

**Road user
behaviour
observatory
(Metropolitan France)**
Results for the year 2018

November 2019

Summary

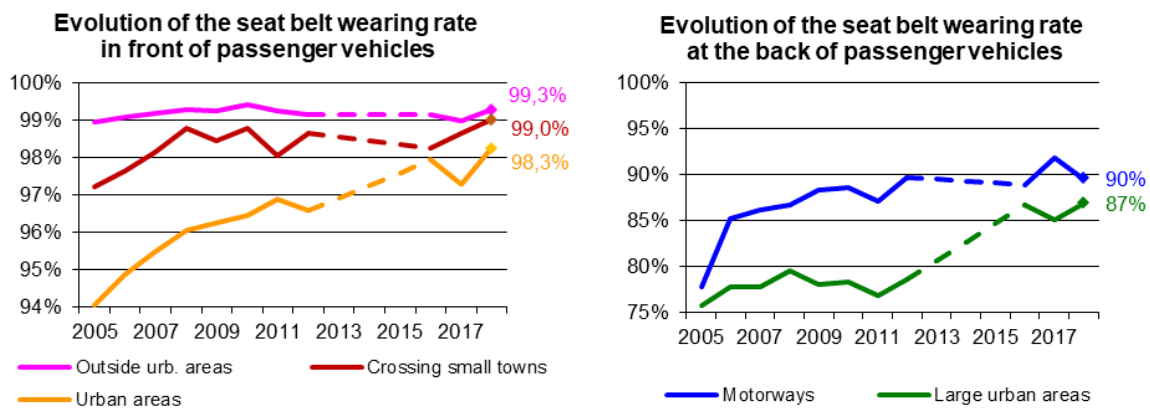
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Synthesis

Behavioural observations resumed in 2016 after three years of interruption; the methodology now includes new categories of users (wearing seat belts in front of light commercial vehicles, wearing helmets by cyclists in urban areas). The main conclusions for 2018 are as follows:

The rate of seat belt use by passenger car occupants is broadly stable compared to the previous year; the only significant variations observed are a 2 point decrease (from 92% to 90%) in rear seat belt use on connecting motorways, and an increase in overall rear seat belt use in large urban areas (+2 points). Outside urban areas, the front rate is around 99.3% at the front and 90% at the rear on motorways; in large urban areas the values are 98.3% and 87% respectively. The comparison between working days and weekends does not show any significant difference except for the wearing of seat belts at the rear on motorways, where it is 10 points lower for adults and 14 points lower for children at weekends and almost identical at the front in large urban areas.

For light commercial vehicle users, the rate of seatbelt use observed at the front is 95.1% outside urban areas and 91% in urban areas, values significantly lower than those observed for passenger vehicles.



Helmets are almost always worn by motorcycle users in metropolitan France, both inside and outside urban areas. In 2018, only 5 out of 503 users observed in urban areas did not wear it. **Helmet use by cyclists**, observed in urban areas since 2016, is 22% on working days in 2018, up from 2016. It remains stable overall at weekends, and stands at 27% in 2018.

Observations of **telephone use** seem to show an overall decrease in 2018, exclusively driven by a decrease in the use of the earphone. The rate of use by motorists varies from 3.2% to 4.1% depending on the type of road network. The proportion of motorists with the phone in their hands but not on the double ear in large cities. The use of telephones or earphones is 5.9% and 5.2% respectively outside urban areas for drivers of light commercial vehicles and heavy goods vehicles, and 8% for drivers of light commercial vehicles in urban areas. Finally, 5.7% of cyclists observed in large urban areas wore a handset, headset or headset.

The observations also count the occupants of the vehicles, thus making it possible to estimate an **average occupancy rate**. For passenger vehicles, it is in the order of 1.4 to 1.6 depending on the road networks (stronger on motorways), slightly higher than in 2017. It is higher on weekends than on working days on any network.

Introduction

Since the 1980s, ONISR has had speed measurements and observations of road user behaviour carried out by a service provider at a number of observation points in the metropolitan road network. For technical reasons, this system was interrupted between 2013 and 2015. A replacement system was implemented during this period for speed measurements, but no observations could be made regarding behaviour. Behavioural observations resumed in 2016 after a change in the panel of observation points and minor changes in methodology.

This summary note of the results of the 2018 observations deals successively with the use of seat belts, the use of helmets by two-wheelers, the use of telephones while driving and the vehicle occupancy rate.

Appendix 1 summarizes by network type the number of vehicles observed in each category.

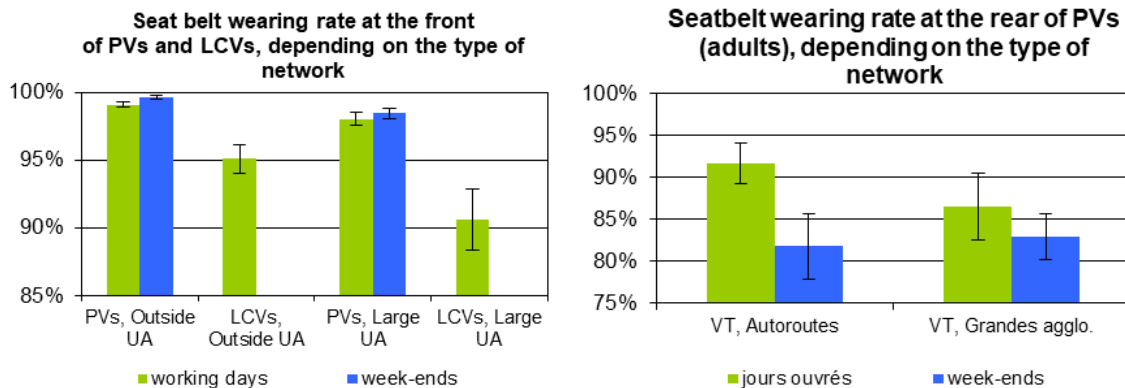
Appendix 2 presents in detail the methodology used for behavioural observations and indicates the changes made in relation to the system in force until 2012.

1. Wearing a seat belt

Observations of seat belt use in front of vehicles are carried out on all types of road networks (see details in Annex 2). They cover passenger vehicles (PVs) and, since 2016, light commercial vehicles (LCVs). The results for the different types of networks outside urban areas are very similar. As a result, the observations were aggregated into three groups: networks outside urban areas, crossings of small urban areas, and large urban areas.

For practical reasons (need to observe vehicles at very low speeds), observations of seat belt use at the back of vehicles are only carried out on two types of networks: motorway toll gates and large urban areas. They only cover passenger vehicles, and distinguish between adults and children among rear passengers.

All observations, both front and rear, are made during the day.



The results are presented by network type according to the grouping used for the results relating to front seat belt use:

- networks outside urban areas (motorways only for wearing seat belts at the rear),
- crossings of small towns (only for front seatbelt use),
- large agglomerations.

For each type of network we present successively:

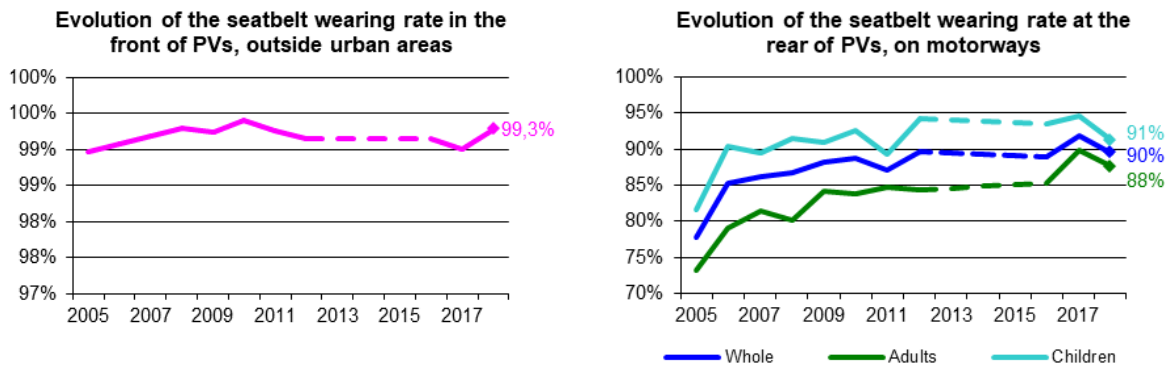
- the evolution of the seat belt wearing rate over the period 2005-2018, for PV occupants;
- a comparison of the wearing rate observed on working days and weekends in 2018 for PV occupants;
- for LCV occupants, the rate of front seat belt use observed since 2016 (first year integrating these vehicles).

The number of SUVs observed at weekends is too low to allow a comparison between working days and weekends.

Each of the rates mentioned is accompanied by the value of the associated confidence interval in 2018.

1.1. Networks outside urban areas

PV occupants, 2005-2018 evolution



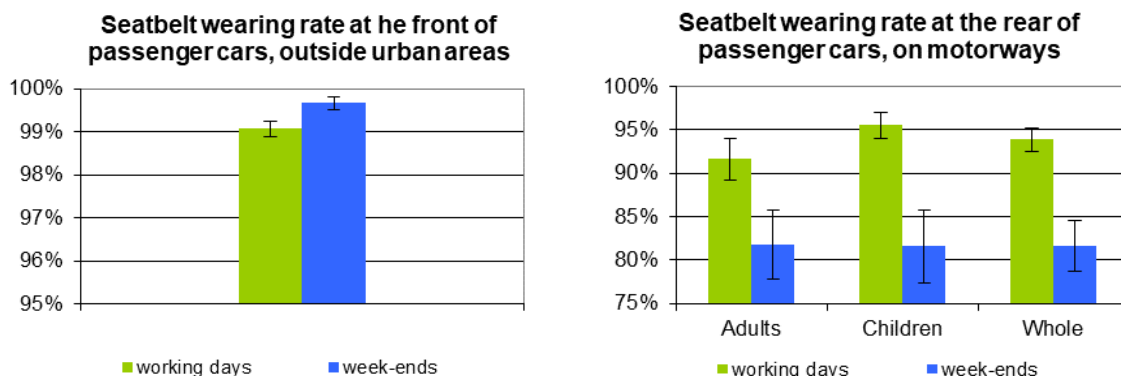
The 95% confidence interval associated with the calculated seat belt wearing rates for 2018 is:

± 0.13% for front seat belt use,

± 1.4% for rear seat belt use on motorways (± 2.2% for adults, ± 1.7% for children).

In view of these intervals, the very slightly higher rate observed in 2018 for front seat belt use outside urban areas remains marginal compared to 2017. **For rear seat belt use on motorways**, the trend is not very significant for adults (-2 points, which partially offset last year's increase), but seems to be clearly **downward for children** (-4 points).

Comparison of working days and weekends (PV occupants, 2018)



The lines at the top of each bar represent the 95% confidence intervals.

The rate of seat belt use is similar on working days and on weekends at the front. On the other hand, there is a clear difference between working days and weekends for **adults and children installed at the rear on motorways (94% on working days vs. 82% on weekends)**.

Thus, it should be noted that the trend is reversed for the wearing of rear seat belts on motorways between working days and weekends compared to last year.

LCV occupants (front seatbelt)

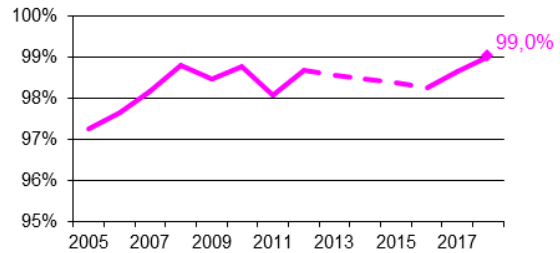
The rate of front seat belt use for occupants of LCVs is 95.1% ± 1.0% in 2018. The slight decrease from 2017 is not statistically significant.

1.2. Crossing through small towns and cities

PV occupants, 2005-2018 evolution

The 95% confidence interval associated with the front seat belt wearing rate calculated for 2018 is $\pm 0.4\%$. Given this interval, the evolution of this rate since 2012 is not statistically significant.

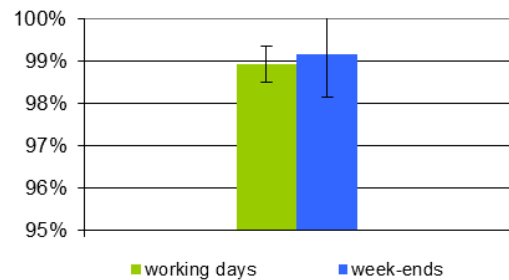
Evolution of the seatbelt wearing rate in front of passenger cars, crossing small towns



Comparison of working days and weekends (PV occupants, 2018)

The rate of front seat belt use observed in small city crossings is identical on working days and at weekends.

Seatbelt wearing rate in front of passenger cars, crossing small towns

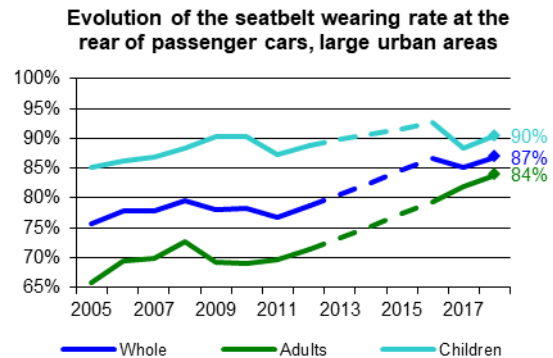
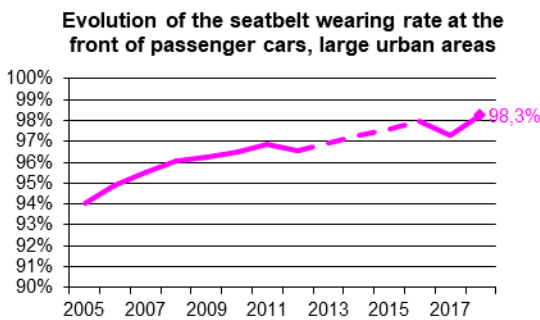


LCV occupants (front seatbelt)

The rate of front seat belt use for occupants of LCVs is 91 per cent ± 2.3 per cent. It shows a decrease (-4.1 points) compared to 2017, but this remains statistically insignificant.

1.3. Large urban areas

PV occupants, 2005-2018 evolution



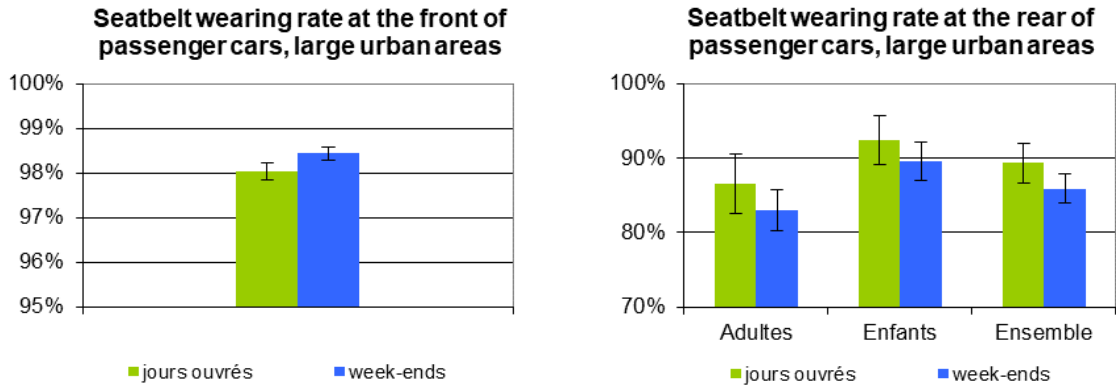
The 95% confidence interval associated with the calculated seat belt wearing rates for 2018 is:

$\pm 0.3\%$ for front seat belt use,

$\pm 1.6\%$ for rear seat belt use ($\pm 2.3\%$ for adults, $\pm 2.0\%$ for children).

Given these intervals, the slight increase in all rates is **not significantly different from 2017 (about 1 to 2 points)**.

Seat belt wearing rates in urban areas are significantly lower than those on networks outside urban areas. Approximately 2.7% of front and 13% of rear occupants do not wear seat belts (16% for adults in the rear).

Comparison of working days and weekends (PV occupants, 2018)

The rate of seat belt use in front of vehicles is slightly higher (+0.4 points) on weekends than on working days. At the rear, on the other hand, the port is better respected on working days than at weekends, but the difference (from 2 to 4 points depending on the category of passengers) remains relative given the 95% confidence interval.

LCV occupants (front seatbelt)

The rate of front seat belt use for LCV occupants in large urban areas is $91\% \pm 2.3\%$ in 2018. It is slightly higher (+1 point) than in 2017, given the 95% confidence interval, this evolution is statistically insignificant.

This rate remains much lower than that associated with front occupants of passenger vehicles (see graph p5).

2. Helmet use by two-wheelers

2.1. MTW helmet wearing

As the number of users observed is relatively small (249 outside urban areas and 503 in large urban areas), the helmet wearing rates calculated are indicative. In general, the absence of wearing a helmet has become an exception in metropolitan France.

Outside urban areas, as in 2017, the 2018 observations do not show any differences between working days and weekends, as was observed in 2010-2012 (but the low number of employees observed means that this observation should be put into perspective).

Rate of helmet use by MTW users - Outside urban areas

	working days	week-ends
2010	205 out of 215 (95 %)	185 out of 209 (89 %)
2011	180 out of 189 (95 %)	139 out of 156 (89 %)
2012	160 out of 161 (99 %)	122 out of 131 (93 %)
2016	120 out of 122 (98 %)	73 out of 74 (99 %)
2017	167 out of 168 (99 %)	64 out of 64 (100 %)
2018	132 out of 132 (100 %)	117 out of 117 (100 %)

In large urban areas, observations from 2016 onwards have been rebalanced between working days and weekends, which now makes it possible to express a result for weekends. There are no significant differences from working days.

Rate of helmet use by MTW users - Large urban areas

	working days	week-ends
2010	500 out of 508 (98 %)	n.d.
2011	547 out of 552 (99 %)	n.d.
2012	535 out of 537 (100 %)	n.d.
2016	240 out of 246 (98 %)	158 out of 160 (99 %)
2017	242 out of 248 (98 %)	177 out of 179 (99 %)
2018	347 out of 349 (99 %)	151 out of 154 (98 %)

2.2. Cyclist helmet wearing

Observation of helmet use by cyclists was added to the collection market starting in 2016, in major urban areas only. Again, the relatively small numbers of cyclists observed give the calculated helmet wearing rates a simple guide value.

Helmet use seems to increase during the week between 2016 and 2018, and remain stable during the weekend but at a higher rate.

Rate of helmet use by cyclists – Large urban areas

	working days	week-ends
2016	35 out of 202 (17 %)	35 out of 126 (28 %)
2017	36 out of 187 (19 %)	60 out of 207 (29 %)
2018	58 out of 263 (22 %)	62 out of 232 (27 %)

3. Using the phone while driving

The observation of telephone use by drivers on road networks was introduced in 2009 in the specifications of the surveys used to feed the behaviour observatory. Investigators placed at the edge of traffic lanes classify vehicles into four categories according to whether the driver:

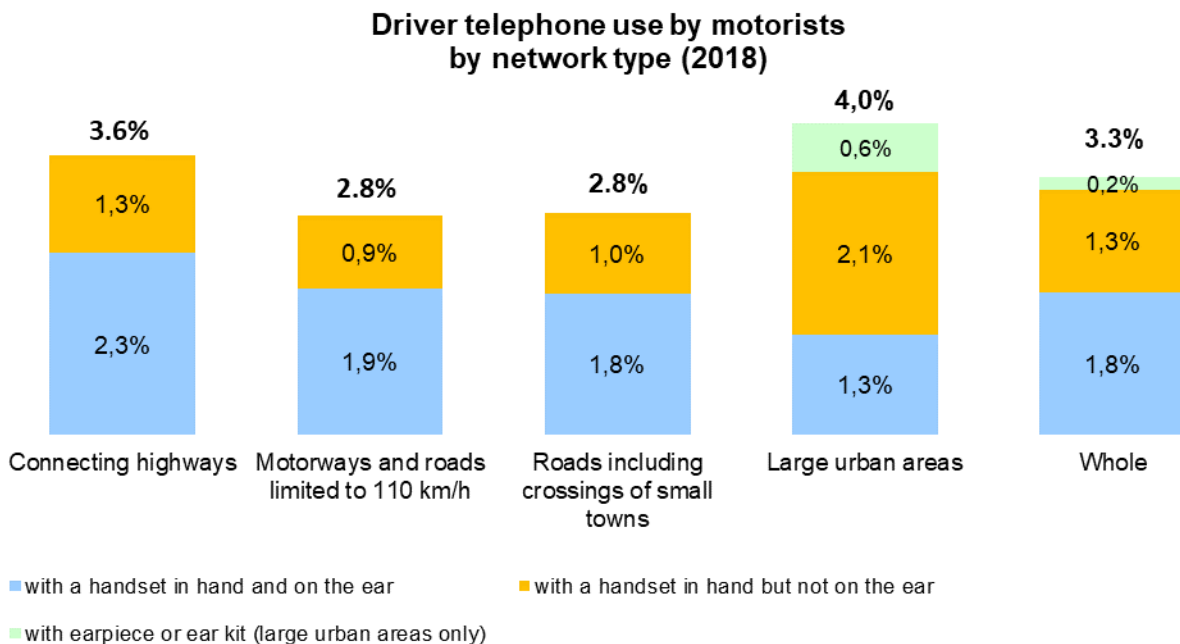
- has a phone in his hand and on his ear,
- has a phone in his hand but not on his ear,
- wears an earpiece, earpiece or headset (in large urban areas only),
- has none of this.

The number of vehicles observed is shown in Appendix 1, and the observation methodology is detailed in Appendix 2.

3.1. Driver telephone use by motorists by network type

Driver telephone use by motorists by network type is detailed in the following figure.

These observations seem to show an overall decrease in 2018, driven exclusively by a decrease in the use of the earphone. The share of **motorists with the telephone held in their hands but not on the ear doubles** in large urban areas (2.1% in 2018 compared to 1.1% in 2017); on the other hand, it is significantly reduced among commercial vehicle users (2% compared to almost 6% last year) who seem to use the hands-free system more, but with headset.



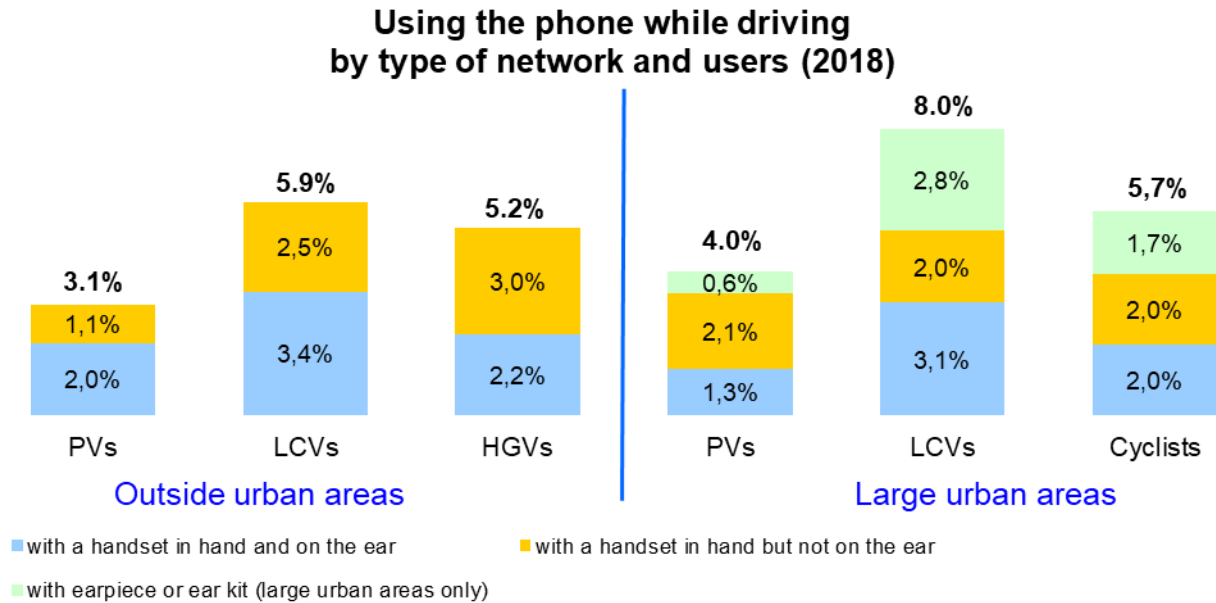
The 95% confidence interval associated with the overall telephone use rate is:

- ±0.9% for Connecting Motorways,
- ±0.6% for Motorways and roads limited to 110 km/h,
- ±0.4% for Roads,
- ±0.6% for large urban areas
- ±0.3% for the rate calculated on all networks.

The 2017 observations noted a higher rate of telephone use on connecting highways. In 2018 the trend is downwards except in the major cities.

3.2. Use of the telephone while driving by type of user (all networks combined)

The following figure details the rates of telephone use while driving for the four categories of users: drivers of passenger vehicles (PVs), light commercial vehicles (LCVs), heavy goods vehicles (HGVs) and cyclists (these are only observed in large urban areas).



The 95% confidence interval associated with the overall telephone use rate is:

- outside urban areas, by $\pm 0.3\%$ for PVs, $\pm 1.3\%$ for LCVs, and $\pm 1.1\%$ for HGVs;
- in large urban areas, by $\pm 0.6\%$ for PVs, $\pm 2.8\%$ for LCVs, $\pm 2.1\%$ for cyclists.

For drivers of light commercial vehicles, the telephone usage rate is higher in large urban areas than on networks outside urban areas. The number of heavy goods vehicles observed in large urban areas is too small to produce a relevant value for them.

The use of the telephone while driving is much more frequent for "professional" drivers than for drivers of passenger vehicles. Among light truck drivers using a telephone, the proportion of those using the headset or earphone seems to have doubled compared to 2017.

Cyclists were first observed in 2016, the observations of this third year confirm the **very high rate of use in large urban areas** already recorded over the previous two years.

3.3. 2009-2018 evolution by type of user

The modification of the panel between 2012 and 2016, and in particular the reinforcement of observation points in large urban areas, may have led to an artificial increase in the rate of telephone use calculated on all networks. In addition, the overall rate calculated now includes the wearing of an earpiece in large urban areas. The cumulative effect of these two changes was estimated at an increase of +0.2 points for motorists and +0.3 points for light truck drivers, and a decrease of 0.2 points for heavy truck drivers.

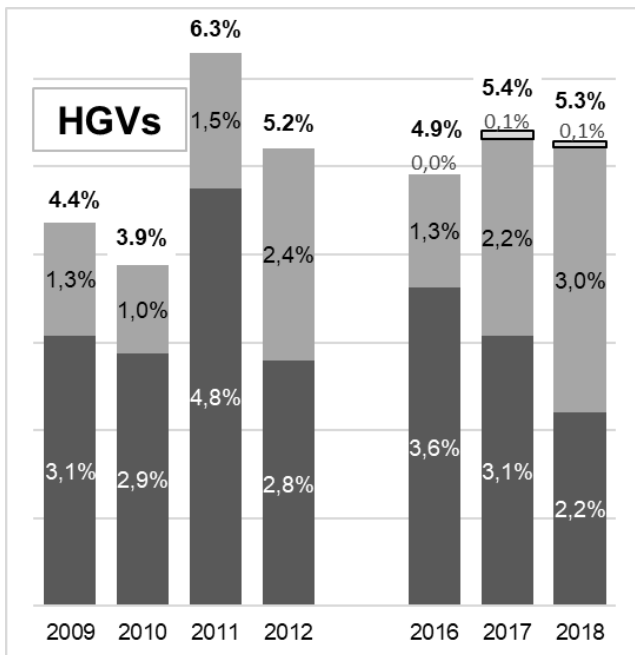
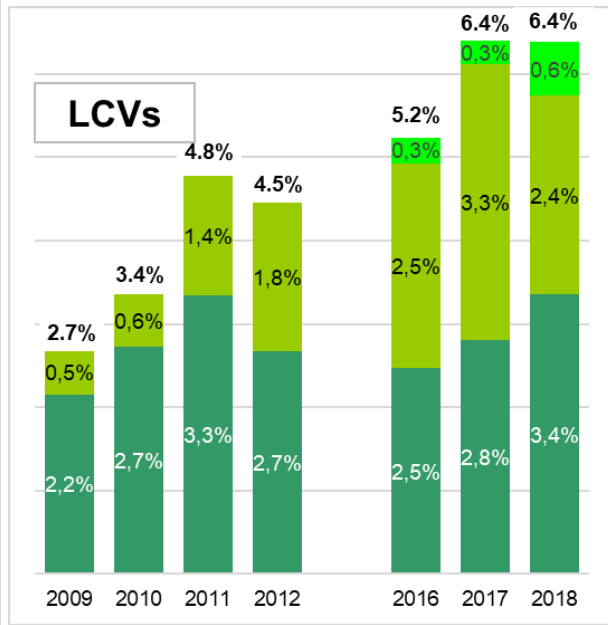
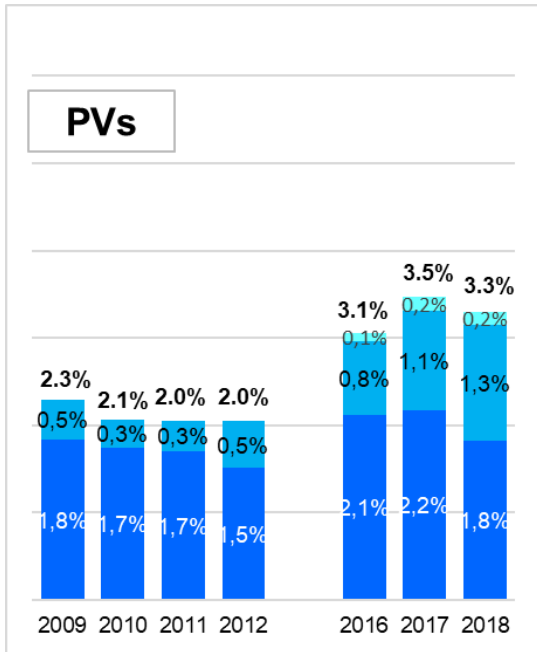
The overall rate of telephone use by motorists and light commercial vehicle drivers increases significantly between 2012 and 2017, while for 2018 it is stable or even slightly decreasing for PVs. For heavy goods vehicles, on the other hand, the trends are not statistically significant given the number of vehicles observed.

Evolution of telephone use at the wheel according to the type of users

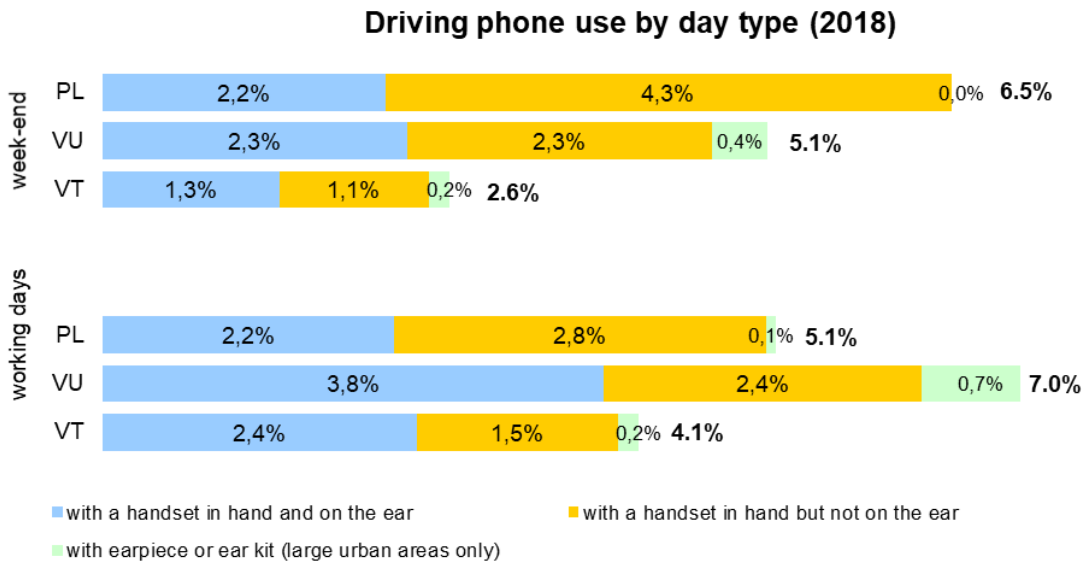
Light colours represent the proportion of drivers wearing an **earpiece** or ear kit (observed from 2016 onwards, only in large urban areas),

the intermediate colours, the proportion of conductors with **handset in hand but not on the ear**,

the dark colours, the proportion of conductors with **handset in hand and on the ear**.



3.4. Use of the telephone while driving by type of user and by day

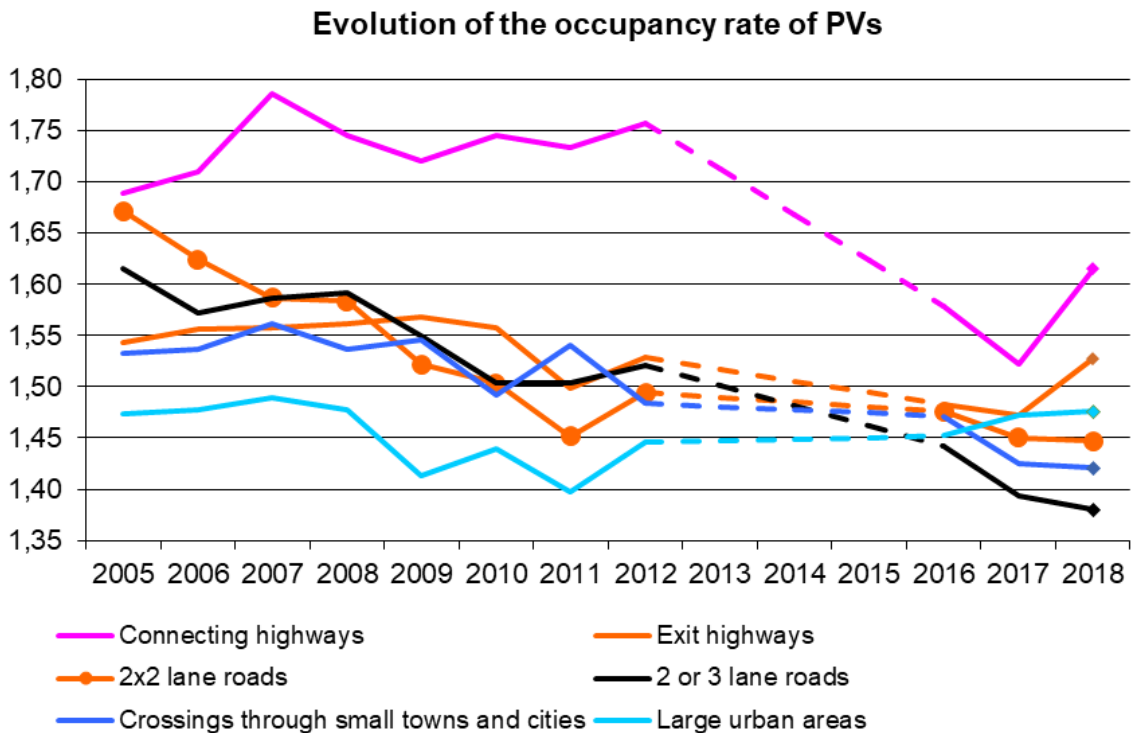


Driver telephone use by motorists and light truck drivers is more frequent on working days than on weekends. On the other hand, for heavy goods vehicles, the low number of drivers observed at weekends does not allow us to consider that the difference between working days and weekends is statistically significant.

4. The vehicle occupancy rate

4.1. Occupancy rate of passenger vehicles

The following figure shows the evolution observed since 2005 of the passenger vehicle occupancy rate by network type.

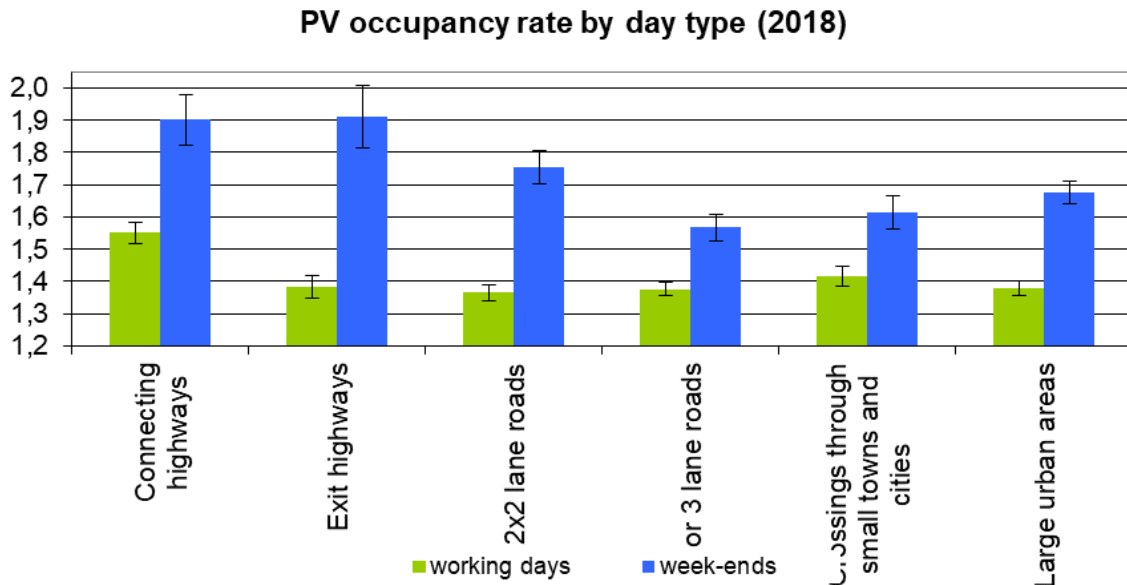


For the 2018 observations, the 95% confidence interval associated with the occupancy rate varies from ± 0.019 to ± 0.035 depending on the type of network.

The occupancy rates observed on the various networks are between 1.38 and 1.61, generally slightly lower than in 2012. However, there is an increase for connecting motorways and alternate motorways, while on other networks there is stagnation.

4.2. Passenger vehicles - Comparison of working days and weekends

The following figure compares, for each type of network, the passenger car occupancy rate observed in working days (Monday to Friday) and weekends. The lines at the top of each bar represent the 95% confidence intervals.



The occupancy rate observed at weekends is systematically higher than that observed on working days, respectively by 0.19 and 0.20 on two- or three-lane roads and crossings of small towns, and by around 0.3 to 0.53 on other networks. For all types of networks, this difference is statistically significant.

4.3. Occupancy rate of light commercial vehicles

Since 2016, the observation of the occupancy rate, coupled with that of the wearing of seat belts at the front, has also included light commercial vehicles. As the number of LCVs observed on weekends is very low, we only publish results relating to working days here.

Occupancy rate of LCVs at the front – working days

	Connecting highways	Exit highways	2x2 lane roads	2 or 3 lane roads	Crossings through small towns and cities	Large urban areas
2016	1.39	1.50	1.35	1.35	1.37	1.31
2017	1.36	1.42	1.39	1.38	1.36	1.30
2018	1,41	1,27	1,27	1,37	1,40	1,35

The width of the 95% confidence interval associated with the occupancy rate is ± 0.06 to ± 0.9 depending on the type of network. There is therefore no significant difference between the different types of networks, nor any significant change between 2016 and 2018.

5. Appendix 1: Number of vehicles observed

Wearing a seat belt at the front, wearing a helmet and occupancy rate:

Road type	Passenger vehicles	Light commercial vehicles	MTWs	Bicycles
Outside urban areas	11 126	1 185	194	---
Roads crossing small towns and cities	2 388	217		
Large urban areas	4 785	497	441	474
Whole	18 299	1 899	635	474

Wearing a seat belt at the back:

Road type	Passenger vehicles
Motorways	1 245
Large urban areas	1 359
Whole	2 604

Use of the telephone while driving:

Road type	Passenger vehicles	Light commercial vehicles	HGVs	Bicycles
Autoroutes de liaison	1 586	157	369	---
Autoroutes et routes limitées à 110 km/h	5 687	594	931	---
Routes y compris traversées de petites agglomérations	6 439	448	178	---
Grandes agglomérations	3 880	352	17	460
Ensemble	15 231	1 551	1 495	460

6. Appendix 2: Road User Behaviour Observatory Methodology

Observations relating to user behaviour are made by a service provider within the framework of a contract that also includes the measurements used to feed the speed observatory. For technical reasons, this system was interrupted between 2013 and 2015. During this period, speed measurements were carried out by Cerema (Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement) on a sample of representative points of the observatory's panel; however, no observations could be made regarding behaviour.

This annex presents the current system and indicates the changes made in relation to the system in force until 2012.

6.1. Common modalities and panel of observation points

All observations are made during the day from locations on the traffic lanes.

The following table presents the number of observation points by network type and observed behaviour type. It also gives in italics and brackets the number of points in force in the previous enactment when it was different.

Road type	Front seat belt and helmet use, occupancy rate	Seatbelt wearing rate at the rear	Phone
Connecting highways	21	---	4
Exit highways	12	---	4 (3)
2x2 lane roads	36 (25)	---	4 (3)
2 or 3 lane roads	50 (98)	---	12 (25)
Roads crossing small town and cities	25 (49)	---	5
Large urban areas*	44	44	14 (6)
Toll barriers on motorways	---	11	---
TOTAL	188 (249)	55	43 (46)

* Observations are conducted in seven major urban areas: Paris, Lille, Metz, Nantes, Lyon, Toulouse, Avignon.

For observations of front seat belt use, the panel was reduced on 2 or 3-lane roads outside urban areas as well as crossings of small urban areas, both types of networks being previously based on a very large number of points. This modification is linked to the evolution of the speed observatory's panel of measurement points (the points are identical except for motorway networks and large urban areas).

For driving telephone observations, the panel was rebalanced to strengthen observations in large urban areas.

In addition, some observation points have been moved, for reasons of investigators' safety or induced by the requirements of speed measurements often carried out at the same locations.

Unlike speed measurements, where the characteristics of each observation point can influence the measured value, it is reasonable to consider that the observed behaviours (wearing a seat belt, helmet, telephone use) do not depend, on a given type of road network, on the particularities of each observation point. The only factors that can influence the outcome of the observations are the type of road network, vehicle category, time of day and type of day (working day, weekend). Consequently, it can be considered that the results of behavioural observation results are absolutely representative when these factors are taken into account,

and that this representativeness is not modified by a modification of the panel of observation points.

The results of observations made from 2016 onwards are therefore directly comparable to those obtained until 2012, and it is not necessary, as in the case of speed measurements, to implement an approach aimed at correcting a possible effect of the modification of the panel of observation points.

6.2. Seat belt use in front seats of vehicles, helmet use for MTW users and vehicle occupancy rate

Arrangements in place (since 2016)

Each of the panel's points is observed once a year; the duration of each observation is 10 minutes per lane on highways and divided roads, and 30 minutes per point on other networks.

In large urban areas, half of the observations are made on working days (Monday to Friday), a quarter on Saturdays and a quarter on Sundays, so as to allow a robust comparison between working day and weekend behaviour. On the other networks, observations are distributed evenly over the 7 days of the week.

Observations are made on passenger vehicles (PVs), light commercial vehicles (LCVs) and motorized two-wheelers (MTWs); bicycles are also observed in large urban areas.

For the use of seat belts, each front seat occupant is informed in three possible ways:

- wear the belt,
- doesn't wear the belt,
- the port is undetermined.

The seat belt wearing rate is calculated by excluding occupants whose wearing is undetermined.

The results for the different types of networks outside urban areas are very similar. Consequently, the observations are aggregated into three groups: networks outside urban areas, crossings of small urban areas, and large urban areas. The seat belt wearing rate associated with each group is calculated pro rata to the number of observations without weighting between network types. It is accompanied by a confidence interval that makes it possible to assess whether the changes observed are statistically significant.

Previous system (until 2012)

In the scheme in force until 2012, the modalities listed below were different:

- the frequency of observations was once a year in large agglomerations (unchanged) and three times a year on other networks;
- the distribution of observations between working days and weekends was unbalanced in large urban areas: their planning led in practice to almost all observations being made on working days; no observations were made on Saturdays, and observations made on Sundays were concentrated in a single urban area. As a result, the rate of front seat belt use observed in large urban areas was representative only on working days;
- the observation of light commercial vehicles, as well as bicycles in large urban areas, was added in 2016.

The other observation methods have not been modified.

In previous practice, the rate of use of the out-of-city seat belt was calculated by a weighted average of the rates observed on each of the types of network concerned, the weighting adopted being intended to reflect their relative weight in terms of kilometres travelled. This principle has been abandoned and the 2005-2012 results have been recalculated according to the principles now in force. This may result in slight deviations from previously published values for these years.

6.3. Wearing seat belts in the rear seats of vehicles

Arrangements in place (since 2016)

For practical reasons (need to observe vehicles at very low speeds), only two types of networks are concerned: large urban areas and motorway toll plazas. Each of the panel's points is observed once a year, for a period of one hour in large cities and two hours at toll plazas.

Half of the observations are divided into working days (Monday to Friday), a quarter on Saturdays and a quarter on Sundays.

Only passenger vehicles are observed.

The characterization of rear seat occupants and the calculation of the seat belt wearing rate follow the same principles as for front seat observations. In addition, a specific distinction is made between children under the age of ten (by visual assessment by interviewers).

Previous system (until 2012)

Seat belt use at the rear has been observed since 2005. In the scheme in force until 2012, the modalities listed below were different:

- the frequency of observations was three times a year;
- the duration of each observation was 30 minutes in large urban areas (unchanged duration on toll gates);
- Observation planning in large urban areas was subject to the same biases as for front seat belt observations (see above). For the same reasons, the rate of rear seat belt use observed in large urban areas was therefore only representative on working days.

6.4. Using the phone while driving

Arrangements in place (since 2016)

Each of the panel's points is observed twice a year, once on working days (Monday to Friday) and once at weekends; within each network type, weekend observations are distributed approximately equally between Saturdays and Sundays. Each observation lasts 30 minutes.

The observations cover drivers of passenger vehicles (PVs), light commercial vehicles (LCVs), heavy goods vehicles (HGVs) and cyclists in large urban areas.

Each of the observed drivers is informed in four possible ways:

- he has a handset in his hand and on his ear,
- he has a handset in his hand but not on his ear,
- wears an earpiece, earpiece or headset (in large urban areas only),
- he has none of that.

The exploitations lead to very similar results for some types of networks. Consequently, the observations are aggregated into four groups: connecting motorways, motorways and roads limited to 110 km/h, roads including those crossing small conurbations, large conurbations. The telephone usage rate associated with each group is calculated pro rata to the number of unweighted observations between network types. It is accompanied by a confidence interval that makes it possible to assess whether the changes observed are statistically significant.

Previous system (until 2012)

Telephone use while driving has been observed since 2009. The system in force until 2012 was very similar, were simply added in 2016:

- observation of cyclists in large urban areas,
- observing the wearing of an earpiece, ear kit or headset (in large urban areas only).

In previous practice, the types of networks were grouped differently when the results were used. The 2009-2012 results have been recalculated according to the principles now in effect. This may result in slight deviations from previously published values for these years.

The modification of the panel between 2012 and 2016, and in particular the reinforcement of observation points in large urban areas, may have led to an artificial increase in the rate of telephone use calculated on all networks. The effect induced by this reinforcement was estimated at an increase of +0.1 point for PVs and +0.2 point for LCVs, and a decrease of -0.2 point for HGVs.