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**Summary:**

# Trends in the risk of apprehension for traffic offences. An update

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*The report is an update of a study made in 2010 regarding the risk of apprehension for traffic offences in Norway. Six offences are included in the study: Speeding, non-use of seatbelts, drink-driving, driving under the influence of drugs or medications, violating hours of service and rest regulations, and using a hand-held mobile phone while driving. All these offences have been reduced in recent years. The risk of apprehension has been reduced for speeding and hours of service and rest regulations. For the other offences included in the study, the risk of apprehension has increased. Drivers overestimate the risk of apprehension for speeding. The number of speed cameras is grossly overestimated. Vehicle technology offers the most promising measures for reducing traffic offences. However, the introduction of this technology may continue to be slow.*

This report is an update of a study reported in 2010 regarding the risk of apprehension for traffic offences in Norway. Knowledge is updated to the year 2013 or the most recent year for which information is available concerning the prevalence of traffic offences. The report describes violation rates, risk of apprehension, perceived risk of apprehension, and measures that may reduce traffic offences.

## The rate of offences

For most traffic offences, nothing is known about how common they are. The study is limited to those offences for which it has been possible to estimate their rate of occurrence. These offences are:

- Speeding
- Drink-driving
- Non-use of seatbelts
- Driving under the influence of drugs or medications
- Violations of hours of service and rest regulations
- Use of hand-held mobile phones while driving

All these offences have been reduced recently. In 2004-06, 49 % of all vehicle kilometres were driven at speeds above speed limits. In 2012-13, the rate of speeding had been reduced to 44.5 % of vehicle kilometres.

Drink-driving has been reduced from 0.37 % of vehicle kilometres in 2005-06 to 0.27 % of vehicle kilometres in 2008-09.

Seatbelt wearing among car drivers has increased from 89.8 % in 2004-06 to 95.9 % in 2012-13.

Driving under the influence of drugs or medications has been reduced from 3.5 % of vehicle kilometres in 2005-06 to 2.0 % of vehicle kilometres in 2008-09.

Violations of hours of service and rest have been reduced from 12.0 % of heavy vehicle kilometres of travel in 2006-08 to 8.6 % of heavy vehicle kilometres of travel in 2012-13.

Finally, driving while using a hand-held mobile phone has been reduced from 2.5 % of vehicle kilometres in 2008 to 0.9 % of vehicle kilometres in 2013.

## **Risk of apprehension**

The risk of apprehension has been reduced for speeding and for violations of hours of service and rest regulations. For the other traffic offences, the risk of apprehension has increased in recent years, although the increase is not statistically significant for drink-driving.

Per million vehicle kilometre driven while committing a violation (i.e. kilometres driven while speeding, not wearing a seatbelt, etc.), the changes in the risk of apprehension found were as follows:

- Speeding: 12.3 per million vehicle kilometres in 2004-06 and 10.6 per million vehicle kilometres in 2012-13.
- Drink-driving: 45.4 per million vehicle kilometres in 2005-06 and 59.4 per million vehicle kilometres in 2008-09.
- Non-use of seatbelts: 13.0 per million vehicle kilometres in 2004-06 and 18.7 per million vehicle kilometres in 2012-13.
- Driving under the influence of drugs or medications: 3.5 per million vehicle kilometres in 2005-06 and 7.0 per million vehicle kilometres in 2008-09.
- Hours of service and rest: 1.5 per million vehicle kilometres in 2006-08 and 1.1 per million vehicle kilometres in 2012-13.
- Use of hand-held phones: 13.5 per million vehicle kilometres in 2008 and 48.7 per million vehicle kilometres in 2013.

## **Subjective risk of apprehension**

A sample of 1,000 licence holders (car) were interviewed about their perception of the risk of apprehension for traffic offences. A large majority, 77 %, indicated that they had not been stopped by the police last year. When asked about the risk of apprehension when (a) Driving more than 10 kilometres above the speed limit, (b) Drink-driving with a BAC above 0.02 %, (c) Not wearing seatbelts, a majority of drivers were able to correctly identify which of these violations had the highest risk of apprehension (the correct answer is speeding).

Drivers overestimate the risk of apprehension for speeding. They were asked to imagine a driver who always violated speed limits by 15 km/h and state how long they thought it would take before the driver was caught by the police. A scale ranging from 0 (the driver is never caught) to 1 (the driver is caught immediately or at least within one year) was constructed. The mean score of drivers on this scale was 0.341. Based on the actual risk of apprehension, the score is 0.130.

Drivers also overestimate the number of speed cameras. The mean number stated was 6,940. The actual number of speed cameras is 343. If the median number is used,

rather than the mean, it is 700, which is still about twice as many as the actual number of speed cameras.

## **Measures to reduce traffic violations or increase the risk of apprehension**

Several measures can be taken to reduce traffic offences or increase the risk of apprehension. Cost-benefit analyses indicate that the most efficient measures that can be taken in the short term are:

- Installing feedback signs for speed. Benefits exceed costs when traffic volume is more than 5,000 vehicles per day.
- Increasing conventional police enforcement. Benefits exceed costs up to about three times the current level of enforcement.
- Increasing the use of section control. Benefits exceed costs when traffic volume is more than about 3,000 vehicles per day.