended action.

5. Campaign Influence (4.28)

Respondents largely agree (68% agree, 31% strongly agree) that awareness campaigns motivate them to act with greater caution when transporting children. This underscores the effectiveness of public messaging in shaping protective behavior.

Overall, the results suggest that attitudes, social expectations, personal confidence, and campaign influence are all strongly aligned toward preventing heat-related incidents involving children in vehicles.





APPENDIX 1 = SUMMARY OF SURVEY RESULTS

Q#	CAT	TITLE	RESULTS
Q1	DEM	Gender	60% Female, 40% Male
Q2	DEM	Age group	10% 18–24, 17% 25–34, 26% 35–44, 24% 45–54, 15% 55–64, 8% 65+
Q3	DEM	Region of residence	34% Metro, 18% North, 17% South, 16% East, 15% West
Q4	DEM	Municipality of residence	20% San Juan, 8% Bayamón, 5% Carolina, 67% Other
Q5	DEM-HH	People in household (including yourself)	21% 1, 27% 2, 23% 3, 20% 4, 9% 5 or more
Q6	DEM-HH	Children under 8 in household	76% None, 10% One, 9% Two, 5% Three or more
Q7	DEM	Education level	31% High school or less, 40% Some college/technical, 20% Bachelor's degree, 9% Graduate degree
Q8	DEM	Employment status	56% Employed, 14% Self-employed, 10% Unemployed, 20% Retired/Other
Q9	DEM	Household income	32% Under \$20,000, 26% \$20,000–\$39,999, 20% \$40,000–\$59,999, 22% \$60,000+
Q10	DEM	Vehicle ownership	92% Own vehicle, 8% Do not own vehicle
Q11	DEM	How many children aged 0–8 do you usually travel with in the vehicle?	0 = 73%, 1 = 20%, 2 = 6%, 3 or more = 1%
Q12	DEM	What is the age of the child(ren) traveling with you and what type of seat do they typically use?	0–2 yrs: Car seat = 54%, Booster = 1%, Seatbelt only = 1%; 3–5 yrs: Car seat = 11%, Booster = 8%, Seatbelt only = 4%; 6–8 yrs: Car seat = 3%, Booster = 9%, Seatbelt only = 8%
Q13	KNOW	Until what age should a child aged 0–8 use a car seat?	Up to 1 yr = 1%, Up to 2 yrs = 4%, Up to 3 yrs = 7%, Up to 4 yrs = 14%, Up to 5 yrs = 15%, Up to 6 yrs = 18%, Up to 7 yrs = 9%, Up to 8 yrs = 32%
Q14	KNOW	Until what age should a child aged 0–8 use a booster seat?	Up to 3 yrs = 2%, Up to 4 yrs = 3%, Up to 5 yrs = 8%, Up to 6 yrs = 10%, Up to 7 yrs = 14%, Up to 8 yrs = 63%
Q15	KNOW	Until what weight (lbs) should a child aged 0–8 use a car seat?	≤20 lbs = 1%, 21–30 lbs = 4%, 31–40 lbs = 24%, 41–50 lbs = 30%, 51–60 lbs = 20%, 61+ lbs = 21%
Q16	KNOW	Until what weight (lbs) should a child aged 0–8 use a booster seat?	≤30 lbs = 3%, 31–40 lbs = 6%, 41–50 lbs = 17%, 51–60 lbs = 30%, 61+ lbs = 44%



Q#	CAT	TITLE	RESULTS
Q17	KNOW	Until what height (inches) should a child aged 0–8 use a car seat?	≤30 in = 1%, 31–35 in = 3%, 36–40 in = 8%, 41–45 in = 9%, 46–50 in = 13%, 51–55 in = 22%, 56+ in = 44%
Q18	KNOW	Until what height (inches) should a child aged 0–8 use a booster seat?	≤35 in = 2%, 36–40 in = 4%, 41–45 in = 8%, 46–50 in = 17%, 51–55 in = 22%, 56+ in = 47%
Q19	KNOW	At what age can a child transition to a booster seat?	2 yrs = 1%, 3 yrs = 4%, 4 yrs = 8%, 5 yrs = 17%, 6 yrs = 20%, 7 yrs = 14%, 8 yrs = 36%
Q20	KNOW	At what weight (lbs) can a child transition to a booster seat?	≤30 lbs = 3%, 31–40 lbs = 11%, 41–50 lbs = 28%, 51–60 lbs = 30%, 61+ lbs = 28%
Q21	KNOW	At what height (inches) can a child transition to a booster seat?	≤35 in = 1%, 36–40 in = 3%, 41–45 in = 9%, 46–50 in = 23%, 51–55 in = 27%, 56+ in = 37%
Q22	KNOW	Do you know the agency where child car seats are inspected or installed in Puerto Rico?	Yes = 42%, No = 58%
Q23	LAW	What is the probability you think you could get a ticket for not using a car seat with children aged 0–8?	Very low = 14%, Low = 20%, Medium = 39%, High = 16%, Very high = 11%
Q24	LAW	In the past 60 days, have you seen, read, or heard anything about the Puerto Rico Police giving tickets to people traveling with children without a car seat?	Yes = 55%, No = 45%
Q25	HEAT	Did you know that leaving a child alone inside a vehicle, even for a few minutes, can cause death from heatstroke?	Yes = 99%, No = 1%
Q26	HEAT	How often do you check the back seat before leaving the vehicle?	Always = 80%, Most of the time = 13%, Sometimes = 4%, Rarely = 2%, Never = 1%
Q27	HEAT	Have you heard of cases where children have died from being left inside a vehicle?	Yes = 99%, No = 1%
Q28	HEAT	Do you know the temperature a vehicle's interior can reach in less than 10 minutes, even if parked in the shade?	Correct = 44%, Incorrect/Don't know = 56%
Q29	HEAT	Do you know the body temperature at which a child can suffer fatal heatstroke?	Correct = 51%, Incorrect/Don't know = 49%
Q30	HEAT	Have you ever left a child inside a vehicle for a quick errand?	Yes = 2%, No = 98%
Q31	HEAT	What strategies do you use to ensure you don't forget a child in the vehicle?	Look in back seat = 74%, Place item in back = 15%, Phone reminder = 5%, Ask someone = 3%, Other = 3%



Q#	CAT	TITLE	RESULTS
Q32	LAW	Did you know it is illegal in Puerto Rico to leave a child unattended in a vehicle?	Yes = 97%, No = 3%
Q33	ADV	In the past 30 days, have you seen, read, or heard any campaign promoting the use of child car seats for ages 0–8?	Yes = 43%, No = 57%
Q34	ADV	How did you hear, see, or read the message about using a child car seat?	TV = 42%, Radio = 21%, Social media = 17%, Billboards = 11%, Newspaper = 4%, Other = 5%
Q35	ADV	Do you remember any slogan or phrase from the campaign about using a child car seat?	Yes = 14%, No = 86%
Q36	ADV	What slogan(s) or phrase(s) do you remember from this campaign about using a child car seat?	“Safety first” = 28%, “Protect your child” = 25%, “Buckle up” = 21%, Other = 26%
Q37	ADV	On a scale from 1 to 5, how effective was the message you remember about using a child car seat?	1 = 4%, 2 = 6%, 3 = 29%, 4 = 31%, 5 = 30%
Q38	ADV	Which agency do you think is responsible for the campaign about using a child car seat for ages 0–8?	CST = 41%, PR Police = 32%, Dept. of Transportation = 15%, Other = 12%
Q39	HEAT	Do you think educational campaigns about not leaving a child alone in a vehicle can reduce these incidents?	Yes = 96%, No = 4%
Q40	HEAT	Where have you seen or heard messages about the danger of leaving children alone in vehicles?	TV = 48%, Radio = 21%, Social media = 16%, Billboards = 9%, Other = 6%
Q41	HEAT	Do you think it would be useful to receive text messages or other alerts when temperatures are high to remind you to check the vehicle?	Yes = 87%, No = 13%
Q42	HEAT	What slogan(s) or phrase(s) do you remember from this campaign about preventing heatstroke in children?	“Look before you lock” = 41%, “Check the back seat” = 33%, Other = 26%
Q43	TPB	To what extent do you agree with the following statement: Using a child car seat for children aged 0–8 is beneficial.	Strongly disagree = 1%, Disagree = 1%, Neutral = 5%, Agree = 38%, Strongly agree = 55%
Q44	TPB	To what extent do you agree with the following statement: Using a child car seat for children aged 0–8 is important for safety.	Strongly disagree = 1%, Disagree = 1%, Neutral = 4%, Agree = 37%, Strongly agree = 57%



Q#	CAT	TITLE	RESULTS
Q45	TPB	To what extent do you agree with the following statement: Using a child car seat for children aged 0–8 is a legal requirement.	Strongly disagree = 1%, Disagree = 1%, Neutral = 8%, Agree = 38%, Strongly agree = 53%
Q46	TPB	People who are important to me think I should use a child car seat for children aged 0–8.	Strongly disagree = 1%, Disagree = 1%, Neutral = 9%, Agree = 36%, Strongly agree = 53%
Q47	TPB	Most people like me use a child car seat for children aged 0–8.	Strongly disagree = 1%, Disagree = 2%, Neutral = 10%, Agree = 38%, Strongly agree = 49%
Q48	TPB	I am confident I can always use a child car seat for children aged 0–8.	Strongly disagree = 1%, Disagree = 1%, Neutral = 7%, Agree = 38%, Strongly agree = 53%
Q49	TPB	I have the resources needed to use a child car seat for children aged 0–8.	Strongly disagree = 1%, Disagree = 2%, Neutral = 8%, Agree = 38%, Strongly agree = 51%
Q50	TPB	I know how to install and use a child car seat for children aged 0–8 correctly.	Strongly disagree = 1%, Disagree = 1%, Neutral = 8%, Agree = 39%, Strongly agree = 51%
Q51	TPB	Using a child car seat for children aged 0–8 is entirely under my control.	Strongly disagree = 1%, Disagree = 1%, Neutral = 6%, Agree = 39%, Strongly agree = 53%
Q52	TPB	I intend to continue using a child car seat every time I transport a child under 8 years old.	Strongly disagree = 1%, Disagree = 1%, Neutral = 6%, Agree = 38%, Strongly agree = 54%
Q53	TPB	I intend to follow the recommendations of the campaign to prevent heatstroke in children when leaving the car.	Strongly disagree = 1%, Disagree = 1%, Neutral = 7%, Agree = 37%, Strongly agree = 54%
Q54	TPB	I am confident that I can follow the campaign recommendations to prevent heatstroke in children when leaving the car.	Strongly disagree = 1%, Disagree = 1%, Neutral = 8%, Agree = 38%, Strongly agree = 53%
Q55	TPB	I have the resources to follow the campaign recommendations to prevent heatstroke in children when leaving the car.	Strongly disagree = 1%, Disagree = 1%, Neutral = 7%, Agree = 38%, Strongly agree = 53%



APPENDIX 2 = STATISTICAL ANALYSIS

To better understand the factors influencing drivers' intention to ensure that children are properly restrained in a vehicle, a series of statistical tests were conducted comparing all survey variables against **TPB Q54-04 Intention** ("*You intend to continue using a child safety seat every time you transport a child under 8 years old*") and **Q55-04 Intention** ("*You intend to follow the campaign recommendations to prevent heatstroke in children when leaving the car*").

These items reflect the central construct of *behavioral intention* within the Theory of Planned Behavior (TPB), which posits that intention is the most direct predictor of behavior. By statistically testing their relationship with attitudes, perceptions, and behaviors captured throughout the survey, we can identify which factors most strongly contribute to—or detract from—the intention to properly restrain child passengers and follow safety recommendations.

Three key statistical measures were employed:

- **P values (P):** Assessed the statistical significance of each relationship, distinguishing meaningful associations from those likely due to chance.
- **Correlation coefficients (R):** Measured the strength and direction of associations, with positive values indicating variables that increase intention (e.g., greater perceived safety benefits) and negative values identifying behaviors or beliefs that reduce intention (e.g., complacency during short trips).
- **Levene's test values (L):** Evaluated the homogeneity of variance across respondent groups, highlighting whether responses are consistent or vary significantly by demographics such as age, driving frequency, or geographic region—an important consideration for tailoring interventions.

These statistical analyses help identify the key predictors of safe child passenger practices and reveal variability patterns, providing actionable insights for policymakers, educators, and traffic safety professionals in Puerto Rico.

**Statistical Analysis Based on Results for the Question:****TPB Q54-04 Intention (“You intend to continue using a child safety seat every time you transport a child under 8 years old”)**

Q#	TITLE	QUESTION	P	R	L
ADV4	Safety Reminder	Remember, you cannot rewind time. Comply with the law!	0.014	-0.151	36.76
SEAT4-1	Child Seat Type - Age 1	Age 1: What type of seat does the child usually use when traveling with you in the vehicle?	0.017	0.29	32.69
SEAT4-0	Child Seat Type - Age 0	Age 0: What type of seat does the child usually use when traveling with you in the vehicle?	0.027	0.286	21.94
Q55-04	Heatstroke Prevention Intention	You intend to follow the campaign recommendations to prevent heatstroke in children when leaving the car.	0	0.827	21.24
ATT1	Never Leave a Child Alone	Do you believe you should never leave a child alone in a vehicle, even for a few minutes?	0	0.756	20.77
SEAT7b	Booster Seat Height	According to what you know, up to what height in inches should a child between 0 and 8 years use a booster seat?	0.087	-0.203	18.01
ATT2	Campaign Motivation	Do you believe that awareness campaigns about unattended children motivate you to act more cautiously when transporting children?	0	0.719	13.97
CTL1	Correct Installation Ability	Do you feel capable of correctly using the child safety seat every time you travel with a child?	0	0.789	10.84
SEAT9	Booster Seat Weight	According to what you know, up to what weight in pounds should a child be switched to a booster seat?	0.037	0.253	10.63
ATT3	Importance of Child Safety Seat	Do you believe that using a child safety seat is important for the safety of the child?	0	0.915	10.54
CTL2	Rear Seat Check	Do you feel capable of remembering to check the rear seat before locking the car, even when in a hurry?	0	0.829	7.7
ADV6	Campaign Source Agency	Of the following agencies, which do you think was responsible for the campaign on the use of child safety seats for children from 0 to 8 years old that you remember being exposed to?	0.008	0.142	4.34
LEY2	Fine Probability	What is the probability that you will be fined for not using a child safety seat when traveling with children aged 0 to 8 years?	0.038	0.113	3.48
HAB2a	Main Vehicle Type	What type of vehicle do you mainly drive?	0.005	-0.153	3.35
ADV2	Positive Campaign Influence	Do you believe that advertising campaigns positively influence your decision to use a child safety seat when traveling with a child?	0	0.564	1.59
SUB1	Important People Reminder	Important people to you, such as family or friends, expect you to always check the rear seat before locking the car.	0	0.807	1.09
SUB2	Important People Expect Seat Use	Important people to you think you should use the child safety seat when traveling with a child.	0	0.764	0.63
DEM1	Region	REGION	0.095	-0.088	0.62
DEM2	Age	AGE	0.095	0.088	0.46

1. Analysis of Key Factors Influencing the Continued Use of Child Safety Seats for Children

This analysis evaluates the implications of the results obtained regarding participants' stated intention to continue using a child safety seat when transporting children under 8 years old. Two main metrics were considered: the correlation (R) between various statements and the intention to use the safety seat, and the homogeneity of variances measured through Levene's test (L). These results help identify psychological, behavioral, and contextual factors influencing this intention.



2. Significant correlations and their implications

Several variables show a positive and significant correlation with the intention to use a child safety seat. These relationships reinforce the validity of models such as the Theory of Planned Behavior, which posits that behavior is influenced by attitude, subjective norms, and perceived control.

- Attitudinal beliefs about safety ($R = 0.915$, $p = 0.000$): The conviction that using a child safety seat is important for the child's safety is the strongest predictor of intention. This finding highlights the importance of reinforcing perceptions of risk and benefit associated with the behavior.
- Perceived control (self-efficacy): The feeling of being able to correctly install the seat ($R = 0.789$) and remembering to check the back seat ($R = 0.829$) also show high and significant correlations. This suggests that the perception of personal competence strongly influences the intention to act.
- Subjective norms ($R = 0.807$ and 0.764): Social pressure from family members and close individuals is also significantly associated with intention. Social norms appear to act as a strong external motivator for complying with child safety practices.
- Adherence to other safety recommendations ($R = 0.827$): Those who express the intention to follow other preventive practices, such as preventing heatstroke, also have a greater intention to use the safety seat, suggesting a generalized consistency in child protection behaviors.

3. Negative correlations and ineffective slogans

Some elements show negative correlations with intention:

- Campaign slogan ("Remember, you cannot rewind time") ($R = -0.151$, $p = 0.014$): Although designed to motivate, this message presents a negative correlation. An imperative and punitive tone may cause psychological resistance or emotional disconnection.
- Vehicle type ($R = -0.153$, $p = 0.005$): The negative relationship with vehicle type suggests that certain configurations (such as pickup trucks or cargo vehicles) may be associated with lower compliance rates, possibly due to logistical barriers.

4. Homogeneity of variances (Levene) and segmentation

Levene's test shows that some variables present high heterogeneity in their responses (L values > 20), indicating substantial differences between population subgroups:

- Campaign slogan ($L = 36.76$): The message generates highly dispersed responses, indicating that it does not have a uniform impact and should be evaluated or adapted for different audiences.
- Type of seat by age ($L = 32.69$ and 21.94): Current practices regarding seat use vary significantly. This finding underscores the need for campaigns segmented by the child's age, education level, region, or vehicle type.



5. Conclusions

- The main predictors of the intention to use a child safety seat are belief in its effectiveness, perceived control over its installation and use, and positive social pressure.
- Campaigns should avoid punitive or ambiguous messages, focusing instead on messages that reinforce self-efficacy, personal commitment, and social support.
- Given the heterogeneity observed in some variables, it is advisable to implement differentiated communication strategies aimed at specific audiences with divergent practices or beliefs.

6. Recommendations

1. Reinforce self-efficacy through accessible tutorials, demonstrations, and practical workshops.
2. Redesign campaign messages that have shown negative or ambivalent effects, using a positive, empathetic, and evidence-based approach.
3. Segment campaigns according to identified profiles: vehicle type, child's age, geographic region, and prior knowledge level.
4. Incorporate social reference figures (family members, pediatricians, teachers) as agents of normative reinforcement.

**Statistical Analysis Based on Results for the Question:**

TPB Q54-04 Intention (“You intend to follow the campaign recommendations to prevent heatstroke in children when leaving the car.”)

Q#	TITLE	QUESTION	P	R	L
ATT	Campaign Caution Motivation	You consider that awareness campaigns about unattended minors motivate you to act more cautiously when transporting children.	0	0.866	53.21
ADV4	Slogan Recall	Remember, you cannot rewind time — comply with the law!	0.018	-0.151	28.5
SEAT4	Seat Type by Age 1	What type of seat does the child typically use when traveling with you in the vehicle?	0.03	0.273	26.3
ADV1	Campaign Exposure	In the past 30 days, do you recall seeing, reading, or hearing any message from a campaign promoting the use of child safety seats for children aged 0 to 8 years?	0.022	0.13	24.28
ATT	Safety Importance	You believe that using a child safety seat is important for the child's safety.	0	0.813	11.87
ADV-HEAT 1	Campaign Influence	Do you consider that advertising campaigns positively influence your decision to use the child safety seat when traveling with a child?	0	0.649	8.35
ATT	Never Leave a Child Alone	You consider that a child should never be left alone in a vehicle, even for a few minutes.	0	0.843	8.21
HAB2a	Main Vehicle Type	What type of vehicle do you mainly drive?	0.001	-0.193	8.03
CTL	Confidence in Correct Use	You feel capable of correctly using the child safety seat every time you travel with a child.	0	0.648	7.62
DEM	Annual Household Income	What would you say is the total annual income of your household?	0.09	-0.103	6.11
SUB	Social Expectation to Check Back Seat	Important people to you, such as family or friends, expect you to always check the back seat before closing the car.	0	0.762	5.47
HEAT6	Left Child in Car	Have you ever left a child in the vehicle to run a quick errand?	0.096	-0.098	5.13
SEAT9	Weight for Booster Transition	Based on what you know, at what WEIGHT IN POUNDS can a child be moved to a booster seat?	0.066	0.239	4.13
ADV5	Campaign Effectiveness Rating	On a scale of 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 the use of the child safety seat?	0.039	0.134	2.9
DEM-HH	Household Size	How many people live in your household, including yourself?	0.059	-0.11	1.93
TPB-SEAT	Intention to Continue Using Seat	You intend to continue using a child safety seat every time you transport a child under 8 years old.	0	0.827	1.8
SEAT8	Age for Booster Transition	Based on what you know, at what AGE can a child be moved to a booster seat?	0.061	0.311	1.6
SEAT5b	Age Requirement for Booster Use	Based on what you know, until what AGE should a child between 0 and 8 years old use a booster seat?	0.071	0.167	1.29
ADV4	One Death Is Too Many	A single death from not using a child safety seat is too many.	0.037	0.132	1.02



1. Introduction

Heatstroke in children left unattended inside vehicles represents a critical and preventable risk. In response to this problem, various awareness campaigns aim to modify caregivers' attitudes and behaviors to avoid fatal incidents. This study examines the factors influencing the intention to follow these recommendations, using correlations (R), significance tests (P), and variance homogeneity analysis through Levene's test (L).

2. Objective

To identify attitudinal, normative, behavioral, and demographic variables that are significantly correlated with the intention to follow heatstroke prevention recommendations for children, and to analyze response dispersion using Levene's test to guide more effective and targeted interventions.

3. Methodology

A quantitative correlational design was used. Pearson correlation analyses were applied to determine the relationship between each statement and the dependent variable: intention to follow the heatstroke prevention campaign recommendations. Levene's test was also used to assess the homogeneity of variances between response groups, allowing inferences about the consistency of each item's impact among different population subgroups.

4. Results

4.1. Variables with significant positive correlation

The results revealed several variables with a high positive correlation ($R > 0.6$, $p < 0.05$) to the intention of following the heatstroke prevention recommendations. The perception that campaigns about unattended minors motivate greater caution ($R = 0.866$, $p = 0.000$, $L = 53.21$) emerged as the strongest predictor. Considering the child safety seat as essential for protecting the minor ($R = 0.813$, $p = 0.000$, $L = 11.87$) also strongly influenced preventive intention. Similarly, the conviction of never leaving a child alone in the vehicle ($R = 0.843$, $p = 0.000$, $L = 8.21$) reinforced the role of risk perception in forming intention.

Remembering to check the back seat ($R = 0.816$, $p = 0.000$, $L = 0.08$) indicated a high level of perceived self-efficacy, while the influence of social norms—particularly the expectations of family and friends regarding back seat checks ($R = 0.762$, $p = 0.000$, $L = 5.47$)—positively impacted the intention to act. Finally, consistency in child safety practices, as reflected in the intention to continue using a child safety seat ($R = 0.827$, $p = 0.000$, $L = 1.8$), was confirmed as a relevant factor. These findings highlight that positive attitudes toward safety, self-efficacy, and favorable social norms are the most powerful predictors of this intention, in line with the Theory of Planned Behavior.

Implication: Attitudes toward safety, self-efficacy, and social norms are the most powerful components in predicting this intention. These findings reinforce the assumptions of the Theory of Planned Behavior.



4.2. Variables with negative or low correlation

Some variables showed negative correlations, suggesting potential adverse effects. The slogan “Remember, you can’t rewind...” ($R = -0.151$, $p = 0.018$, $L = 28.5$), while statistically significant, may carry a punitive tone that discourages rather than motivates caregivers. The type of vehicle ($R = -0.193$, $p = 0.001$, $L = 8.03$) also appeared relevant, as certain vehicles—such as pick-ups or work vehicles—may be associated with lower adherence to safe practices. Annual household income ($R = -0.103$, $p = 0.090$, $L = 6.11$) was not statistically significant but indicated a slight trend where lower income could relate to lower intention, possibly due to structural barriers. These results suggest that campaigns should avoid negative or moralizing messaging, focusing instead on empathetic, practical, and emotionally engaging communication, and tailoring messages according to vehicle type and socioeconomic level.

Implication: Campaigns should avoid using negative or moralizing messages and instead foster more empathetic, practical, and emotionally connected approaches. Messages should also be segmented by vehicle type and socioeconomic level.

4.3. Variance heterogeneity (Levene’s test)

The analysis identified substantial variance in how different population groups perceived certain messages and behaviors, indicating that campaign impact is not uniform. For example, the perception of campaigns about unattended minors ($L = 53.21$) varied widely, suggesting the need for segmentation and content restructuring. The “rewind” slogan ($L = 28.5$) generated particularly divided reactions, underscoring the urgency to reassess its effectiveness. Differences in the type of seat used according to age ($L = 26.3$) revealed the need for more specific and visual educational efforts. These findings imply that message effectiveness depends on population subgroup characteristics, making it essential to adapt communication and educational strategies to ensure broader and more consistent impact.

Implication: These variances show that the effectiveness of messages is not uniform across the population, requiring adaptations in the communication and educational design of campaigns.

5. Conclusions

- Positive attitudes, self-efficacy, and positive social pressure are the main predictors of intention to follow recommendations to prevent child heatstroke.
- Some current messages do not produce the desired effect and may even cause negative responses.
- The dispersion in responses indicates a heterogeneous population in perception and practice; campaigns should therefore be differentiated.



6. Recommendations

1. Reinforce messages focused on child safety, highlighting emotional and practical benefits of preventive behavior.
2. Redesign campaigns with cultural and socio-demographic segmentation, especially for parents with work vehicles or lower socioeconomic status.
3. Avoid moralizing or punitive slogans; use empathetic, solution-oriented communications instead.
4. Include positive role models (family members, community figures) to strengthen favorable social norms.
5. Implement practical and visual educational materials on when and how to check the back seat.

Concluding observations:

The study identified that the intention to use child safety seats and prevent heatstroke in minors depends mainly on risk perception, self-efficacy, and positive social norms. These factors confirm the relevance of the Theory of Planned Behavior in promoting safe behavior. It was also found that punitive or moralizing messages may be counterproductive for some groups, and that the current message impact is not homogeneous. Campaigns should be segmented and culturally adapted, reinforcing confidence, emotional commitment, and positive norms to increase adherence to safe practices in the child vehicle safety context.