

VEHICLE SAFETY LABELLING SCHEMES FOR CONSUMERS

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ABSTRACT

Consumer rating labelling schemes for vehicle safety are an effective way to positively influence consumer behaviour and catalyse market change for safer vehicles. Consumer labelling schemes are commonplace globally and these schemes, many of which have been operating for decades, are well recognised by consumers. The use of consumer rating labelling is widespread across many sectors including household appliances (energy efficiency), vehicles (fuel efficiency and emissions performance), food/nutrition and, more recently, vehicle safety.

Several initiatives have already led to the successful implementation of vehicle labelling schemes in some regions using safety rating data from New Car Assessment Programmes (NCAPs). These schemes involve the display of the safety rating for a model on a label affixed to a vehicle on display in a dealership showroom or virtual showroom. Some schemes have combined safety rating information with fuel efficiency information or have used innovative features such as QR codes to allow customers to easily access additional information.

By presenting comparative safety performance information at point of sale, vehicle consumers gain information about the vehicles that they may not otherwise have accessed. They can then make a better-informed purchasing decision.

Furthermore, the inclusion of safety ratings at point-of-sale has a strong influence on vehicle manufacturers by incentivising them to achieve better safety ratings if they know that consumers will find the rating of the vehicle while they browse potential models to buy. This is particularly the case for mandatory schemes which, by requiring all models to be included, ensures that poorer performance is less easily hidden from consumers.

Although mandatory labelling schemes may require lengthy processes, for example, to enact legislation to support the scheme, they are more likely to have an impact on the poorest performing vehicles where there is little incentive for these to participate in a voluntary scheme. As such, it is desirable that labelling schemes be mandatory or, where a scheme is initially implemented as voluntary, that transitioning to a mandatory scheme occurs as soon as possible.

NCAPs are generally the best source of information for a vehicle safety rating labelling scheme as NCAP ratings are simple, objective and easily printed onto a label. Using ratings from an established, trusted organisation with a strong reputation is likely to improve consumer acceptance of a scheme. Most NCAP rating schemes use star ratings, which are an established method for conveying comparative performance to consumers. Where NCAP ratings are available in the local market, these should be used for a vehicle safety rating labelling scheme.

INTRODUCTION

Consumer labelling schemes are one method of providing comparative information to potential consumers at point of sale. These labels, affixed to products in showrooms or stores, allow consumers to see the performance or rating of a product thereby enabling these consumers to make a better-informed purchasing decision.

Over the past few decades, consumer labelling schemes covering vehicle safety have been implemented in several regions. These schemes are intended to help guide consumers to choosing vehicles with higher safety ratings by providing a safety performance rating at the point of sale. For vehicle safety rating label schemes, these are generally based on NCAP ratings and are aimed at purchasers of new vehicles.

This paper describes a project primarily to assist with the implementation of vehicle safety labelling by national governments. The aims of the project were to examine the feasibility of introducing vehicle safety information, such as NCAP ratings, at the point-of-sale of new vehicles to empower consumer safety choices and drive market

transformations; and to provide recommendations to governments on the application of a vehicle safety labelling scheme.

BACKGROUND

Over the past few decades NCAPs have been introduced in many regions of the world. There are currently ten NCAPs or similar programmes that cover Australasia, Europe, North America, Latin America, China, Korea, Japan, South-East Asia and India. These NCAP organisations conduct demanding tests of new vehicles to the inbuilt safety systems exceed the minimum required by regulation (where applicable) and to identify vehicles that provide the best protection from serious injury for occupants and other road users. Recently the tests have expanded to include crash-avoidance technologies such as autonomous emergency braking (AEB).

Detailed studies of real-world crashes in several regions show that the driver of a 5-star car has around half the risk of serious or fatal injury, compared with the driver of a zero or 1-star car [1, 2, 3]. In other words, half of the drivers killed or seriously injured in a zero or 1-star car would have escaped without serious injury in a 5-star car. Similar reductions in serious injury risk apply to other occupants of the car, as well as vulnerable road users struck by a vehicle [4].

Similar savings occur for other occupants of 5-star cars and for vulnerable road users struck by a vehicle that performs well in NCAP tests.

Despite clear evidence that show safer vehicles save lives, some vehicle manufacturers have offered less-safe variants of a model to consumers, especially in regions that have not implemented key UN/Global vehicle safety regulations. It is therefore important that vehicle purchasers can readily access NCAP safety ratings, where available, and compare the brands and models that interest them.

For these NCAP ratings to be effective, it is crucial that information about varying levels of safety between vehicle models and variants of models is provided to consumers [5, 6, 7, 8, 9]. Many NCAPs rely on consumers proactively accessing safety ratings on the NCAP's website. Despite the accessibility of online safety rating information, it remains an issue that some consumers will fail to inform themselves of a vehicle's safety rating during their purchasing process. While some dealership staff will provide consumers with information about a vehicle's safety rating (especially where a vehicle has achieved a high rating) there is less incentive for dealers of lower-rated vehicles to disclose safety rating information.

By providing this safety information at point of sale, some of these concerns can be mitigated. This is where national governments can assist by encouraging/mandating the display of these safety labels.

SOURCES OF DATA

Existing literature, information and data on automotive and non-automotive consumer labelling systems were reviewed, particularly vehicle safety labelling systems introduced in several countries that have NCAP programs. Interviews were also held with relevant NCAP programs and organisations who shared their experience with implementing vehicle safety labelling schemes for consumers.

Based on these reviews and advice, recommendations for designing and implementing vehicle labelling schemes were developed.

RESULTS

A review of historic consumer rating labelling schemes in areas such as home appliance energy efficiency, fuel efficiency and nutrition demonstrates that consumers report a high trust in labelling schemes across a wide range of products. They value better performance of higher-rated products. Across populations, consumers have reported being willing to pay more for higher-rated products [10, 11]

Several national governments have introduced requirements for NCAP-related safety information to be available on labels affixed to vehicles at the point of sale (e.g. vehicle dealership showrooms). These might be in addition to, or combined with, other mandated labelling systems such as fuel-consumption labels [12]. Examples of vehicle safety rating labels are provided in the Appendix.

In general, under these schemes, a vehicle on display in a showroom (or virtual showroom) must have a prominent label that either provides an NCAP rating or a web link, such as a website URL or QR code. In some cases, the web link provides safety information for the actual vehicle being viewed, based on its unique vehicle identification number (VIN). This helps to reduce confusion and misinformation about safety features of variants. QR codes, in particular,

have proven to be an effective resource with several schemes incorporating these into their label design. QR codes also have advantages if the rating for the vehicle changes as the linked record for the QR code can be updated without the need to change the labels on vehicles in showrooms.

Consumer rating labels have the potential to affect consumer decisions and to put pressure on manufacturers to improve the safety performance of the product they bring to market. The potential benefits include:

- Labels provide a basis for direct comparison for consumers while making a purchasing decision.
- By having independent verifiable information available at point of sale the consumer does not need to conduct as much research, reducing the burden for seeking information on the products.
- Mandatory schemes in particular are likely to be more effective due to better consistency and increased coverage of the market. Mandatory labels act to 'hold brands to account' e.g. by imposing enforceable penalties for non-compliance and by ensuring that poor performance is not hidden from consumers through omission.
- Increasing awareness of road safety throughout the community and reinforces that vehicle safety is important.
- Increasing safety-related competitiveness in the sale of new vehicles and incentivises manufacturers to improve the safety of their vehicles.
- Providing commercial advantages for distributors of safer vehicles.
- Assisting governments to improve vehicle safety regulations, adopt UN regulations (where applicable) and support NCAPs.
- Ensuring that the message of safety reaches consumers, where some salespeople may not raise this (especially if the consumer does not ask about safety), or where the importance of safety and diversity of performance in the market is downplayed by salespeople.
- Helping dispel myths such as 'all vehicles are 5 stars' or 'they meet regulations so all vehicles provide the same safety'.

Overall, the concept of vehicle safety labelling was found to be feasible and desirable for regions that have access to NCAP ratings. A vehicle safety labelling programme has the potential to empower consumer safety choices, ensure market transparency on vehicle safety performance and incentivise manufacturers to prioritise and improve vehicle safety.

DISCUSSION

Mandatory vs voluntary schemes

Vehicle safety labelling schemes have significant potential to increase the supply and purchase of safer vehicles. It is recommended that governments introduce mandatory vehicle safety labels for new vehicles, especially in markets with an established NCAP. Compared with voluntary schemes, mandatory schemes are more likely to achieve widespread coverage of the fleet, thereby increasing the engagement and effectiveness of the scheme. Although developing legislative/regulatory frameworks and developing enforcement processes will require more time and resources for mandatory schemes, a potential benefit is that by being written into legislation/ regulations a mandatory scheme is more likely to be resilient over time.

While a voluntary approach is simpler to implement, it is likely to be less effective than a mandatory scheme. In some regions, however, there may be some resistance to a mandatory labelling scheme from certain stakeholders and so an interim voluntary approach could have advantages. Once the scheme becomes established, a timeline for introducing

mandatory labelling could be introduced. In any case, it is considered important to identify and engage with key stakeholders as early as possible, especially stakeholders who may resist the scheme and any who will be actively involved in the administration of the scheme (including any enforcement).

NCAP star ratings¹, which are simple and easily understood by consumers, should be used as the indicator of safety on the labels. Star ratings are readily associated with vehicle safety performance (e.g. NCAP test results) and are a concise way of presenting a complex set of performance data. NCAP ratings are an ideal source of rating information for a vehicle safety rating labelling scheme. Using ratings from an established, trusted organisation with a strong safety reputation is likely to improve consumer acceptance of a scheme. The labels could also incorporate a QR code for obtaining further information online about the safety rating or safety features of the vehicle.

Design of labels

Table 1 shows label design features that historic consumer vehicle safety ratings labelling schemes have commonly included and additional features that may improve the effectiveness of the labels.

Table 1. Features of consumer labels for new vehicle safety

Features commonly used on consumer rating labels	Other features that may improve the effectiveness of safety rating labels
Colourful, to attract attention.	UV resistant materials to improve label longevity and legibility
The scheme/programme name	Prominently including the word 'Safety' to ensure label purpose is correctly interpreted by consumers
A graphic representing the rating (e.g. star rating or other rating scale)	Combining safety rating information with other performance information (e.g. fuel efficiency) - where available
Important details or a link to external sources of information (URL or QR code)	May include product specific details (e.g. brand, model) to specifically identify the product to which the label and rating apply. Includes a method for consumers to link to the NCAP record for the model/variant, such as via a QR code.
Highly visible location (e.g. labels are affixed to vehicle side windows or windcreens)	Adhering the label to the inner surface of the vehicle windscreen or window to provide protection to the label.
A key performance measure, or an overall numerical score that represents the rating (or upon which the rating is based)	Positioning the label so that it does not obstruct the view of the driver (e.g for test drives)

Given the prevalence of other types of consumer labelling associated with new vehicles consideration should be given to the design of vehicle safety rating labels to ensure that consumers do not confuse them with those labels. Selecting appropriate design elements and ensuring the prominent inclusion of the word 'Safety' are measures that can be taken to reduce the risk of confusion. This is likely to be less of an issue where fuel efficiency rating information is to be combined on the same label as vehicle safety ratings (e.g. Monroney and RightCar labels).

¹ Most NCAPs publish an overall rating out of 5 stars. Where the relevant NCAP uses an alternative method that should be included on the label instead of a star rating.

Implementation issues

Key administrative processes that are crucial for the successes of a labelling scheme include:

- A process to source safety ratings and ensure they are applied to the correct model/variant. It is recommended that safety performance ratings are sourced directly from the local NCAP ratings (or equivalent), where available.
- Administrative processes to ensure that as soon as possible after a rating is issued that participating brands/dealerships are able to apply these to vehicles on display in showrooms. Delays in applying ratings to vehicles in showrooms should be avoided.
- A process for ensuring that the correct labels are applied to vehicles in showrooms, including virtual showrooms
- A process for monitoring the scheme, including the detection of inadvertent or deliberate misapplications of labels/ratings and ensuring that links to online resources are correct.

In general, the steps for implementing a vehicle safety labelling scheme are:

- Identify an option (or options) appropriate to the region
- Prepare a proposal/discussion paper and consult with stakeholders
- Prepare a draft protocol describing the operation of the scheme
- Develop a scheme website and data management processes
- If appropriate, conduct a trial of the scheme
- Finalise the protocol, develop associated educational materials and provide support for manufacturers, dealers and administrators
- Public launch of the scheme
- Monitor and review the implementation
- Develop long-term performance criteria and conduct ongoing reviews

Enforcement

The design and implementation of a scheme should take into account ways to enforce the requirements. In regions where strong consumer protections already exist there may be existing provisions in place for appropriate enforcement. In other cases, specific legislation may be required to be introduced.

Early in the life of a scheme it is inevitable that labelling mistakes will be made and some flexibility in the enforcement action should be considered. In particular, education about the requirements at the motor dealer level would be appropriate unless clear deception of consumers is involved.

Where enforcement actions will be carried out by a third party (e.g. a government consumer protection agency) it is essential that the involvement of the third party be confirmed during the scheme design phase and that the third party agrees to their roles, responsibilities and expectations for resourcing.

LIMITATIONS

The main limitation of this study is that the review and recommendations only apply to new vehicles that have been awarded a safety rating by an NCAP. The scope was limited to regions with an NCAP. While safety rating schemes exist for used vehicles and for the collective safety features fitted to vehicles, they were out of scope for the project.

CONCLUSIONS

There are major road safety benefits from encouraging consumers to purchase safer vehicles. Where a region has an NCAP program, it is recommended that governments introduce a labelling scheme to make the safety rating of vehicle models available at the point of sale. This can be achieved through a vehicle safety label that prominently displays an NCAP safety rating for that model. The label could include a QR code linking to relevant online information. It is recommended that, where feasible, schemes be mandatory to maximise participation and effectiveness but, for ease of implementation, they could be voluntary in the short term before transitioning to a mandatory scheme.

A comprehensive report setting out the reasons for encouraging vehicle safety labelling and providing recommendations for the design and implementation of labelling schemes has been published by Global NCAP [13].

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APPENDIX. EXISTING/HISTORIC VEHICLE SAFETY RATING LABELLING SCHEMES

Several labelling schemes related to vehicle safety have been introduced around the globe. This appendix provides details of the following schemes;

- Monroney (USA)
- ASEAN NCAP (South East Asian region)
- RightCar (New Zealand)
- Stars on Cars (Australia) – ceased
- Chile vehicle safety labelling scheme

Monroney Sticker/Label - USA

Section 10307 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires that each new passenger vehicle that has been rated under the NHTSA's New Car Assessment Programme (NCAP) must have the relevant crash ratings displayed on a label (the Monroney label) affixed to the vehicle. Using a maximum 5 star rating system the label includes overall, frontal, side and rollover star ratings from the NHTSA's US NCAP crash test programme. The SAFETEA-LU Act, and therefore the Monroney label, are underpinned by legislation and enforcement actions including fines for non-compliance.

Applying to vehicles with a GVM of less than 8,500lb (3,856 kg). Each Monroney label must include the following information, on a sticker affixed to the vehicle at the point of sale.

- Crash test ratings as determined by the National Highway Traffic Safety Administration
- Engine and transmission specifications
- Standard equipment and warranty details
- Optional equipment and pricing
- City and highway fuel economy ratings, as determined by the Environmental Protection Agency (EPA)
- The manufacturer's suggested retail price (MSRP)

NHTSA has developed a mechanism to allow vehicle dealers and private sellers to generate their own Monroney label for vehicles for sale.



Figure 5. Monroney Label Examples

ASEAN NCAP (ASEAN region)

Following a voluntary phase from June 2018, vehicles in the ASEAN region have been required to display an ASEAN NCAP label for all passenger vehicles at point of sale on the vehicle's side window or windscreen. The label republished the ASEAN NCAP result for the specific model variant and uses a maximum 5 star rating system. ASEAN NCAP have developed an application process to allow vehicle brands to generate labels for all model variants and allows vehicle brands to either arrange printing or have printing arranged through ASEAN NCAP.



Figure 6. ASEAN NCAP Label Example

RightCar - New Zealand

RightCar is a voluntary scheme administered by the New Zealand Government and uses a maximum 5 star rating system. The scheme allows vehicle sellers to generate a physical label to affix to the vehicle at point of sale.

The RightCar label includes:

- vehicle's plate number (rego) or vehicle identification number (VIN)
- make and model of the car
- year of manufacture
- safety rating system used to assess the rating
- year the car was assessed or tested.

Safety rating information is taken from ANCAP ratings, Used Car Safety Ratings (UCSR) and New Zealand Vehicle Safety Risk Ratings (VSRR's).



Figure 7. NZ RightCar label Example

Stars on Cars - Australia

Commencing in 2007, the 'Stars on Cars' programme was a voluntary programme led by ANCAP and supported by state and territory governments, motoring organisations, insurers and vehicle dealerships. The programme involved ANCAP ratings being prominently displayed in vehicle showrooms, including the use of stickers and swing tags on showroom vehicles to display the ANCAP safety rating. The programme focussed on promoting vehicles with 4 and 5 star ratings.

Initially the programme faced a lack of support from key car brands, including brands with some of the top selling 4 and 5 star models.

'Stars on Cars', was implemented in Western Australia, South Australia, Victoria and the Northern Territory but was not implemented in other states/territories. Despite indications of success, it is unclear why these state/territory programmes ceased or why the initiative was not extended to other states and territories. Success measures of the programme were based on an increase in sales of higher star rated vehicles during the programme period, increased web visits and feedback responses from consumers and vehicle dealers.



Figure 8. Example 'Stars on Cars' label and swing tag (for 5 Star rated vehicle)

Vehicle Safety Labelling - Chile

For several years Chile has required a safety label on new vehicles offered for sale. The label indicates whether or not optional safety features such as head-protecting side airbags are fitted to the vehicle. The label also certifies that the vehicle meets regulation requirements and includes a QR code to obtain further information online.

In 2022 the Chilean Ministry of Transport and Telecommunications (MTT) submitted a proposed decree to the government. This included the addition of a Latin NCAP star rating to the mandatory safety label. The Decree subsequently became law. Chile therefore became the first country in the region to commit to including an NCAP star rating in their safety label. The Decree established that all new vehicle models for sale must include Latin NCAP's star rating result in the vehicle safety label, as long as at least one of the test vehicles used for the evaluation was purchased in Chile. In cases where the model does not have an applicable rating by Latin NCAP (e.g. none of the test vehicles were purchased in Chile) the label will show the legend "not available". The lack of a Latin NCAP star rating displayed on the safety label does not limit the possibility of vehicles being available for sale.

In 2023 responsibility for the safety labelling scheme was transferred to Servicio Nacional del Consumidor (SERNAC), which is the consumer protection agency of the Chile government.

At the time of writing the updated labelling scheme, with the Latin NCAP rating included, was in the process of being introduced. Further details may be published during 2026.

Etiquetado de Seguridad

Ministerio de Transportes y Telecomunicaciones

Marca:

Modelo:

Código informe técnico:

Elementos de Seguridad Optativos

- ☐ Limitador de tensión en cinturón de seguridad.
- ☐ Pretensor para cinturón de Seguridad.
- ☐ Airbag lateral de cabeza.
- ☐ Air Bag lateral de cuerpo.
- ☐ Sistema avanzado de frenado de emergencia (AEB).
- ☐ Detector de punto ciego (BSD).
- ☐ Asistente de velocidad inteligente (ISA).
- ☐ Asistente de mantenimiento de carril (LKA).

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Adulto: Niño:

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Etiquetado de Seguridad

Ministerio de Transportes y Telecomunicaciones

Marca:

Modelo:

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- ☐ Limitador de tensión en cinturón de seguridad.
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- ☐ Asistente de mantenimiento de carril (LKA).

**VEHÍCULO
NO EVALUADO
POR LATIN NCAP**

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Figure 9. Chilean Vehicle Safety Label for rated and unrated vehicle models