Ministry of Infrastructure
and Water Management

Monitor Smart Mobility 2026

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Monitor Smart Mobility 2026

Before you lies the fourth edition of the Smart Mobility Monitor. Thanks to innovations by market players and legislation and regulations, particularly from Europe, digitalisation and automation solutions have become an integral part of our mobility system. Road users today make use of many applications. This monitor provides an overview of a selection of trends, developments and applications in the fields of vehicle automation, traffic management and information services, and mobility services.

In 2023, we began systematically mapping these trends, developments and applications, and each year we review the current state of affairs. Each edition is based on ongoing research as well as a number of newly launched studies. This creates a series of editions from which trends can be identified. In terms of applications, these include advanced driver assistance systems, real-time in-car travel and route information, and shared mobility services. This monitor pays particular attention to developments in the use of advanced driver assistance systems, real-time in-car travel and route information, and other services and systems within road freight transport.

This monitor discusses the categories of vehicle automation, traffic management, and information and mobility services on the basis of three recurring themes: availability, use and effect.

The 'availability' theme describes which specific applications are currently available. The 'use' theme shows the extent to which these applications are used by motorists and transport operators and/or lorry drivers, what the level of awareness is, and how users rate these applications. The monitor also highlights what is already known about the effects of the applications.

With the insights from the Smart Mobility Monitor, public authorities at all levels can increasingly make policy decisions based on facts and figures. The monitor provides information to encourage positive trends or, if necessary, to intervene where undesirable developments occur. In this way, it contributes to a safer, more sustainable and more efficient mobility system for motorists, lorry drivers and transport operators.

Pages relating to lorries or freight transport are marked with the text 'The information on this page concerns freight traffic' in green, accompanied by a lorry icon. The source of the information displayed is indicated at the bottom of each page. The appendices contain an overview of the sources. The sources provide detailed coverage of the topics presented here, including the statistical basis of the studies. A list of abbreviations used is included at the back of the Smart Mobility Monitor. The photographs in the Monitor are sourced from iStock, MAN, DAF, BMW Group, Polestar and Kia.

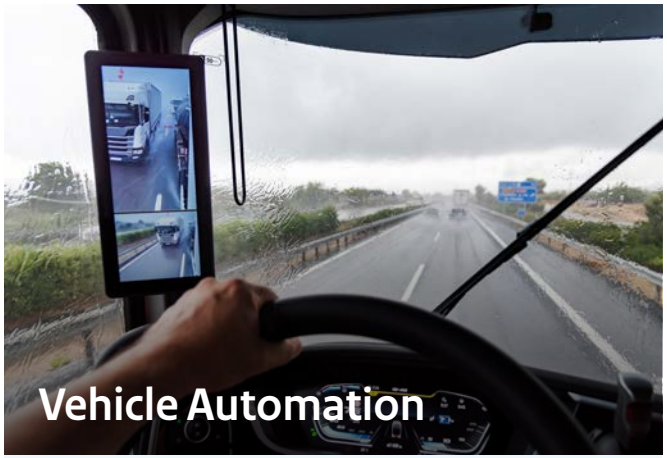
The Smart Mobility Monitor 2026 and previous editions can be downloaded from the CROW website 'The Smart Mobility Ladder'.

Guide

The first chapter of this Monitor, on vehicle automation, describes developments relating to Advanced Driver Assistance Systems (ADAS) for passenger cars, based on the ADAS Trend Analyses (2025). It then describes developments in driver assistance systems for lorries, as examined in the Monitor on Road Traffic-Related Information Services and Driver Assistance Systems in Freight Transport (2025). The chapter continues with insights into 'mode confusion' (who is performing the driving task: the driver or the vehicle?) and how the message about driver assistance systems can influence driving behaviour. Finally, a comparison is made between developments in passenger cars and lorries.

The second chapter examines the use of information services by transport operators (planners) and lorry drivers. Both pre-trip and on-trip information are relevant here. The basis for this is the study 'Monitoring road traffic-related information services and driver assistance systems in freight transport (2025)'. The study 'Digitalisation and automation in road freight transport: availability, use and effect' provides further insight into how other systems and services can play a role within freight transport. This chapter also concludes with a comparison between developments in passenger cars and lorries. To this end, the lorry study was compared with the 'Monitor of Road Traffic-Related Information Services 2024' (passenger cars).

The third chapter focuses on the development of shared mobility and examines the various shared transport modes, such as car-sharing, shared two-wheelers and mobility hubs. Based on the 'National Travel Survey (2025)' and 'The State of Shared Mobility' (2024), trends in use and development are mapped out, after which the key findings are clearly summarised. Although digitalisation is less prominent in this chapter, it is inextricably linked to shared mobility: booking, unlocking and payment are carried out via digital platforms, and vehicle management is also highly data-driven. A well-functioning data exchange is therefore an essential prerequisite for the functioning of shared mobility services.



Vehicle Automation

Vehicle automation refers to systems that assist with (parts of) the driving task and, in some cases, take over part of it. They are generally developed by car manufacturers and suppliers to improve road safety or driving comfort. The level of automation in vehicles varies by vehicle, but is becoming increasingly advanced in all cases. It is expected that, in the future, these systems will be able to take over more and more of the driver's driving tasks. The pace of this development is difficult to predict. Potential effects (both positive and negative) resulting from increasing adoption will only become apparent over time. This provides further justification for monitoring. In this Monitor, the focus is on driver assistance systems, and we do not address fully automated driving (ADS).

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Traffic Management & Information Services

Traffic management is used by road authorities to improve safety, traffic flow and the reliability of the road network. It is used, for example, in the event of incidents, traffic jams, roadworks, the effective management of slippery conditions, and the optimal use of tunnels, bridges and rush-hour lanes. Automation and digitalisation play a major role in many of these tasks. These include physical signs along and above the road that indicate the speed limit, lane closures (matrix signal displays) or provide information. Road users (motorists and professional drivers) also receive rapid and targeted information in their vehicles via various information services about current situations (e.g. diversions, traffic jams, roadworks, approaching emergency services) and applicable traffic regulations.

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Mobility Services

In this Monitor, 'Mobility Services' refers primarily to shared mobility. Shared mobility is a collective term for all modes of transport available to multiple users, whereby the user is the driver but not the owner of the vehicle. Examples include shared bikes, scooters and cars. Shared mobility has a digital component because, usually, you reserve, book and pay for shared vehicles using an app. Promoting shared mobility is primarily aimed at keeping cities and regions liveable and accessible, and helps to facilitate urban development.

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Road Freight Transport in the Netherlands

In addition to developments in passenger transport, this Monitor specifically examines developments relating to the use of advanced driver assistance systems, real-time trip and route information in lorries, and other supporting services and systems within road freight transport.

In 2024, a total of 6.6 billion vehicle-kilometres were covered by road freight transport in the Netherlands. The average trip distance for loaded vehicles is 95 kilometres. Specifically for domestic trips, the average distance is lower, at 67 kilometres. Of the total 53 million laden trips, 86% have a domestic destination and 6% of trips (heavy and medium-duty freight traffic) are cross-border. Trips include both those with fixed routes and times and those with variable routes at different times. The majority of these transport activities are carried out by Dutch hauliers. Approximately 86% of lorry-kilometres in the Netherlands are driven by Dutch lorries. Foreign lorries account for the remaining 14% of kilometres driven (CBS).

Around 80% of road freight transport in the Netherlands is carried out by professional freight transport companies (transport firms, own-account carriers and self-employed drivers). The sector has a strong SME profile: 74% of companies hold a maximum of five licences to transport freight by lorry. At the same time, approximately 70% of all trips in professional freight transport are carried out by just 15% of companies (mostly trips for the retail sector). Transport capacity is concentrated among a relatively small group of larger companies.

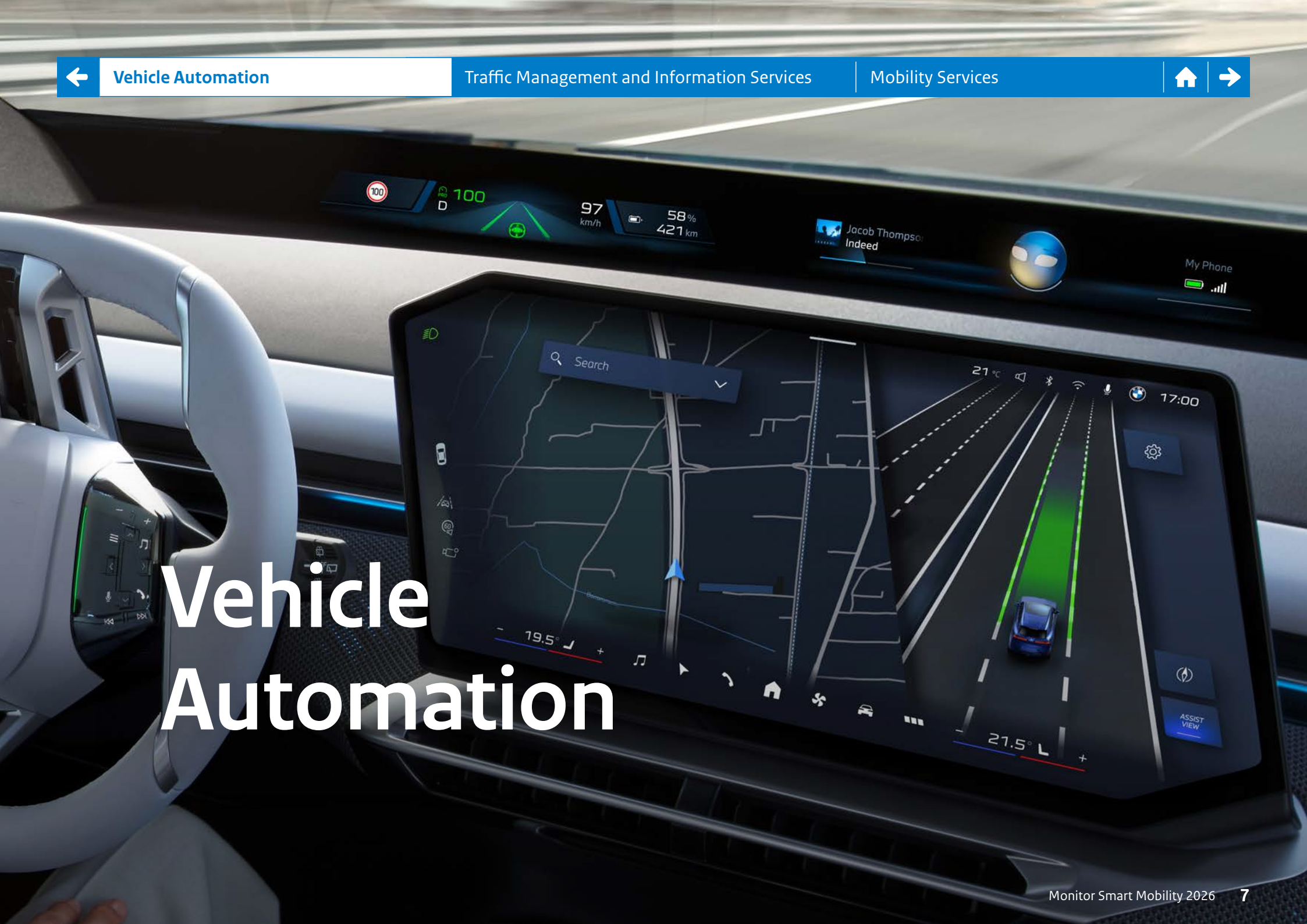
Only 1% of companies belong to the largest category (>100 employees), but this group manages almost a quarter of the total number of lorries.

The Dutch lorry fleet comprises approximately 154,000 vehicles. Although lorries account for only around 1.5% of the total Dutch vehicle fleet, they are responsible for over 5% of the total number of vehicle-kilometres travelled. The economic lifespan of lorries and tractor units is assumed to be approximately seven years; for trailers and semi-trailers, it is twelve years.

An estimated 92,000 to 96,000 drivers are active in the sector, with an average age of 45.5 years; 12.5% of them work as self-employed drivers.

The following terminology is used:

- Companies (or carriers): all natural or legal persons that carry out the transport of goods, regardless of whether this is their main activity.
- Own-account carriers: companies that transport goods for their own account as a supporting activity to their main business.
- Haulage contractors (professional hauliers): companies that transport goods for a fee on behalf of third parties (professional haulage). A distinction can be made between:
  - Owner-operators: haulage contractors consisting of a single owner-driver with no staff.
  - Haulage contractors with two or more employees: professional hauliers with multiple drivers and/or support staff.
- (Lorry) drivers: drivers of lorries used to transport goods. A distinction can be made between:
  - Employed drivers: formally employed by a transport operator.
  - Self-employed drivers (owner-drivers): independently operating drivers who carry out trips on behalf of transport operators or clients.
- Trips: a trip is the movement of goods from a point of origin to a destination, including the sequence in which multiple stops are made.
- Routes: a route is the actual path that a driver chooses or is assigned in order to complete a trip.



Vehicle Automation

Figure 1: Selection from the ADAS Dictionary – www.adasalliantie.nl

Category	Name of assistance system	Abbr.	Dutch name	Brief description	Mandatory in new vehicles	On at vehicle start
(Adaptive) speed and distance assistance systems	Intelligent Speed Assistance	ISA	Intelligente Snelheid Assistent	Informing: displays the speed limit to the driver. Warning: alerts the driver when the vehicle exceeds the speed limit. Limiting: limits the vehicle's speed to the applicable speed limit when it is exceeded.	Yes, from 7 July 2024	Yes
	Adaptive Cruise Control	ACC		Automatically maintains distance from the vehicle ahead and reduces speed when it detects the vehicle is getting too close.		
	Cruise Control	CC		Allows the vehicle's speed to be set, so the accelerator pedal can be released.		
	Speed Control Function	SCF	Intelligente Snelheidsbegrenzer	Ensures the vehicle does not exceed the speed limit set by the driver.		
	Speed Limit Information Function	SLIF	Snelheidslimietherkenning	Displays speed limit signs on a screen in the vehicle and alerts the driver if the limit is exceeded.		
Emergency braking systems	Anti-lock Braking System	ABS	Anti Blokkeer Systeem	Prevents the wheels from locking up during braking.	Yes, from 1 July 2004	Yes
	Autonomous Emergency Braking	AEB	Autonoom noodremsysteem	Intervenes in dangerous situations by bringing the vehicle to a standstill via emergency braking. When the driver brakes, it automatically applies maximum braking force.	Yes, from 7 July 2024	Yes
Lane support systems	Lane Keep Assist	LKA	Rijstrookassistentie	Provides steering corrections and/or a warning when the lane is unintentionally departed.		
	Lane Departure Warning	LDW		Warns when the lane is unintentionally departed without use of the indicator.		
	Emergency Lane Keeping	ELKS		Actively steers to keep the vehicle in its lane.	Yes, from 7 July 2024	Yes
	Lane Centering	LC		Keeps the vehicle in the centre of the lane.		
	Autonomous Emergency Steering	AES		Detects an imminent collision that cannot be avoided by braking and actively intervenes via the steering to avoid obstacles.		
Monitoring systems: surroundings	Forward Collision Warning	FCW		Warns the driver of an imminent collision.		Yes
	Blind Spot Warning	BSW	Dodehoekwaarschuwing	Warns the driver with a light signal, usually in or near the door mirror, when the vehicle is overtaking or being overtaken.		
	Rear Collision Warning	RCW		Detects the area behind the vehicle and warns of a possible collision from the rear.		
Monitoring systems: vehicle and occupants	Driver Drowsiness and Attention Warning	DDAW	Vermoeidheids- en aandachtswaarschuwing	Detects driver fatigue and issues a warning signal or intervenes via a controlled stop.	Yes, from 7 July 2024	Yes
	Advanced Driver Distraction Warning	ADDW	Geavanceerde afleidingswaarschuwing	Detects driver distraction and issues a warning.	Yes, from 7 July 2026	Yes
	Rearview Camera	RV	Achteruitrijcamera	Provides a view of the area behind the vehicle using cameras or parking sensors.	Yes, from 7 July 2024	Yes
Parking assistance systems	Assisted Parking		Parkeerassistent	Steers automatically when parallel parking; the driver only needs to operate the accelerator and brake.		
	Remote Control Parking	RCP		Parks the vehicle autonomously in a parking space under the driver's supervision.		
Information systems	Traffic Sign Recognition	TSR	Verkeersbordherkenning	Displays traffic signs on a screen in the vehicle.		
	Navigation Systems		Navigatiesysteem	Provides instructions (visual and/or audio) on the route to a destination.		
A combination of (adaptive) speed and distance assistance systems, lane support systems and monitoring systems	Driver Control Assistance System	DCAS		The collective term for a highly advanced driver assistance system that supports the driver with braking, acceleration and steering, while a Driver Monitoring System (DMS) monitors whether the driver is watching the road.		

This is an excerpt from a carefully compiled overview by the ADAS Alliance. The full overview can be found at www.adasalliantie.nl. The content is based on available data that has been collated, but this does not guarantee that the information is complete or error-free. Consequently, no rights may be derived from the ADAS Dictionary 2025. The ADAS Alliance welcomes additions via www.adasalliantie.nl

Source: ADAS Alliantie – ADAS dictionary

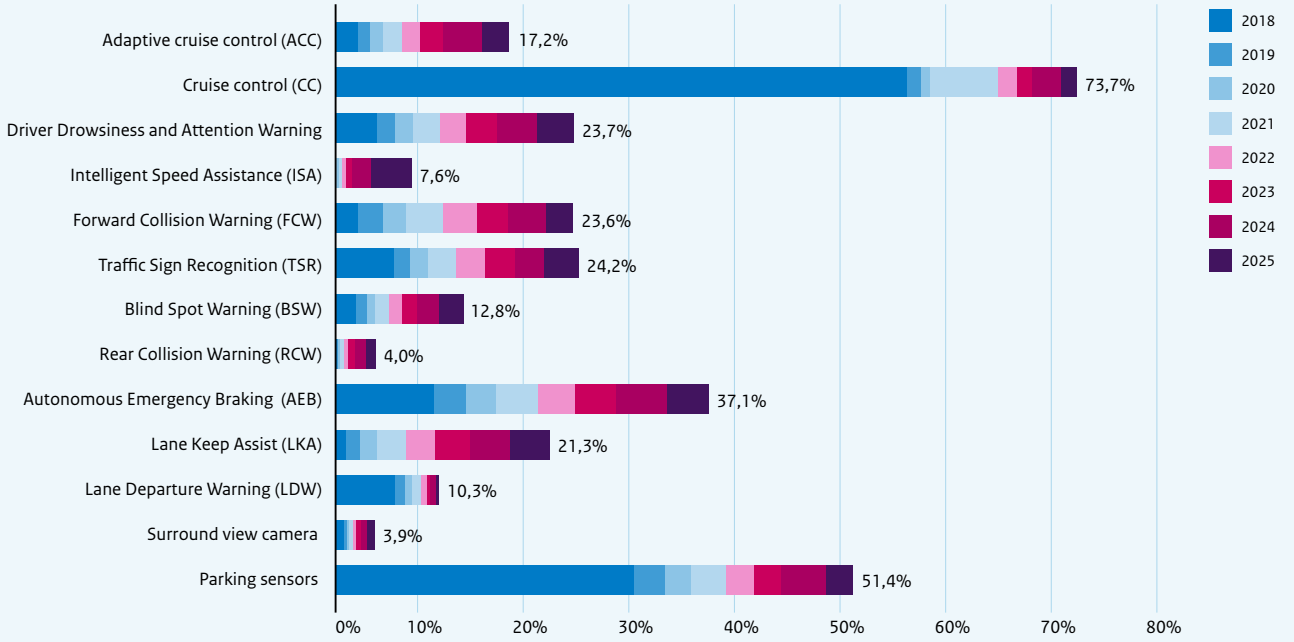
The proportion of driver assistance systems in the passenger car fleet

The number of passenger cars fitted with a driver assistance system is growing every year, both in absolute terms and as a proportion of the total number of cars on the road (fleet). The figure shows the trend since 2018 in the annual increase in the total vehicle fleet. At 73.7%, cruise control is by far the most prevalent system in the fleet in 2025, followed by parking sensors (51.4%).

The strongest increase in driver assistance systems is seen in those that have been mandatory since July 2024 (see ADAS Dictionary, page 8), with all newly sold vehicles since then being equipped with these mandatory systems. The share of systems such as Intelligent Speed Assistance (ISA) and Autonomous Emergency Braking (AEB) in the vehicle fleet grew by over 4% last year. The share of non-mandatory driver assistance systems such as Adaptive Cruise Control (ACC) and Lane Keep Assist (LKA) also grew by (almost) 4% last year. Other non-mandatory driver assistance systems, such as Rear Collision Warning and surround-view cameras, show lower growth rates.

In addition to developments in the overall vehicle fleet, the average number of driver assistance systems in newly sold passenger cars was also examined. In 2025, this figure rose from 9.3 (2024) to 10.6. A key factor behind this growth, alongside the European requirement for a number of driver assistance systems, is the continued rise of electric vehicles (EVs). In 2025, 40% of new car sales are EVs. These are generally better equipped with driver assistance systems than cars with petrol or diesel engines. The average age of a passenger car has fallen slightly from 11.7 years in 2024 to 11.2 years in 2025 (RDC). From a European perspective, the Netherlands sits in the mid-range in terms of the average age of passenger cars, with the European average standing at 12.3 years (ACEA).

Figure 2: Annual growth in the percentage of vehicles with a driver assistance system in the passenger car fleet



Explanation of ISA:
The results in the studies used relate to all the different variants of ISA (Intelligent Speed Assistance). Only where 'warning ISA' is stated does this refer to the variant that has been mandatory in all newly registered cars since July 2024.

Source: RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge)
Source: RWS – Driving Task Automation Monitor (ownership, awareness, use and level of knowledge)
Source: RWS – ADAS passenger car, van and lorry Monitor (online dashboard)

Awareness of the availability of driver assistance systems in newly sold passenger cars

It is not always clear to what extent motorists are aware of which driver assistance systems their car is equipped with.

In addition to the actual presence of driver assistance systems in new passenger cars sold in 2025, the study investigated whether motorists themselves are aware of a system's presence (Presence columns). For twelve of these driver assistance systems (model year 2025), the study examined the extent to which motorists are aware that a system is present.

On average, motorists are aware that 75% of the systems actually fitted in their cars are present. This is lower than the 79% recorded in 2024. Of the systems not included in the vehicle, 68% of the motorists surveyed were able to confirm that they do not have them. In 2024, this figure was 64%.

There may be various reasons for these differences. The number of systems is increasing, they are becoming more complex, and their names vary by make. Furthermore, the available vehicle data does not always specify which optional systems have been purchased, which can sometimes give the mistaken impression that a system is missing. This has resulted in the actual presence of the systems under investigation being recorded in the vehicle databases for approximately 90% of vehicles.

Motorists also sometimes confuse systems with one another, for example by mixing up Lane Keep Assist and Lane Departure Warning. Another reason for the lack of accurate knowledge about the driver assistance systems present is that the naming can sometimes suggest different functionality.

Figure 3: Objective and self-reported presence of driver assistance systems (2025) in newly sold passenger cars

2025	Presence			Absence
System	**Objective**	**Subjective**	**Subjective given objective**	**Subjective given objective**
Cruise Control	60%	86%	91%	63%
Adaptive Cruise Control	61%	56%	89%	67%
Speed Limit Recognition		63%		
Traffic Sign Recognition	64%	41%	51%	77%
Warning ISA		80%		
Speed Limiter		57%		
Forward Collision Warning	73%	59%	75%	63%
Autonomous Emergency Braking	95%	49%	58%	68%
Rear Collision Warning	20%	21%	50%	85%
Lane Keep Assist	75%	56%	81%	73%
Lane Departure Warning	11%	60%	75%	49%
Emergency Lane Keeping		34%		
Lane Centering		28%		
Blind Spot Warning	46%	39%	79%	82%
Driver Drowsiness and Attention Warning	71%	44%	63%	79%
Driver Distraction Warning		14%		
Parking Sensors	96%	85%	95%	48%
Surround View Camera	13%	65%	89%	59%
Rear Automatic Emergency Braking		40%		
Average			75%	68%

Presence "Subjective" is the proportion who believe the system is present (regardless of objective presence)
Presence "Subjective given objective" is the proportion who believe the system is present given its objective presence (based on VMS)
Absence "Subjective given objective" is the proportion who believe the system is not present given its objective absence (based on VMS)

Source: RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge)

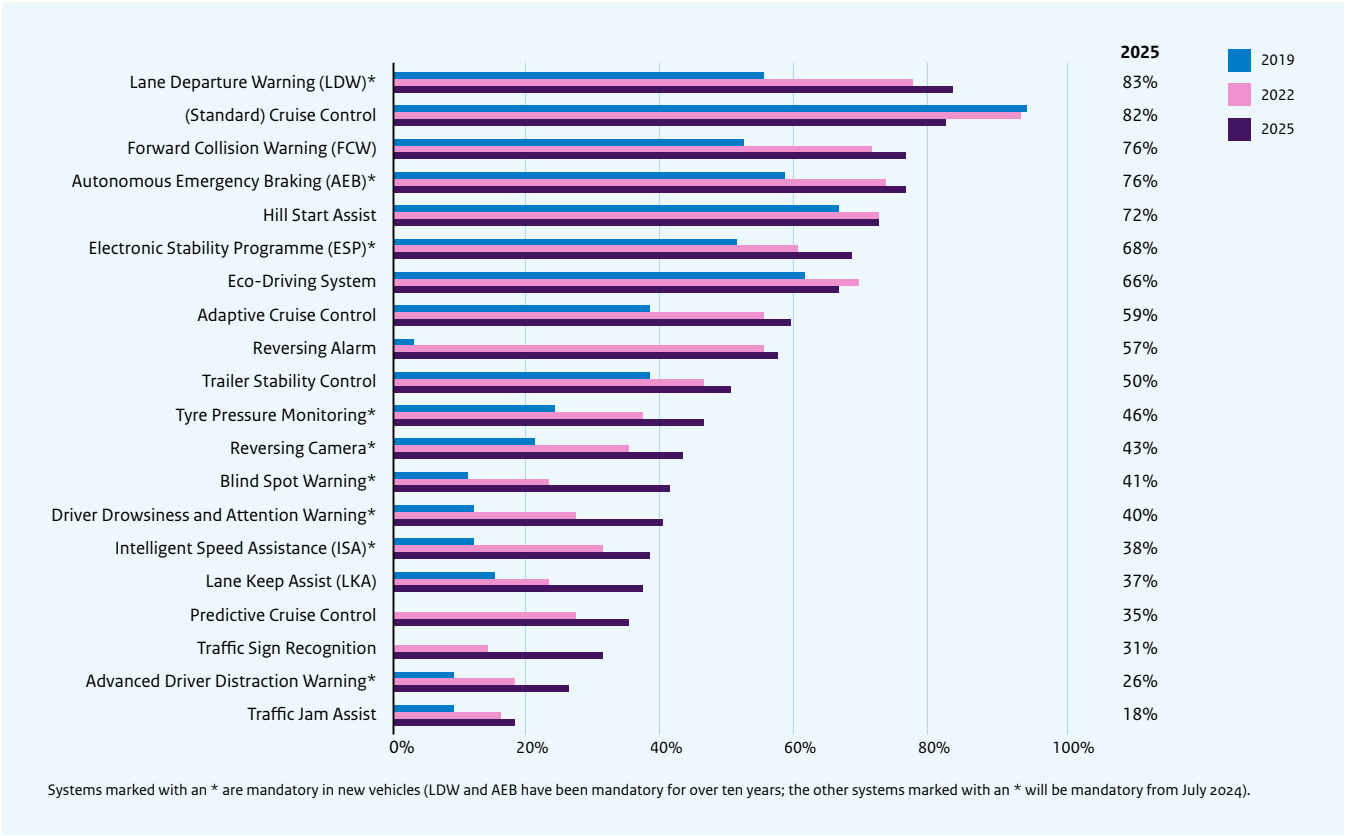
Trend in the self-reported presence of driver assistance systems in lorries

Research shows that the self-reported presence of driver assistance systems in lorries in 2025 has increased significantly compared to 2019 and 2022. Growth can be seen for almost all systems. With regard to Cruise Control, there is a shift in prevalence from (Standard) Cruise Control to more modern variants, such as Adaptive Cruise Control. Eco-Driving shows a slight decline, whilst the prevalence of Hill Start Assist has remained stable.

Among the biggest increases compared to 2022 are Blind Spot Warning, Traffic Sign Recognition and Lane Keep Assist. Driver Drowsiness and Attention Warning, Automatic Windscreen Wipers and Mirror Cameras are also being reported significantly more frequently. The strong growth in Blind Spot Warning and Driver Drowsiness and Attention Warning is linked to the European requirement to include these systems in new lorries from July 2024.

Furthermore, employed drivers generally report having driver assistance systems in their lorries more often than self-employed drivers. This may be due to the faster fleet replacement policy of large transport companies, which are more likely to invest in new vehicles and modern safety technologies. Companies (with two or more drivers in their employ) often estimate the presence of driver assistance systems to be higher than their drivers do. This was also the case in 2019 and 2022.

Figure 4: Trend in the self-reported presence of driver assistance systems in lorries



Systems marked with an * are mandatory in new vehicles (LDW and AEB have been mandatory for over ten years; the other systems marked with an * will be mandatory from July 2024).

Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

The following requirements apply to lorries under the European General Safety Regulation (GSR):

From 6 July 2022 in new lorries:
- Lane Departure Warning System
- Stability Control System
- Advanced Emergency Braking on Heavy Vehicles
- Speed Limiter

From 7 July 2024 in new lorries:
- Pedestrian and Cyclist Collision Warning
- Blind Spot Information System
- Reversing Detection
- Tyre Pressure Monitoring for Heavy Vehicles
- Intelligent Speed Assistance
- Driver Drowsiness and Attention Warning

From 7 July 2026 in new lorries:
- Advanced Driver Distraction Warning

Motorists' level of knowledge regarding the use of their driver assistance systems

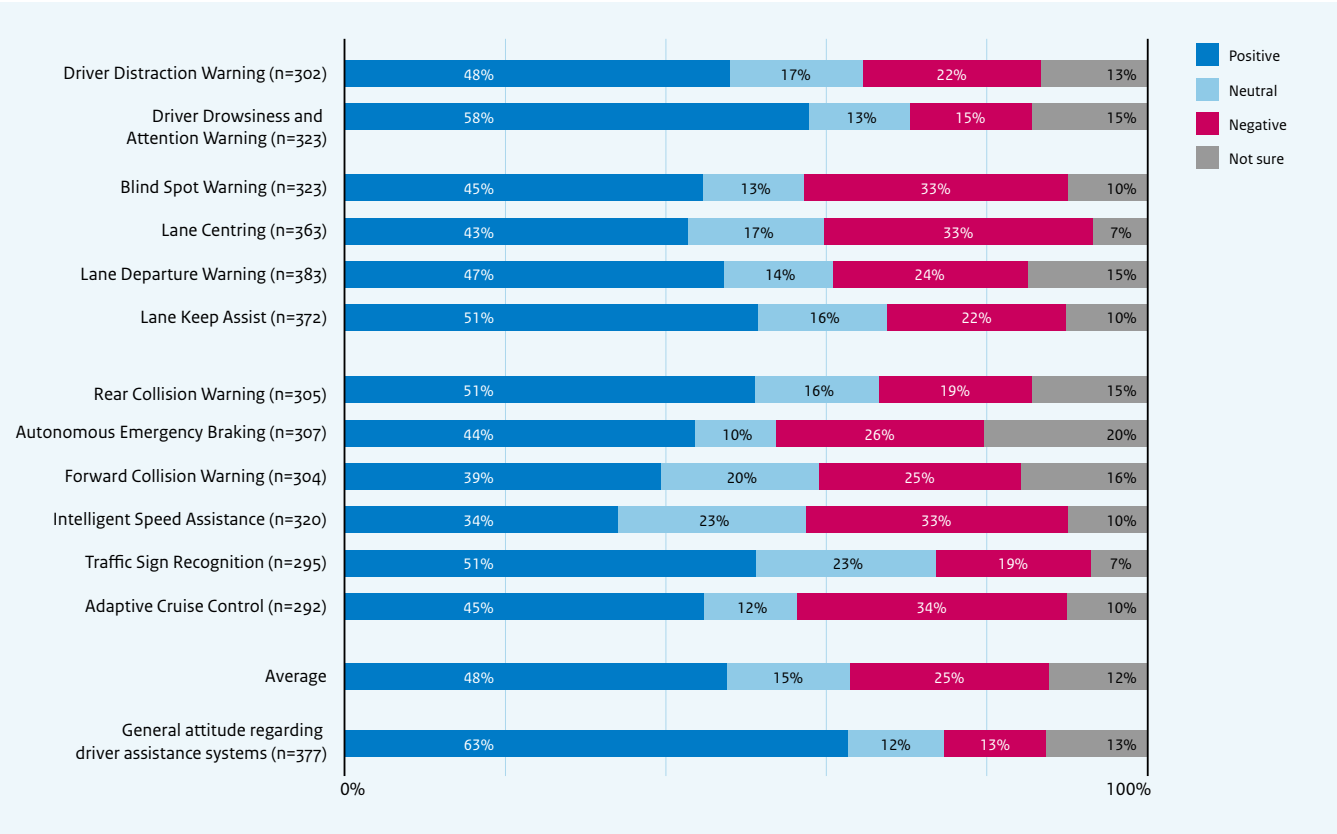
By presenting motorists with various statements about their own vehicle, we assessed the extent of their knowledge. In other words: how well do the answers correspond to the system's operation and practical application, as intended by the developer? An answer that corresponds to the desired level of knowledge is marked with a 'positive score', whilst an answer that does not is marked with a 'negative' score. Not all motorists who own a car with driver assistance systems know how to use them safely or understand their limitations.

On average, just under half of motorists have a positive level of knowledge regarding the operation and scope of the systems studied. There are significant differences between systems: for Forward Collision Warning, the share with sufficient knowledge stands at 39%, whilst for Driver Drowsiness and Attention Warning it is 58%. Drivers score highest on statements regarding general knowledge of driver assistance systems, with 63% giving a positive response.

The study also shows that drivers largely continue to rely on their own observations and do not blindly trust the signals from driver assistance systems.

The average level of knowledge has fallen slightly to 47% in 2025, compared with 51% in 2024. A contributing factor is that two statements were removed in 2025 and several others were worded more precisely. Nevertheless, the conclusion remains clear: there is still considerable room for improvement in knowledge about driver assistance systems.

Figure 5: Drivers' level of knowledge of driver assistance systems based on the statements presented (2025)



Source: RWS – Driving Task Automation Monitor (ownership, awareness, use and level of knowledge)

Most motorists use their driver assistance systems

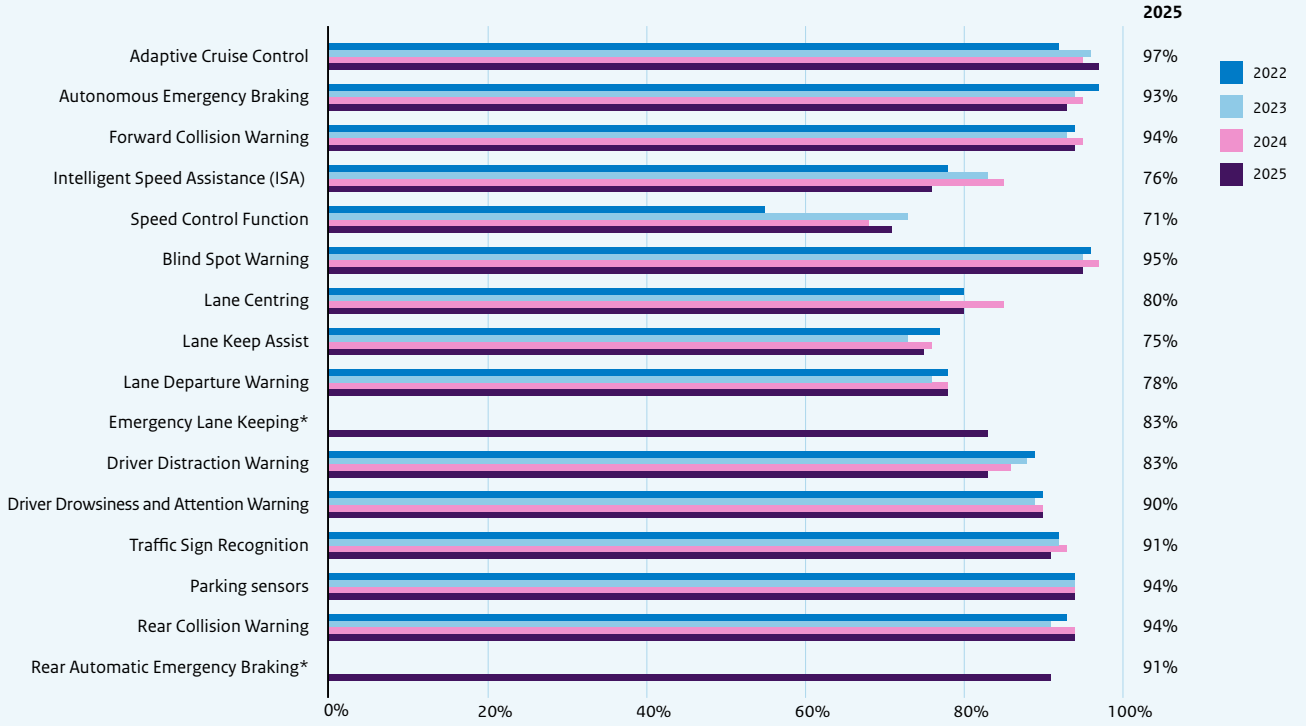
The majority of motorists use the available driver assistance systems. In 2025, nearly 90% of motorists say they use the available systems. This proportion is virtually unchanged from 2024, which shows that acceptance of driver assistance systems remains consistently high. Driver assistance systems are therefore increasingly becoming an accepted part of (the control of) the vehicle.

There are differences between systems. The use of Intelligent Speed Assistance (ISA) and Lane Centring (LC) has fallen noticeably compared to last year. A possible factor is that these systems are perceived as intrusive or annoying, particularly when they intervene or issue warnings continuously.

Other systems show only minor fluctuations in use compared to 2024. The systems that determine lane position – such as Lane Departure Warning (LDW), Lane Keep Assist (LKA) and Lane Centring (LC) – are, relatively speaking, the least likely to be switched on or left on. ISA and the speed limiter are also among the least frequently used functions.

Despite these differences, driver assistance systems appear to be widely accepted and are actively used by a large majority of motorists.

Figure 6: Share of driver assistance systems in passenger cars that are switched on, active or being activated (self-reported, in %, n=511)



No data is available for systems marked with an * prior to 2025.

Source: RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge) (n=511)

Self-reported use of driver assistance systems in passenger cars

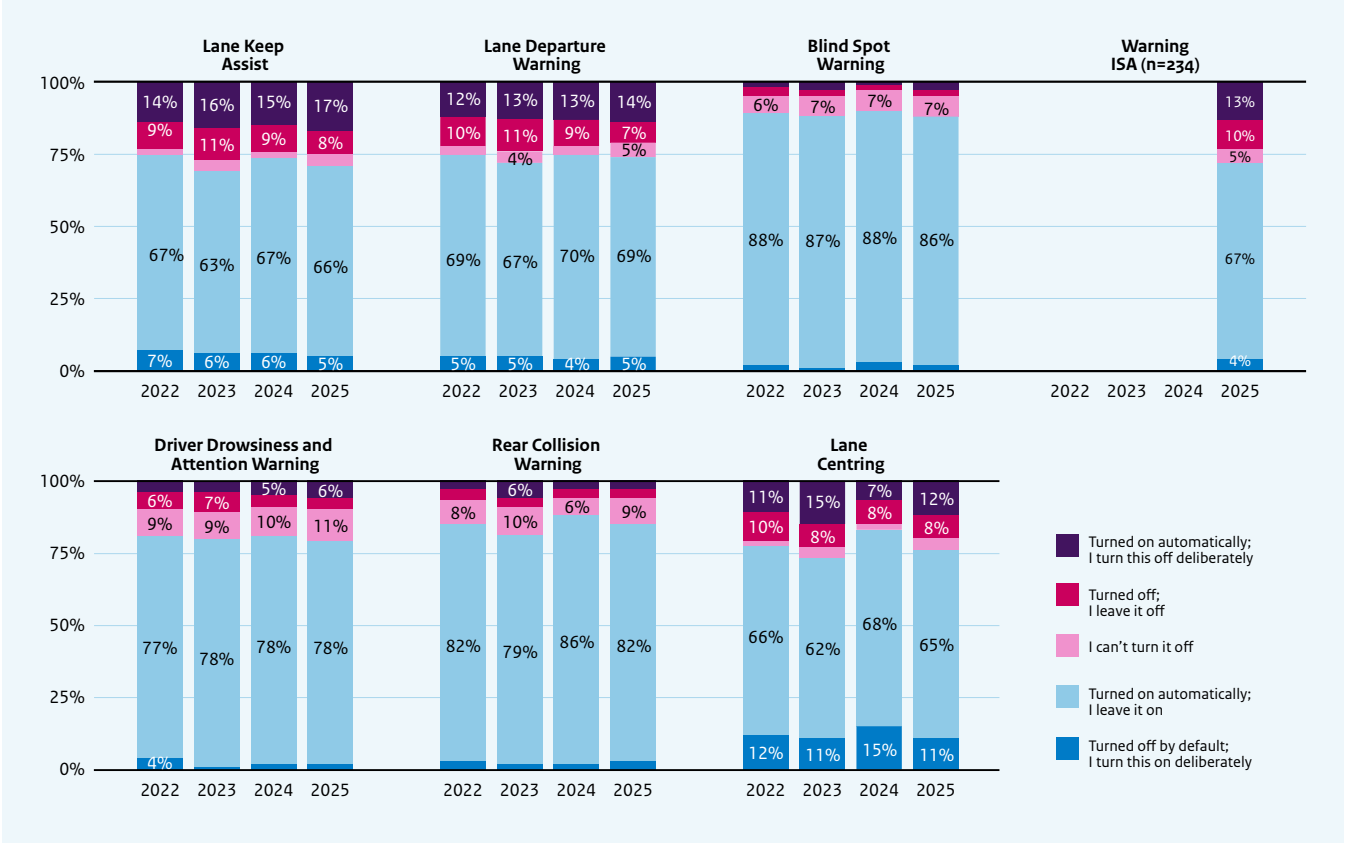
In most cases, driver assistance systems are switched on by default and remain switched on throughout the trip.

The systems shown here were, in most cases, left on or switched on in 2025 about as often as in previous years. However, for Lane Centring, there is a decrease in the proportion of drivers who deliberately switch the system on or leave it on, and an increase in the proportion who deliberately switch it off.

Of these systems, Lane Centring is still the one most frequently (11%) deliberately switched on, but it is also relatively often deliberately switched off or left off. Lane Keep Assist and Lane Departure Warning are also relatively often deliberately switched off or left off.

The method of switching ISA on or off was surveyed in this way for the first time in 2025, and this concerns warning ISA. Compared with the other driver assistance systems shown here, this system is relatively often left off and switched off more frequently than average. This is also the case in comparison with the years prior to 2024, when warning ISA was not yet mandatory and various other variants of ISA were present in the survey population (not shown in the graph, see source file).

Figure 7: Use of driver assistance systems (switched on and switched off) in passenger cars



Source: RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge)

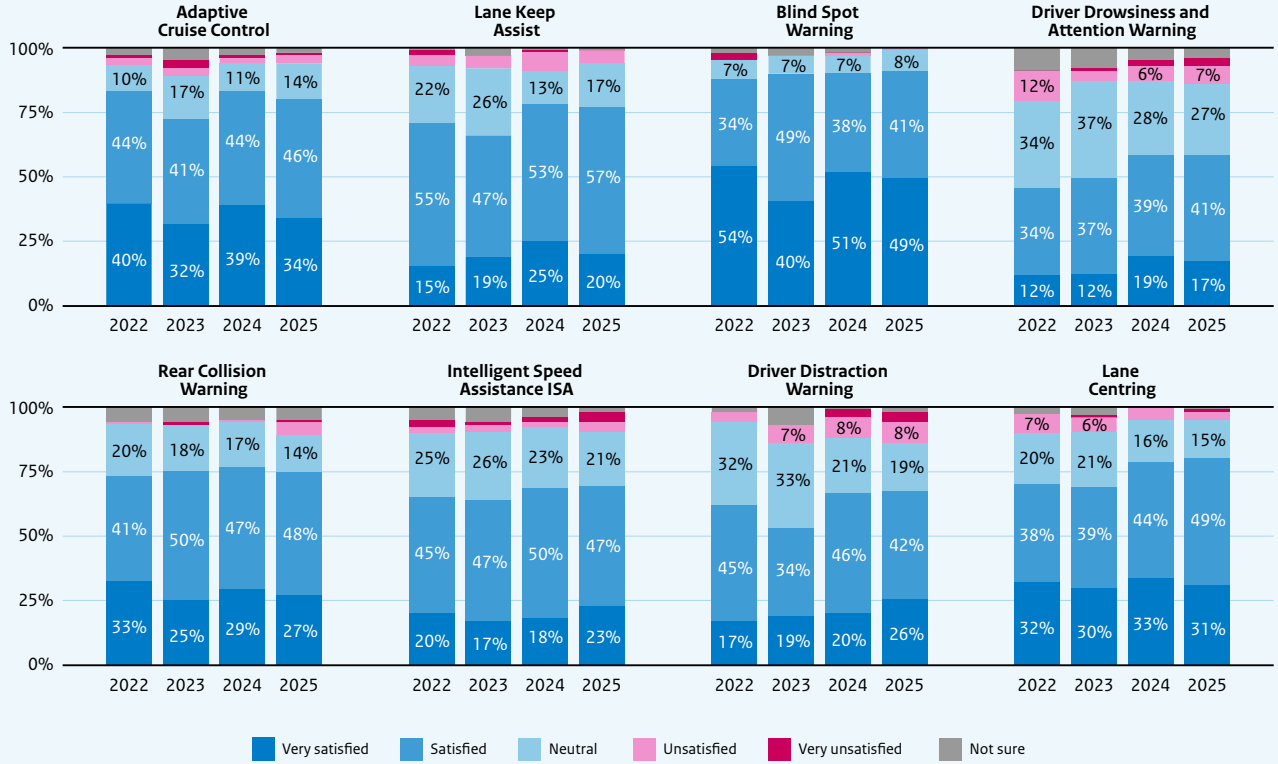
Majority of motorists are satisfied with their driver assistance systems

User experiences show that about three-quarters of motorists are satisfied with how driver assistance systems work. Satisfaction is highest for the Blind Spot Warning system. Systems that detect fatigue, distraction, or speeding receive, on average, a slightly less positive rating. In particular, a small group of users is dissatisfied with the performance of the Driver Drowsiness and Attention Warning, Advanced Driver Distraction Warning, and the Intelligent Speed Assistance system.

Motorists are particularly satisfied when alerts are clear, reliable and timely, and when it is easy to switch systems on. Dissatisfaction arises when signals are unclear or (according to the driver) unjustified, or when warnings are perceived as disruptive. This is something we see occurring, among other things, following the introduction of warning ISA as a mandatory system in mid-2024.

Compared with 2024, ratings in 2025 have remained largely stable. For some driver assistance systems, such as Lane Centring and ISA, we see both the '(very) satisfied' group and the 'dissatisfied' group growing at the expense of the 'neutral' group. For ACC, there is a slight decline in the proportion of very satisfied users. For Rear Collision Warning, the dissatisfied group is growing, whilst Lane Keep Assist and Lane Centring are in fact not rated negatively as often. These shifts are not reflected in the use of the systems.

Figure 8: Level of satisfaction among motorists with their driver assistance system (n=130-367)



Source: RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge)

Use of driver assistance systems in lorries

The use of driver assistance systems among lorry drivers was also examined in 2025. Use remains high in 2025. The figure shows how often lorry drivers report having the various driver assistance systems switched on. Cruise Control systems, Collision Warning, Blind Spot Warning and Reversing Alarm are used most frequently. For a large proportion of drivers, these systems are switched on (almost) all the time or are used as often as possible. Traffic Jam Assist, on the other hand, is used least frequently, partly because it only becomes active when there is an actual traffic jam.

When drivers deliberately switch systems off, this is usually due to driving conditions. For example, Eco-Driving is often switched off in urban areas because the system is less well suited to traffic conditions there. In addition, some drivers find that certain systems issue too many warnings, which can be a reason to switch them off.

For most systems, the proportion of drivers who have them switched on (almost) all the time is lower than in 2022.
An increase was still visible between 2019 and 2022. Exceptions are the Reversing Alarm and Standard Cruise Control, which are used more frequently in 2025 than in 2022.

Traffic conditions, technological developments in driver assistance systems, and drivers' appreciation of the systems in practice all influence use.

Figure 9: Turning on, leaving on, or turning off driver assistance systems by lorry drivers (n=99-328)

Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

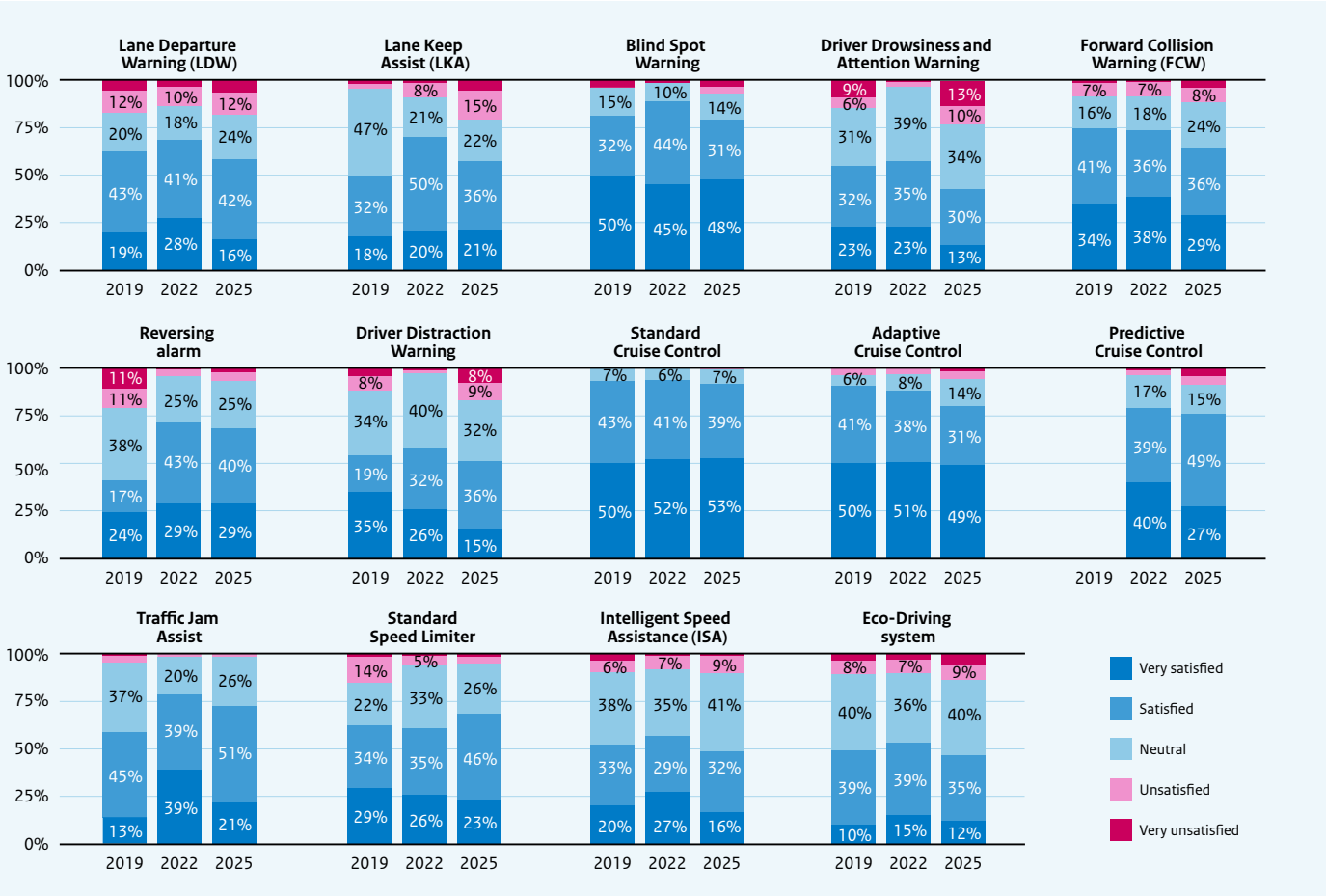
Lorry drivers' satisfaction with their driver assistance systems

Drivers are generally satisfied, or at least neutral, about the quality of the various driver assistance systems. Compared with 2022, they are less positive about some systems in 2025. Some drivers are particularly dissatisfied with systems that detect fatigue, lane departures or distraction. With these functions, many drivers indicate that warnings are often issued unjustifiably. This also occurs with other warning systems, albeit to a lesser extent.

It is often noted with regard to Lane Keep Assist that the system performs poorly in roadworks, on narrow lanes, with wide loads or on bends, and that it sometimes interprets old road markings or tar lines as lane markings. According to drivers, collision warning systems can react to objects that pose no danger, such as road signs, shadows or branches. In addition, many drivers find the warning sound irritating, and the sheer number of systems means it is not always clear which alert indicates what to look out for.

A small group of drivers are dissatisfied with cruise control systems, speed limiters and ISA. With cruise control, this is mainly because, according to some, the system brakes too quickly or too sharply, particularly behind slower vehicles. Eco-Driving systems are perceived as less useful when they reduce speed too much or do not function as well on hilly terrain.

Figure 10: Lorry drivers' satisfaction with their driver assistance systems (n=99-328)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Driver assistance systems and driver distraction

Most motorists are confident that driver assistance systems will not distract them, although a significant proportion do recognise the risks (such as following the vehicle in front too closely, veering off the road, or failing to notice another road user, or noticing them too late).

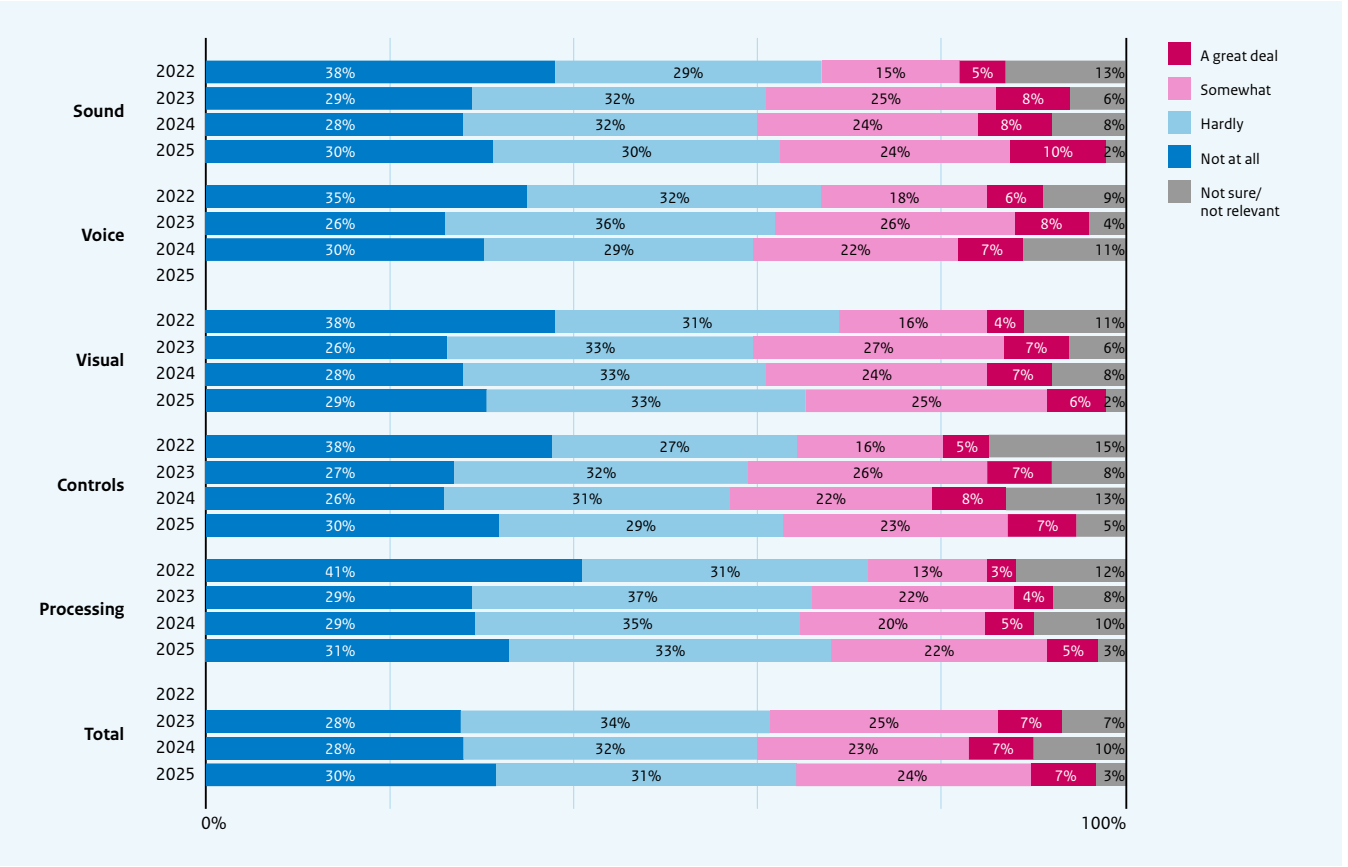
Driver assistance systems are designed to support drivers. Signals from driver assistance systems support the driver, such as issuing a warning in the event of a potential hazard. However, driver assistance systems can also cause distraction whilst driving. In the study, motorists were asked to what extent they expect these systems to distract them from the driving task.

This question explicitly does not concern warnings that are specifically intended to help the driver – such as a notification in the event of danger. It concerns distraction caused by the way in which systems present information: via audible signals, visual notifications, operating the system, or processing the information provided.

In 2025, over 60% of motorists say they expect driver assistance systems to distract them little or not at all from the driving task. For this group, the benefits of the support outweigh any potential distractions caused by the systems.

Around 30% of motorists expect driver assistance systems to distract them 'somewhat' or 'a great deal' from the driving task. This applies to all systems surveyed and to all forms of distraction: sound, visual information, operation and the processing of notifications.

Figure 11: Degree of potential distraction among motorists by type of information (n=965 in 2025)



Source: RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge)

Potential consequences of driver distraction caused by driver assistance systems

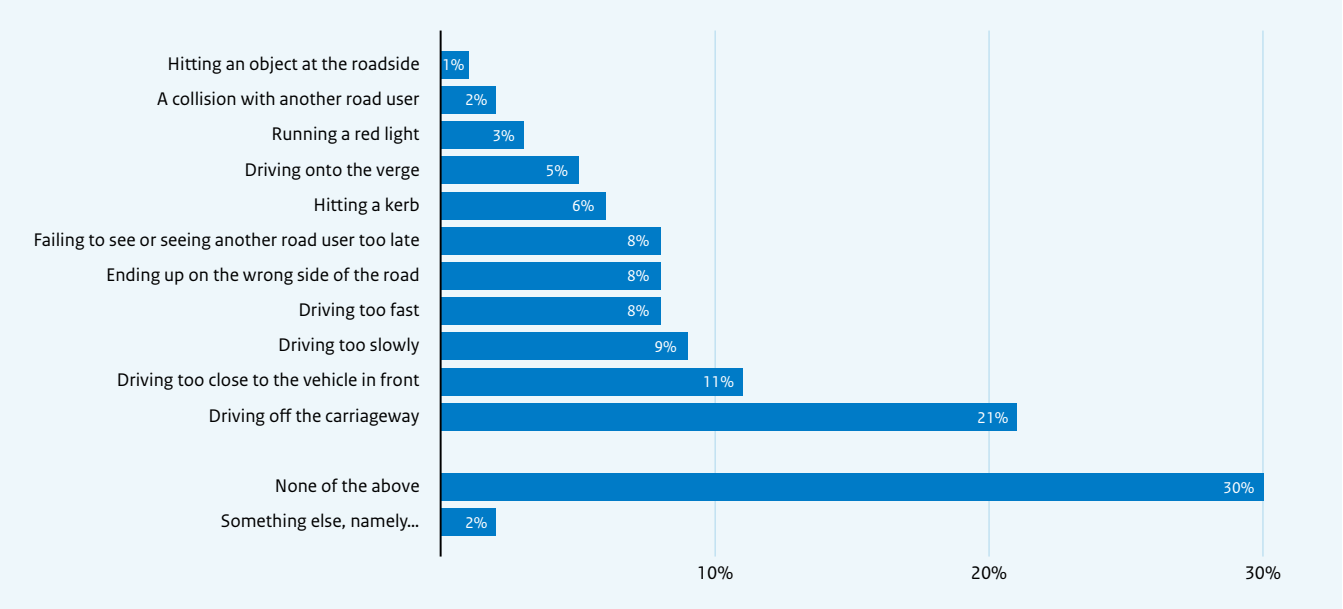
In 2025, a further study was conducted to investigate the extent to which drivers themselves become distracted as a result of signals or when operating these systems. Of the users who previously indicated that driver assistance systems could potentially be distracting (approx. 30%), 55% say they have actually been distracted at some point whilst driving. Across all respondents, this amounts to approximately 20%.

Not every distraction leads to risks. Of the drivers who have occasionally been distracted from the driving task by operating a driver assistance system, 30% state that this did not lead to (potentially) dangerous situations. The remaining 70% indicate that distraction does sometimes have consequences. The most frequently cited situations are veering off the carriageway, driving too slowly and following too closely. A collision with another road user or object is mentioned by 2%.

Compared with 2024, the proportion of users who state that they have occasionally been distracted by operating a driver assistance system has risen from 49% to 55% (not shown in this figure, see source file). At the same time, the proportion who say that this distraction had no consequences has fallen from 37% to 30% (see source file).

Looking at all motorists in the study, the overall proportion who say they have occasionally been distracted by one or more systems has in fact fallen slightly: from 21% to 19% (see source file).

Figure 12: Which unsafe situations have (ever) occurred as a result of distraction from the driving task due to operating a driver assistance system? (n=965)



Source: RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge)

Although driver assistance systems offer many benefits (e.g. comfort, early warning, emergency braking), it remains necessary to prevent distraction. In particular, systems that display a large number of signals or complex information increase the likelihood that drivers will momentarily lose their concentration.

Driver assistance systems and driver distraction among lorry drivers

Driver assistance systems are designed to support lorry drivers, but some lorry drivers find themselves distracted by the way these systems provide information or are operated. Audible alerts are particularly distracting: 37% of drivers find them somewhat to highly distracting. Voice prompts (33%), visual information on displays (29%), operating the systems (28%) and processing all the information (26%) also regularly cause distraction. These percentages are comparable to the levels of distraction experienced by car drivers.

Lorry drivers who indicated that they are sometimes distracted were asked whether this had led to dangerous situations. For 21%, this was not the case. Four out of five report that distraction does sometimes have consequences. The most frequently cited situations are veering (briefly) out of the lane (30%) and driving too close to the vehicle in front (20%).

These findings show that driver assistance systems are valuable, but that the way in which information is presented or the systems are operated remains important for road safety.

Figure 13: Degree of potential distraction among lorry drivers by type of information (n=176)

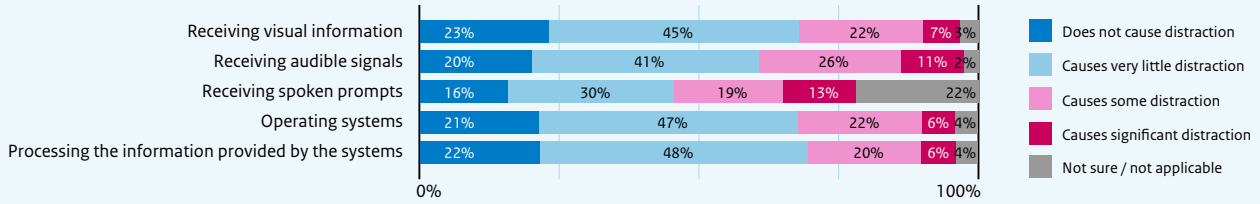
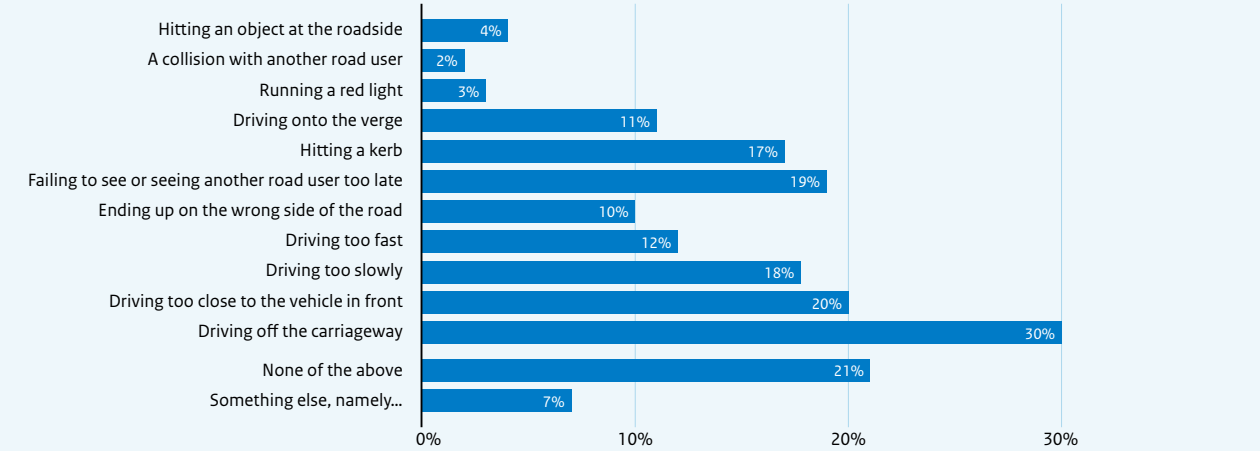


Figure 14: Consequences of distraction caused by driver assistance systems among lorry drivers (n=176)



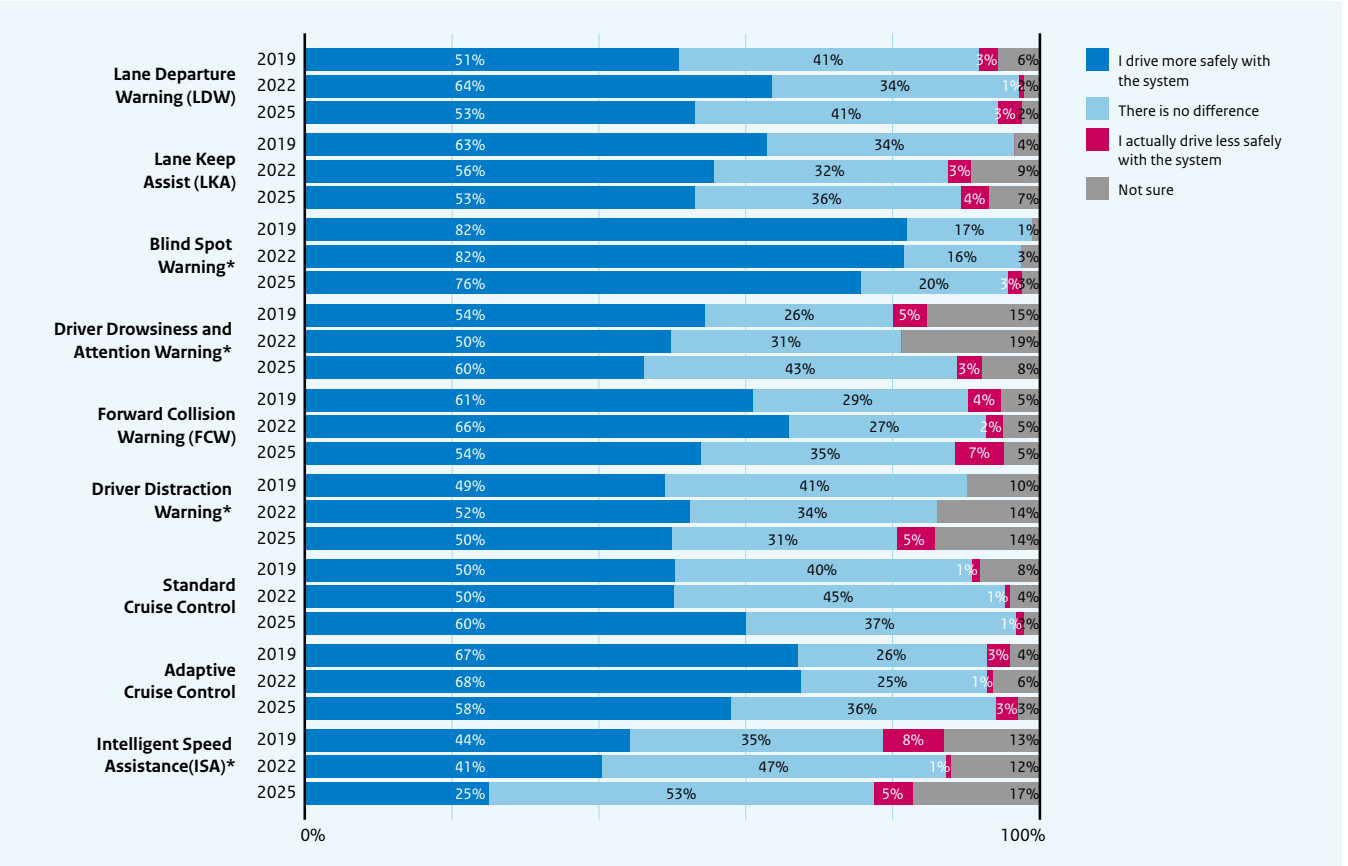
Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

The effect of driver assistance systems on the driving behaviour of lorry drivers

Drivers were asked whether driver assistance systems contribute to safer lorry driving. A large proportion of drivers (46–76%) indicate that driver assistance systems contribute to safer driving behaviour. With most systems, at least half of the drivers experience a positive effect. In addition, a proportion of drivers (20–43%) stated that they drive just as safely without the system as with it. This may indicate that not everyone clearly notices the effects in practice. Only a small minority said that they actually drive less safely with the systems switched on.

Compared with 2022, drivers have become less positive. For three-quarters of the systems surveyed, the neutral option is now chosen more often at the expense of the positive one, and a negative effect is also mentioned slightly more often. Only for cruise control systems do the ratings remain roughly the same.

Figure 15: Does the driver assistance system help lorry drivers to drive more safely? (n=93-210)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Differences between driver assistance systems in terms of driving comfort as perceived by drivers

Cruise control systems receive the highest ratings for comfort. Between 80% and 90% of drivers believe that these systems contribute to driving comfort. This rating has remained remarkably stable in recent years.

The situation is different for other systems. In particular, Intelligent Speed Assistance and the Eco-Driving are perceived by a significant proportion of drivers as less comfortable. Since 2019, the proportion of drivers who find these systems pleasant has even fallen significantly. Possible causes include the perceived loss of control over the vehicle and the frequency of warnings or interventions by the system.

When it comes to fuel consumption, opinions are divided. Around 45% of drivers believe that they drive more economically with Eco-Driving. 27% notice no difference, and 15% think they drive less economically with the system. Compared with 2022, expectations regarding the fuel efficiency of Eco-Driving have declined: fewer drivers see an improvement, whilst more drivers indicate that there is no benefit or that fuel consumption actually appears to be worse. Traffic conditions have, however, become more challenging since 2022 (increase in traffic volume, traffic jams, roadworks).

It can be concluded that driver assistance systems are still regarded by many drivers as a valuable aid, but that enthusiasm for some systems is gradually waning. In particular, systems that are perceived as less pleasant, less effective or too intrusive are receiving more critical assessments. At the same time, cruise control systems and various safety systems remain an important part of a safe and comfortable driving experience.

Figure 16: Does the driver assistance system contribute to driving comfort for the lorry driver? (n=210)

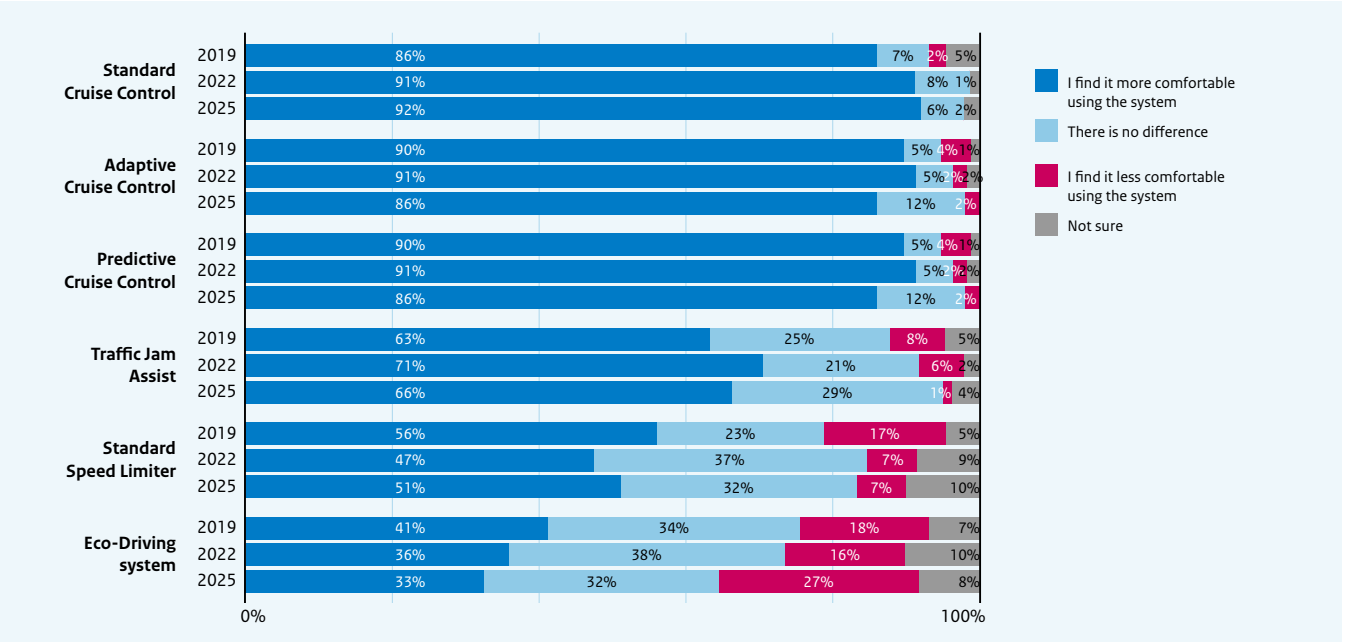
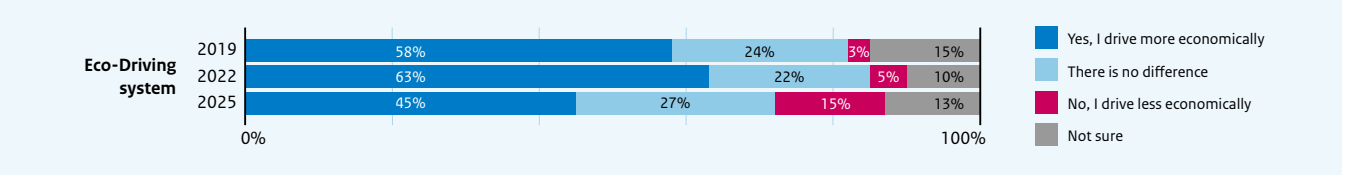


Figure 17: Does the driver drive more economically thanks to the driver assistance system?



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Who is actually in control? The risk of mode confusion in automated driving systems

With the growth of Advanced Driver Assistance Systems (ADAS) and higher levels of vehicle automation, a significant safety risk is emerging: mode confusion. This refers to the uncertainty about who is performing which driving task – the driver or the vehicle. This confusion can lead to incorrect behaviour, delayed reactions and, ultimately, unsafe situations on the road. The Institute for Road Safety Research (SWOV) has carried out research on this matter.

A review of the literature shows that there are two main types of mode confusion. 'General' mode confusion arises when drivers do not fully understand how the system works or what their own role is. 'Transient' mode confusion occurs when it is unclear whether a system is on, off or temporarily disabled. Both forms are exacerbated by the complex and often inconsistent operation of modern ADAS: numerous functions, sub-functions and exceptions make it difficult for motorists to understand what the system is doing at any given moment.

In practical analyses of two car brands, 62 scenarios were identified in which mode confusion can occur. What is striking here is the large number of functions and the often conditional or unclear system feedback. Consistency and transparency are frequently lacking, which increases the risk of misinterpretation.

To make mode confusion measurable, SWOV developed a test method based on 'freeze probes' in a VR driving simulator. By pausing a driving situation and asking the driver questions immediately, it was possible to accurately determine whether there was any ambiguity regarding the system status.

The research confirms that mode confusion is a growing safety issue. Simpler system logic, clear feedback and better training can contribute to safer use of automated driving systems.

SWOV – Who is driving? A study into mode confusion

How messaging about driver assistance systems influences driving behaviour

As modern cars are increasingly equipped with Advanced Driver Assistance Systems (ADAS), the importance of clear communication about their capabilities and limitations is growing. A large-scale study involving 3,000 motorists from four European countries shows that the way in which these systems are presented has a significant impact on motorists' behaviour and understanding.

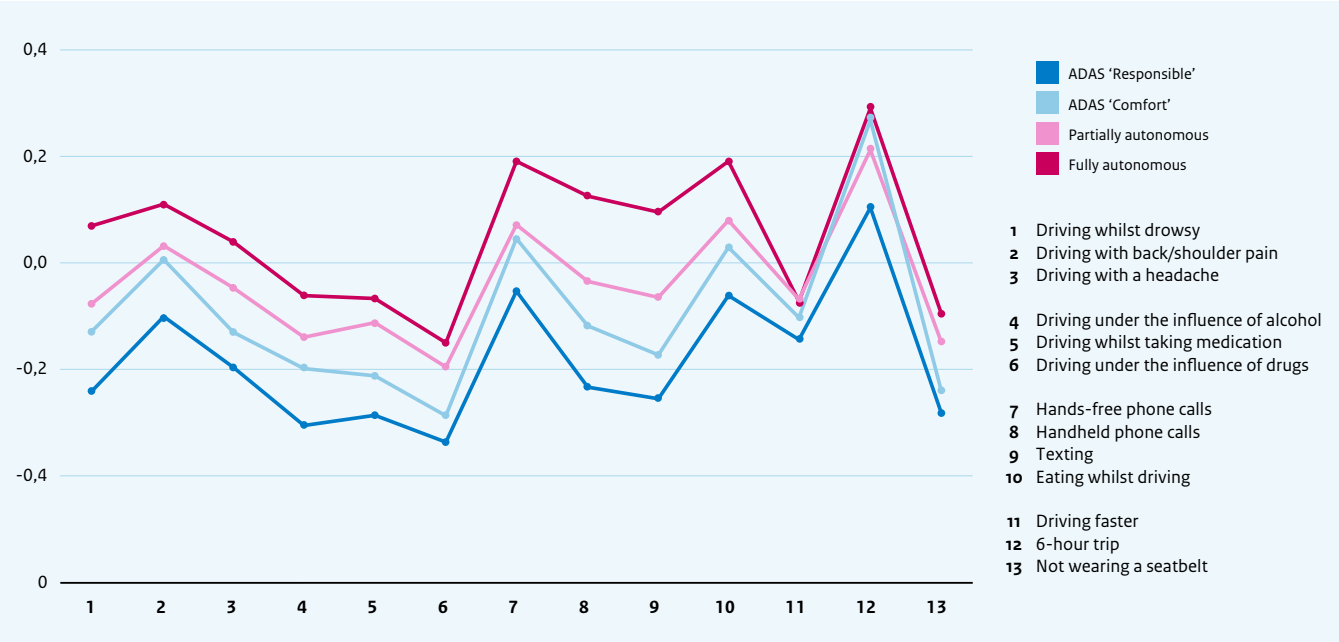
Participants watched a commercial that could present the same ADAS in two ways: emphasising increased comfort, or the driver's responsibility when using these support systems. Although both videos contained the same facts, the presentation led to strikingly different expectations. For various high-risk behaviours, motorists indicated on a Likert scale whether they considered it much more likely (2) or much less likely (-2) that they would exhibit this behaviour. Drivers who watched the 'Comfort' version were more likely to indicate that they would be inclined to engage in riskier driving behaviour, for example when tired, under the influence of alcohol or when distracted. They were also quicker to believe that the system could take over more tasks than is actually the case.

The 'Responsible' group had a clearer understanding of the division of roles between humans and technology: ADAS provides support, but does not replace the driver.

Although the 'Responsible' video also highlighted the limitations of ADAS, viewers of both videos were equally positive about the system.

It is also striking that previous experience with ADAS did not protect motorists from overestimating its capabilities when comfort was emphasised.

Figure 18: Risk-taking behaviour when driving a car equipped with advanced driver assistance systems under various conditions



Source: Framing automation of driving tasks: Effects on risk perception and consumers' understanding of different levels of vehicle automation across four European countries

The study advocates for "careful, realistic communication" and clearer terminology regarding levels of automation. Because no matter how advanced the technology becomes, safe use starts with the right expectations.

'Comfort'-video →

'Responsible'-video →

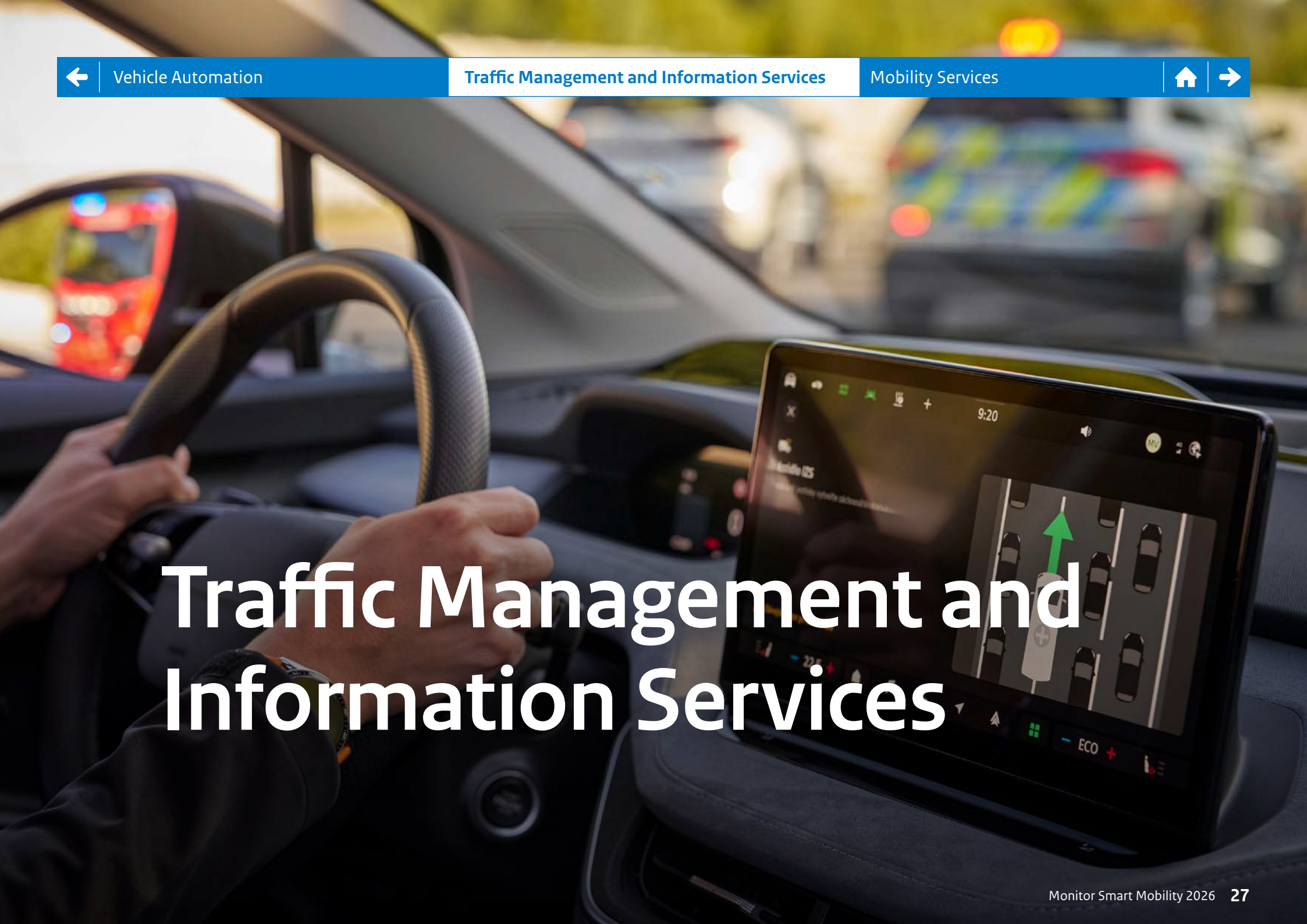
Comparison between passenger cars and lorries in vehicle automation

The prevalence of driver assistance systems is continuing to rise in both passenger cars and lorries. This growth is partly driven by European requirements under the General Safety Regulation (GSR). Although the use of these systems is high in both vehicle categories, use among lorry drivers has shown a slight decline since 2022. For lorries, driving conditions – such as traffic jams, urban areas, cargo and roadworks – play a greater role in the decision whether or not to use systems than for passenger cars. Of the driver assistance systems available, ISA and lane-keeping systems are the least valued by both groups and are switched off most frequently.

Three-quarters of motorists are satisfied with their driver assistance systems, comparable with previous years. Lorry drivers are more likely to give a neutral rating and are less positive than in 2022. However, a lack of sufficient knowledge about the operation and limitations of these systems among both motorists and lorry drivers can regularly lead to suboptimal use.

Distraction caused by driver assistance systems plays a role for both groups. Motorists are mainly distracted by controls and notifications, whilst lorry drivers are more often bothered by audible signals and visual clutter. Some drivers indicate that this distraction sometimes leads to potentially dangerous situations.

Finally, lorry drivers are more likely to view driver assistance systems as safety systems, whilst motorists mainly regard them as comfort and support systems. Between 46% and 76% of lorry drivers feel that driver assistance systems result in safer driving behaviour, although this appreciation has fallen compared with 2022.



Traffic Management and Information Services

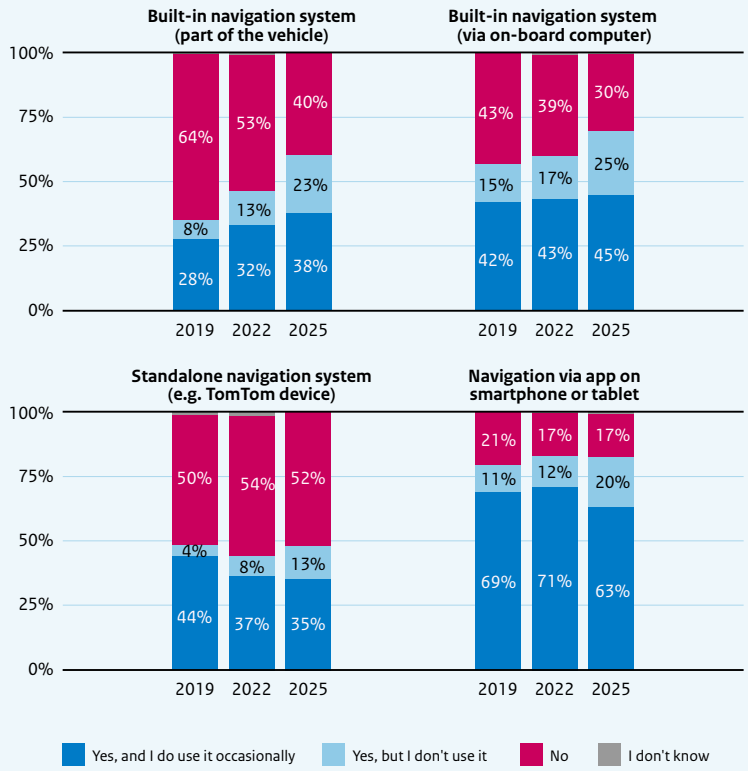
The availability of in-truck navigation for lorry drivers

Lorry drivers have access to navigation systems and can also receive traffic information through them. In 2025, the largest proportion reported having navigation apps on a smartphone or tablet (63%), followed by navigation via the on-board computer (45%), built-in systems in the vehicle (38%) and standalone systems (35%). Most drivers have multiple systems and use them in combination.

Ownership (possession, regardless of use) of built-in systems is clearly increasing between 2019 and 2025. Ownership of standalone devices (e.g. TomTom) remains virtually unchanged during this period. Navigation via smartphone or tablet remains the most common method, but declines after peaking in 2022.

In the survey, lorry drivers also state that they do often receive up-to-date information, but that this varies depending on the type of system. With apps, 90% receive up-to-date information, whilst with other systems the figure is around 70%. Google Maps is the most widely available app (around 75%), followed by Waze (10%), Flitsmeister (10%), TomTom (7%) and Truckmeister (6%). Of the companies, 83% state that their navigation systems have a freight transport option (this option is not free). Larger companies are more likely to have an option specifically for freight transport. In fact, all companies with 50 vehicles or more have such a navigation system. Owner-drivers are less likely to purchase a specific freight transport option for their navigation system.

Figure 19: The use of in-truck navigation systems by lorry drivers



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

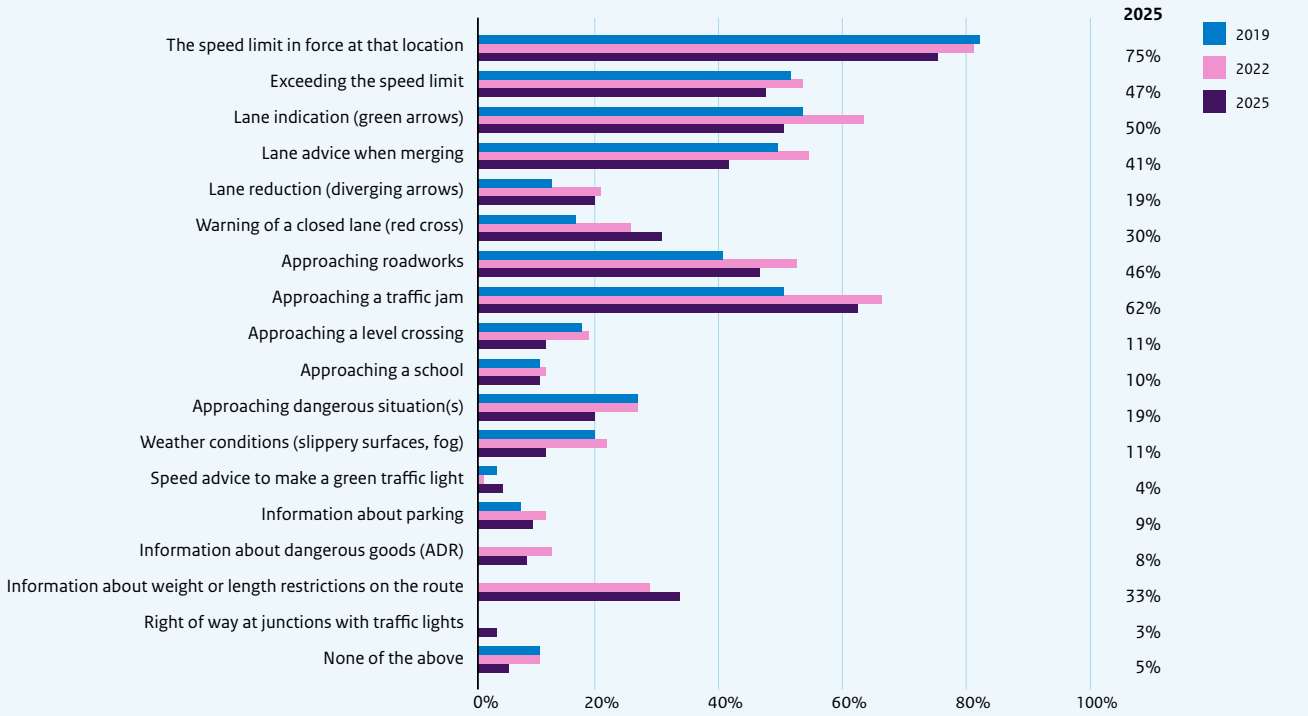
Differences between lorry drivers and car drivers: The 2024 Road Traffic Information Services Monitor (passenger cars) shows that Google Maps is also by far the most popular app among car drivers (80% use this app). Flitsmeister follows at 32%, with Waze and TomTom each at 11%. Among car drivers, there are also apps that are popular but rarely mentioned by lorry drivers: ANWB (39% of car drivers versus 3% of lorry drivers), vanAnaarBeter (24% of car drivers versus 1% of lorry drivers) and Apple Maps (18% of car drivers versus 2% of lorry drivers).

Information available in-truck for lorry drivers

The companies surveyed indicate that virtually all drivers are able to receive traffic information (97%). Lorry drivers were asked what information they receive in their lorries. More than half of the drivers mention the applicable speed limit (75%), approaching a traffic jam (63%) and lane guidance (green arrows) (51%). Drivers indicate that, compared with 2022, almost all information elements are now received less frequently. When comparing 2019, 2022 and 2025, there is not always a clear trend.

The potential of available traffic and safety information does not appear to be used optimally. There are various reasons for this, such as reliance on one's own knowledge, the popularity of Google Maps over specific lorry navigation systems, inaccurate or incomplete information, and too many alerts and screens. Of all companies, 83% state that their navigation system has an option specifically for freight transport, whilst 33% of drivers say they receive information on, for example, weight and length restrictions on the route. Of the drivers transporting hazardous materials, 34% receive specific ADR information. If no specific navigation or information is used for lorries, there is a risk that information tailored to lorries will be missed by the driver during the trip or at a signposted diversion. As a result, drivers may (unintentionally) take routes that are prohibited for their lorry or load, or literally find themselves stuck.

Figure 20: In-truck information available to lorry drivers



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Automation and digitalisation in road freight transport

In road freight transport, the execution of a trip is the result of a chain of decisions that are taken partly before departure (pre-trip) and partly during the trip (on-trip). In both phases, digital services and systems are playing an increasingly important role. These systems support both carriers in planning their freight and fleet and drivers in completing their routes safely and efficiently.

Pre-trip phase

The pre-trip phase largely takes place at the carrier's premises. In a planning department, orders are translated into specific trips and routes. Here, ICT systems such as Transport Management Systems (TMS), Fleet Management Systems (FMS) and trip and route planning systems support the carrier and provide insight into which vehicles and drivers are deployed, the order in which addresses are visited and which routes are the most efficient.

This planning relies increasingly on external digital data. Examples include information on delivery windows, environmental zones, zero-emission zones, vehicle dimensions, weight restrictions and ADR routes. This data is crucial: it not only determines the optimal route, but often also whether a route is permitted at all. Digital restriction data, made available via the National Road Traffic Data Portal (NDW) and standardised through models such as the Open Trip Model (OTM), is therefore increasingly being integrated into planning systems.

In addition to formal planning systems, planners and drivers also use navigation and information services during the pre-trip phase. Before setting off, they check things like expected traffic levels, roadworks and trip times. This is done using navigation apps such as Google Maps, TomTom and Flitsmeister, but also via radio or specialist websites. In practice, formal systems and informal sources complement each other: where the TMS lays the foundation, this is often supplemented with up-to-date information and experience.

Specific logistics contexts require additional pre-trip systems. For trips to terminals and ports, for example, port and logistics apps such as Port Alert are used, which provide insight into expected waiting times, disruptions and terminal congestion. For companies with electric lorries, charging apps are also playing an increasingly important role. Apps from lorry manufacturers and market players (such as Volvo, Scania, MAN, Milence, DKV and UTA) support the planner and driver in determining charging locations, charging times and payment options, and are increasingly being incorporated into route planning.

In summary, the pre-trip phase ensures that a trip is planned in a way that is feasible, permitted and as efficient as possible, with due regard for costs, time, sustainability and compliance with regulations.

On-trip phase

As soon as the driver sets off on their trip, the focus shifts to the on-trip phase. In this phase, the emphasis is on the lorry and the driver, supported by systems in the vehicle and along the road. Drivers use navigation via their smartphone (or tablet), the on-board computer or a built-in system. This is used to navigate, receive traffic updates, follow diversions, and also to receive safety alerts. Whenever current information calls for it, drivers may deviate from the originally planned route, either in consultation with the planning department or independently.

The role of driver assistance systems in lorries was discussed at length in the first chapter. Increasingly, this is being supplemented by support from the infrastructure. Smart traffic lights can give lorries priority or provide speed advice. Their use is currently still limited and primarily focused on specific logistics corridors. Whether static or dynamic, road signs provide information on the lanes to be used and (speed) restrictions. Safety messages can warn drivers of incidents, stationary vehicles, approaching emergency vehicles or weather-related restrictions. Other on-trip systems focus on safety and operational reliability. Tyre pressure monitoring warns drivers of low tyre pressure (mandatory in Europe from July 2024). Parking and rest planning apps (such as Truckfly, LKW App and TransParking) help drivers during their trip to find suitable parking spaces and comply with driving and rest times.

Automation and digitalisation in road freight transport: the *range* of systems and services

This page examines the range of systems and services that can contribute to mobility objectives relating to safety, traffic flow and sustainability. Many systems and services are accessed via an app. These apps often operate independently, on different screens, and are usually not integrated.

ICT systems

ICT systems encompass all software and digital services that support transport companies in both planning and operations, ranging from office applications to on-board computers. Within the market, there are around twenty major providers active in the field of Fleet Management Systems (FMS), which enable companies to efficiently manage and optimise their vehicles. These systems combine software and hardware, such as GPS trackers, and provide real-time insight into vehicle locations, driving behaviour, fuel consumption and maintenance requirements, with the aim of reducing costs, increasing productivity and improving safety. In addition, there are around five major providers of Transport Management Systems (TMS), which focus on the integrated management of all transport-related operations, including order management, route planning, execution and invoicing, to support an efficient and cost-effective logistics chain. There are also around five providers of trip and route planning systems. However, none of the suppliers offers a fully integrated total package. Links between systems are usually established via the route planning system, which primarily uses semi-static data and real-time information, such as current traffic data and roadworks.

Apps for charging on the go

There are various apps available to assist drivers with charging electric lorries. These apps provide information on charging locations, the availability of charging points and payment options. Both vehicle manufacturers and market players are developing such apps. For example, lorry manufacturers such as Volvo, Scania and MAN offer their own platforms, in which vehicle and charging data are integrated. In addition, there are apps from independent market players, such as DKV, UTA and Milence, which provide access to a wider network of charging points and often offer additional services, such as route planning or cost overviews. There are also specialised search apps for electric lorries, such as eTrucker and myevtruck, which focus specifically on finding suitable charging locations for heavy goods vehicles. The functionality of these apps ranges from simple, static location information to advanced services with real-time data on availability, charging speeds and integrated payment options.

Access and restrictions: information & systems

This concerns digital information on access conditions for heavy goods vehicles, including environmental zones, ADR routes, weight and dimension restrictions, and delivery time windows, as well as the physical systems used for access control. Although digital information is available for a large proportion of these conditions, it is not yet complete or uniform. In particular, for ADR regulations, maximum vehicle weights, dimensions and local delivery time windows, there is often a lack of complete coverage or up-to-date detailed information. Furthermore, delivery time window restrictions are not always available in a machine-readable format, which complicates automatic processing and integration into planning systems.

In addition to digital information provision, there are physical access controls on the main road network. For example, there are eighteen socalled Weigh-in-Motion systems (WIM). These systems measure the weight of passing lorries whilst they are in motion and record whether there is any overloading. If overloading is detected, the Human Environment and Transport Inspectorate (ILT) can be called in to stop the vehicle in question for further investigation. This combination of digital regulations and physical control mechanisms forms the basis for effective monitoring of compliance with access and safety regulations within the heavy goods transport sector.

Smart Traffic Lights

These are traffic lights that communicate directly with vehicles. Some smart traffic lights give priority to lorries, allowing them to request a green phase or have it extended, so they can continue driving without having to stop. By October 2025, there were a total of 1,241 operational smart traffic lights across all road networks, 399 of which had specific priority for lorries. To connect with these smart traffic lights, both on-board computers, such as MobiCoach, and apps, such as GreenFlow, are used.

Hubs

Hubs are locations where goods are consolidated, temporarily stored and redistributed. They play an important role in organising logistics flows more efficiently, particularly in urban areas and the construction sector. Many of these hubs use smart systems to link with carriers, book loading and unloading slots, and share real-time information on shipments and available capacity. This allows trips to be planned more effectively, increases utilisation rates and reduces unnecessary vehicle movements.

Examples of major terminals include the Port of Rotterdam and Schiphol Airport, which serve as central hubs for international freight flows. In addition, there are around 430 urban hubs in the Netherlands, of which approximately 50 are multi-client, where goods are stored and further distributed for last-mile urban distribution. The construction sector uses around 57 construction hubs, which reduce construction traffic by consolidating material flows and delivering just-in-time. Various commercial providers play a role in this ecosystem, such as CityHub, Hubbel and Port Alert, with Port Alert having already connected some 1,600 vehicles to its system by 2024.

Lorry parking

This concerns digital parking solutions for lorries, whereby drivers and planners have access to information on available parking locations and, in some cases, can also reserve parking spaces via apps. Nationwide, the NTM/NDW provides a virtually complete static overview of available public lorry parking spaces; coverage is estimated at approximately 95 to 98 per cent. Not all private lorry parking spaces are included. For a limited number (eight private and secure lorry parks), real-time information on current availability is available. There are various apps for finding parking locations, such as Truckfly, LKW App, TransParking and Travis. However, these applications do not provide a complete picture of all available or vacant parking spaces, meaning that the provision of information for drivers and transport companies remains fragmented.

Source: RWS – Digitalisation and automation in road freight transport: availability, use and effect

Automation and digitalisation in road freight transport: the *use* and *potential impacts* of systems and services

ICT systems

- Every professional transport company uses ICT systems. A Transport Management System (TMS) is used by virtually all companies with ≥10-15 vehicles; this amounts to approximately 2,500 companies (around 15% of all transport companies).

Access and restrictions: information & systems

- Self-reporting by drivers shows that 33% of drivers receive information on width/weight and 8% receive ADR information.

Smart traffic lights

- Until recently, there were approximately 1,500 'connected' lorries. This service is currently being relaunched by a number of market players (including Rydian with FMS suppliers). Usage is expected to increase significantly due to improved pricing.
- 3% of drivers report that they are sometimes given priority at smart traffic lights.
- With regard to smart traffic lights, it can be said that, depending on the location, this leads to fewer stops and/or shorter travel times. Per location (route/junction), this can vary from a few per cent to a 35% effect.

Lorry parking

- Self-reports from drivers show that 9% of drivers receive parking information, but it is not known whether this is static or real-time information.

Source: RWS – Digitalisation and automation in road freight transport: availability, use and effect

Lorry drivers' preference for in-car or roadside information

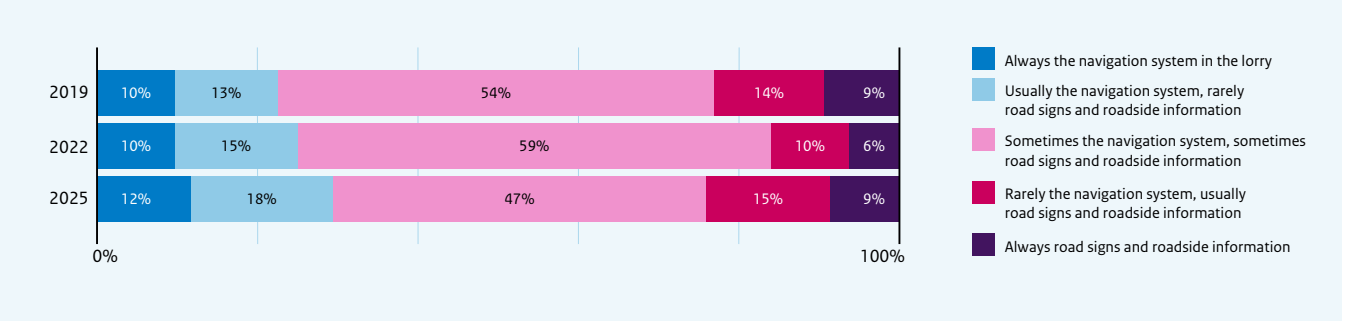
In 2025, drivers were asked which advice they would follow if the route information on (electronic) signs along or above the road differed from that provided by the in-car navigation system. If the information provided by the navigation system differs from the information visible at the roadside, 30% of those surveyed opt for the navigation system, compared with 24% for the roadside. Almost half of those surveyed have no preference; sometimes they follow the roadside information, other times the navigation system.

Compared with previous surveys, there has been an increase in both the proportion of drivers who prefer roadside information and the proportion of drivers who prefer the navigation system.

The trend shows that the preference for navigation services grew from 23% in 2019 to 30% in 2025. The group that sometimes follows the navigation system and sometimes the road signs is still the largest, but declined to 47% in 2025.

The group that prefers road signs and roadside information is increasing (from 16% in 2022 to 24% in 2025) and has thus returned to roughly the same level as 2019 (23%). The overall picture shows that the proportion of lorry drivers who prefer in-car navigation services remains higher.

Figure 21: Which information is preferred when the routes provided by your navigation system and roadside signs do not match (n=366)

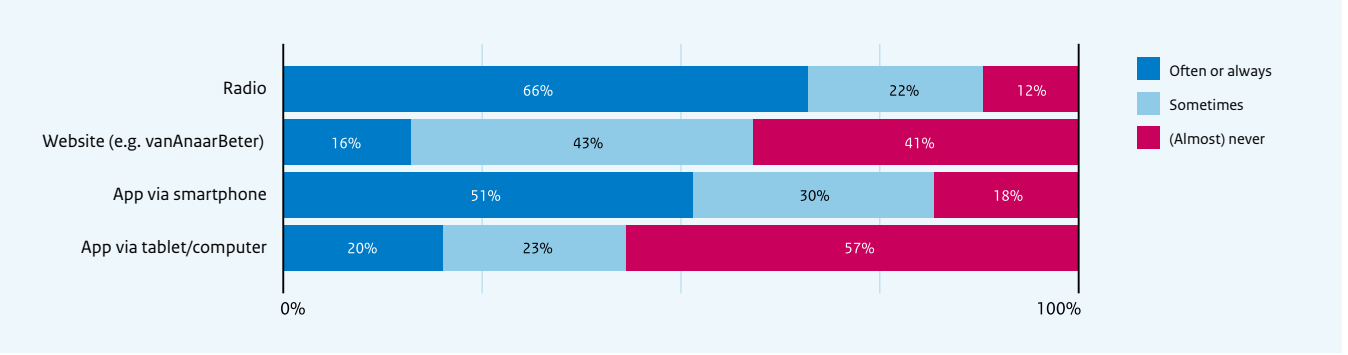


Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

The use of information services by lorry drivers (shortly) before departure

In 2025, the use of information services (shortly) before departure is common practice among drivers. The results highlight the importance of another medium for receiving traffic information that has not yet been mentioned: namely, the radio. Two-thirds of lorry drivers (66%) say they often or always listen to the radio before setting off. Smartphone apps are used frequently or always by just over half of the drivers. Information via websites or via a tablet/computer is used considerably less: 41% (websites) and 57% (apps via tablet/computer) of drivers (almost) never use these. Compared with 2022, websites, smartphone apps and apps via tablet/laptop/computer are now used more frequently.

Figure 22: Which information service is used before departure? (n=396)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

In which situations do lorry drivers look up information prior to their trip, and what kind of information is this?

Planners look up information selectively prior to the trip in cases of uncertainty and use it to determine routes, departure times and conditions in advance and to optimise the logistics of the trip. Drivers tend to consult information more frequently shortly before departure to keep track of the current situation and to be able to make safe and smooth adjustments whilst on the road.

The study examined what drivers do with route information that they receive before or during the trip.

Drivers look up information in advance when they expect heavy traffic or when they have to drive in unfamiliar areas; this applies to 41% of drivers. In addition, 29% say they mainly look up information when they need to be on time, whilst 23% say they always gather information before setting off. Within the 'other' category, a few drivers mention that they pay particular attention to roadworks and diversions. Some drivers also indicate that they gather information in connection with the transport of dangerous goods or due to height and weight restrictions.

Compared with the 2022 survey, a few differences are apparent. The proportion of drivers who also look up information for daily trips or frequently driven routes has risen from 10% to 20%. At the same time, the proportion of drivers who seek information for unfamiliar or less frequently driven routes, in bad weather or when heavy traffic is expected, has fallen by approximately 10 percentage points.

The most frequently sought information still concerns traffic jams, roadworks or diversions, and the route itself. This largely corresponds to the results from 2022, although looking up the route has fallen from 68% to 56%. Only 3% of drivers say they do not look up any information in advance at all.

Figure 23: In which situations do you look up traffic information before setting off? (n=220)

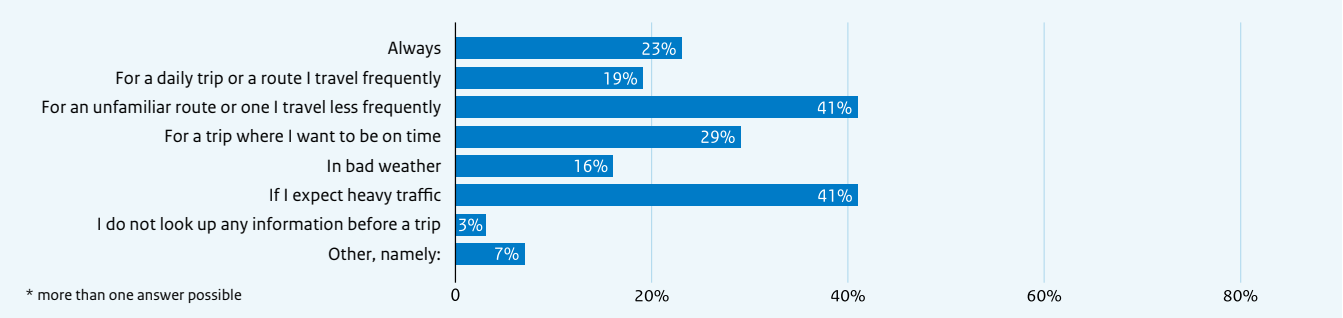
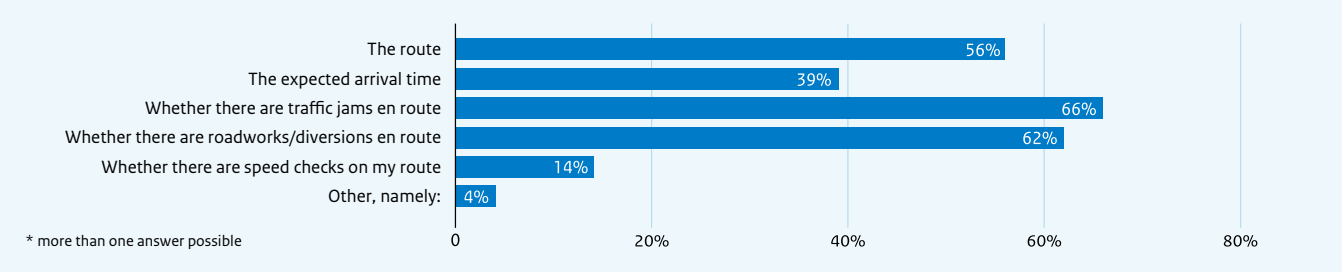


Figure 24: What information do you look up before your trip? (n=220)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Acting on pre-trip and on-trip information in the lorry

Route planning (pre-trip)

When planning the route, there are differences between self-employed drivers and haulage companies. Among self-employed drivers, it is usually the business owner (70%) or the driver (7%) themselves who determines the route, and sometimes the customer (20%). In transport companies with two or more employees, this is usually a planner (47%), and sometimes the business owner (14%), driver (21%) or customer (14%). The larger the company, the more likely it is to have a planner (or planning department). Among transport companies with two or more employees, 41% use a TMS (Transport Management System) or other advanced planning system.

Lorry drivers were also asked whether, when drawing up the schedule, they use data on delivery time windows, vehicle restrictions, environmental zones, preferred routes, etc. Around 60% do so; in transport companies with two or more employees, drivers do this more often than self-employed drivers.

Figure 25: Who in the organisation determines the routes? (n=211)

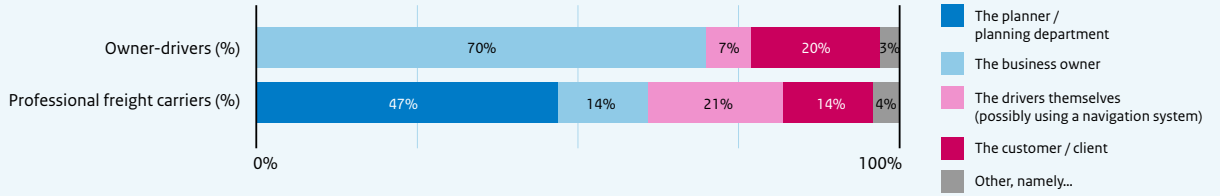
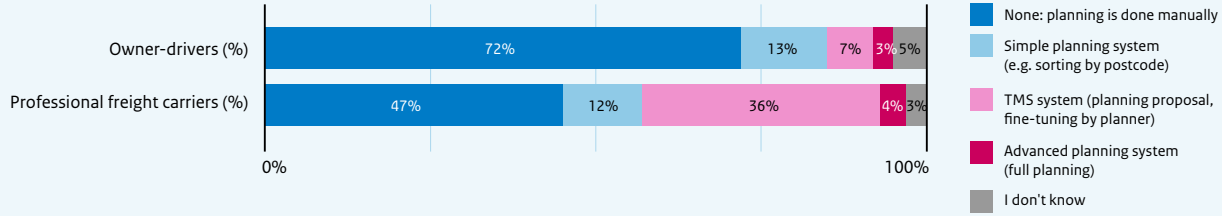


Figure 26: What kind of system is used for planning within the organisation? (n=214)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Acting on pre-trip information

Of the drivers, 77% say they sometimes adjust their route based on pre-trip information, and 41% sometimes adjust their departure time as a result. A quarter (24%) do not make any adjustments, but appreciate knowing what to expect. Compared with 2022 and 2019, drivers are making adjustments less frequently.

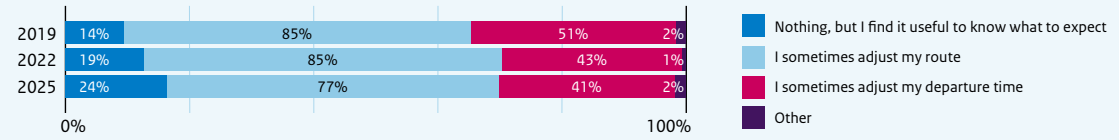
Acting on on-trip information

A large proportion of drivers (88%) do occasionally adjust their route whilst on the road. They usually decide this themselves, but it is also done in consultation with the planner. If drivers do not choose the route that their sat-nav indicates is the quickest, it is often because they are very familiar with the area. Other reasons frequently cited are that the alternative route does not make sense, that there is insufficient time saved, or that the recommended route is not pleasant.

Three years ago, the picture was broadly the same, except that at that time 73% of drivers (versus 61% now) replied that they did not choose the route that their sat-nav indicated was the fastest, because they were very familiar with the area.

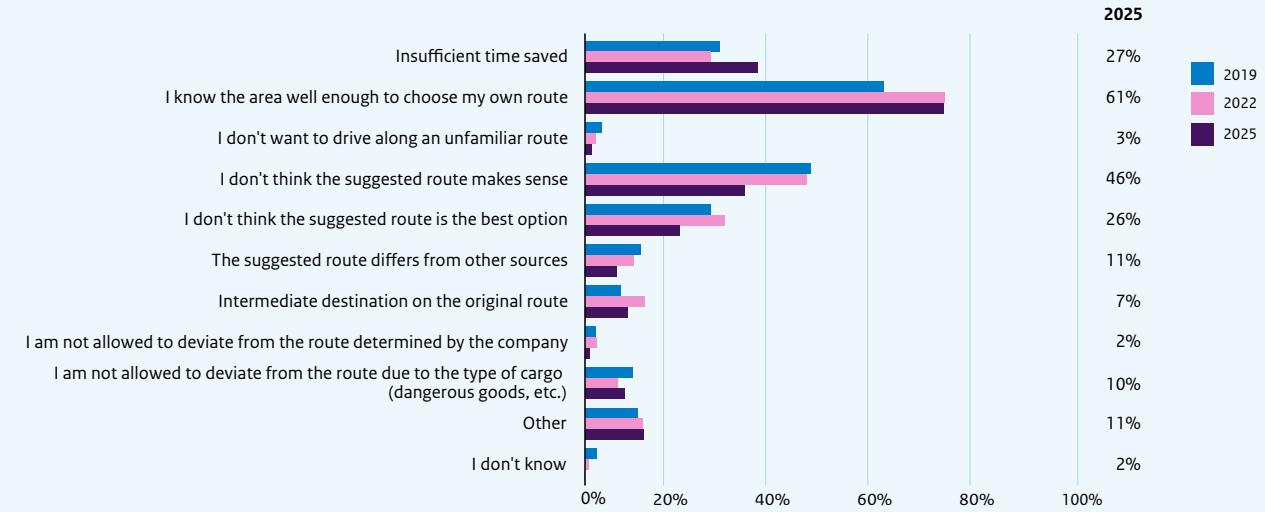
Drivers transporting dangerous goods or carrying out exceptional transport are much more likely to state that, due to the nature of their load, they are not permitted to deviate from the route. The figures show that 34% of dangerous goods drivers and almost 60% of exceptional transport drivers chose this response.

Figure 27: What do lorry drivers do with the information they look up before the trip? (n=211)



* more than one answer possible

Figure 28: If the route recommended by the navigation system as the quickest is not taken, what is the reason for this? (n=174)



* more than one answer possible

Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Distraction caused by information services in lorries

A significant proportion of lorry drivers experience distraction due to the way in which information and notifications from information services are presented. In particular, operating these systems causes disruption in the cabin: 35% of drivers state that this distracts them to some extent or significantly. Spoken text (31%), audible signals (29%), visual information (24%) and processing received information (23%) are also regularly experienced as distracting.

Among drivers who have occasionally been distracted, it was investigated whether this led to dangerous situations. For 30%, this has never been the case, but for the majority it does happen from time to time. The most commonly cited dangerous situations are veering off the carriageway (30%) and driving too close to the vehicle in front (20%). These findings demonstrate that careful design and timing of information remain important for road safety.

The Smart Mobility Monitor 2025 revealed that, for motorists too, operating the system is the most distracting factor. This was followed by receiving visual information and processing information. Sound (spoken text or audible signals) caused relatively the least distraction. For lorry drivers, the situation is the reverse (sound actually causes more distraction), but the percentages are close. Furthermore, the question asked of motorists in 2024 regarding distraction was specifically limited to reports of traffic jams and roadworks, and was therefore less general than in the survey targeting lorry drivers.

Figure 29: The degree of distraction experienced by a lorry driver as a result of the way in which information and alerts from information services are received (n=396)

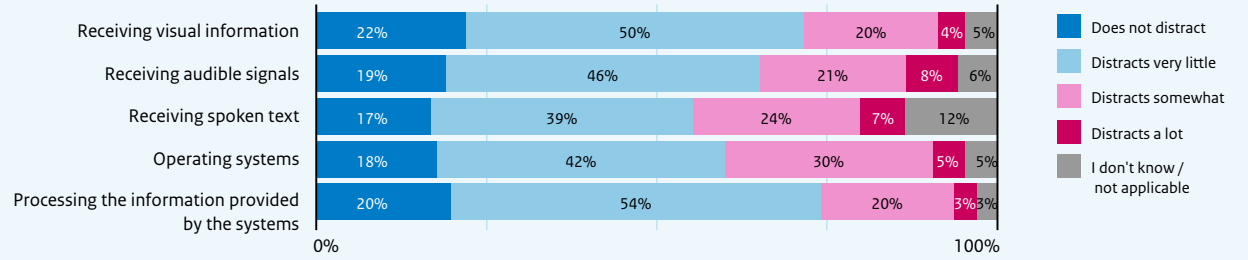
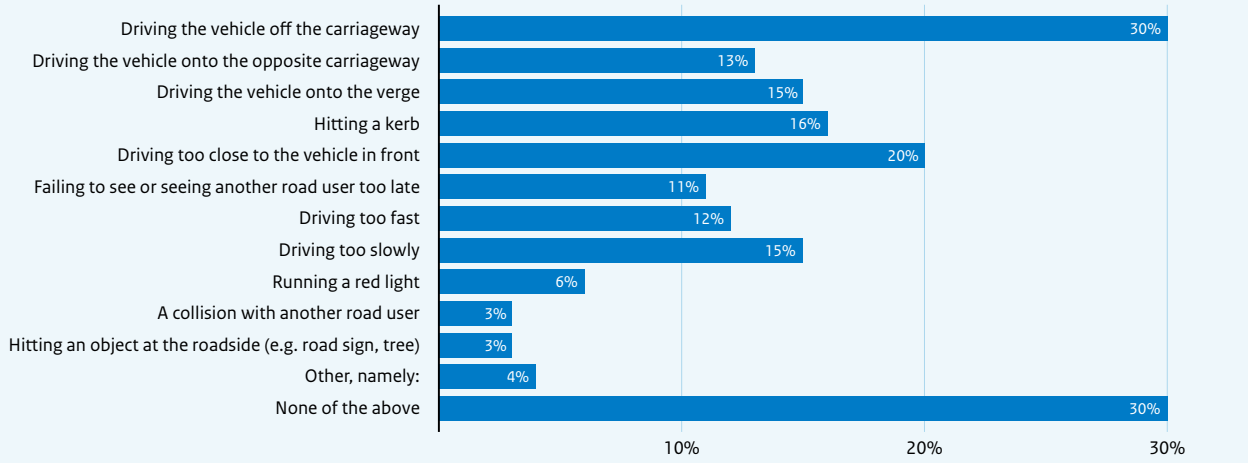


Figure 30: If you were distracted by your information services, what dangerous situations has this ever led to? (multiple answers possible) (n=228)

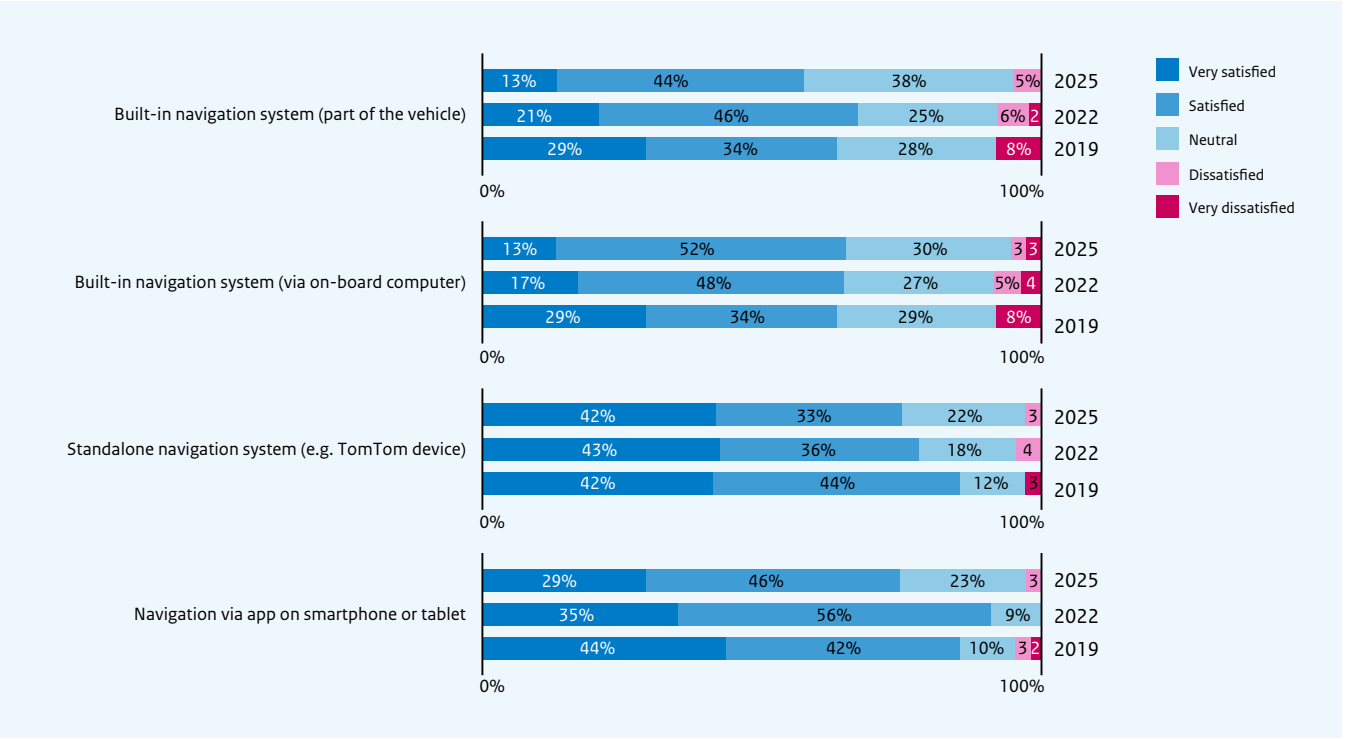


Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Satisfaction with the quality of information services among lorry drivers

In 2025, drivers are satisfied with the quality of the information they receive via their navigation system whilst driving.
Only a small percentage of drivers (3 to 5%) are dissatisfied. Compared with three years ago, the neutral option is chosen more frequently. The highest levels of satisfaction are with a standalone navigation system (e.g. a TomTom device) or with navigation via an app on a smartphone or tablet. The few drivers who are dissatisfied mainly state that they do not receive up-to-date information.

Figure 31: Satisfaction with the quality of the information services provided by the navigation system (n=64–119)



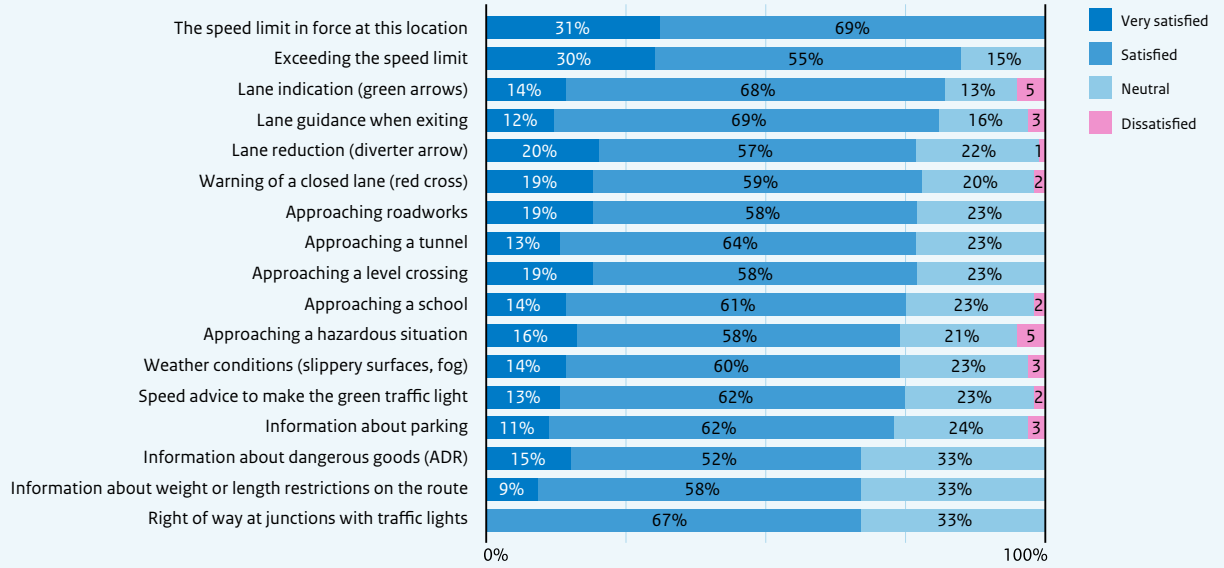
Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Lorry drivers' satisfaction with the quality of information provided by service providers

In 2025, lorry drivers who stated that they received various types of information were asked, for each type of information, to what extent they were satisfied with it. Overall, it is striking that the ratings are predominantly positive; only a small number of drivers indicated that they were dissatisfied. However, for most types of information, the number of satisfied drivers is a few percentage points to 10 percentage points lower than in 2022. Compared with 2022, there is also a slightly higher tendency to choose a neutral rating rather than a positive one.

The results show that lorry drivers are most satisfied with the local speed limit, warnings for exceeding it and the green lane markings.

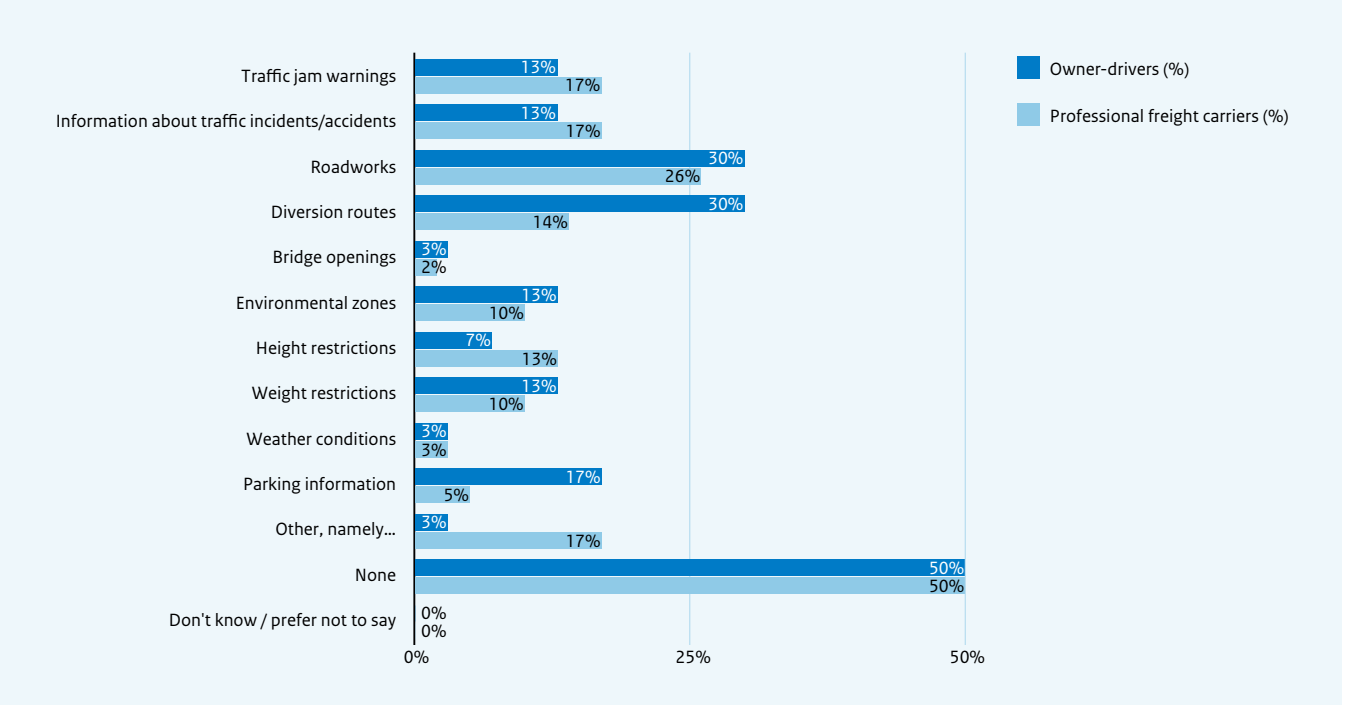
Figure 32: Satisfaction with the quality of the information received in the lorry (n=176)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Transport operators were asked about the traffic situations about which they would like to be better informed. Just over half of the companies responded that there are no such situations. This proportion has risen compared with 2022, when it stood at 38%, and in 2019 at 24%. The situations most frequently mentioned in 2025 are roadworks, diversion routes, traffic jam warnings, and information about incidents and accidents. This 'top four' is the same as in 2022 and 2019.

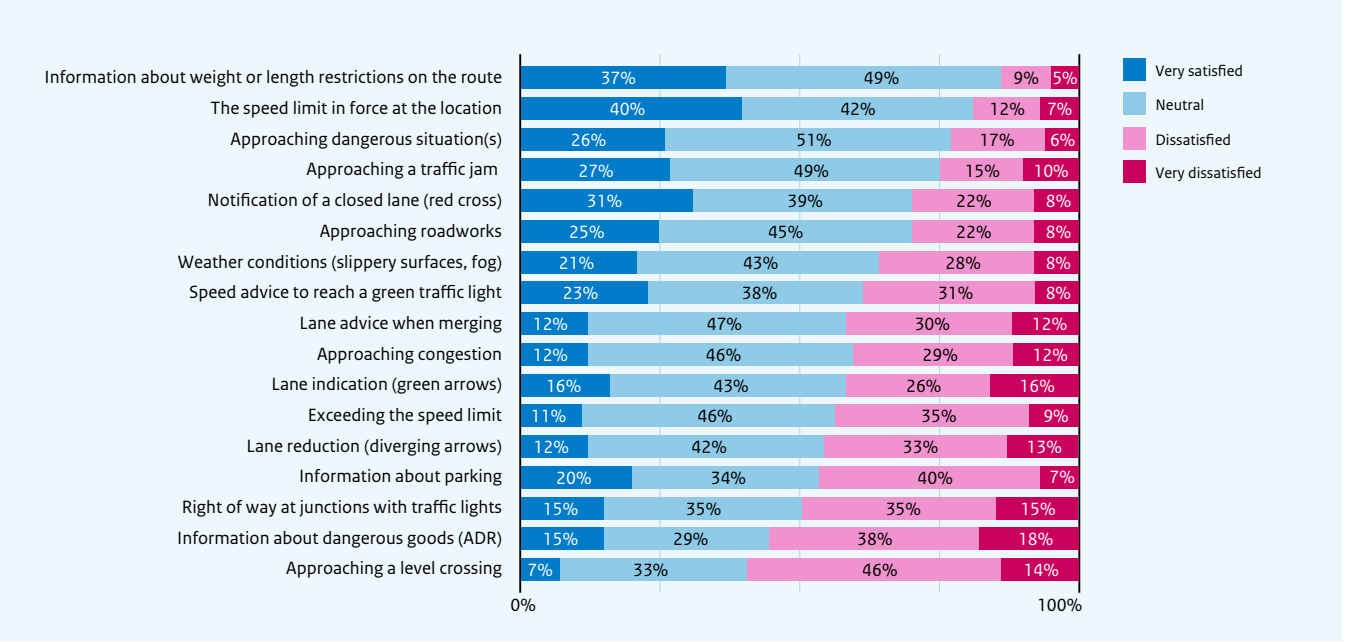
Figure 33: About which traffic situations would drivers like to be better informed? (n=141)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Drivers were also asked what information they do not currently receive but would find useful to have. For almost all types of information, more than half of the drivers replied that they would find it useful. Information about weight or length restrictions on the route and the applicable speed limit scored highest (both over 80%). Drivers find information about approaching a level crossing and about dangerous goods (ADR) less useful, although ADR information is not relevant to all drivers.

Figure 34: What information that drivers do not currently receive would be useful to provide? (n=176)



Source: RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025

Comparison between passenger cars and lorries for information services

Nowadays, both motorists and lorry drivers have access to up-to-date travel and route information virtually everywhere. Smartphone apps play a key role in this, with Google Maps in particular being widely used by both groups. Navigation via smartphone is often combined with other sources of information, such as roadside information in the form of road signs and Variable Message Signs (VMS), and in some cases with radio traffic updates. Both motorists and lorry drivers make more intensive use of information services whilst driving when they encounter traffic jams, accidents or roadworks. Where there are conflicting recommendations between different information sources, both groups in practice usually follow the navigation system in the vehicle. At the same time, distraction from the driving task plays a role for both motorists and lorry drivers. Operating systems, notifications and processing the information provided result in moments of increased cognitive load for both groups.

However, there are also clear differences in the way information is accessed and used. For passenger cars, pre-trip information is mainly used on an individual and voluntary basis, particularly on unfamiliar routes or when time is of the essence. Motorists mainly use smartphones or PCs for this, with government information often being accessed indirectly via commercial apps. In freight transport, by contrast, pre-trip information is an integral part of business processes and planning. This information is strongly focused on route planning and operational constraints, such as delivery time windows and route and vehicle restrictions. The use and processing of this information lies primarily with planners or operators and less directly with the driver themselves, and is carried out via professional planning systems.

The use of information also differs during the trip. For passenger cars, on-trip use of information services is high, even on familiar routes. The focus here is on traffic jam information, trip times and route advice, usually via the smartphone, often linked to the vehicle via CarPlay or Android Auto. The role of roadside information is gradually declining in this context. In freight transport, on-trip information use is also high, but more spread across multiple systems simultaneously. In addition to smartphone apps, lorry drivers also use on-board computers and lorry navigation systems. In this context, it is not only general traffic information that is important, but also lorry-specific information, such as vehicle restrictions, permitted routes and ADR routes.

Finally, motorists and lorry drivers differ in the extent to which they automatically follow navigation and traffic advice. Motorists are increasingly following on-trip advice almost automatically, even on short and familiar trips, where navigation usually takes precedence over roadside signs, with the exception of situations involving roadworks. Lorry drivers also regularly adjust their routes, but do so less automatically and in a manner that is clearly more context-dependent. Factors such as vehicle suitability, safety, expected time savings and – in the case of dangerous goods or exceptional loads – the often limited freedom of choice play a decisive role in this.

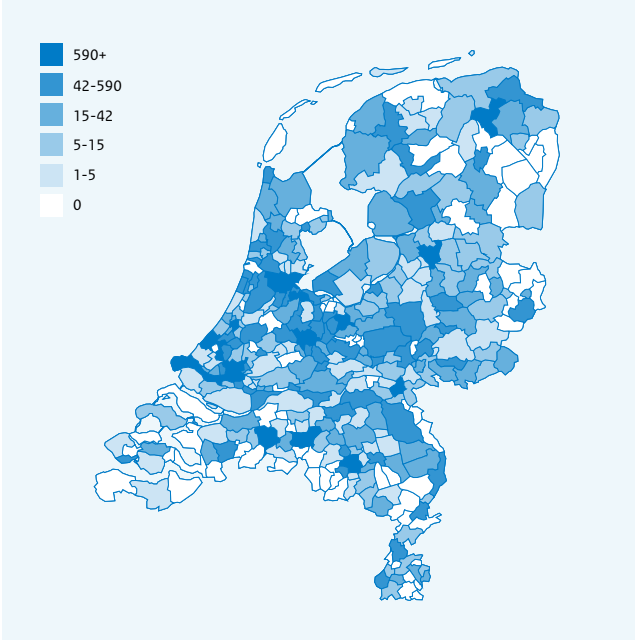
Motorists are generally very satisfied with navigation and information services, particularly regarding the timeliness, clarity and usability of the information, and express relatively little criticism of the systems themselves. In freight transport, satisfaction is more moderate: although information is often available, it does not always reach the driver, or is incomplete or not very useful, partly due to a lack of awareness of what information is available.

Mobility services

Shared mobility options

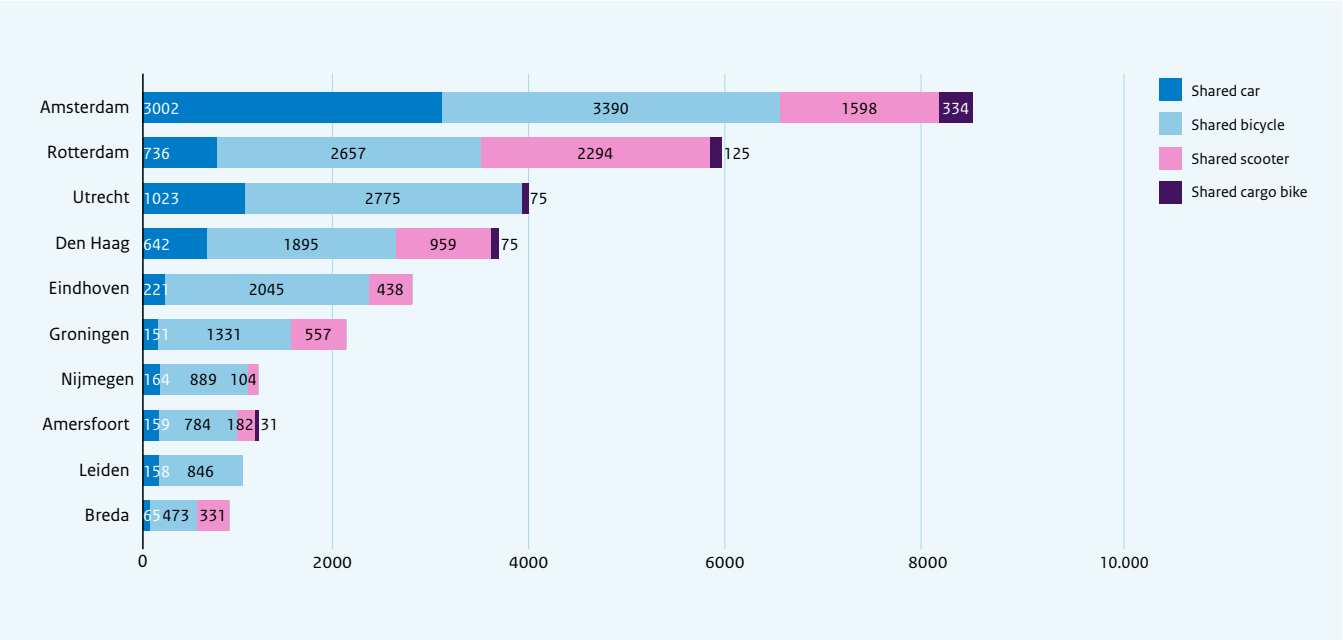
In 2025, the Netherlands had over 46,000 shared vehicles. The majority of these vehicles are shared bicycles (59%), with the OV-fiets (public transport bicycle-sharing scheme) being the largest provider. Shared scooters (19%) and shared cars (20%) together account for just under half. The shared cargo bike (1%) is a relatively new mode of transport available in small numbers. In 2025, 280 municipalities had one or more forms of shared mobility available. Furthermore, shared mobility is intrinsically linked to digitalisation. Booking, unlocking and payment are handled via apps and digital platforms. Fleet management is also data-driven, based on location, availability and user data. As a result, the shared vehicle fleet is highly digitised and well-organised data exchange is an essential prerequisite for the functioning of shared systems.

Figure 35: Number of shared vehicles in the Netherlands by municipality



Source: CROW – State of Shared Mobility

Figure 36: Top 10 municipalities based on number of shared vehicles and modal breakdown



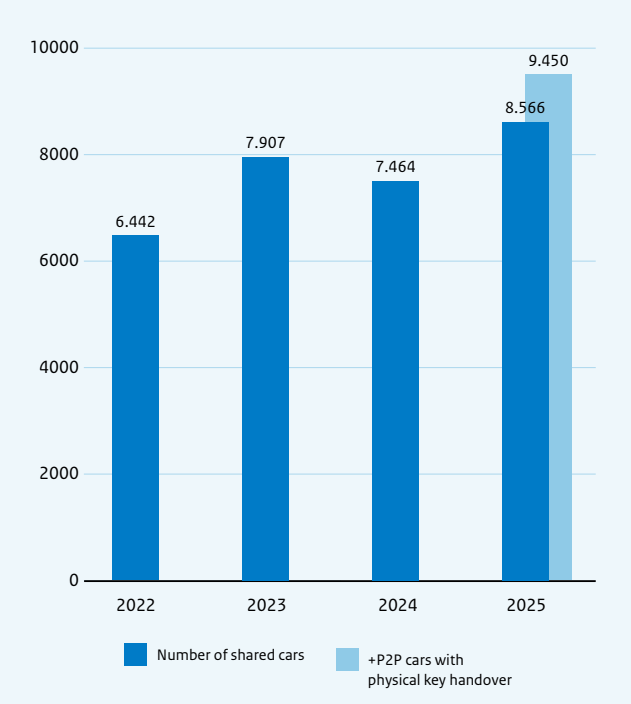
Source: CROW – State of Shared Mobility

Car-sharing fleet

The number of car-sharing vehicles grew by 15% in 2025, when frequently used P2P (Peer-to-Peer) car-sharing vehicles with physical key handover are not included. In 2025, P2P car-sharing vehicles with key handover that are used more than 10 times a year were included in the definition of car-sharing vehicles for the first time. These are vehicles owned by private individuals who rent out their cars. Including these P2P vehicles, the total number of car-sharing vehicles in 2025 comes to 9,450.

The share of electric vehicles in the publicly accessible car-sharing fleet fell from 50% in 2024 to 45% in 2025. This share is 41% when frequently used P2P car-sharing vehicles with physical key handover are included. Providers where the proportion of electric shared cars is lower have significantly expanded their fleets, resulting in a slight decline in the proportion of electric shared cars nationwide. For the time being, the proportion of electric shared cars remains significantly higher than in the total passenger car fleet in the Netherlands; in 2025, 7.3% of the passenger car fleet was electric.

Figure 37: Development of the number of shared cars in the Netherlands

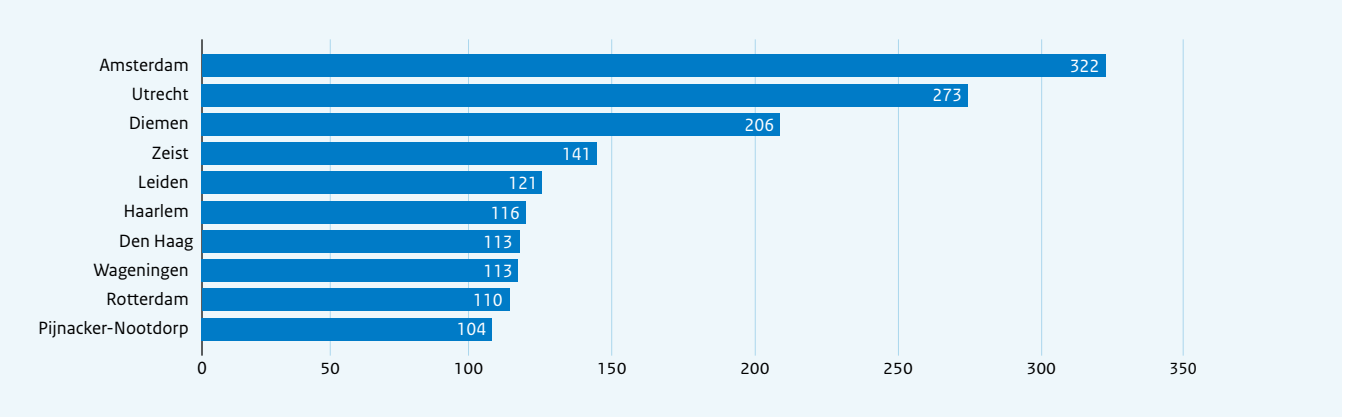


Source: CROW – State of Shared Mobility
Source: RVO – Sustainable Mobility Database

The top 10 municipalities in terms of the number of shared cars per 100,000 inhabitants changed slightly in 2025 compared with 2024. Amsterdam, Utrecht and Diemen remain in the top three municipalities with the highest number of shared cars per inhabitant. Zeist and Pijnacker-Nootdorp are new entrants to the top 10 this year. Zeist in particular stands out, as this municipality entered the rankings directly at number 4 this year. Compared with last year, the number of municipalities where car-sharing vehicles are available increased by 22. Car-sharing vehicles are now available in 211 municipalities. If municipalities with Peer-to-Peer car-sharing schemes involving key handover are included, this figure rises further to 237 municipalities.

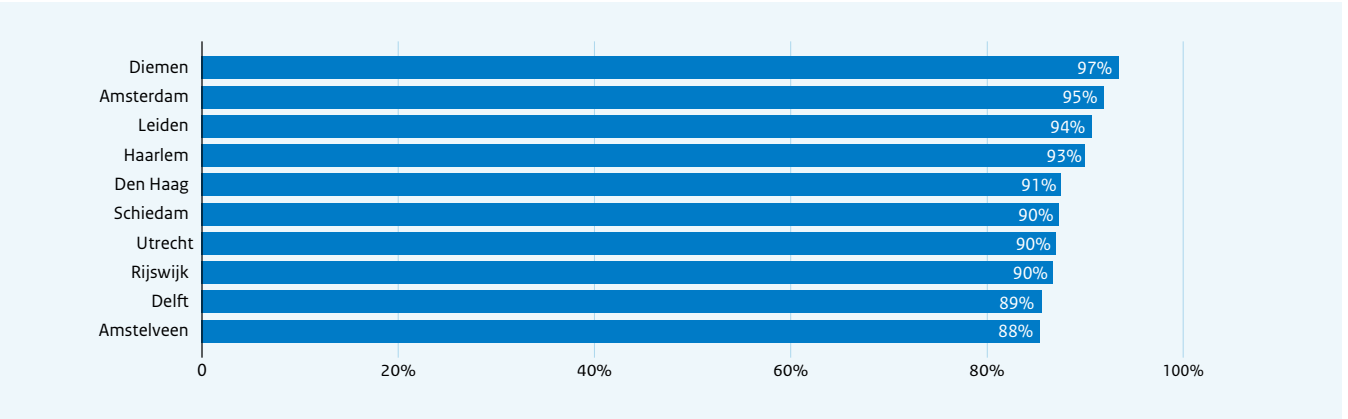
The table below shows the top 10 coverage rates for car-sharing per municipality. For car-sharing, this is the percentage of residents who have a car-sharing vehicle within a walking distance of 400 metres. These top ten municipalities with the highest coverage are all located in the Randstad region. It is also striking that the national coverage rate for car-sharing has risen to 36%, compared with 33% in 2024. If P2P car-sharing vehicles with physical key handover and more than 10 uses per year are included, the increase rises to as much as 38%. Under both the old and the new definitions, more Dutch people have access to a shared car.

Figure 38: Top 10 municipalities by number of car-sharing vehicles per 100,000 inhabitants



Source: CROW – State of Shared Mobility

Figure 39: Top 10 car-sharing coverage rates for municipalities



Source: CROW – State of Shared Mobility

Shared two-wheeler services

Shared scooters

There are two providers of shared scooters in the Netherlands; these companies offer only electric shared scooters. Shared scooter providers require a municipal licence to operate. The number of shared scooters rose by almost 3% compared with 2024, to just over 8,800 vehicles. This has brought the downward trend of the past three years to a halt, and the market is once again showing a cautious increase. The number of cities with shared scooters fell slightly in 2025 compared with the previous year. In 2024, shared scooters were still available in 31 cities. That number fell to 26 cities in 2025. The national coverage rate is 15% for 2025. This coverage rate refers to the number of people who can use a shared scooter within a 200-metre walk.

Shared bicycles

Compared with last year, the number of shared bikes rose by 2% to more than 27,000 in 2025. There are various providers of shared bikes in the Netherlands. Each local authority decides for itself which providers it allows within its area. The number of different shared bike providers fell from 17 to 14 compared with 2024. Dutch Railways (NS) operates its own shared bike scheme and, with the OV-fiets, is the largest provider of shared bikes. Since autumn 2025, all OV-fiets bikes have been fitted with a digital lock. The number of OV-fiets bikes has risen slightly, whilst the number of bikes from the other bike-sharing providers has increased by more than 5%. The number of municipalities with shared bikes remained constant in 2025 at 212. The national coverage rate is 10% for 2025. This coverage rate refers to the number of people who can reach a shared bike on foot within 200 metres.

Shared cargo bikes

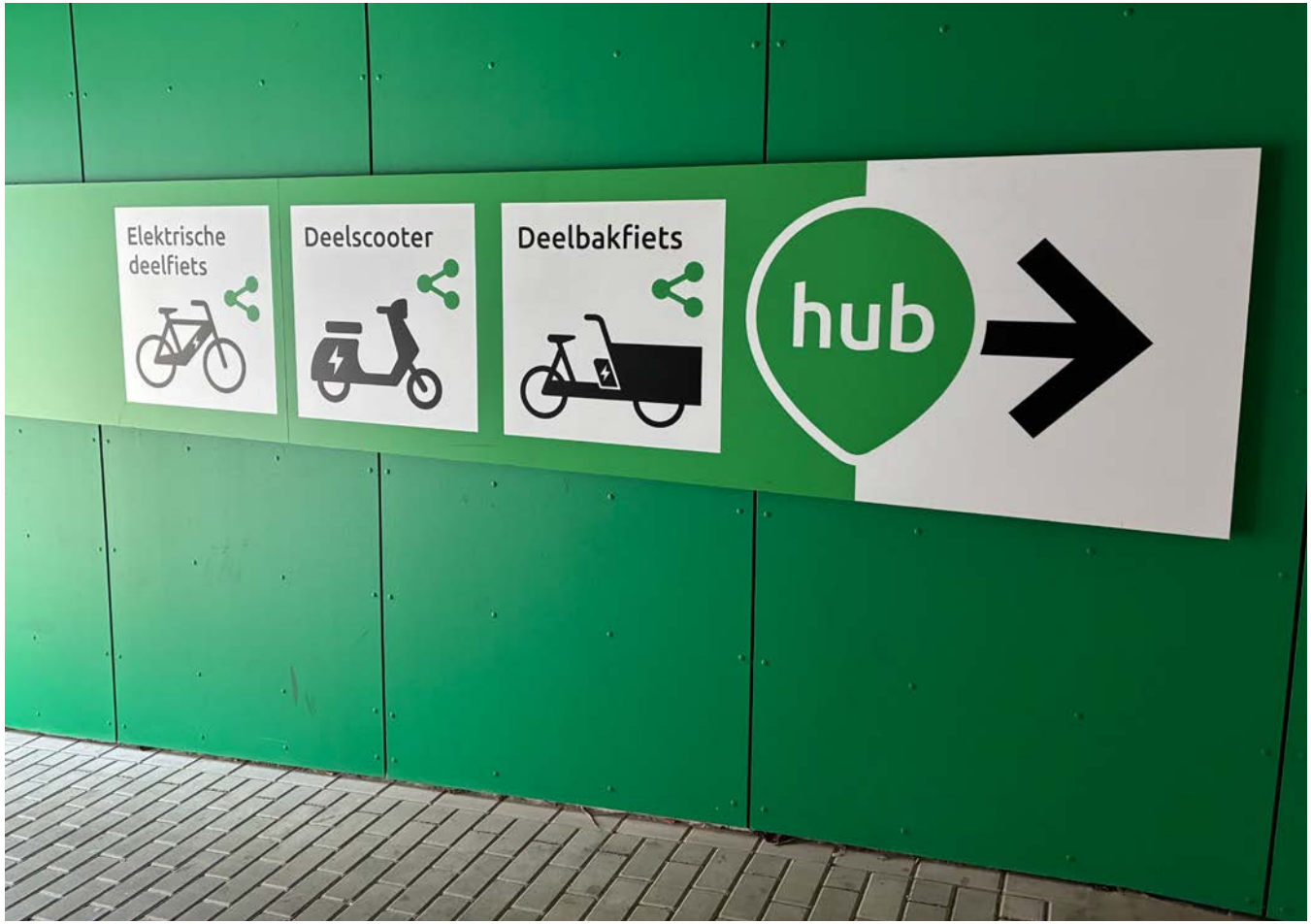
There are two providers of shared cargo bikes in the Netherlands. All shared cargo bikes in the Netherlands are equipped with electric pedal assistance. The number of shared cargo bikes fell by 27% compared with 2024, to nearly 700 vehicles. In 2025 there were eight cities with shared cargo bikes, whereas in 2024 shared cargo bikes were still available in twelve cities. These declines can be attributed to temporary market conditions.

Source: CROW – State of Shared Mobility

Availability of shared mobility hubs

A shared mobility hub is a recognisable location in public space where shared vehicles can be parked. These hubs provide a fixed and recognisable spot, making it easier for travellers to find shared vehicles. Furthermore, the hubs improve the quality of life in towns and villages by preventing clutter and nuisance caused by shared vehicles. During the 2020 Intergovernmental Consultation on the Multi-Year Programme for Infrastructure, Spatial Planning and Transport (BO-MIRT), the national government and the regions agreed to develop a uniform concept for shared mobility hubs to increase national recognisability for travellers.

In 2022, the Ministry of Infrastructure and Water Management (IenW) launched the shared mobility hubs knowledge programme to gain experience with physical shared mobility hubs and to create the conditions under which these hubs can be successful. This knowledge programme is part of the broader collaborative programme Natuurlijk!Deelmobiliteit (Of course! Shared Mobility). Together with local and provincial authorities, the roll-out of standardised shared mobility hubs has begun under various conditions. Between 2022 and 2028, as part of this programme, approximately 1,500 shared mobility hubs will be implemented and monitored; by the end of 2024, 333 shared mobility hubs had already been established.



Source: Monitoring and evaluation of shared mobility hubs 2024
Source: Website Natuurlijk!Deelmobiliteit

Development of shared mobility use

The number of users of shared mobility (excluding carpooling and ride-sharing) increased by 5 percentage points in 2025 compared with 2024 and by 9 percentage points compared with 2023. The proportion of Dutch people who have never used any form of shared mobility stood at 78% in 2025, falling below 80% for the first time; in previous survey years, this percentage was higher.

Car-sharing

The proportion of Dutch people who used car-sharing in 2025 fell by 7% compared with 2024. However, the use of car-sharing increased by 1%, meaning that people who use car-sharing services are using them more frequently.

Over the past three years, the proportion of Dutch people who have used car-sharing services has remained stable; approximately one in ten Dutch people (aged 18 and over) use a shared car through a company, via their employer, owned by a fixed group of users, or a private car via an online platform. Users of employer-provided shared cars make the most frequent use of car-sharing, followed by users of jointly owned shared cars.

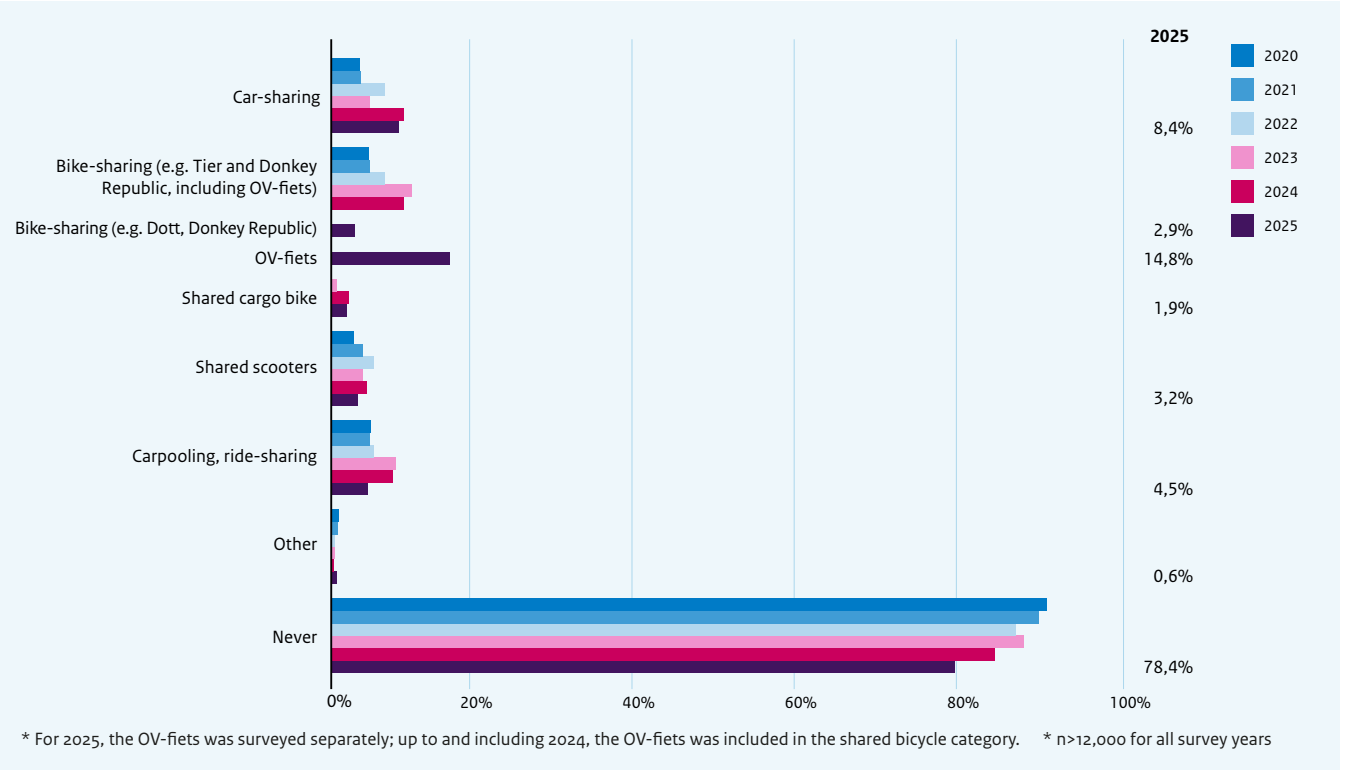
Shared bikes

The growth in total shared mobility use in 2025 is primarily driven by an increase in the use of shared bikes. The proportion of respondents who say they used a shared bicycle in 2025 is clearly higher than in 2024 and 2023. However, this picture is partly distorted because in 2025 separate questions were asked about the OV-fiets scheme. As a result, use of the OV-fiets may have been underestimated in previous years.

Shared scooters

The use of shared scooters shows a stable picture in 2025.

Figure 40: Users of shared mobility schemes



* For 2025, the OV-fiets was surveyed separately; up to and including 2024, the OV-fiets was included in the shared bicycle category. * n>12,000 for all survey years

Source: Ministry of Infrastructure and Water Management – National Travel Survey 2025

Compared with 2024, only limited shifts are visible, and the proportion of users also remains roughly the same compared with 2023.

Frequency of shared mobility use

Those who make use of shared mobility tend to do so on an occasional basis; although the frequency of shared mobility use remains fairly stable over time, a number of general trends can be observed. The proportion of users who use shared mobility weekly or monthly is 19% for car-sharing (18% in 2024), 20% for bike-sharing (21% in 2024) and 20% for scooter-sharing (20% in 2024). Carpooling and ride-sharing occur more regularly, at 34% of users (32% in 2024).

Car-sharing

Car-sharing is mainly used sporadically; in 2025, 33% of users use a shared car less than once a year, whilst 48% make a number of car-sharing trips per year. The proportion of regular users (monthly or weekly) fluctuates around 19% and has increased slightly compared with 2020.

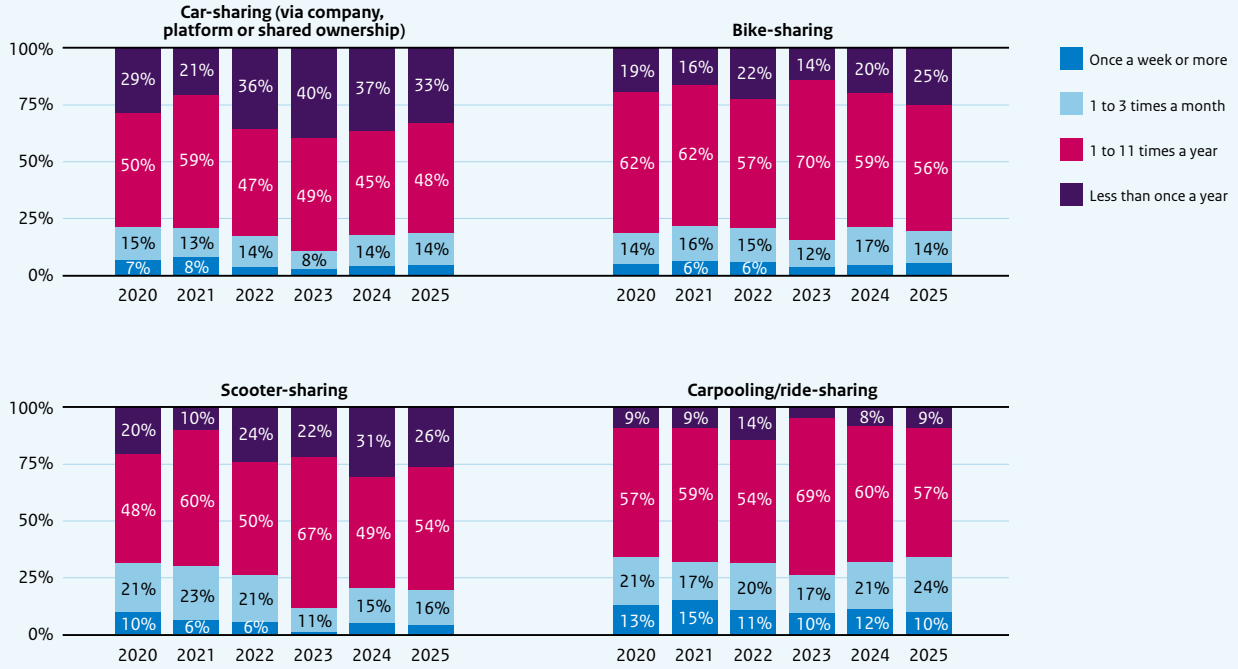
Shared bikes

The use of shared bikes is also largely sporadic, but with a slightly higher proportion of regular users than for shared cars. In 2025, around 20% of users use a shared bike at least once a month. Over the period 2020–2025, there is a slight shift towards more frequent use.

Shared scooters

The use of shared scooters has become less frequent since 2021. The proportion of users who use shared scooters on a weekly basis has declined since 2020 and stands at around 4% in 2025. The majority of users make occasional use of shared scooters (1–11 times a year).

Figure 41: Frequency of shared mobility use



Source: Ministry of Infrastructure and Water Management – National Travel Survey 2025

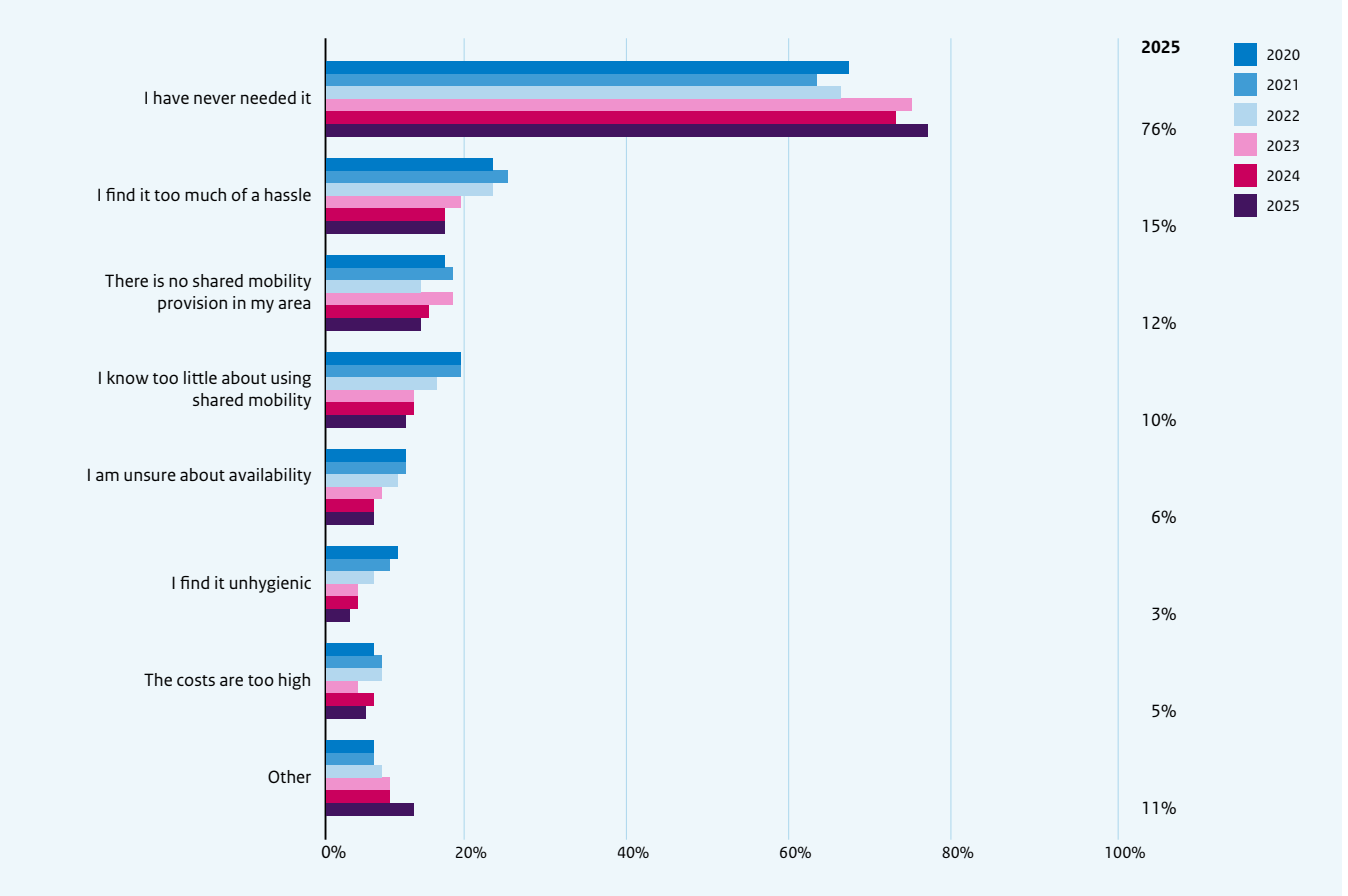
Carpooling / ride-sharing

As in previous years, carpooling and ride-sharing are the most frequently used forms of shared mobility. In 2025, approximately 34% of users make use of these services monthly or more frequently. This proportion has risen slightly since 2020, suggesting that ride-sharing has become a structural part of the travel pattern for some users.

Reasons for not making use of shared mobility services

The main reason for not making use of shared mobility services (except in the case of car-sharing) is that there has not yet been a need for it. In 2025, this applies to 76% of non-users; in 2024, the figure was 72%. There is a group that states they find shared mobility too much of a hassle (15%) or know too little about it (10%). Compared with two years ago, the number of people who say there is no shared mobility available in their area has decreased slightly. In addition, since 2020 there has been a decrease in the number of people who say they do not use shared mobility due to hygiene concerns, uncertainty regarding availability and a lack of knowledge. A small group of people (5%) do not use shared mobility because they find the price too high (6% in 2024).

Figure 42: Reasons for not using shared mobility



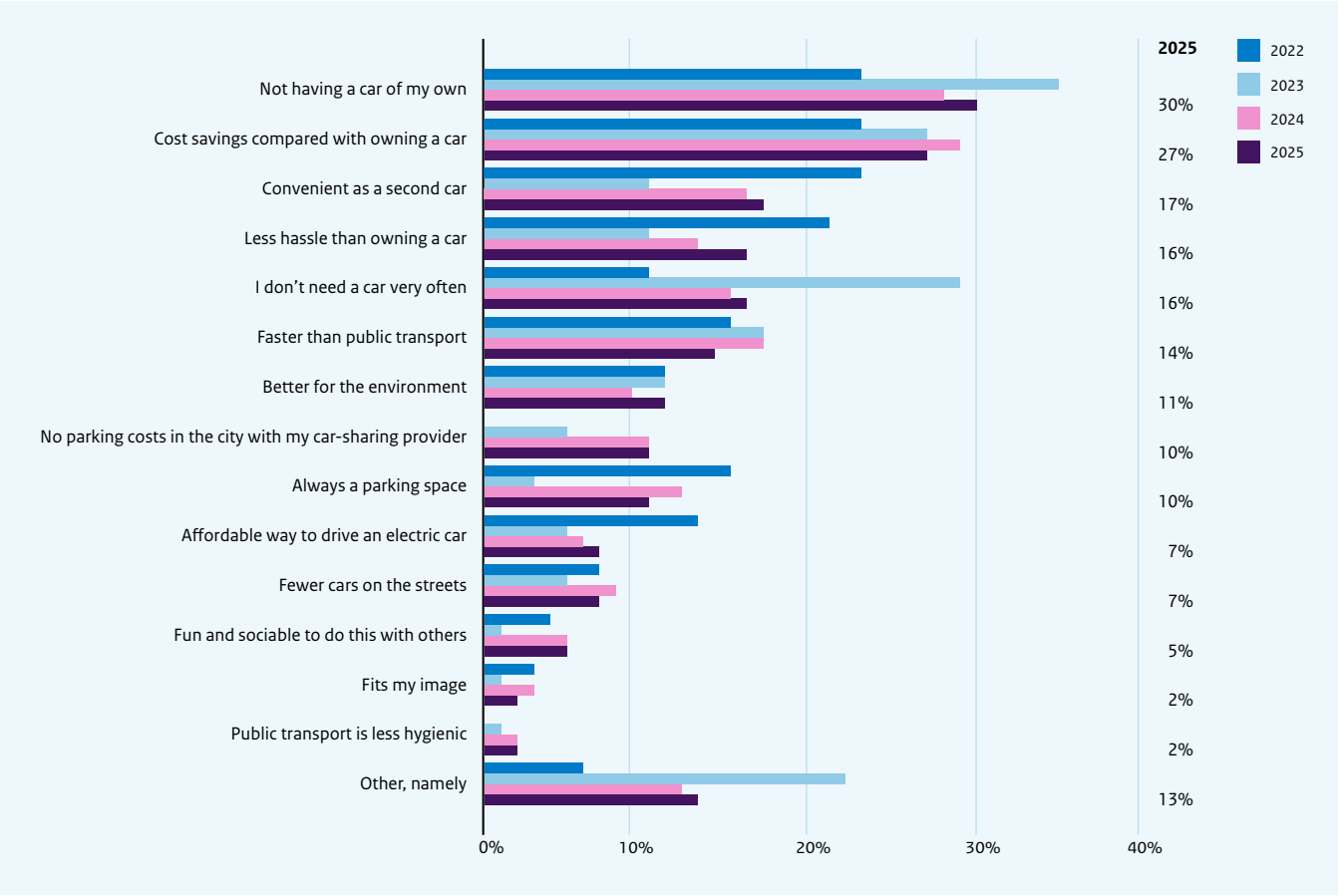
Source: Ministry of Infrastructure and Water Management – National Travel Survey 2025

Main motives for car-sharing

Just as in 2024, not having access to a private car and the cost savings compared with owning a car remain the main reasons for using a shared car. The convenience of having a second car, it being less of a hassle than owning a car, and not needing a car very often are also cited as reasons for using a shared car. The reasons cited are consistent with those from 2024.

Furthermore, the 2025 National Travel Survey reveals a clear difference in the reasons for car-sharing between households that do not (yet) own a car and those that do. Respondents from households without a car say they need a car less often. Households without a car also more frequently perceive the use of a shared car as faster than public transport, and cite easier and cheaper parking as a reason for using a shared car. Parking a shared car in the designated spot is included in the fare, so these costs are not charged separately at the end of the trip.

Figure 43: Reasons for using a shared car (2025: n=1,330)

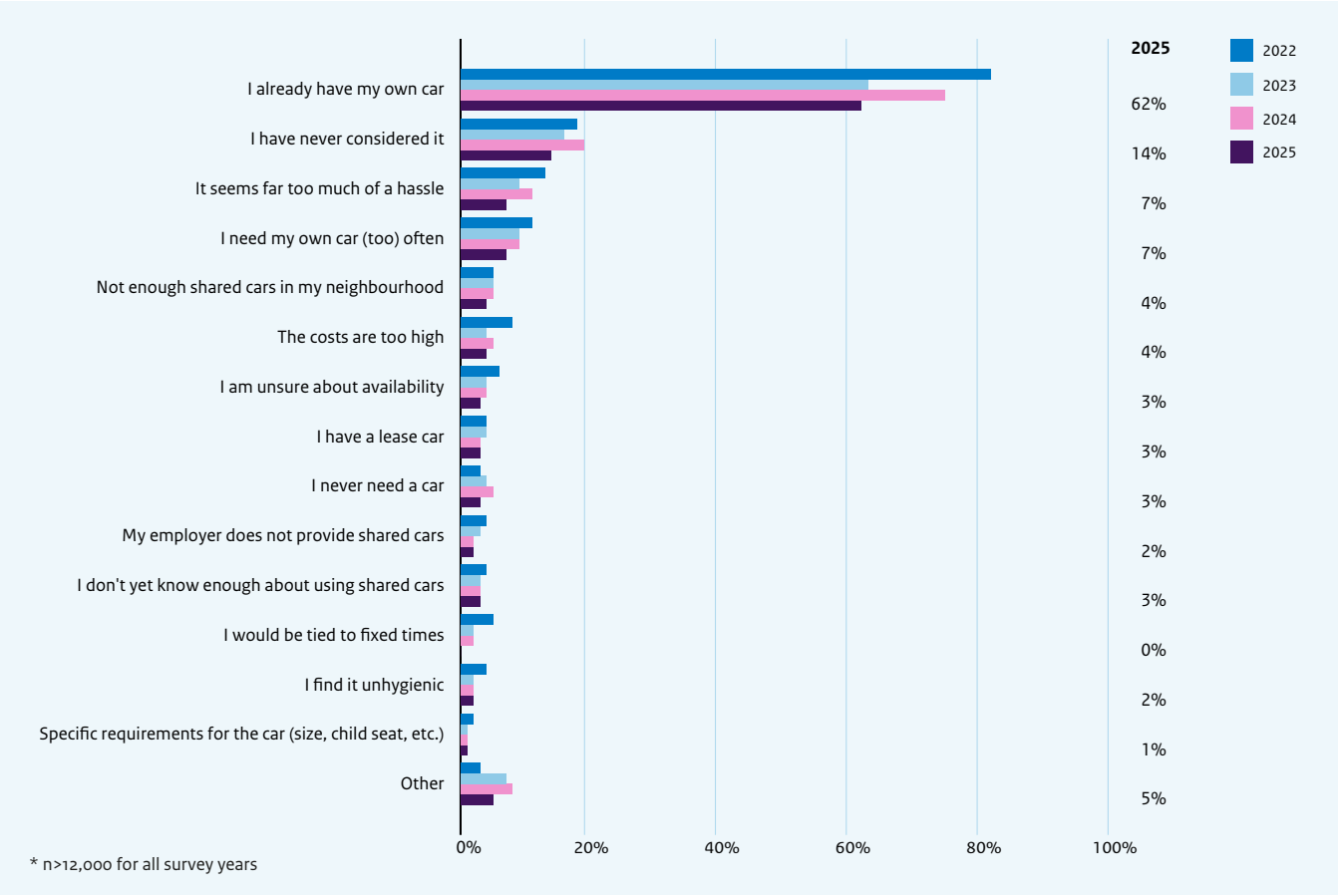


Source: Ministry of Infrastructure and Water Management – National Travel Survey 2025

Reasons for not using car-sharing

For car-sharing, the main reason for not making use of it continues to be that people already own a car. In 2025, 62% of respondents cite this as a reason, although this proportion is lower than in previous survey years. Car ownership therefore remains strongly correlated with the (non-)use of car-sharing. In addition, the proportion of people who say they have never seriously considered using a shared car has fallen to 14% in 2025, the lowest level of any survey year. Other objections are also declining: for instance, fewer and fewer people state that using a car-sharing service is 'too much hassle' or that they need their own car (too) often (both 7% in 2025). Being tied to fixed times when using car-sharing is no longer mentioned at all in 2025 as a reason for not using car-sharing.

Figure 44: Reasons for not using car-sharing (2025: n=9,543)



Source: Ministry of Infrastructure and Water Management – National Travel Survey 2025

Use of shared bikes

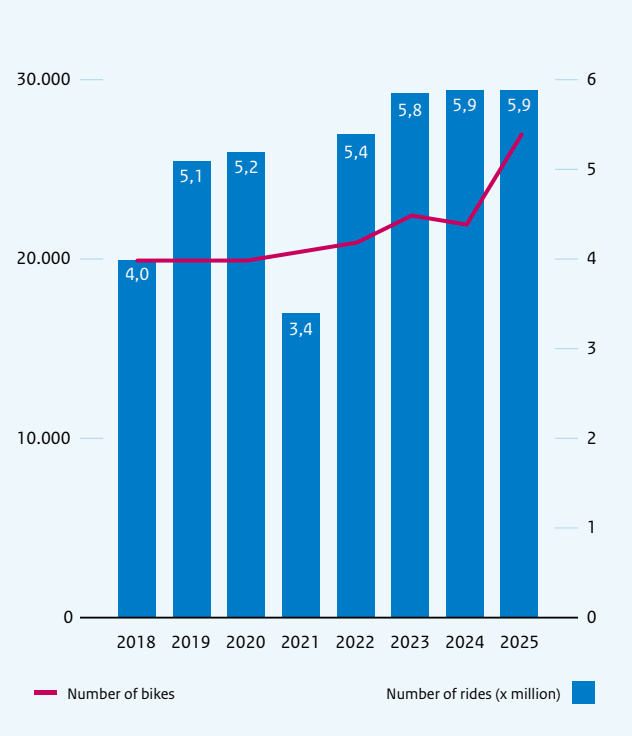
OV-fiets

This year too, the OV-fiets remains by far the largest provider of shared transport. The number has risen further to 26,744 OV-fiets bikes at 281 different locations. The number of rides made with the OV-fiets in 2025 stands at 5.9 million.

Shared bikes excluding the OV-fiets

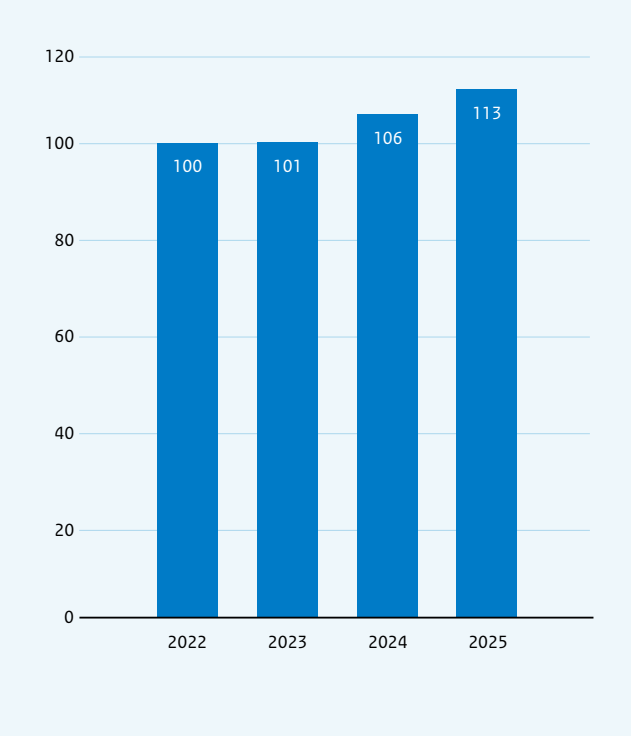
For shared bikes (excluding the OV-fiets), the intensity of rentals has been tracked in recent years. The number of shared bike rentals has risen in recent years, as shown by an index of registered shared bike rentals. The rental of shared bikes in 2025 rose by 13% compared with 2022. This is mainly explained by the increasing number of rentals per shared bike per day; compared with 2022, an average shared bicycle is now rented out almost 50% more often in a single day. The rise in rentals per shared bicycle may be linked to shared bicycle providers focusing on local authorities where a business case can be made and where usage is higher.

Figure 45: Total number of OV-fiets bikes and rides



Source: NS annual report 2025
Source: Statistics on availability of OV-fiets

Figure 46: Number of shared bike rentals, indexed



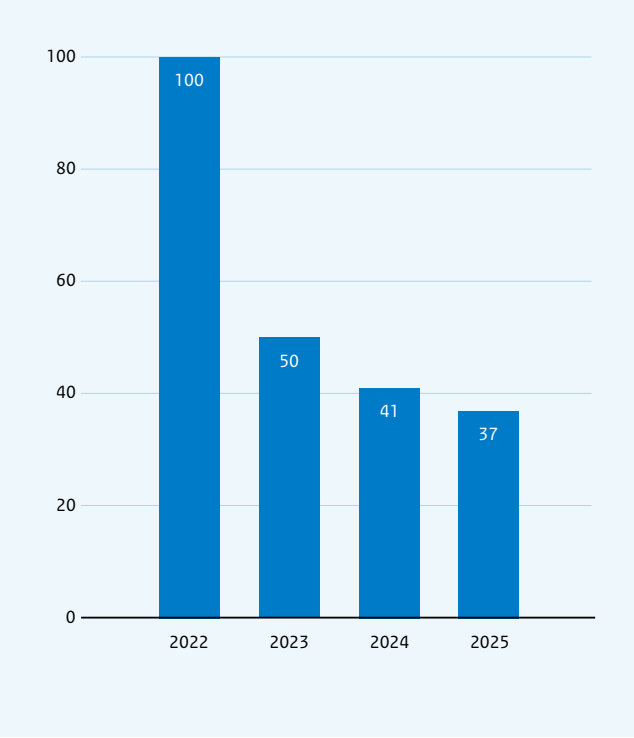
Source: CROW – State of Shared Mobility

Shared scooter use

The intensity of shared scooter rentals has also been tracked in recent years. The index of shared scooter rentals has fallen in recent years. In 2025, shared scooter rentals fell by 63% compared with 2022. This is mainly explained by the declining number of rentals per shared scooter per day; compared with 2022, an average shared scooter is now rented out on average one time fewer per day.

The number of rentals per shared scooter per day is still higher than that for shared bicycles; in 2025, a shared scooter is rented on average more than twice a day, whilst a shared bicycle is rented on average more than once.

Figure 47: Number of shared scooter rentals, indexed



Source: CROW – State of Shared Mobility

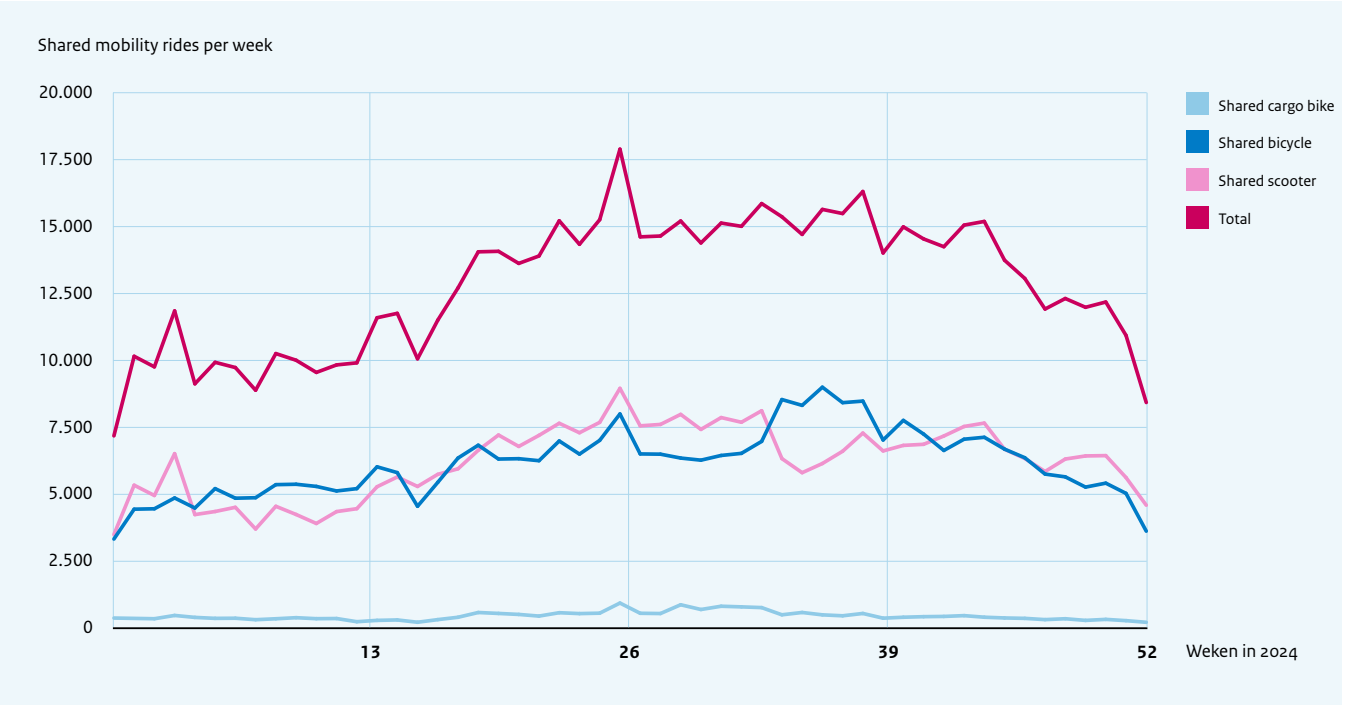
Use of shared mobility hubs

In 2024, 321 shared mobility hubs were monitored in various cities across the Netherlands. On average, a hub facilitates 43 shared mobility rides per week, excluding shared cars. The top ten per cent of hubs with the highest shared mobility use account for an average of 239 rides per week. The bottom ten per cent of hubs with the lowest shared mobility use have an average of 2 rides per week.

At large and extra-large hubs (capacity for 5 shared vehicles or more), shared mobility use at hubs is higher. Similarly, in neighbourhoods with low car ownership (<0.6 cars per household) and at hubs located less than 250 metres from public transport, hubs are used more frequently.

There is a clear seasonal effect on the use of shared mobility at the hubs, which is significantly higher in the summer months than in spring and winter. Activity at the hubs is relatively higher at the end of 2024 because at that point more hubs are active than at the start of the year (+51). No data are available on the use of shared cars at hubs.

Figure 48: Total use of shared mobility at hubs



Source: Monitoring and evaluation of shared mobility hubs 2024

Effects of car-sharing

The 2025 National Travel Survey shows that for just under half of the users of the various forms of car-sharing, car-sharing has no effect on car ownership (46%: same number of privately owned cars). Almost one in three (30%) say they have not (yet) bought a car of their own, and 11% have got rid of a car due to their use of a shared car. A proportion (14%) indicate they have purchased a car.

The 2025 National Travel Survey also shows that the use of a shared car had no effect on the number of trips made using other modes of transport for 64% to 71% of users. For the train, this effect also appears to be smaller than last year. In 2025, 17% of car-sharing users stated that they travelled less by train; in 2024, this figure was still 22%. The differences for the other modes of transport are small.

Figure 49: Effect of car-sharing use on car ownership (2025: n=1,330)

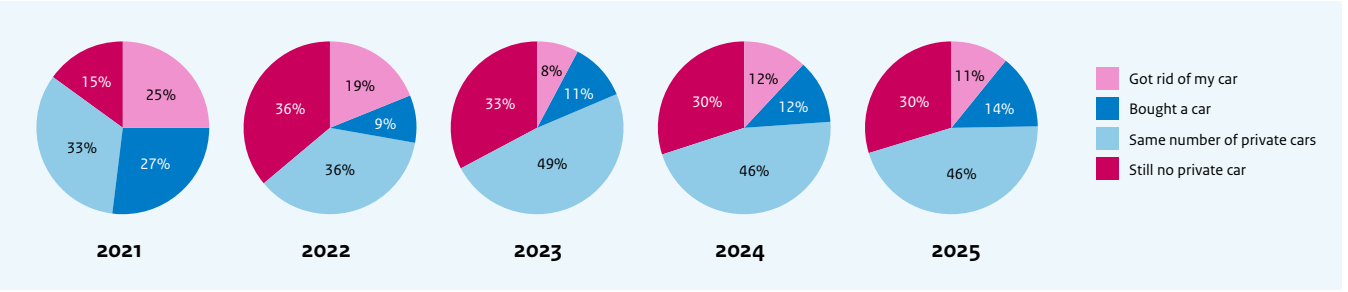
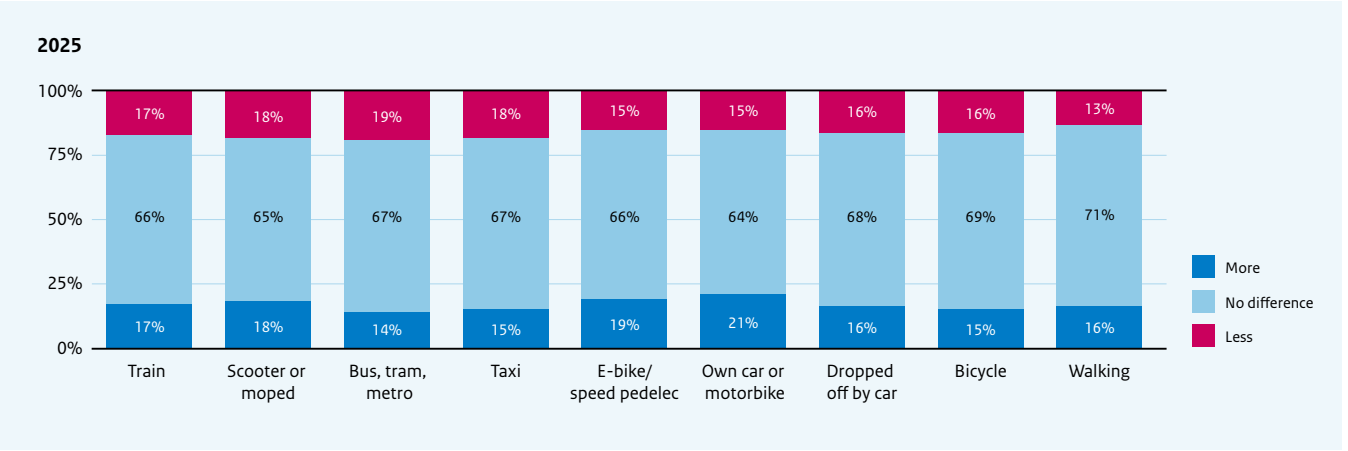


Figure 50: Effect of car-sharing use on use of other modes of transport



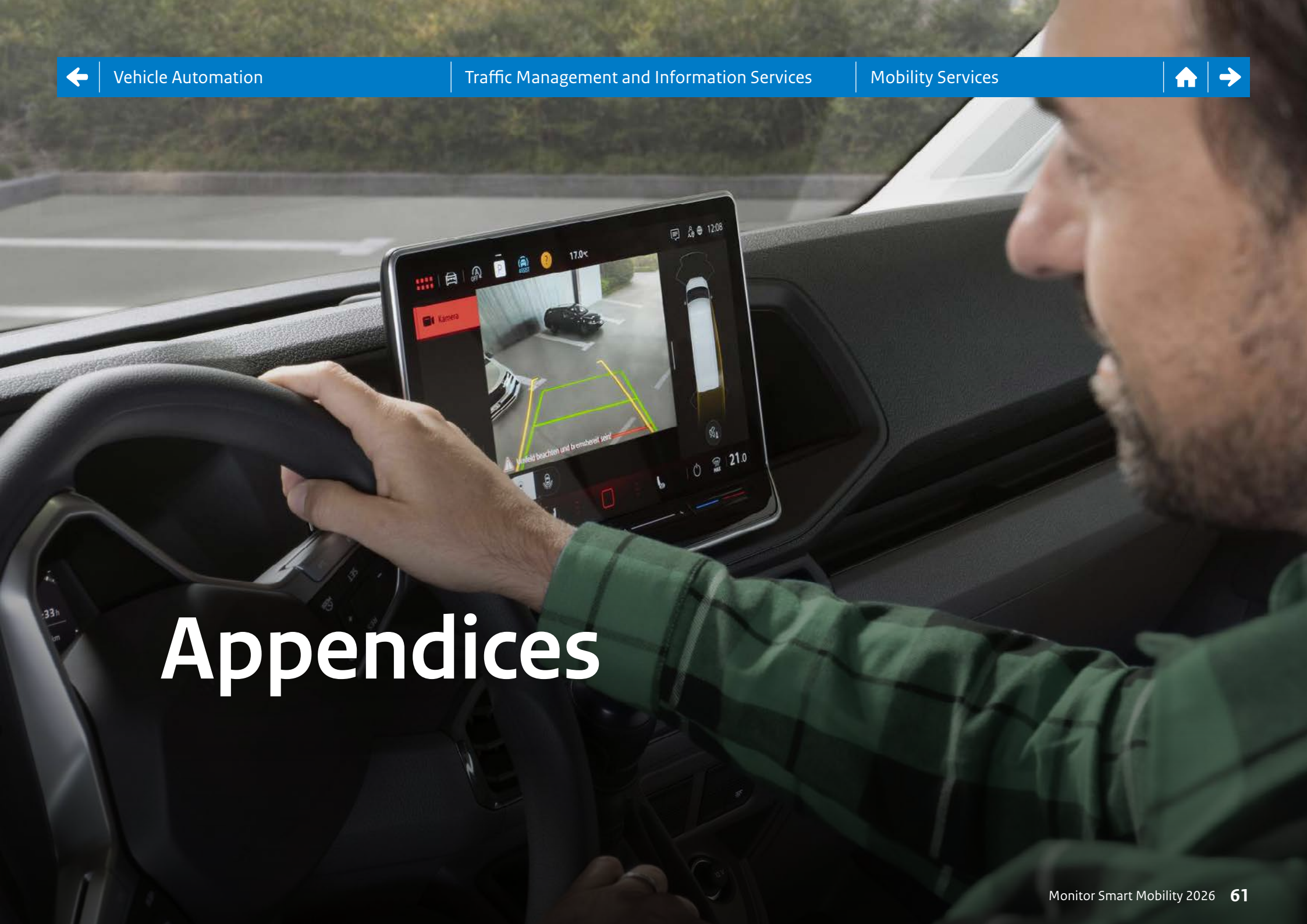
Source: Ministry of Infrastructure and Water Management – National Travel Survey 2025

Effect of shared mobility hubs

Shared mobility hubs are being implemented in an increasing number of local authorities and provinces, and the effects of these hubs are becoming increasingly clear. Shared mobility hubs are an effective measure against nuisance caused by shared vehicles in public spaces and are considered a prerequisite in many local authorities for the growth of shared mobility in urban areas.

Free-floating shared vehicles currently cause nuisance because they can be parked anywhere within a permitted area. Parking these shared vehicles at hubs improves their visibility and helps prevent clutter in the streetscape. Shared mobility hubs therefore contribute to improving the visibility of shared vehicles and increase public support for shared transport. In rural areas too, experience is increasingly being gained with shared mobility hub systems as a prerequisite for the introduction of shared mobility.

Source: Monitoring and evaluation of shared mobility hubs 2024



Appendices

Overview of services and systems in freight transport

(from: Digitalisation and automation in road freight transport: availability, use and effect)

Service/system	Brief description
ICT systems	Collective term for software and services used by transport companies in planning and operations. From office software to the on-board computer.
Navigation systems	A system that provides instructions (visually and/or by audibly) within the vehicle regarding the route to be followed to a destination. Information on, for example, road closures, accidents and other safety alerts is also included.
Apps for on-the-go charging	Apps that assist drivers with matters relating to the charging of electric lorries (such as locations and availability).
Access and restrictions: information provision and systems (Information services)	Depending on the type of vehicle and what it is carrying, there may be restrictions on where the vehicle is permitted to drive. This topic concerns both the provision of information and physical access.
iVRI's	Smart traffic lights.
Tyre pressure monitoring	Sensors in the road that allow lorry drivers to receive immediate information about their tyre pressure.

Service/system	Brief description
Hubs	Central (storage) location where goods are collected to be transported in consolidated loads. This is included in this overview with the addition of smart services and systems (e.g. to facilitate consolidation, an app to connect with others, availability and booking, etc.).
Lorry parking	Parking spaces for lorries with a smart component such as an app for booking and/or checking availability.
ADAS – Advanced Driver Assistance Systems	Advanced Driver Assistance Systems in various categories: Warning systems, Cruise Control & Traffic Jam Assist, Speed limiters, Eco-Driving, Other systems.
Autonomous driving	Vehicles capable of participating in traffic without human intervention.

Overview of driver assistance systems for lorries

(from: Monitoring road traffic-related information services and driver assistance systems in freight transport 2025)

The systems are the same as in 2022. The names and descriptions are in line with the ADAS Dictionary[1].
Where requirements are mentioned, these apply to *new* lorries..

System	Description
Lane Departure Warning system	Alerts the driver when the vehicle unintentionally leaves the lane without the indicator being used. ***Mandatory since November 2015***.
Lane Keeping Assist	Provides steering corrections and/or a warning when the vehicle unintentionally leaves the lane.
Blind Spot Warning	Alerts the driver with a light signal, usually in or near the wing mirror, if the vehicle is overtaking or being overtaken. ***Mandatory since July 2024***.
Driver Drowsiness and Attention Warning	Detects driver fatigue and issues a warning signal or intervenes by bringing the vehicle to a controlled stop. ***Mandatory since July 2024***.
Forward Collision Warning	Alerts the driver to imminent collisions.
Reversing Alarm[2]	Audible warning when reversing and parking sensors.
Advanced Driver Distraction Warning	Detects driver distraction and issues a warning. ***Mandatory since July 2024.***
(Standard) Cruise Control	Allows the vehicle's speed to be set, so that the accelerator pedal can be released.
Adaptive Cruise Control	Automatically maintains a distance from the vehicle ahead and reduces speed if it detects that the vehicle is getting too close to the vehicle in front.
Predictive cruise control[3]	Similar to Adaptive Cruise Control, but also takes into account approaching changes in gradient and bends.
Traffic Jam Assist	Assists the driver whilst driving in traffic by steering, accelerating, braking and keeping the vehicle in its lane.

System	Description
Intelligent Speed Assistance (ISA) (warning version)	Alerts the driver when the vehicle exceeds the speed limit. ***Verplicht sinds July 2024***.
Eco-Driving system[3]	A system that provides advice on economical driving, for example an indicator to suggest changing to a different gear.
Autonomous Emergency Braking (AEB)	Intervenes in the event of danger by bringing the vehicle to a standstill via an emergency stop. Automatically applies maximum braking force when the driver applies the brakes. ***Mandatory since November 2015***.
ESP (Elektronic Stability Program)	Regulates the power delivered to a wheel. ***Mandatory since November 2014***.
Trailer Stability Control	Stabilises the lorry and trailer/semi-trailer in potentially critical situations and applies preventive braking.
Tyre Pressure Monitoring	Monitors tyre pressure and alerts the driver if tyre pressure is abnormal. ***Mandatory since July 2024***.
Traffic Sign Recognition	Displays traffic signs on a screen inside the vehicle.
Reversing Camera	Provides a view of the area behind the vehicle using cameras or parking sensors. ***Mandatory since July 2024***.
Hill start assist	Helps prevent the vehicle from rolling backwards when starting uphill from a standstill.
Mirror cameras	Digital rear view mirrors with a monitor in the vehicle's cab.

1. https://www.adasalliantie.nl/nl/adas-alliantie-lanceert-adas-woordenboek-2025
2. Does not appear exactly in this form in the ADAS Dictionary.
3. Does not appear in the ADAS Dictionary.

Source references

Number	Source: vehicle automation	Year	Website
1	RWS – Research into driving task support systems (ownership, use, evaluation and level of knowledge)	2025	Link
2	RWS – Driving Task Automation Monitor (ownership, awareness, use and level of knowledge)	2025	Link
3	RWS – ADAS passenger car, van and lorry Monitor (online dashboard)	2026	Link
4	ADAS Alliance – ADAS dictionary	2025	Link
5	RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025	2025	Link
6	RWS – Digitalisation and automation in road freight transport: availability, use and effect	2025	Link
7	Framing automation of driving tasks: Effects on risk perception and consumers' understanding of different levels of vehicle automation across four European countries	2025	Link
8	SWOV – Who is driving? A study into mode confusion	2025	Link

Number	Source: traffic management and information services	Year	Website
9	RWS – Monitoring road traffic-related information services and driver assistance systems in freight transport 2025	2025	Link
10	RWS – Digitalisation and automation in road freight transport: availability, use and effect	2025	Link
11	RWS – NIS Network Management Information System	2026	On request

Number	Source: mobility services	Year	Website
12	Ministry of Infrastructure and Water Management – National Travel Survey 2025	2026	Link
13	CROW – Shared Mobility Dashboard	2026	Link
14	CROW – State of Shared Mobility	2025	Link
15	Monitoring and evaluation of shared mobility hubs 2024	2025	Link
16	Statistics on availability of OV-fiets	2026	Link
17	RVO – Sustainable Mobility Database	2026	Link
18	Website Natuurlijk!Deelmobiliteit	2026	Link
19	NS annual report 2025	2026	Link

List of abbreviations

Term	Afkorting
European Agreement concerning the International Carriage of Dangerous Goods by Road	ADR
Adaptive Cruise Control	ACC
Advanced Driver Assistance System	ADAS
Advanced Driver Distraction Warning	ADDW
Automated Driving Systems	ADS
Anti-lock Braking System	ABS
Assisted Parking	ABS
Autonomous Emergency Braking	AP
Autonomous Emergency Steering	AEB
Blind Spot Warning	AES
Business-to-consumer car-sharing	BSW
Cruise Control	B2C
Driver Control Assistance System	CC
Driver Drowsiness and Attention Warning	DCAS
Dynamic Route Information Panel	DDAW
Dynamic Traffic Management	DRIP
Electronic Stability Program	DVM
Electric Vehicle	ESP
Emergency Lane Keeping	EV
Fleet Management System	ELKS
Fleet Management System	FMS

Term	Afkorting
Forward Collision Warning	FCW
General Safety Regulation	GSR
Geographical Route Information Panel	GRIP
A hub is a transfer point for goods or passengers	HUB
Intelligent Speed Assistance	ISA
Smart Traffic Lights	iVRI
Knowledge Institute for Mobility Policy	KiM
Knowledge Institute for Infrastructure, Public Space, Traffic, Transport, Work and Safety	CROW
National Travel Survey	LRO
Lane Centring	LC
Lane Departure Warning	LDW
Lane Keep Assist	LKA
Ministry of Infrastructure and Water Management	Min I&W
Mobility as a Service	MaaS
Motorway Traffic Management	MTM
National Road Traffic Data Portal	NDW
National Mobility Access Point	NTM
Original Equipment Manufacturer	OEM
Peer-to-Peer car-sharing	P2P
Rear Collision Warning	RCW
Reversing Camera	RC

Term	Afkorting
Remote Control Parking	RCP
The Directorate-General for Public Works and Water Management (Rijkswaterstaat)	RWS
Society of Automotive Engineers levels of driving task automation	SAE-level
Speed Control Function	SCF
Speed Limit Information Function	SLIF
Foundation for Scientific Research on Road Safety	SWOV
On-ramp Dosing Installation	TDI
Traffic Sign Recognition	TSR
Transport Management System	TMS
Urban Data Access Platform	UDAP
Traffic Management	VM
Traffic Management for Route Advice	VM-IVRA
Weigh-in-Motion	WIM
Zero Emission	ZE

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