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POPULAR SCIENCE ARTICLE

# Use of Safety Belts on Long-Distance Buses

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## Abstract

*This article summarises the results of research carried out by the National Directorate for Road Accident Investigations (DNISAU) on a survey of passengers between 2021 and 2022, aimed at finding out the perceptions and practices of users of public long-distance bus services concerning the use of seat belts.*

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## Introduction

The National Directorate for Road Accident Investigations (DNISAU) conducted the first study with quantitative data in Argentina which allowed to know the self-reported use of seat belts in long-distance public passenger transportation as well as the determinants associated with its non-use. Additionally, the study aimed to gather information from the users' perspective regarding the system's compliance with the minimum safety standards required under the current regulatory framework, such as the implementation of the Safety Protocol for Interurban Passenger Road Transportation Services, the availability and proper functioning of seat belts in the vehicles, and the monitoring and enforcement of their use. The information gathered is expected to serve as input for State actions aimed at increasing seat belt use and, consequently, reducing the impact that accidents have on people's lives.

The general objective was to understand the users´ perceptions, beliefs, dispositions, attitudes, and practices of scheduled long-distance bus services regarding seat belts during the summer season in Argentina for the 2021-2022 period.

The goal is guided by the following specific objectives:

1. To characterize users in terms of their sociodemographic attributes and usage of long-distance public transportation.

2. To distinguish perceptions and beliefs regarding risk and safety in transportation in general.

3. To investigate users' perceptions of compliance with seat belt regulations.

4. To understand the practices of passengers related to seat belt use.

5. To identify the factors that contribute to the use or omission of seat belt use in long-distance passenger transportation.

A quantitative methodological strategy was developed by conducting a survey as the data collection technique. The survey consisted of 28 closed questions, distributed across different thematic areas that allowed for the construction of users' sociodemographic and transportation usage profiles, seat belt usage frequency and reasons, transportation safety perceptions, types of vehicles and roadways, and recognition of seat belt regulations. The survey was conducted in two simultaneous modalities: an online, self-administered questionnaire promoted through institutional social media, and an assisted, in-person questionnaire applied at various bus terminals across the country. The data from both sources were consolidated, processed, and analyzed together using the SPSS statistical program.

## Main Results

Regarding the frequency with which the respondents use seat belts on long-distance bus trips, 38.8% report always using them. The majority of them (94.1%) state that they keep the seat belt fastened for the entire duration of the trip, except when they leave their seat to go to the bathroom, get a snack, or for other reasons.

> ***"It is thus expected that the information is expected to serve as an input for the generation of state actions to increase the use of seat belts use of seat belts and reduce the impact the impact that accidents have on people's lives. on people's lives."***

On the other hand, a slightly higher proportion of respondents say they never use it (41.9%). The remaining 19.3% reported using it sometimes. When asked about the reasons for not always using the seat belt (i.e., those who answered that they sometimes or never use it), the majority stated that they forget or are not used to it (61.4%). The next most common reasons were that the seat belt is uncomfortable and that no one monitors or enforces its use (both received the same response frequency at 28%).

A small proportion of respondents stated that seat belts are not mandatory (7.4%), not necessary (3.5%), and not effective (2%). The low selection of these last two reasons tentatively allows for rejecting a hypothesis related to negative perceptions about the functionality and effectiveness of seat belts as a safety device.

It is interesting to note the lack of correspondence between the self-reported use of seat belts by the surveyed individuals (41.9% never use it) and what they report observing about the frequency of use by other passengers (67.6% say that nobody or almost nobody uses it).

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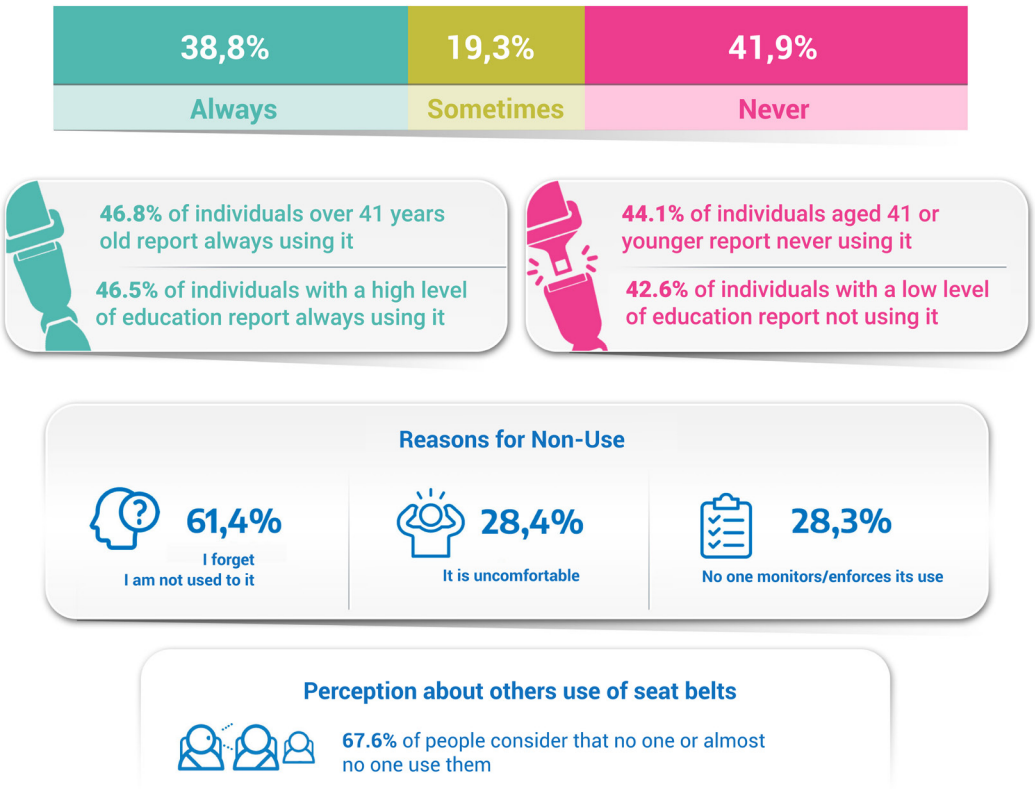
*Figure 1. Frequency of seat belt use on long-distance buses*




*Note: The figure presents the percentage distribution of passengers' perceptions of the information provided by the company related to safety measures, the monitoring of seat belt use by staff, and the situation of non-availability or malfunctioning of restraint devices in the seats. Source: Own elaboration based on survey data of long-distance bus passengers on seat belt use, JST, 2022.*

## Conditions of the System

One of the actions that service providers must undertake is to offer information about the use of the seat belt before the trip begins. When investigating this issue through the perceptions of the surveyed individuals, they explicitly mentioned possible ways this information could be communicated (informational brochure, video, explanations by staff). It is worth noting that the Safety Protocol for Interurban Passenger Transportation Services (implemented through Resolution 149/2019 by the Transportation Management Secretariat) establishes the obligation for interurban services operators under national jurisdiction to provide users with information about the proper use of seat belts, among other measures.

As shown in the first chart of Figure 2, 73.7% of passengers report not having received information about the vehicle's safety devices on their last trip. This perception increases among those who state that they never use the seat belt (83.2%). It seems that when safety information is available, people are more likely to use seat belts.

Last, it is noteworthy that nearly one-third of the surveyed individuals (32.1%) expressed a desire to use the seat belt at some point while traveling on long-distance buses but were unable to do so because it was either malfunctioning or not available in their seat. Among those who never use the seat belt, 94.5% did not report this situation or do not remember it.

Most of those who reported encountering difficulties with the device chose to travel without the seat belt and did not file any complaints with the company or the regulatory bodies responsible for the issue. The work of Hernández and Pérez (2021) indicates that there is a marked lack of awareness among the transportation users regarding the complaint channels available to express their dissatisfaction with service provision conditions. Moreover, those who are aware of the available means to file a complaint generally believe that institutional channels are ineffective in resolving issues that affect their travel conditions. This results in a weak complaint culture and a normalization of travel conditions, in this case, related to safety.

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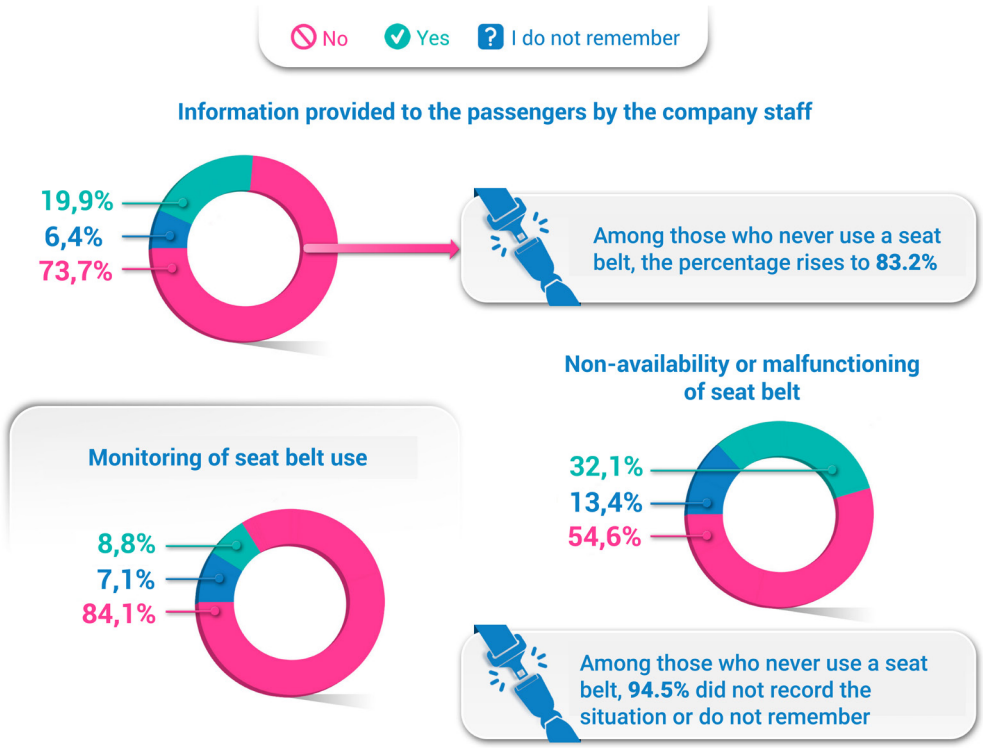
*Figure 2. Conditions of the system for the use of seat belt*




*Note: The figure presents the percentage distribution of passengers' perceptions regarding the information provided by the company related to safety measures, the monitoring of seat belt use by staff, and the situation of non-availability or malfunctioning of restraint devices in the seats. Source: Own elaboration based on survey data of long-distance bus passengers on seat belt use, JST, 2022.*

## Beliefs about Seat Belts

Based on suggestions from the consulted bibliography (Ghaffari et al., 2020), the perception of surveyed individuals regarding the effectiveness, necessity, and conditions of seat belt use on long-distance buses was researched. Using a three-category scale, they were asked to indicate their level of agreement with the following statements:

1. "Large and sturdy vehicles are safe, which is why I don't use the seat belt."
2. "The seat belt prevents people from being thrown from their seats or the vehicle in an accident."
3. "It is comfortable to wear a seat belt during the trip."
4. "In an accident, the seat belt can save my life."
5. "It is not necessary to wear a seat belt because an accident is unlikely to happen."
6. "The seat belt is easy to use."
7. "Wearing the seat belt is uncomfortable."

The highlighted findings suggest that there is a marked consensus that the seat belt is, due to its attributed ease of use, an accessible device for this transportation service users and is relatively comfortable.

It is also confirmed that it is a highly valued tool as a means of preserving life, as it mitigates the consequences of an accident or incident that could cause individuals to be displaced within the vehicle or ejected from it.

> ***"The majority of those who reported a difficulty with the device chose to travel without a seatbelt and did not complain to the company or to the regulatory bodies with jurisdiction over the issue. with jurisdiction over the issue."***

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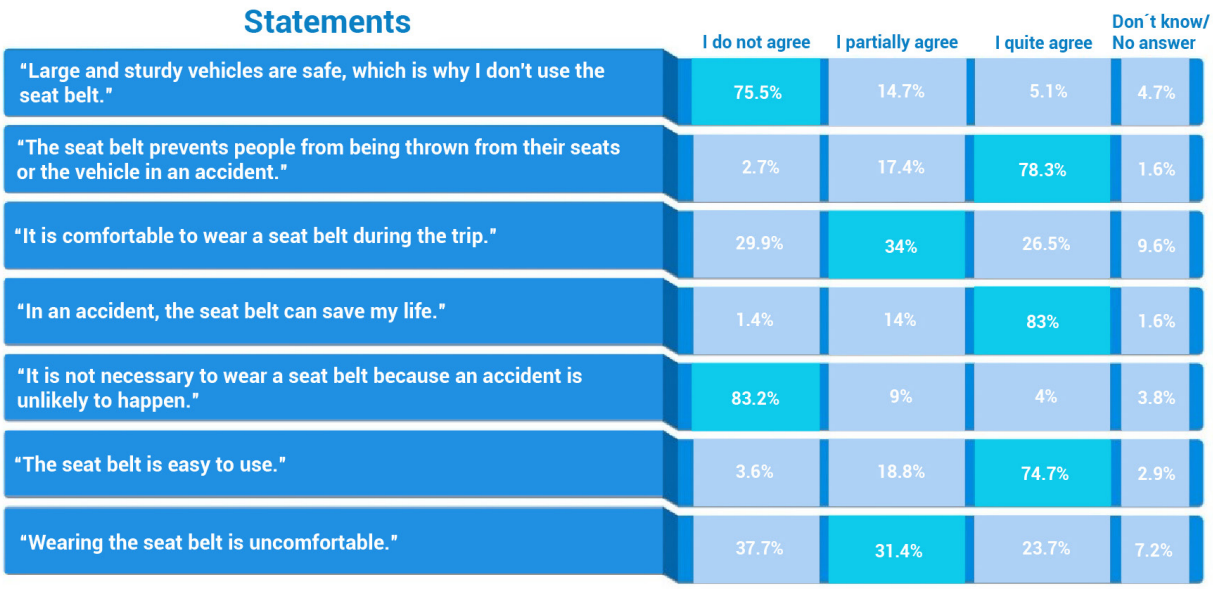
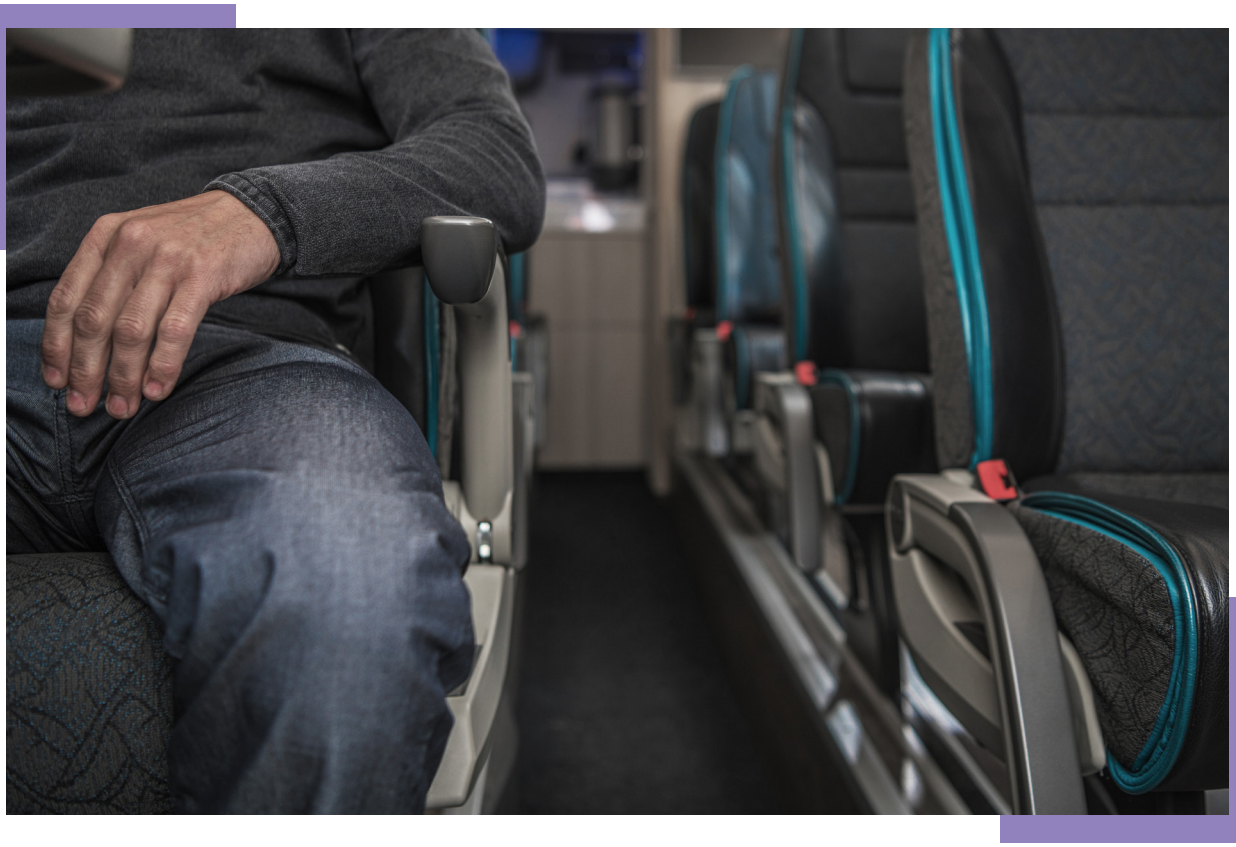
## CONCLUSIONS

The findings can be categorized into two main areas. First, there is consensus on the effectiveness and functionality of the seat belt in mitigating the consequences of a potential traffic occurrence among the surveyed individuals who use long-distance buses. In particular, this perception is strongly rooted

*Figure 3. Level of agreement with statements related to seat belts*




*Note: This figure presents the percentage distribution of the level of agreement among respondents with seven statements related to different beliefs about seat belts. Source: Own elaboration based on data from the survey conducted with long-distance bus passengers regarding seat belt use, 2022.*



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concerning private vehicles. However, in the case of long-distance services, the data obtained indicate that this common understanding does not translate into effective practice, as the levels of self-reported usage are found to be a minority portion of the studied sample. This general trend has nuances when correlated with educational level and age, intensifying or relativizing the relationships outlined. In this regard, it can be concluded that surveyed individuals with a higher level of education and older age are more likely to use seat belts during the journeys. The reasons identified among those who omit using the seat belt refer, on one hand, to users' tendencies to forget or are not used to using it, and on the other, to the lack of mechanisms for enforcing compliance with the regulatory standard. This latter reason could complement the former, as its absence hinders the strengthening of the habit.

Second, the other group of findings is related to the perceived conditions of the system that contribute to the use of seat belts. Resolution 149/2019 of the Transportation Management Secretariat of the Ministry of Transportation establishes the obligation for operating companies to include an institutional video before the start of each trip, in which the safety conditions of the service are mentioned. If necessary, this resource can be replaced by an oral explanation or the distribution of informational brochures. Regarding this dimension, the majority of surveyed individuals indicated not having received information related to safety devices or care practices during the trip. They also reported not receiving any seat belt use monitoring from the company staff. In this case, there are also nuances in the data: individuals who are more inclined to use seat belts are those who perceive the information provided by service providers more intensely. They are also the ones more likely to detect the absence of or any malfunctioning in the restraint devices in the vehicles.

The results allow us to conclude that addressing risk perception and care practices from a public planning perspective requires going beyond the regulation that mandates the use of seat belts to consider options that engage with specific practices and the common understandings that support them. Among these options are the strengthening of mechanisms for enforcing protocols and safety measures at all levels of the system, monitoring and enforcement for users and transportation companies, and the development of communication campaigns that promote seat belt use in this type of transportation.

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