Adoption of the alcohol interlock and its effects in professional transport

Anne Vehmas, Ari Sirkiä, Teemu Kinnunen

Trafi Publications 5/2012

TraFi

Trafi Publications 5/2012

Adoption of the alcohol interlock and its effects in professional transport

Anne Vehmas, Ari Sirkiä, Teemu Kinnunen, Ramboll Finland Oy

Finnish Transport Safety Agency (Trafi)
Helsinki 2012

ISBN 978-952-5893-38-0 (Trafi Publications 5/2012)

FOREWORD

In accordance with Finland's strategy for intelligent transport (Ministry of Transport and Communications' programmes and strategies 5/2009), the implementation and effects of alcohol interlocks in professional transportation were studied during the work. The steering group was represented by the following parties:

- Trafi; Marita Löytty (chair) and Ari Herrala (m1, m2)/Sampsa Lindberg (m3)
- National Police Board; Timo Ajaste (m1)/Heikki Ihalainen (m2, m3)
- Ministry for Transport and Communications; Martina Törnkvist (m1)/Janne Mänttäri (m2)/Kimmo Kiiski (m3)
- Liikenneturva (Central Organisation for Traffic Safety); Ari-Pekka Elovaara (m2)
- Ramboll Finland Oy; Anne Vehmas and Ari Sirkiä

Additionally, representatives from transport organisations and importers of alcohol interlocks were invited to the workshop. The views of professional drivers driving vehicles equipped with an alcohol interlock were surveyed. The representatives of the Data Protection Ombudsman and the occupational safety and health authority, and Liza Jakobsson, responsible for alcohol interlock matters in the Swedish professional transport industry, were interviewed by telephone.

The work was carried out at Ramboll Finland Oy. Project Manager Anne Vehmas was responsible for the study and reporting. Ari Sirkiä acted as the expert on freight traffic, and Teemu Kinnunen as the expert on accident analysis. Seela Sinisalo analysed the survey results and reported on the situation concerning alcohol interlocks abroad. Johann Nyberg interviewed Jakobsson. Minna Koukkula prepared the accident analyses.

In Helsinki, 17. February 2012

Sami Mynttinen

Director of Department
Finnish Transport Safety Agency (Trafi)

ABSTRACT

The study investigated the implementation and effects of alcohol interlocks in professional transportation.

No statistics exist on the drink-driving of professional drivers. In an analysis of stop checks by Uudenmaa Police, 0.23% of all breathalysed drivers were found to be over the legal limit. The share of professional drivers out of all drink-drivers was 8.6%. Between 2001 and 2010, a total of 625 heavy traffic drink-driving accidents occurred on the highways. Although the share of drink-driving accidents out of all heavy-traffic accidents is small (2.5%), the consequences of these accidents are often fatal. Professional drivers should act in an exemplary manner in traffic in every way, and no drink-driving should occur at all.

Since 2008, a person guilty of drink-driving has had the option of choosing a conditional right to drive a vehicle fitted with an alcohol interlock instead of being issued with a driving ban. The number of alcohol interlocks related to a conditional right to drive has thereafter grown steadily. The total number of alcohol interlocks in use is now 760. The recommendation given in 2006 on the use of alcohol interlocks during school transport did not lead to the desired effect of a voluntary increase in the use of alcohol interlocks. In August 2011, the Act on the Use of Alcohol Interlocks in School and Day Care Transportation came into effect. The number of alcohol interlocks in use in professional transportation is now estimated at around 8,000.

In Sweden, the use of alcohol interlocks started in 1999, and it has increased rapidly without any statutory obligations. There are now around 75,000 alcohol interlocks in use in Swedish professional transport. Strong investments in the voluntary use of alcohol interlocks in professional transport have been made, for example through campaigns, and government organisations require the use of alcohol interlocks when arranging competitive tendering on transportation. The use of alcohol interlocks in professional transport has also advanced on a voluntary basis in Norway. In France, alcohol interlocks were made mandatory for school transport vehicles in the autumn of 2009.

In autumn 2011, the experiences of professional drivers on alcohol interlocks were surveyed. The most positive thing about the use of alcohol interlocks was considered to be the image of a responsible driver/company, and the emphasis of road safety and security. The most negative thing was considered to be the time and trouble spent using the device and the embarrassment of using the device in public places. The majority (71%) of respondents had a positive view on the obligatory use of alcohol interlocks in school and day care transportation, but considered the view of the rest of the work community (41% positive) to be clearly more negative than their own.

Most (61%) of the respondents considered alcohol interlocks to be useful in professional transport, while one third (32%) considered it unnecessary. Alcohol interlocks were considered to improve the public image of the employer/company. The majority (81%) of respondents would be prepared to extend the obligation to use alcohol interlocks to all transportation covered by a traffic licence. Many considered that this would correct the current Act on School Transportation, which is considered unfair, as only certain types of

transportation are under the obligation to use alcohol interlocks. Over a half (59%) would install an alcohol interlock on all new motor vehicles, and one-half (50%) on all motor vehicles.

In order to increase the comprehensiveness of alcohol interlock coverage of professional transportation, a decision was made to examine transportation covered by professional qualification requirements. In accordance with Finland's strategy for intelligent transport (Ministry of Transport and Communications 2009), international cooperation for making alcohol interlocks a standard accessory in all new vehicles will continue in Finland. Based on this report, it would be necessary to begin taking measures to increase the voluntary use of alcohol interlocks and drafting of a law decreeing an obligation to use alcohol interlocks in all transportation covered by professional qualification requirements.

In order to increase voluntary use, transportation ordered by the government and municipalities should require the use of alcohol interlocks. Information should be provided on alcohol interlocks, and campaigns arranged to emphasise them as both voluntary image boosts for companies and increased transport security for both charterers and clients. Communications should especially emphasise the utilisation of the Internet and social media.

When new legislation on the use of alcohol interlocks in transportation covered by professional qualification requirements is being prepared, the following issues should be taken into consideration:

- In order for the alcohol interlock to prevent drink-driving, the driver should breathalyse him or herself at the beginning of every work shift and every time they change vehicles. The employer can be obligated to provide instructions and supervise this. In order to facilitate supervision, acceptable alcohol interlocks should have a storage feature.
- A positive feature for alcohol interlocks would be an easy-to-use reset function, the use of which would result in the alcohol interlock requiring a new breathalyser test. The reset is required when the driver changes; it is also required for the alcohol interlock's functionality monitoring carried out by the Police.
- It would be necessary to legislate the driver's obligation to use an alcohol interlock. When the log information of alcohol interlocks is handled, the requirements of the personal data legislation must be taken into consideration. Workplace rules, cooperation procedures and the driver's employment contract must provide information on the alcohol interlock policy.
- In order to ensure regional fairness, the alcohol interlock installation and service network should also be reasonably comprehensive in Lapland and Eastern Finland.
- The Police monitor the use and functionality in connection with their other monitoring duties. The employer can be obligated to collect and maintain a breathalysing test log and keep it for the purpose of inspections by the authorities. The charterer should also ensure that the alcohol interlock is used in accordance with the contract.
- Alcohol interlock service companies would be obligated to report any suspected abuse they notice to the vehicle's owner and the Police or the Finnish Transport Safety Agency.
- It could be necessary to sanction the incomplete or incorrect use of an alcohol interlock in a purposeful way.

Index

1 Background and objectives

The reduction of drink-driving is an essential part of traffic safety work. A drunken driver is involved in roughly one in four fatal road traffic accidents. 82 people died and 1,017 people were injured on average in incidents involving drink-driving in the first decade of the 21st century. In recent years, reducing the number of accidents involving intoxicants has not been as successful as reducing the number of other traffic accidents, so the proportion of accidents involving alcohol has increased (Finnish Government 2010). Even though the number of drink-driving accidents is small in proportion to all accidents involving heavy vehicles, the results are often fatal, especially in the largest group, head-on collisions. In addition, professional drivers should conduct themselves in an exemplary manner in traffic, so there should be no cases of drink-driving at all.

According to the Vision Zero traffic safety initiative adopted in the EU, the designer of the road network is primarily responsible for road users' safety. Each road user is, for his/her part, responsible for observing the laws. It is thus the responsibility of the traffic system's designer to prevent cases of drink-driving (ETSC 2009).

This principle of responsibility works both ways in commercial transport. First, the driver him/herself is responsible to the authorities and his/her employer. Second, the authorities can hold the employer responsible for an employee's (here: a driver's) actions. Drink-drivers pose a hazard to themselves and to others, so stricter measures, such as use of the alcohol interlock, are necessary (ETSC 2009).

The alcohol interlock is a device that prevents the ignition of the vehicle if the driver's exhalation contains too much alcohol. In Finland, alcohol interlocks that comply with the European alcohol interlock standards (EN 504361 or EN 50436-2) and the technical requirements for devices installed in vehicles (Act 1109/2010) are approved for use. The standards require that an alcohol interlock must detect attempts at diversion or manipulation (e.g. use of an artifical breath sample or filtering alcohol from the exhalation) and stop the vehicle's engine from starting.

There are positive experiences of the use of the alcohol interlock in preventing drink-driving. The National Strategy for Intelligent Transport defines the target level relating to alcohol interlocks: "An alcohol interlock is obligatory in chartered school and day care transport. The adoption and effects of the system in transport services, scheduled services and commercial freight traffic financed by public funds will be investigated. International cooperation to make the alcohol interlock standard equipment in all new vehicles will be continued."

The Act on the Use of Alcohol Interlocks in School and Day Care Transport that entered into force in August 2011 has made the alcohol interlock a current topic, both in the media and amongst professional drivers. This survey investigates, in accordance with the National Strategy for Intelligent Transport, the adoption and effects of the alcohol interlock in transport services, scheduled services and commercial freight traffic financed by public funds. This definition

of transport services proved to be so problematic, however, that an investigation into the adoption and effects of the alcohol interlock in transport subject to a professional competence requirement was opted for in the survey.

The research questions used in the survey were:

- How many incidents of drink-driving and accidents involving drink-driving occur amongst professional drivers? What are they like?
- What is the current situation of alcohol interlock use in Finland and Europe, especially Sweden?
- What are professional drivers' user experiences of the alcohol interlock like?
    - Is there a difference between the views of drivers who have used the alcohol interlock voluntarily for a longer time, and those who have only adopted it after the entry into force of the School Transport Act?
- How to define transport services to expand the obligation of alcohol interlock use?
    - What are transport services, scheduled service traffic and commercial freight traffic financed by public funds like? How many vehicles and drivers are there?
    - What are transport services requiring a transport licence or professional competence like?
- What kind of effects would expanding the obligation to use an alcohol interlock to cover transport subject to a professional competence requirement have?
    - How should the processes of various parties be developed, so that the Act providing for the obligation to use an alcohol interlock could enter into force in 2014 at the latest?
    - What development needs does this entail for competitive tendering for transport?
    - What are the cost effects of the expansion (procurement, installation and calibration)? Which parties will be liable for the costs?
    - What legislative requirements does the expansion entail?

2 Research methods and research data

The current situation of alcohol interlock use was investigated through analysis of the literature and by conducting interviews. Data on the number of drink-driving incidents was collected from the research publication and newspaper accounts. Data on accidents involving drink-driving was gained by analysing accident statistics. Experiences on the alcohol interlock and the new Act relating to school and day care transport were gathered using an Internet questionnaire for professional drivers and through a workshop. The limits, effects and prerequisites of expanding the obligation to use an alcohol interlock were considered through knowledge work among the authors and in the guidance group.

2.1 Literature survey and interview

Data on alcohol interlock use was collected from earlier research and surveys for the situation report on alcohol interlock use. In addition to the situation in Finland, the use of the alcohol interlock elsewhere in Europe, and particularly in Sweden, Denmark and France, was examined briefly.

Alcohol interlock use in Sweden was, in addition to literature searches, clarified further by a telephone interview. Liza Jakobsson, who is responsible for matters relating to the alcohol interlock in commercial traffic in Sweden's Trafikverket, was interviewed on 23 September 2011.

2.2 Drink-driving and accidents

There are no statistics on the drink-driving of professional drivers, or professional drivers engaged in school and day care transport in particular. Data on the drink-driving incidents of professional drivers was collected from news in the Helsingin Sanomat and Ilta-Sanomat newspapers and with the help of the Uusimaa Police's Profile of a Drink-Driver report, based on stop check results.

Professional drivers' accidents involving drink-driving were examined from police records of drink-driving accidents involving heavy vehicles or passenger cars or vans in professional use. The accident database maintained by Statistics Finland was made available by the Finnish Transport Agency. It contains data on accidents on public roads that lead to injuries in 2001–2010.

2.3 Questionnaire

To gain knowledge of alcohol interlock user experiences, an Internet questionnaire for taxi, bus and freight traffic drivers and entrepreneurs, whose vehicles are equipped with an alcohol interlock, was carried out. The aim was to include drivers who had operated alcolock-equipped vehicles for shorter and longer periods in different parts of Finland.

To reach drivers and entrepreneurs, help was requested from the Finnish Taxi Owners Federation, the Finnish Bus and Coach Association and Finnish Transport and Logistics. The Finnish Taxi Owners Federation supplied the contact information of 40 taxi broker companies, which were requested to either provide email addresses for their drivers or to inform their drivers of the questionnaire.

Finnish Transport and Logistics provided contact information for 23 bus companies and two transport companies using alcohol interlocks. These were also requested to give email addresses for drivers, disseminate the link among their drivers or inform the drivers of the questionnaire. In addition, the following companies that participated in the 2007–2008 voluntary alcohol interlock trial promised to answer the questionnaire: Kajon Oy (taxis), Pohjolan Liikenne Oy (buses) and KiitoSimeon Oy and Itella Logistics Oy (freight traffic). Thus, long-term alcohol interlock users were also reached.

The drivers' email addresses (216) were received from a taxi broker company. Others received the request to answer the questonnaire via a taxi broker company. The information has been passed on by many different methods: some said they would relay the message directly to the taxis' display terminals or send it by email to the drivers, and others announced they would notify drivers of the questionnaire on their noticeboard, intranet or in a meeting.

In the questionnaire, questions were asked of the drivers' background, their experiences of alcohol interlock use and opinions on the alcohol interlock, alcohol in traffic and traffic safety in general. The form was mainly in the form of multiple choice questions, but there was also an option for the drivers to give their own answers, and there were some freeform questions (Annex 1).

Notification messages about the questionnaire were sent on 14 September 2011 to taxi broker companies, bus companies, transport companies and those drivers whose email addresses were known. 73 answers were already received on the first day. After that, the answers trickled in at a steady pace each day. The questionnaire was closed for analysis of the results on 14 October 2011, so it remained open for one month. 246 answers were received in total.

Respondents

The majority (87%) of respondents were male. Respondents were mainly 35–54 years of age. Two per cent of respondents were under 25 or over 65. Close to a fifth of respondents lived alone, slightly over a third lived in a relationship and 44% had children.

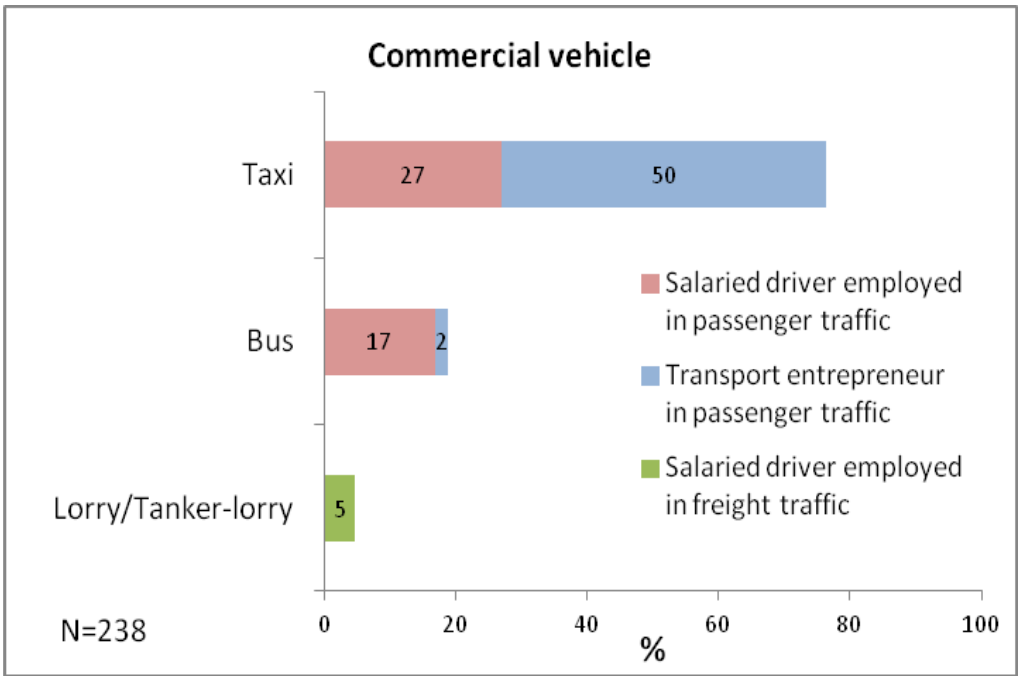


Figure 1. Respondents' working vehicle and position (salaried driver/entrepreneur in passenger or freight traffic). In addition, a few respondents were employed in supervision tasks in freight traffic.

Most of the respondents drove taxis (77%). Close to a fifth were bus drivers and 12 drove a lorry, tanker-lorry or a combination of the two (Figure 1). Approximately half of respondents were salaried employees, the other half being entrepreneurs. The number of kilometres respondents drove annually varied between 10,000 and 200,000 (Annex 2). On average, they drive 75,000 km a year. Respondents working all over Finland answered the questionnaire (Annex 2). The most common regions of work were Pirkanmaa, Pohjois-Pohjanmaa and Uusimaa. Kainuu and Pohjois-Savo had the fewest respondents.

Over one-third of drivers had only used an alcohol interlock for a couple of months, and most had only used it for less than a year (figure 2). There were, however, 15 respondents who had used an alcohol interlock for more than three years. For examination of the results, three classes of alcohol interlock use experience were created by combining the lowest and highest classes. Most (76%) respondents operate a vehicle equipped with an alcohol interlock nearly every day (Annex 2). For the rest, use varies between once a week and a few times per year.

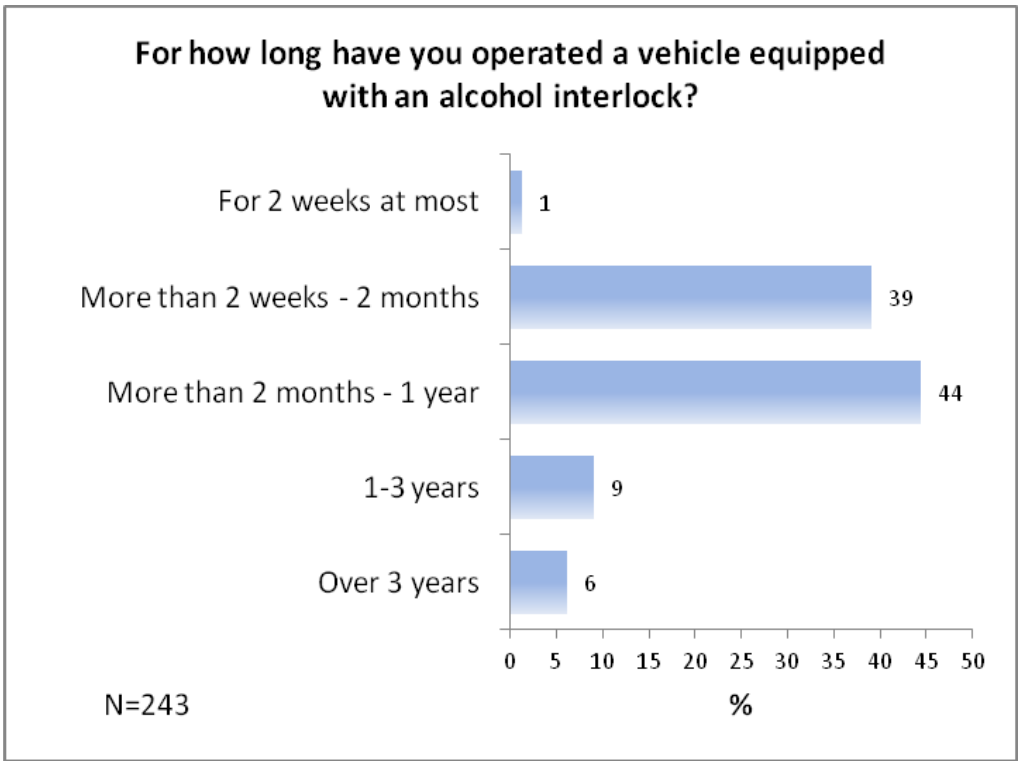


Figure 2. Experience of alcohol interlock use

The majority of respondents use alcohol a few times per month or once a week, but drink enough to become drunk more seldom than that (Annex 2). 6% of respondents do not use alcohol at all, but somewhat over one-fifth drink several times a week or daily. Three respondents said they get drunk every day, but their freeform answers also contained infantile exaggeration. A new, three-tier sum variable was created of alcohol use and getting drunk for examination. In it, 24% of respondents rarely or never drink, 59% drink regularly but do not get drunk often, and 16% drink several times a week and get drunk often.

Respondents mostly agreed with the other statements about traffic safety, but the lowering of the drink-driving limit divided opinions strongly, and approximately half of all respondents do not tolerate others' mistakes without getting annoyed (figure 3).

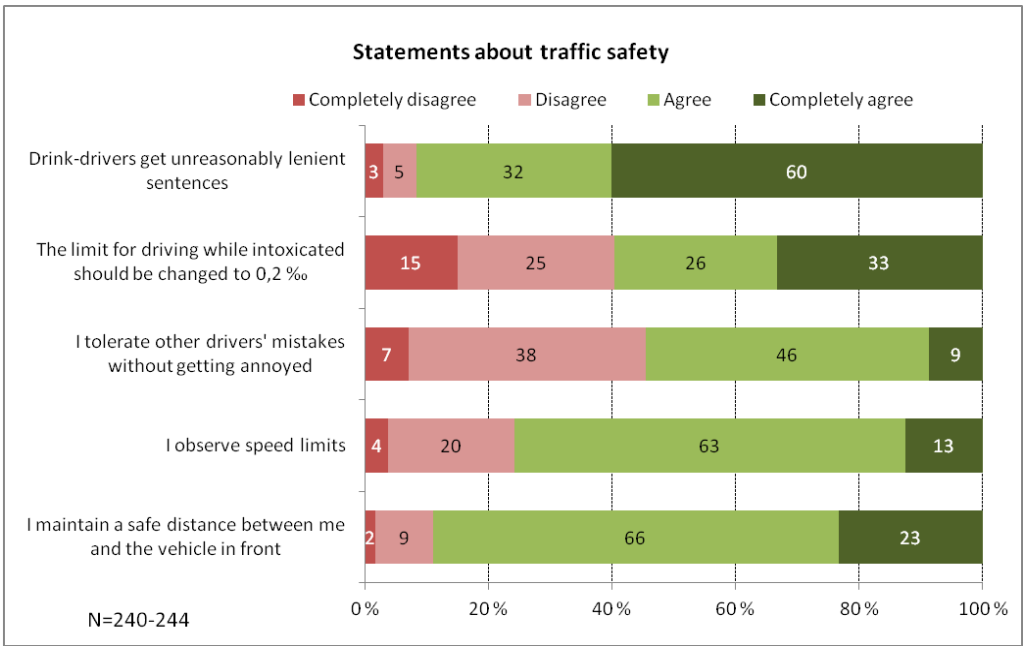


Figure 3. Attitude towards the statements about traffic safety

Alcohol use correlates with the readiness to lower the per mille limit. Those that use alcohol more rarely are happier about lowering the per mille limit than those drinking often and to get drunk (Annex 2). The other statements about traffic safety also correlate negatively with drinking to get drunk, except tolerating others' mistakes without getting annoyed.

Respondents that live alone say they tolerate others' mistakes less (Annex 2). Under 35-year-olds observe speed limits the least and keep a smaller safety distance than those in older age groups (Annex 2).

The results of the questionnaire are described in Chapter 5.

2.4 Workshop

The workshop's objective was to inform participants of the project and chart their views on experiences of alcohol interlock use and the prerequisites for expanding that use.

Representatives from the Finnish Taxi Owners Federation, the Finnish Bus and Coach Association, Finnish Transport and Logistics, the Transport Workers' Union AKT, the Finnish Employers' Federation of Road Transport, alcohol interlock importers and the authorities were invited to take part in the workshop. The event was held on 31 October 2011 at the offices of the Finnish Transport Safety Agency Trafi, and the following 15 people participated:

- Transport unions
  - Finnish Taxi Owners Federation, Ville Jaakola
  - Finnish Bus and Coach Association, Mikko Saavola
  - Transport Workers' Union AKT, Pertti Sulasalmi
- Importers
  - Suomen Fartskriver Oy, Mikko Hellström
  - Dräger Suomi Oy, Jörgen Forsblom
  - Sarco Oy, Esa Sihvola

    - Malux Finland Oy, Tony Weckström, Jarkko Pulska
- Authorities
    - Ministry of Transport and Communications, Janne Mänttäri
    - Supreme Police Command, Heikki Ihalainen
    - The Pirkanmaa Centre for Economic Development, Transport and the Environment, Katja Levola
    - Liikenneturva, Ari-Pekka Elovaara
    - Trafi, Marita Löytty, Jussi-Pekka Laine
    - Ramboll Finland Oy, Ari Sirkiä, Anne Vehmas

There was active discussion in the workshop, both in small groups and, at the end, amongst all participants. The problems and wishes expressed in the workshop will be handled in later chapters on user experiences, effects and prerequisites.

3 Alcohol in traffic

A person who operates a motor-driven vehicle after having consumed alcohol so that his or her blood alcohol level is at least 0.5 per mille or his or her exhalation contains at least 0.22 milligrams of alcohol per litre of air shall be sentenced for driving while intoxicated. Respectively, the limit for driving while seriously intoxicated is a blood alcohol level of at least 1.2 per mille or at least 0.53 milligrams of alcohol per litre of air in the exhalation (The Criminal Code (39/1889), Chapter 23, Sections 3 and 4).

82 people died and 1,017 people were injured on average in incidents involving drink-driving in the first decade of the 21st century. During the last five years, an average of one in four deaths in road traffic have been caused by drink-driving (Statistics Finland, 2010).

3.1 Cases of professional drivers drink-driving

There are no statistics on the drink-driving of professional drivers, or professional drivers engaged in school and day care transport in particular. Based on newspaper items it is known that there are incidents of drink-driving in commercial traffic as well. According to the information received from Liikenneturva (2011), 97 news stories on drink-driving in commercial traffic have been published in Helsingin Sanomat and Ilta-Sanomat alone in the 21st century. These are spread as follows:

- School transport 22 items
- Taxi drivers (not school transport) 23 items
- Bus drivers 24 items
- Lorry drivers 28 items

The Uusimaa police have conducted annual stop check investigations, the results of which are contained in the Profile of a Drink-Driver report (Portman et al. 2011). Over half a million drivers in total (542,495) were breathalysed in the investigation between 1990 and 2008. 1,241 drink-drivers were identified, i.e. 0.23% of those breathalysed. 1,133 (91.3%) of them were male and 108 (8.7%) female. 107 drink-driving males were professional drivers. This makes the percentage of professional drivers among drink-drivers 8.6% and 0.02% of all breathalysed drivers. The most drink-drivers were encountered in Saturday morning stop checks.

The professional drivers were all male. The average blood alcohol level of professional drivers was 1.005 and the range of variation was 0.51–2.81. No statistically significant difference was found between the blood alcohol levels of professional drivers and other male drink-drivers, but the blood alcohol level of male drink-drivers was higher than that of female drink-drivers. 243 drivers were guilty of driving while seriously intoxicated (1.2) between 1994 and 2008. 231 were male (38% of male drink-drivers) and 12 female (19% of female drink-drivers). 21 males were professional drivers. Only one professional driver did not have a valid driving licence (Portman et al. 2011).

A typical professional driver guilty of drink-driving is male, aged 30–49, who drives with a blood alcohol level of approximately one per mille. He usually has a regular job, and he drives a passenger car, van or lorry owned by another per-

son. He drives more than 50,000 km each year. The driving is often related to his work or profession. The professional driver has usually left home or his workplace, and he usually sets out several times a day. He is most often alone in the vehicle (Portman et al. 2011).

The deciding factor behind driving while intoxicated is usually a substance misuse problem, and profession does not have a prohibitive effect (Finnish Government, 2010). According to research, most drink-drivers feel they are fit to drive and are safe drivers while drink-driving. Therefore, it may be difficult to influence these drivers' decisions merely by appealing to their conscience about safety (Rajalin 2004).

3.2 Drink-driving accidents involving heavy vehicles

Professional drivers' accidents involving drink-driving were examined from police records of drink-driving accidents involving heavy vehicles. The accident database maintained by Statistics Finland was made available by the Finnish Transport Agency. It contains the accidents on public roads that lead to injuries in 2001–2010.

There was a total of 24,897 accidents involving heavy vehicles in 2001–2010, in 625 of which a driver was found guilty of driving while intoxicated (≥ 0.5‰). There were an additional 29 cases in the dataset, where a driver's blood alcohol level was below the drink-driving limit (0.1-0.4‰).

According to the entries in the accident data, only 3,269 (13%) of all heavy vehicle accidents occurred during working hours. 99 of these have been drink-driving accidents, that is 16% of drink-driving accidents involving heavy vehicles. It can be construed from the small percentage of accidents that have occurred during working hours that the entries in the accident register do not always record whether the the driver was working at the time of the accident. For this reason, the following examination is based on all cases of drink-driving involving heavy vehicles.

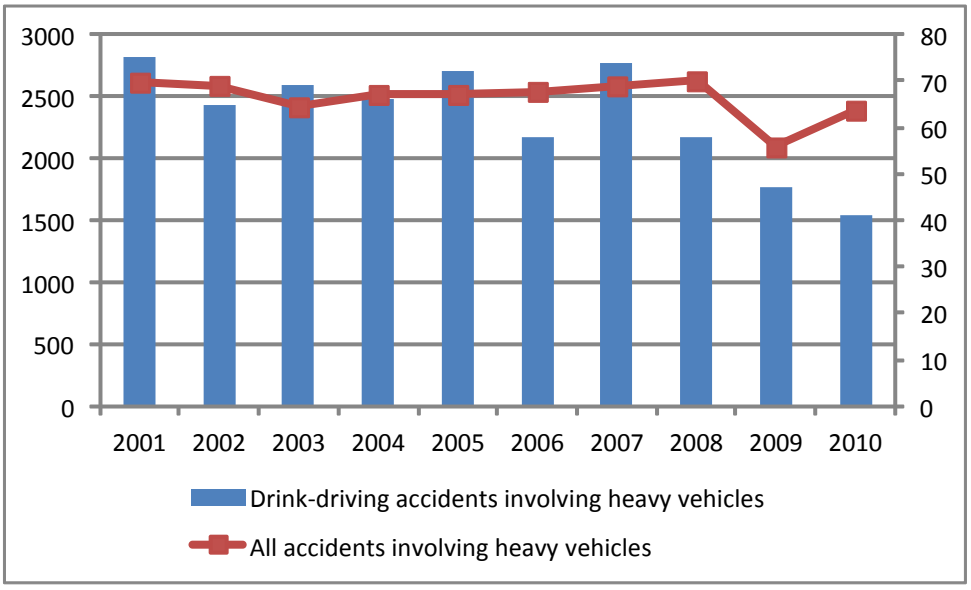


Figure 4. Distribution of accidents by year

The numbers of accidents involving heavy vehicles and drink-driving accidents involving heavy vehicles have both decreased sligtly in recent years (Figure 4). The percentage of accidents involving drink-driving of all heavy vehicle accidents decreased from 3 per cent at the beginning of the 2000s to 2 per cent at the end of the decade (Figure 5). On the other hand, an average of 60 heavy vehicle accidents involved drink-driving each year, so the effect of single cases on yearly variation is more significant than it is when all heavy vehicle accidents are considered as a whole, of which there have been 2,500 on average annually.

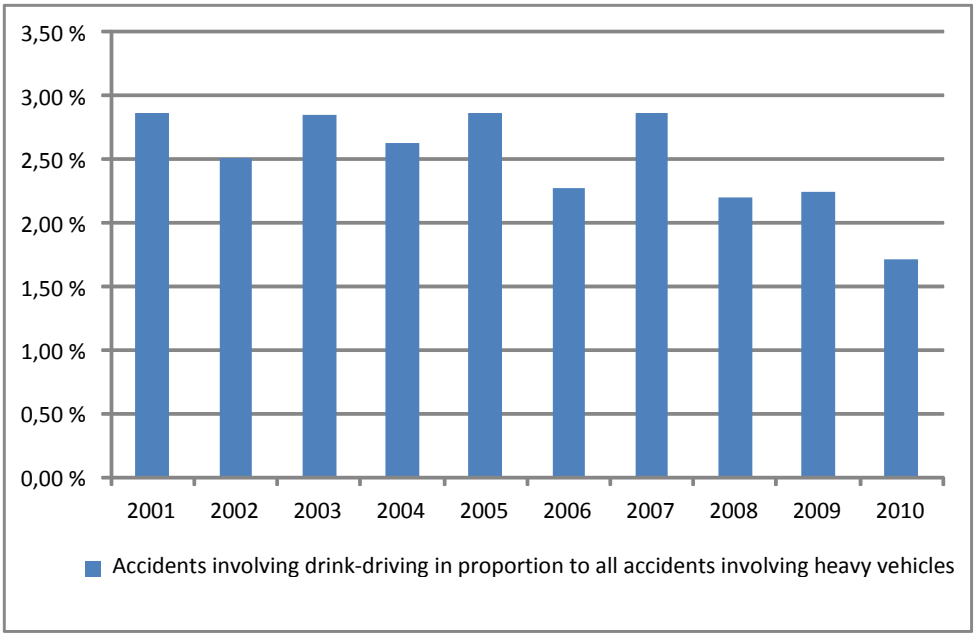


Figure 5. The percentage of drink-driving accidents in accidents involving heavy vehicles per year

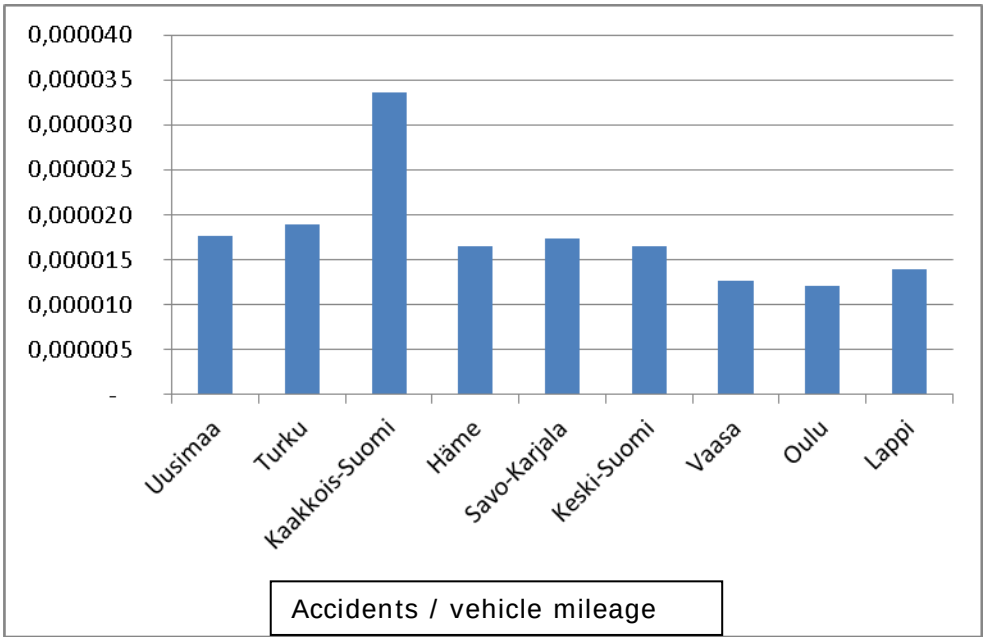


Figure 6. Drink-driving accidents involving heavy vehicles in proportion to the region's vehicle mileage

The most drink-driving accidents involving heavy vehicles in proportion to the amount of traffic occurred in South-Eastern Finland, i.e. the area of the former South-Eastern Finland Road District, in 2001–2010 (figure 6).

The largest amount of drink-driving accidents involving heavy vehicles and heavy vehicle accidents in total happen in November, December and January (Figure 7). Accidents involving drink-driving are, however, relatively more common in summer months than in winter months.

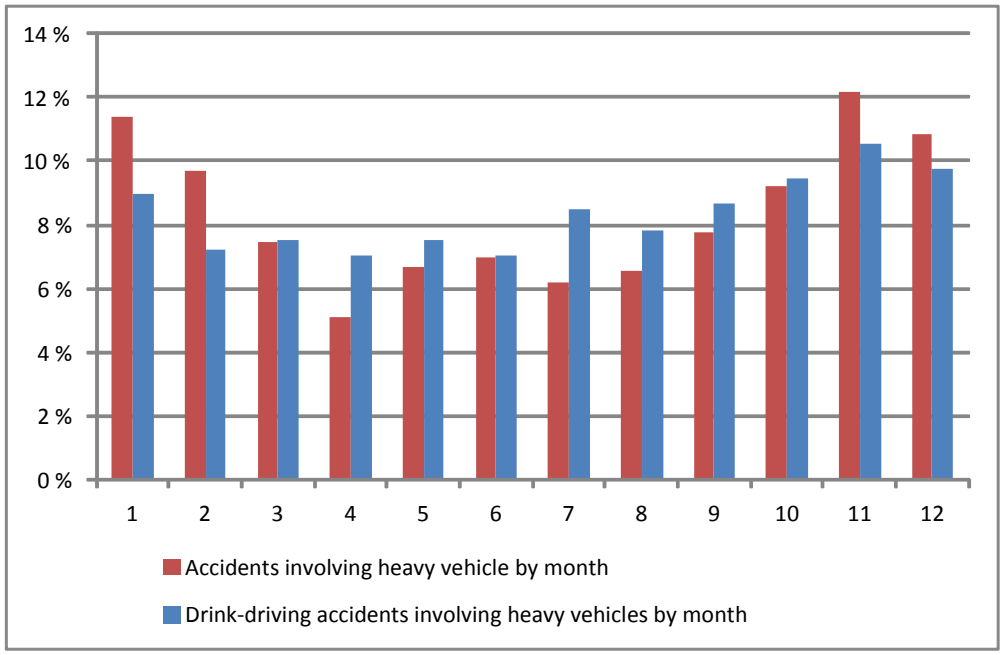


Figure 7. Heavy vehicle accident distribution per month

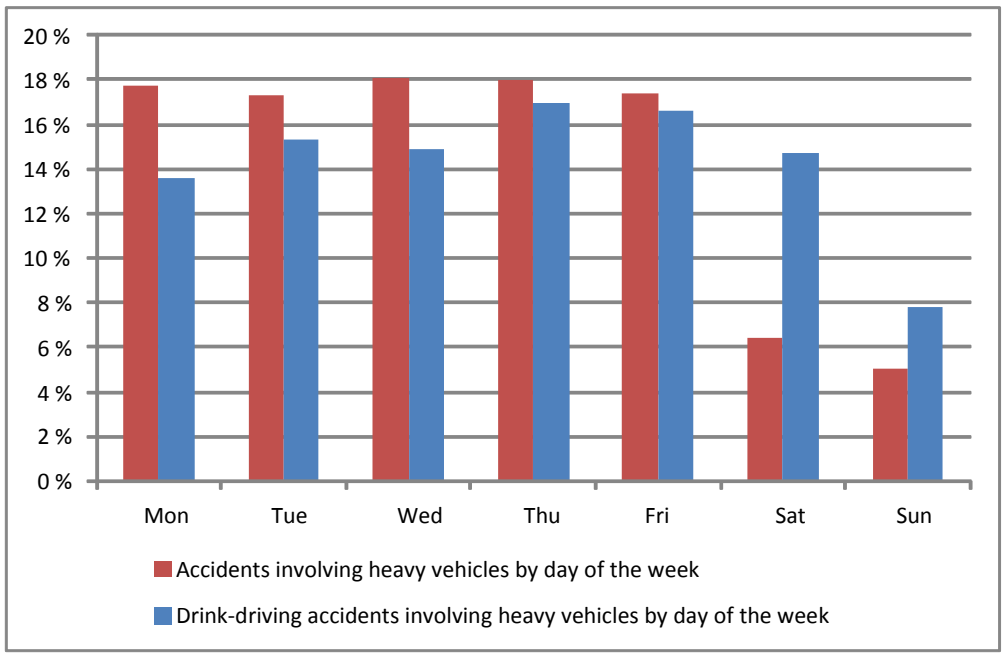


Figure 8. Heavy vehicle accident distribution per day of the week

Drink-driving accidents involving heavy vehicles usually happen towards the end of the week (Thu – Sat), while heavy traffic accidents in general are more common on weekdays (figure 8).

The highest number of heavy vehicle accidents happen in the daytime, between 7 a.m. and 5 p.m. (Figure 9). The distribution of accidents involving drink-driving is much more even. A relatively high number of accidents involving drink-driving occur in the afternoon (3–4 p.m.), evening (7–8 p.m.) and around midnight. The proportion of drink-driving accidents of heavy traffic accidents as a whole is greater in the evening and at night.

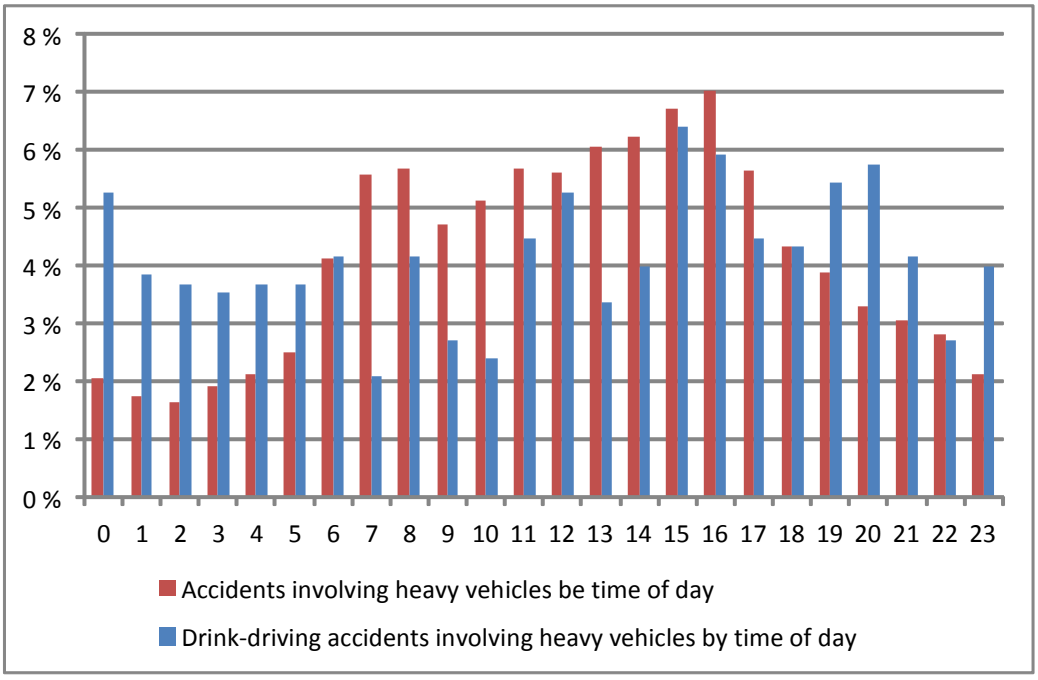


Figure 9. Distribution of accidents by time of day

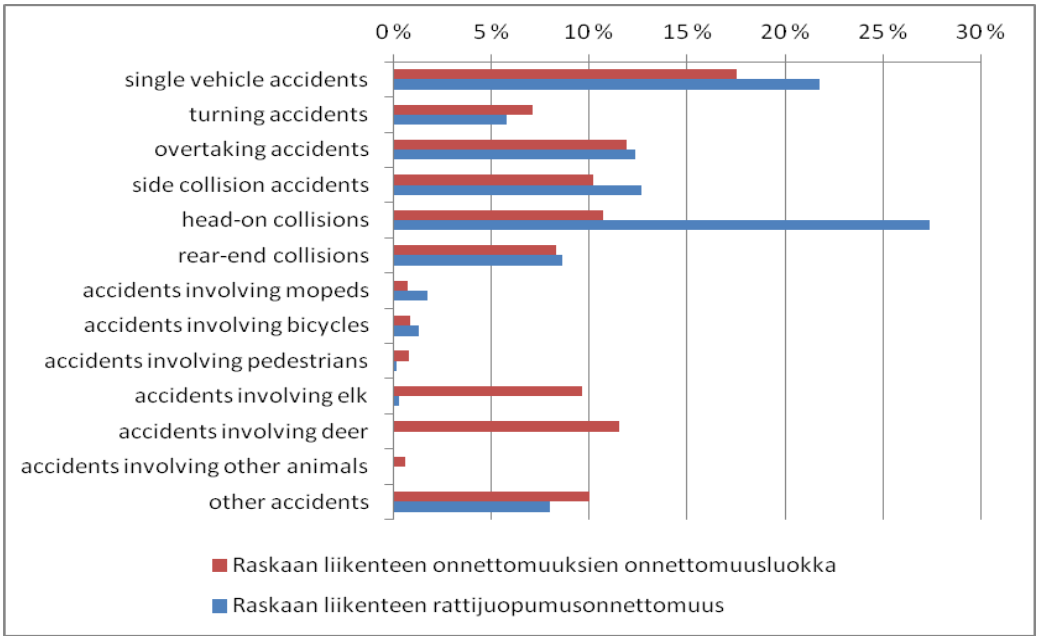


Figure 10. Distribution of accidents in different categories

The most typical heavy vehicle accident is the single vehicle accident (Figure 10). The most common type of drink-driving accident involving heavy vehicles is, however, the head-on collision. The proportion of single vehicle, side collision, overtaking and rear-end accidents is greater in cases of drink-driving than it is in all heavy vehicle accidents. There are very few collisions with elk or deer where the driver has consumed alcohol, even though they otherwise account for 22% of all heavy vehicle accidents.

The per mille level of the driver is only reported for half (49%) of drink-driving accidents involving heavy vehicles. The most common amount is 2.0–2.4 (figure 11). A bit over 4% of drivers have been "tipsy".

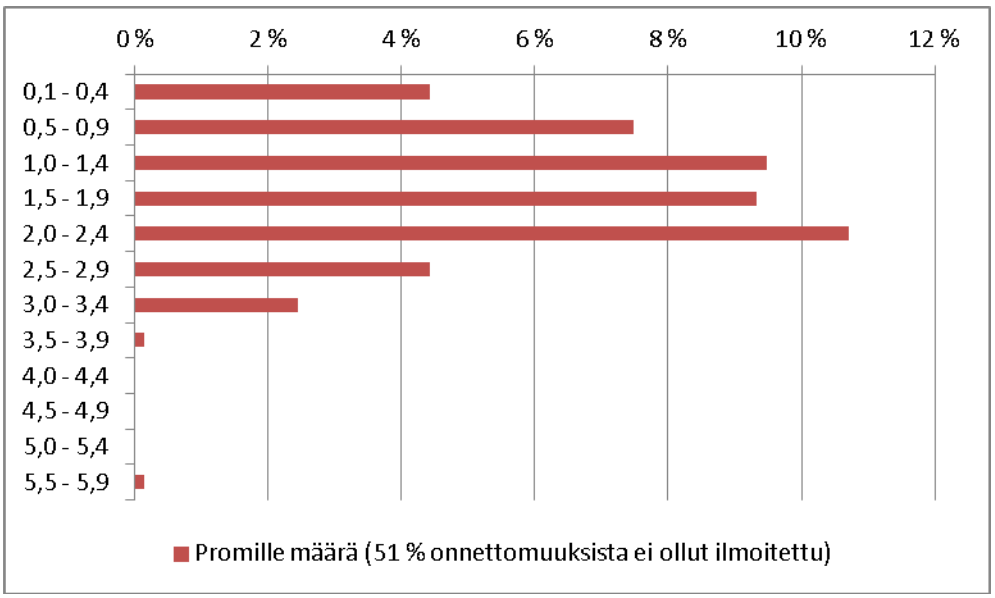


Figure 11. Per mille levels of heavy vehicle accidents involving alcohol

3.3 Drink-driving accidents involving cars and vans in professional use

There was a total of 18,508 accidents involving cars and vans in 2001–2010, in 1,142 (6%) of which a driver was found guilty of driving while intoxicated. 866 accidents involving cars and vans in professional use are recorded in the accident register for 2001–2010. 55 (6%) of these accidents involved an intoxicated driver. It can be construed from the small percentage of accidents that have occurred during working hours that it has not been adequately recorded in the accident register whether a driver was working or not. The following comparison is based on this professional use data, however, since there is no other data available for drink-driving accidents involving cars or vans in professional use.

During the comparison of drink-driving accidents involving cars and vans in professional use to drink-driving accidents involving heavy vehicles, the following differences became apparent:

- Drink-driving accidents involving cars or vans in professional use are more prevalent in the autumn (August, September and October). The spring months (April and May) are also well represented. However, all traffic acci-

dents involving cars or vans in professional use are centred on the winter months (November and February 12%, January and March 10% and December 9%). Drink-driving accidents involving heavy vehicles are, on the other hand, more prevalent during the summer months (Figure 7).

- Drink-driving accidents involving cars or vans in professional use are much more common at the weekends (Fri 18%, Sat 22% and Sun 18%), whereas drink-driving accidents involving heavy vehicles are more evenly spread out over the week (Figure 8).
- Drink-driving accidents involving cars or vans in professional use are more common during the hours of the evening or night than those involving heavy vehicles (Figure 12).
- The usual types of accidents involving cars or vans in professional use are the single vehicle accident (23%), broadside collision (15%), rear-end collision (14%) and other accident (14%). Drink-driving accidents involving cars or vans in professional use contain the most overtaking accidents (24%). The next most common types are other accident (22%), broadside collision (15%) and rear-end collision (15%). The situation is not vastly different from that of drink-driving accidents involving heavy vehicles, but it differs from that of heavy vehicle accidents as a whole where accidents involving animals are concerned. There are hardly any animal accidents involving cars and vans, but they are the most common type of heavy vehicle accident.

As in heavy vehicle traffic, the most drink-driving accidents involving cars or vans in professional use in proportion to the region's vehicle mileage happen in South-Eastern Finland.

Yearly variation in drink-driving accidents involving cars or vans in professional use is great in the limited data. For this reason, it is impossible to make reliable conclusions as to the direction of the development of numbers of accidents.

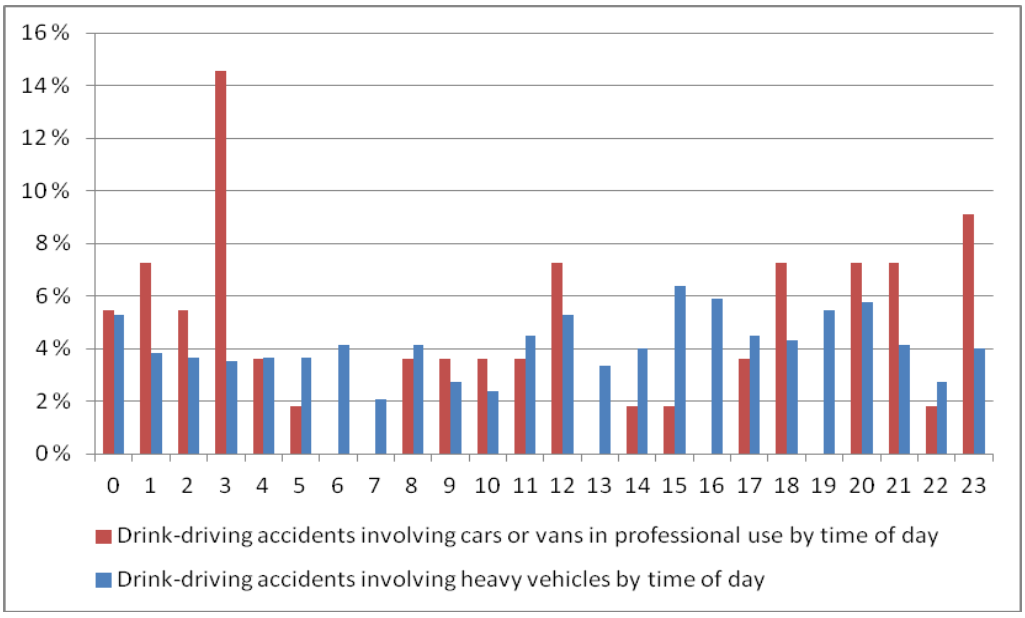


Figure 12. Drink-driving accidents involving cars or vans in professional use or heavy vehicles distributed by time of day

4 Current situation of alcohol interlock use

4.1 Alcohol interlock use in Finland

Before 2005, no national legislation on the use of alcohol interlocks existed in Finland. Some dozens of alcohol interlocks were in use by commercial traffic and some private persons (Finnish Government, 2005).

A three-year alcohol interlock trial was started in the summer of 2005, where a person found guilty of driving while intoxicated could choose alcohol interlock-controlled driving rights instead of a driving ban. An Act and a Decree on the trial of alcohol interlock-controlled driving rights were enacted for the trial (Act 360/2005, Decree 431/2005). 302 drivers participated in the trial. Based on alcohol interlock user data and interviews of the participants, alcohol interlocks are known to have prevented several cases of drink-driving. Nearly all participants were in favour of increasing alcohol interlock use (Beilinson, Britschgi, Higgins and Lähesmaa 2007, Beilinson and Poutanen 2007).

Based on the experiences of the trial, an Act entered into force from the beginning of July 2008, subject to which a person found guilty of driving while intoxicated could choose alcohol interlock-controlled driving rights instead of a driving ban (Act 439/2008, Decree 474/2008). The number of alcohol interlocks related to controlled driving rights has been increasing steadily since then (Figure 13). Around half of those that chose an alcohol interlock leave the interlock in the car after their driving rights are no longer controlled.

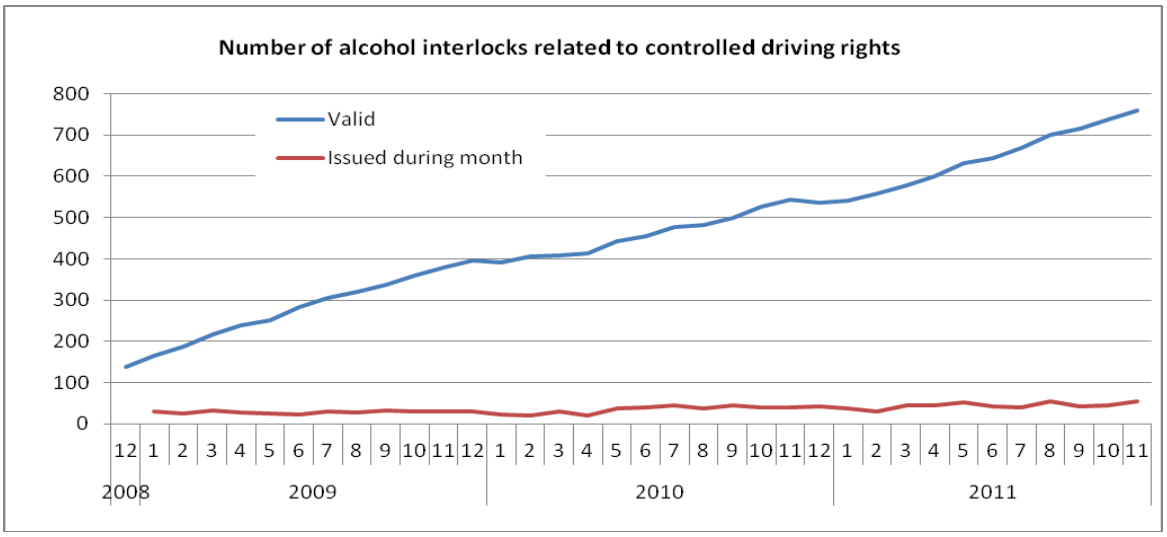


Figure 13. Number of alcohol interlocks related to controlled driving rights

A research experiment led by the Ministry of Transport and Comunications on voluntary alcohol interlock use in commercial transport was implemented in 2007–2008 (Donner, Vehmas and Herkkola 2008). Five taxi, bus and freight transport companies, as well as two expert organisations, participated in the experiment. Altogether, 64 vehicles equipped with an alcohol interlock and over a hundred drivers participated in the experiment. The alcohol interlock was found to be appropriate for use in commercial transport. The technical problems ob-

served mostly had to do with the perceived long warming-up times of alcohol interlocks that had been left in freezing temperatures, and the fact that there was no experience of alcohol interlocks on the installation and maintenance side. Participants in the experiment felt that the alcohol interlock gave a certainty of being fit to drive, and thereby improved traffic safety. Some drivers disliked the amount of time the use of the alcohol interlock took, and some felt exhaling into the alcohol interlock in a public place to be embarrassing. The companies that participated in the experiment considered the alcohol interlock to be a competitive advantage and an image benefit, as well as a part of labour protection, risk management and quality control.

In August 2006, the Ministry of Transport and Communications gave a recommendation to use alcohol interlocks in school and day care transport (Decree 553/2006, Section 9). It was hoped that the recommendation would increase voluntary use of the alcohol interlock. A November 2008 questionnaire for those responsible for municipal school transport showed, however, that the majority of municipalities had not taken the recommendation to use an alcohol interlock into account at all in competitive tendering for transport (Vehmas and Sinisalo 2008). A fifth of municipalities said they recommended the use of an alcohol interlock, 14% gave extra points for having alcohol interlocks and 3% required alcohol interlock use. Out of 236 municipalities that answered the questionnaire, only 17 had 1-26 vehicles equipped with alcohol interlocks in school transport. Altogether, the respondents reported 96 vehicles equipped with alcohol interlocks in use in school transport. The majority of municipalities (64%) were in favour of making alcohol interlock use mandatory in school transport and 6% were against it.

The Act on the Use of Alcohol Interlocks in School and Day Care Transport entered into force from the beginning of August 2011 (Act 1110/2010, Decree 405/2011). According to the Act, it is mandatory to use an alcohol interlock when the transport is arranged by a municipality, federation of municipalities, school or institution as chartered traffic, and the transport receives a municipal or state subsidy. So the Act does not apply to purchased or scheduled service transport in public traffic, even if schoolchildren travel in them. The National Strategy for Intelligent Transport (LVM 2009), however, sets the adoption and effects of the alcohol interlock in transport services, scheduled services and commercial freight traffic financed by public funds as a target. The objective is to make the alcohol interlock standard equipment in all new vehicles through international cooperation.

There are eight different models of alcohol interlocks approved by the Finnish Transport Safety Agency available from the representatives of five manufacturers. Some of the models are wireless. In vehicles used for school transport, the ignition limit of the alcohol interlock must be set to 0.2 per mille, or 0.10 mg of alcohol per litre of air exhaled. Therefore, the vehicle is prevented from starting even at alcohol levels below the drink-driving limit. After an approved breath sample or turning off the engine, the vehicle can be started within 45 minutes without the alcohol interlock requiring a new exhalation (Decree 405/2011). The Finnish Transport Safety Agency has published a list of authorised installation and service sites on their website.

There were 760 alcohol interlocks related to controlled driving rights in use in November 2011. There are an estimated 8,000 alcohol interlocks in use in

commercial transport. Of these, the majority are in taxis because of the Act on the Use of Alcohol Interlocks in School and Day Care Transport.

The alcohol interlock has also featured in the media in connection with these trials and changes in legislation. However, it remains a piece of equipment that is fairly unknown to the public.

4.2 Use of the alcohol interlock in other countries

The alcohol interlock was first adopted in the United States in the 1980s. It has also been used for a long time in Canada and Australia. There are an estimated 200,000 alcohol interlocks in use in North America, of which 180,000 are in the United States and 20,000 in Canada (as per 2009). Compared to North American figures, the situation is very different in Europe, even though the use of the alcohol interlock has become more common here as well during the 21st century (Table 1) (ETCS 2009).

Experimental research into the effects of alcohol interlocks in preventing drink-driving has been conducted in several West European countries, on persons found guilty of driving while intoxicated or in commercial transport. In addition to Finland, at least Sweden, Germany, France, Spain, Norway, the Netherlands and Belgium have conducted trials. Alcohol interlocks are used in several European countries either voluntarily or as mandatory for persons found guilty of driving while intoxicated. In recent years, many transport companies have voluntarily equipped their vehicles with alcohol interlocks to ensure the quality and safety of freight or passenger traffic. It is most common, however, that an alcohol interlock is used as a condition for a person found guilty of driving while intoxicated retaining his/her driving licence (Belgium, Finland, France, Holland, Denmark and Sweden).

Table 1. History of the alcohol interlock in Europe (after ETSC 2009)

1999	First alcohol interlock programme adopted in Sweden for persons found guilty of driving while intoxicated and for commercial transport
2003	Use of an alcohol interlock as an alternative to revoking a driving licence in Sweden
2004	First experimental alcohol interlock programmes in Belgium and France
2004–2005	EU-funded alcohol interlock trial in commercial transport in Germany, Norway and Spain
2005	First experimental alcohol interlock programme for persons found guilty of driving while intoxicated in Finland
2007	Alcohol interlocks in all new vehicles owned by the Swedish Road Administration from September. Mandatory in all vehicles from 2009

2008	Alcohol interlock as an alternative to a driving ban for persons found guilty of driving while intoxicated in Finland
2009	Volvo Bus introduces alcohol interlocks fitted for buses
2010	Alcohol interlocks mandatory in school buses in France
2011	The Netherlands begin a programme for persons found guilty of driving while intoxicated. Alcohol interlocks mandatory in school and day care transport in Finland

It has been suggested several times in Europe that alcohol interlock use should be dereed mandatory at the national level in all commercial transport vehicles. Until now, however, governments have rejected the motions on various grounds. In addition to governments, the public administration and private actors can also promote alcohol interlock use. For example, the Swedish Road Administration and many private companies equip their vehicles with alcohol interlocks (ETCS 2009).

Table 2. National alcohol interlock projects in EU member states (after ETSC 2009 and Trafi 2011)

Measure/Country	**NO**	**BE**	**DK**	**FI**	**FR**	**NL**	**DE**	**SE**	**UK**
Pilot project underway		**X**				**X**	**X** (2012)	**X**	**X**
Legislation is being prepared	**X**	**X RP**	**X**	**X**	**X RP**				**X** c
Legislation has been passed		**X**	**X**	**X**		**X**		**X**	
Rehabilitation		**X**		**X**	**X**	**X**		**X**	
Commercial transport				**X**	**X**				
Transport of children				**X**	**X**				
Voluntary use in commercial transport	**X**	**X**		**X**			**X**	**X**	

c = consultation, RP = rehabilitation programme

4.2.1 The alcohol interlock in Sweden

Sweden started a five-year alcohol interlock trial in 1999 for persons found guilty of driving while intoxicated. The trial imposed strict rules and considerable costs on participants. Based on the positive experiences of the trial, the alcohol interlock became an alternative to revoking a driving licence in Sweden in 2003. In Sweden, a driving licence is revoked for at least a month and at most three years as a consequence of driving while intoxicated. The drink-driving limit is 0.2 per mille. For driving while seriously intoxicated (1.0), a driving licence is revoked for at least a year. A new driving test and suitability test has to be taken if a driving licence revoked for more than a year (Government 2005, 2010).

There is no legal obligation for alcohol interlock use in Sweden, but voluntary use of the alcohol interlock in commercial transport has been heavily invested in through campaigns, etc. Alcohol interlock use has been growing apace since 2004.

Currently, there are approximately 75,000 alcohol interlocks in use in passenger cars, taxis, buses and lorries in Sweden. In addition, there are alcohol interlocks in some trains, trams, ferries and ships in Sweden. The alcohol interlock is used by authorities, municipalities and other organisations in the public sector. In industry and commerce, alcohol interlocks are mainly used by small entrepreneurs operating chartered traffic, and large transport companies whose field of operations covers the entire country. Only a small percentage of private vehicles are equipped with alcohol interlocks. According to the Swedish Taxi Association, over 60% of its members use an alcohol interlock. The Union of Public Transport estimates that over 52% of buses in scheduled service traffic are equipped with alcohol interlocks (Jakobsson 2011).

In Sweden, the alcohol interlock is regarded as a quality control tool for various operations to ensure safe and sober transport. According to surveys, attitudes towards the alcohol interlock are becoming more and more positive. In procurements, state organisations, for example, often define alcohol interlock use or another method of ensuring driver sobriety, for which purpose the alcohol interlock is a practical tool, as a requirement in tendering documents. Requirements vary between procurements. Voluntary use is also mainly based on Sweden's Vision Zero: the alcohol interlock is seen as a chance to reduce the number of people killed or injured in traffic. Technology is considered an important method in reducing the number of fatal crashes and helping drivers avoid drink-driving. Therefore, Sweden has come a long way on a voluntary basis. Extensive voluntary use does not, however, mean that there should be no requirements. It has been estimated that mandatory alcohol interlock use would reduce deaths in traffic by 100 people and cost incurred by society due to traffic accidents by 6 billion kronor (roughly equivalent to 644 million euros) annually in Sweden. Mandatory alcohol interlock use in school transport will probably be among the first requirements, if a law on alcohol interlock use is to be passed in Sweden. At the moment, approximately 85% of Swedish municipalities require alcohol interlock use in school transport (Jakobsson 2011, Trafikverket 2011).

Several factors have influenced the increase of alcohol interlock use. The media has maintained a positive attitude towards the alcohol interlock from the beginning; it has considered the alcohol interlock an effective way to reduce traffic ac-

cidents. The alcohol interlock has been regarded as a quality control tool for several years in Sweden, from the points of view of traffic safety and sobriety, and the working environment and national health. The Sober Drivers' Association has continually invested in informing the consumer about the alcohol interlock. The Trafikverket (previously the Vägverket) cooperates with several actors on traffic safety. The Trafikverket has in recent years implemented several projects where the alcohol interlock has been the subject of traffic safety discussion, and commercial transport and public organisations have been the focus group (Jakobsson 2011).

4.2.2 The alcohol interlock elsewhere in Europe

France

France began a voluntary alcohol interlock trial in 2004, which was intended for drink-drivers who were first-time offenders. In the experiment, a person convicted of driving while intoxicated used an alcohol interlock for six months and bore the costs of use him/herself (Finnish Government 2008).

Toward the end of the 2000s, France began preparatory work for national alcohol interlock legislation (Finnish Government 2010). The Interministerial Commission for Road Safety made the decision to equip all school buses with alcohol interlocks in 2009. Alcohol interlock use was experimented with in 2009 to discover the effects. In the experiment, 300 vehicles from six companies were equipped with alcohol interlocks. They tested three different models from different manufacturers. The companies participating in the experiment were allowed to choose the model they used (TraFi 2011).

In the autumn of 2009, a law entered into force in France, which issued provisions for mandatory use of an alcohol interlock in school transport vehicles. There are approximately 70,000 school transport vehicles in total in France. From the beginning of 2010, an alcohol interlock has been a legal requirement in new school buses. Old vehicels used in school transport must be fitted with alcohol interlocks by 2013 (Trafi 2011).

Norway

In Norway, use of the alcohol interlock in commercial transport has developed on a voluntary basis. There is campaigning for use of the alcohol interlock in school transport. For example, the province of Nord-Trøndelag is adopting alcohol interlocks. The province will install 12 alcohol interlocks during the autumn of 2011 in buses and taxis used in school transport (Institute of Transport Economics 2010).

In addition, alcohol interlock use has been experimented with in municipal buses in the city of Lillehammer and in a private bus company, whose drivers gave positive feedback on it. The city authorities require alcohol interlock use in competitive tendering for City bus traffic. After minor technical problems at the beginning, experiences have been positive (Institute of Transport Economics 2010).

The cost effects and benefits of widespread alcohol interlock use have also been evaluated in Norway. If alcohol interlocks prevented 16.6% of all accidents re-

sulting in injuries where a heavy vehicle (not a bus) is involved, the benefits would equal the costs (Assum & Erke 2009 in ETSC 2009).

Denmark

Denmark participated in the preliminary study regarding alcohol interlock adoption conducted by the EU in 2000–2001. Finland also participated in the preliminary study in question, through VTT Technical Research Centre of Finland. (Finnish Government 2008).

Long-term legislation and practices relating to the alcohol interlock are being prepared in Denmark. The first stage of the plan is to begin using alcohol interlocks in the coming years as a preventive measure for people found guilty of driving while intoxicated. After a few years, the intention is to proceed to voluntary alcohol interlock use in private and public companies and possible groups at risk. The long-term objective is to make alcohol interlocks mandatory in all vehicles (Danish Road Safety Council 2010).

Netherlands

There is an alcohol interlock programme related to drink-driving in the Netherlands. No attention has been paid to the use of alcohol interlocks in school transport, since there are only a few buses used exclusively for school transport. However, the possibility to promote the use of alcohol interlocks among professional drivers and drivers addicted to alcohol is being studied in Holland (Trafi 2011).

Changes to the legislation regarding vehicle characteristics are being prepared in the Netherlands relating to alcohol interlocks. The decrees being prepared provide for issues such as matters and liabilities relating to the installation, removal, manufacturers and importers of alcohol interlocks.

Belgium

The Belgian National Labour Council approved an agreement in the spring of 2009, according to which it is possible to use alcohol interlocks in commercial and public traffic from the spring of 2010, subject to certain conditions. However, no data exists as of yet on how widely they been used in commercial transport. The same possibility for alcohol interlock use also applies to school transport, and the use of alcohol interlocks in school transport has not been separately provided for (Trafi 2011).

Germany

Germany is not considering decreeing for mandatory alcohol interlock use in all commercial vehicles. The main reasons are the alcohol interlocks' weak cost-benefit ratio and various legislative impediments. The alcohol interlock has been found in studies (DAV 2007 and BASt 2006, in ETSC 2009) to be expensive in relation to the benefits achieved since, according to statistics, heavy vehicles are involved in only 600 accidents each year in Germany. It is feared that the adoption of the alcohol interlock would lead to financial losses, since mandatory alcohol interlocks in heavy vehicles would increase the cost of transport.

The obligation to use an alcohol interlock would mostly apply to professional drivers in Germany. Decreeing for mandatory alcohol interlock use in heavy

vehicles has been regarded as problematic, since professional drivers, like other professionals, have a constitutional right to practise their profession in Germany. Possible false results given by alcohol interlocks have been regarded as endangering the drivers' constitutional right to work (ETSC 2009).

5 Experiences of alcohol interlock use

An Internet questionnaire on alcohol interlock use was carried out for drivers and entrepreneurs in taxi, bus and freight traffic in September-October 2011 (Chapter 2.3). The results of the questionnaire and examinations of background variables, which have shown at least nearly significant variation statistically, are presented below. The answers did not contain statistically significant variation in kilometres driven per year.

The results are compared to the results gained in relation to the voluntary alcohol interlock use trial (2007–2008) where applicable. Professional drivers from taxi, bus and freight transport companies, as well as company-owned car drivers from two expert organisations, participated in the experiment. They took the survey before and after the experiment, which lasted approximately one year.

5.1 Best and worst things about using an alcohol interlock

The best things about using an alcohol interlock were felt to be the image benefit gained by a responsible driver and company, the emphasis on traffic safety and the certainty of not driving while intoxicated by accident (Figure 14). Some respondents further stressed in their freeform answers that the best thing was the certainty that salaried drivers were fit to drive. A few said the alcohol interlock constituted a competitive advantage. It used to mean extra points in competitive tendering, and now there is more demand for school transport, since there are not enough taxis equipped with alcohol interlocks available.

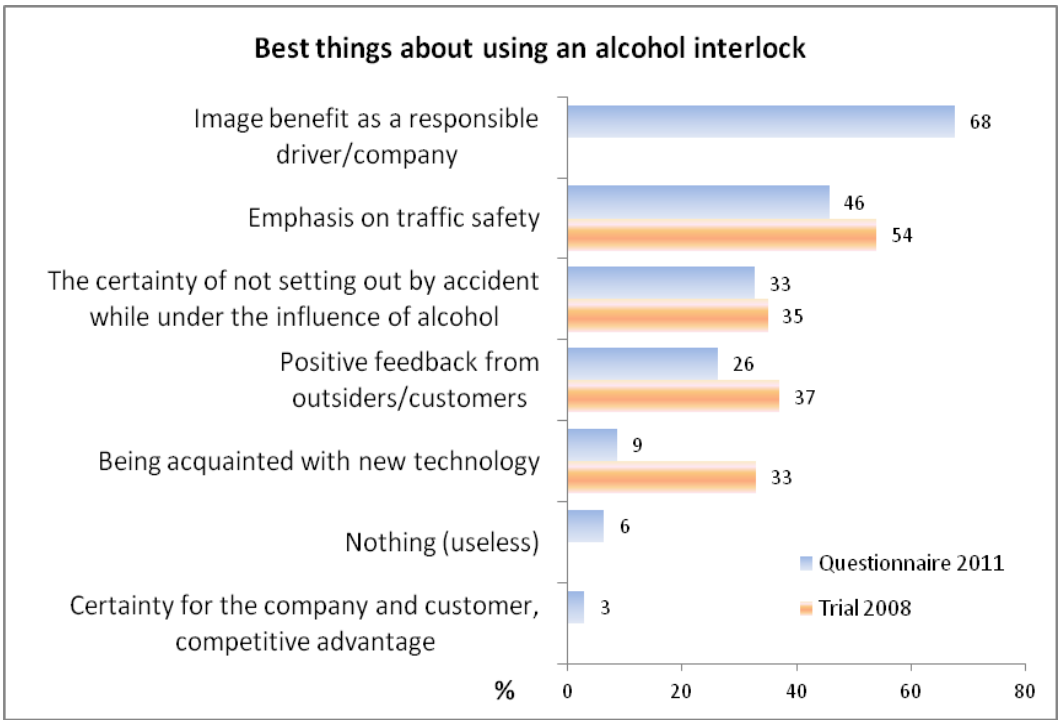


Figure 14. Best things about using an alcohol interlock

The time spent and inconvenience caused by using the device was regarded as the worst thing by alcohol interlock users (Figure 15). An alcohol interlock is usually ready to receive an exhalation in 20–30 seconds, but it can take up to a couple of minutes for a hand-held device left in freezing temperatures to warm

up. The warming-up time was felt to be clearly worse during the trial than in the questionnaire of this autumn, where many users did not yet have experience of using the alcohol interlock in winter. Some did voice doubts about the problems of using the device in freezing conditions, even though otherwise there were far fewer comments on the poor functioning of the device than there were during the trial.

The responses emphasised the awkward nature of exhaling into the device in a public place more than it was emphasised during the trial, even though the new Act on the Use of Alcohol Interlocks in School and Day Care Transport should be widely known, and the number of alcohol interlock users has multiplied since 2008. This perceived awkwardness might also disguise some discontent toward the change in legislation, since the freeform answers included comments such as "the entire profession has been labelled alcoholics" and "the problems of individual cases are being treated by making expensive devices mandatory for everyone".

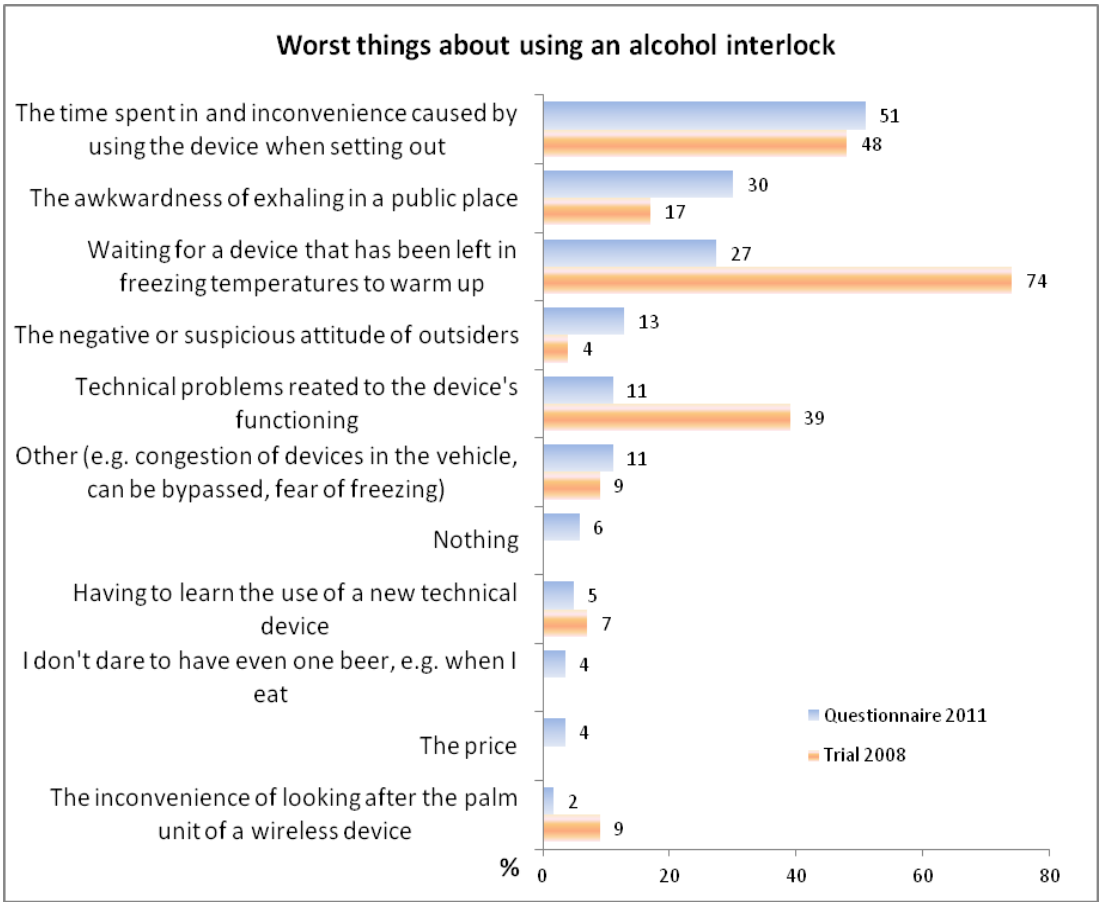


Figure 15. Worst things about using an alcohol interlock

Most of the respondents had not experienced problems relating to the use or functioning of the alcohol interlock (Figure 16). Some had experienced problems relating to exhaling, servicing, the cold and technology. For example, a person with chronic obstructive pulmonary disease had trouble generating sufficient amounts of air, the car could not be made to start when being serviced, and a few devices had broken down during the warranty period. Problems reported in the 2008 trial have partly been resolved by the development of the de-

vices and maintenance network, which is clearly represented by the considerably fewer mentions of problems in this year's questionnaire. On the other hand, most respondents had only been using an alcohol interlock for under a year, so there had not been sufficient time to accrue much experience of maintenance and calibration.

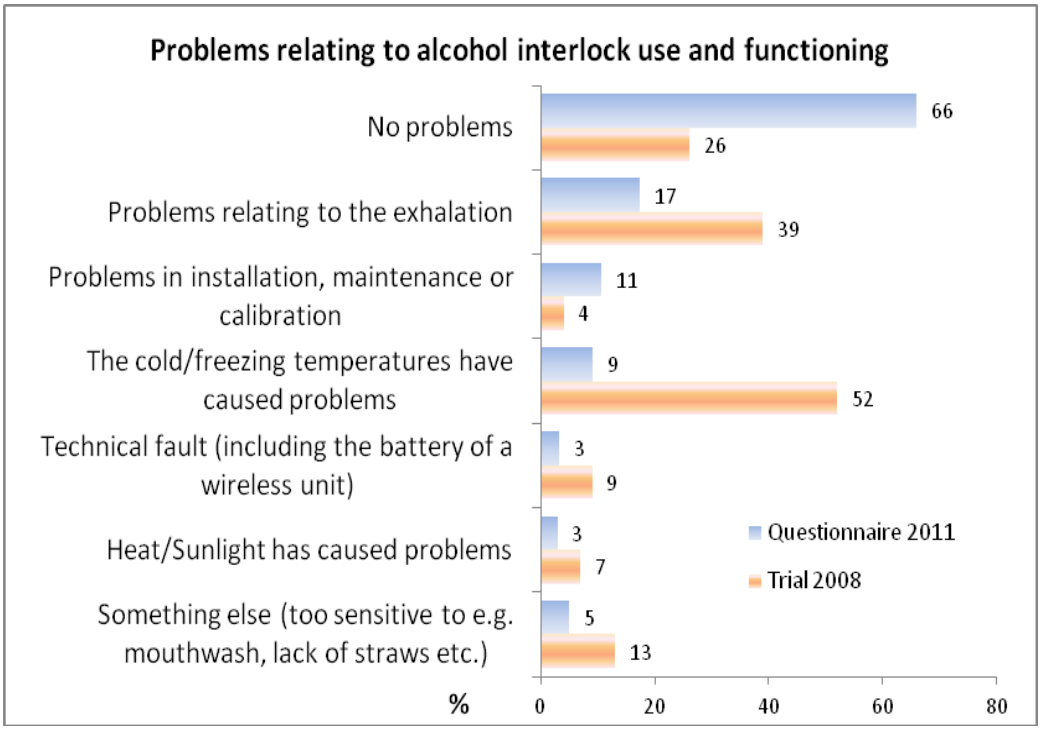


Figure 16. Problems in alcohol interlock use and functioning

5.2 Opinions of the alcohol interlock in commercial transport

The majority of respondents thought that the alcohol interlock had not hindered driving assignments in practice, and that they had been sufficiently instructed in its use (Figure 17). Those living in relationships felt that the alcohol interlock hindered driving assignments the least (Annex 3). The majority of respondents considered it a good thing that a transport customer may also require alcohol interlock use in transport for which it is not required by law.

Most of the respondents feel that the alcohol interlock provides them with a certainty that their blood alcohol level is below 0.2 while driving. One-tenth did not consider the alcohol interlock fail-safe, however. According to them, the alcohol interlock can be circumvented. "An alcoholic will find a way to bypass the lock".

The majority of professional drivers do not find it awkward to use an alcohol interlock, although slightly more awkwardness was felt now than before and after the trial. Entrepreneurs felt alcohol interlock use to be more awkward than did salaried drivers. The most respondents agreed with the statement 'I feel awkward using the alcohol interlock' in Eastern, Northern and Central Finland, and the least in Uusimaa, South-Western Finland and Pohjois-Pohjanmaa (Annex 3).

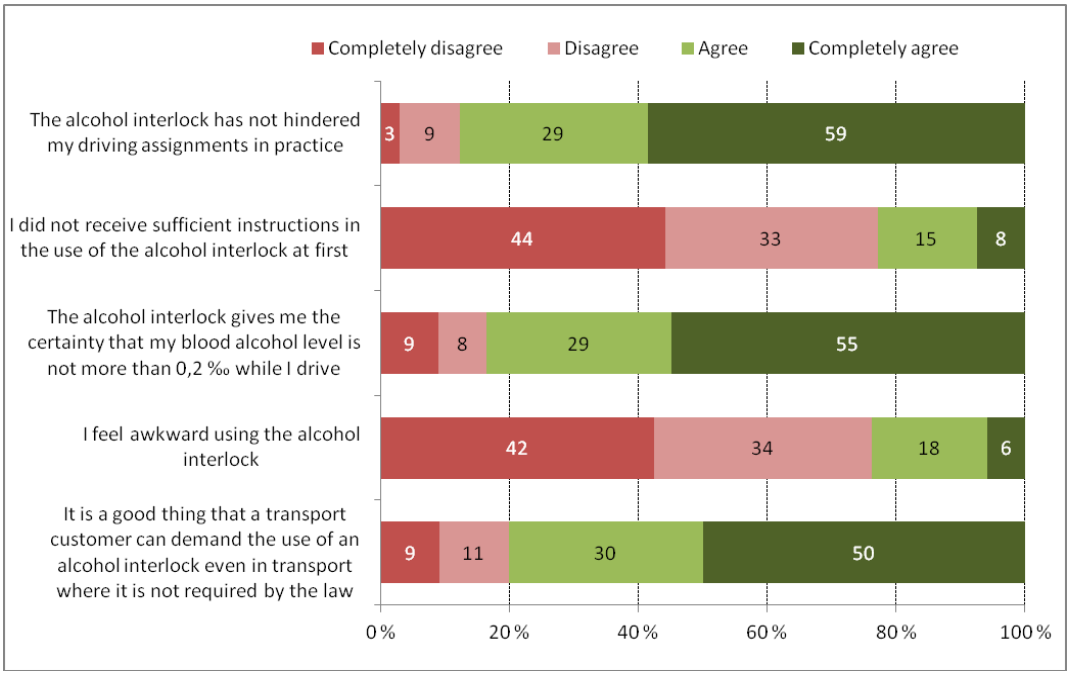


Figure 17. Opinions on the alcohol interlock

Respondents thought most people knew that it was a question of an obligation relating to a professional drivers' work (Figure 18). Participants in the voluntary alcohol interlock use trial felt more often that outsiders considered them responsible drivers than did respondents fulfilling the legal obligation. Some respondents stated in their freeform comments that they were not aware of other people's attitudes, since alcohol interlock use is not visible to outsiders, they did not want to tell others about it or others had not commented on it.

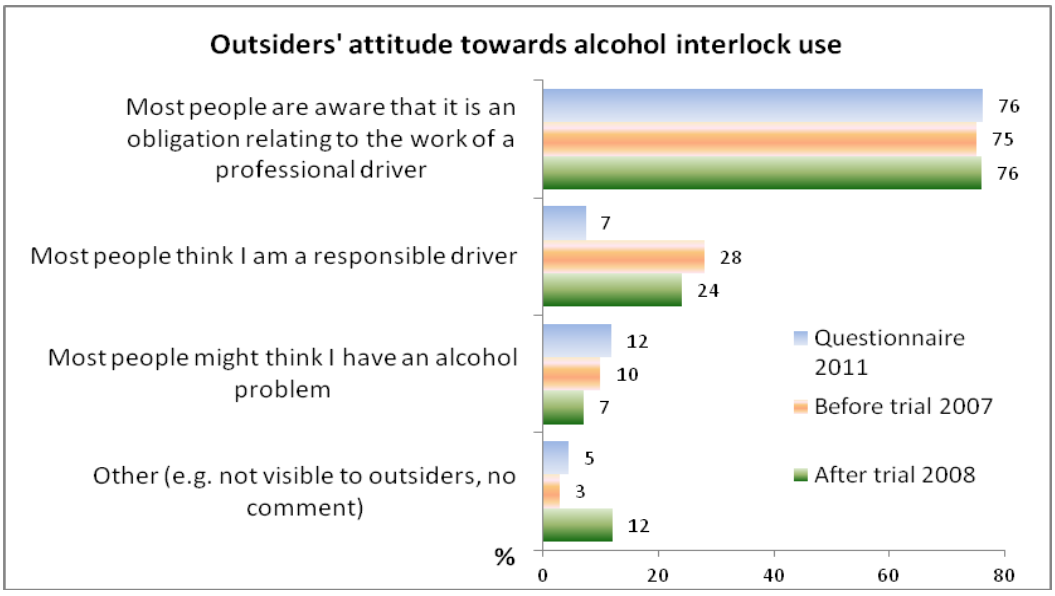


Figure 18. Outsiders' attitude towards alcohol interlock use

Respondents felt that professional drivers should exhale into the alcohol interlock either at the beginning of a shift or after a break of at least one hour (Figure 19). Participants in the trial were prepared to exhale more often than the respondents who took the survey this autumn.

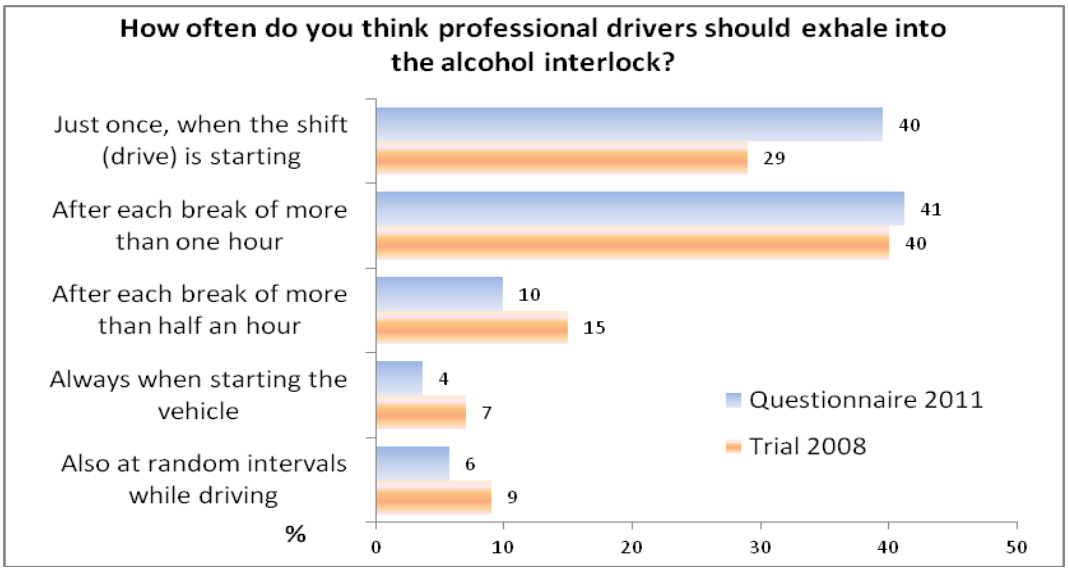


Figure 19. How often professional drivers need to exhale into the alcohol interlock

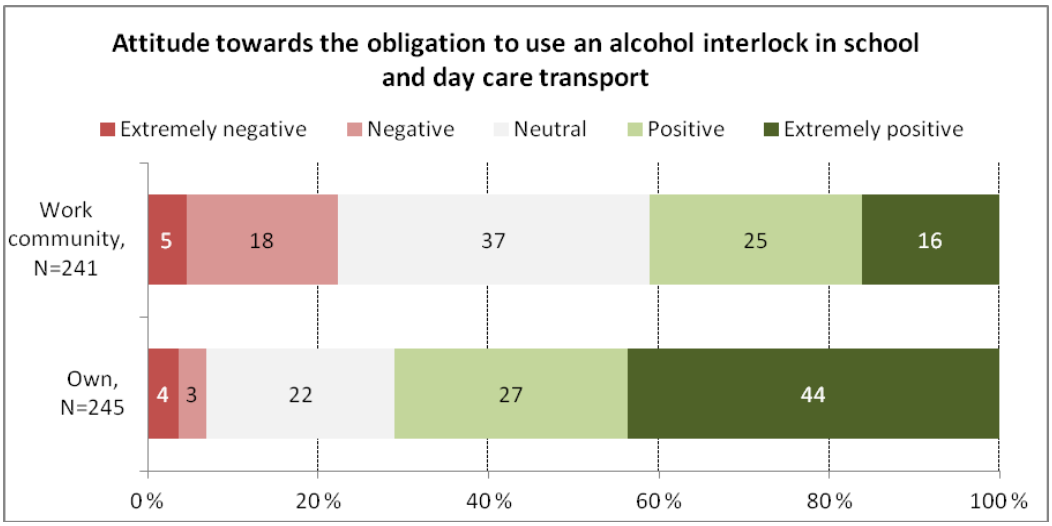


Figure 20. Own and work community's attitude toward the obligation to use an alcohol interlock in school and day care transport

The majority (71%) of respondents had a positive attitude toward the obligation to use an alcohol interlock in school and day care transport, but felt the attitude of the rest of the work community was clearly more negative than their own (Figure 20). Those that had used an alcohol interlock for more than a year and salaried drivers had a more positive attitude, and felt that their work community had a more positive attitude towards the alcohol interlock than those that had used the alcohol interlock for a shorter time and entrepreneurs. Respondents that used alcohol regularly and were often drunk and those living alone had a more negative attitude than others toward alcohol interlock use in school transport (Annex 3).

There was variation in the opinions of respondents working in different parts of Finland. Respondents in Satakunta and Finland Proper, Uusimaa and Central Finland had a more positive attitude, whereas those working in Eastern Finland had the most negative attitude. The greatest differences between the drivers' own and the work community's attitudes were found in Pohjois-Pohjanmaa. In

Eastern and Northern Finland, the respondents unusually felt that the work community's attitude was more positive than their own (Annex 3).

Respondents felt that alcohol interlock use improved their employers/company's public image (Figure 21). Those participating in the trial believed more in the effect than did the 2011 survey respondents. The most sceptical towards an improved public image were among those that had used an alcohol interlock for less than two months.

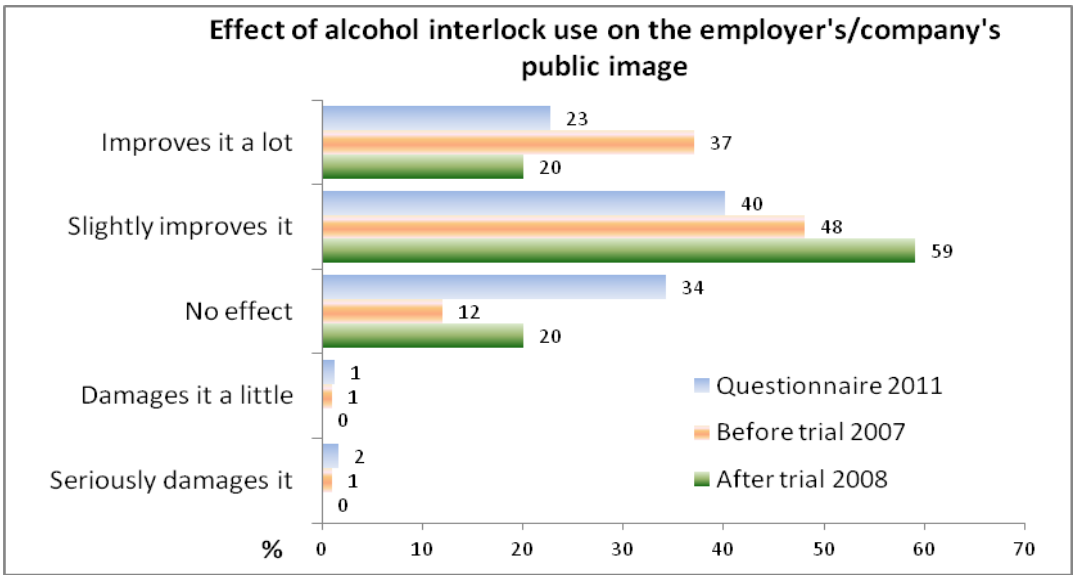


Figure 21. Effect of alcohol interlock use on the employer's/company's public image

The majority (61%) of respondents considered the alcohol interlock necessary in commercial transport, and a third (32%) thought it was unnecessary (Figure 22). The question of necessity displayed similar regional differences to the attitude toward alcohol interlock use in school transport. The alcohol interlock was felt to be most necessary in Uusimaa, Central Finland, Satakunta and Finland Proper. Its unnecessary nature was most highlighted in Eastern and Northern Finland (Annex 3). During the trial, usefulness was evaluated instead of necessity. The participants in the trial considered the alcohol interlock clearly more useful than the professional drivers of 2011 felt it to be necessary.

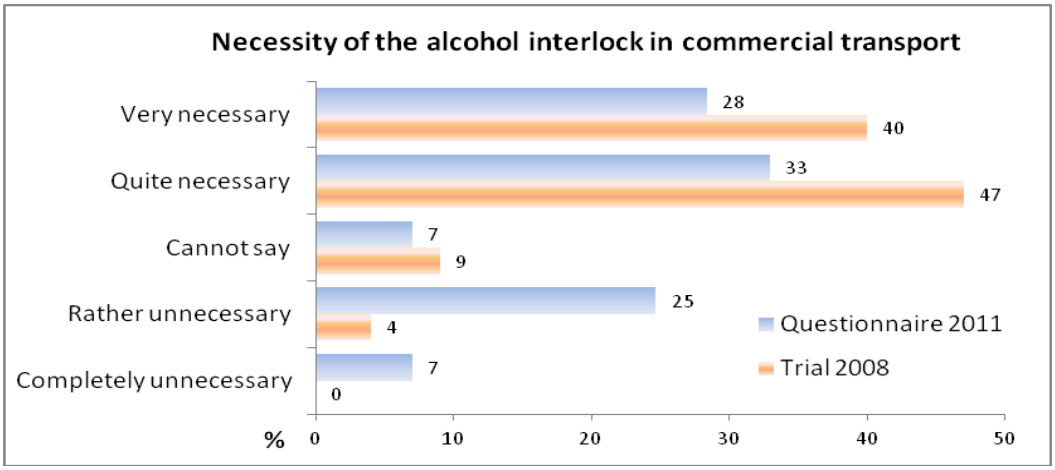


Figure 22. Necessity of the alcohol interlock in commercial transport (usefulness during the trial)

5.3 Views on expanding the use of the alcohol interlock

The majority of respondents would be prepared to expand the obligatory use of alcohol interlocks (Figure 23). The alcohol interlock could be used in the transport of dangerous goods (88%) and in passenger and freight traffic requiring a transport licence (81%). More than half (59%) of respondents would install an alcohol interlock in all new motor vehicles, and half (50%) would install it in all motor vehicles.

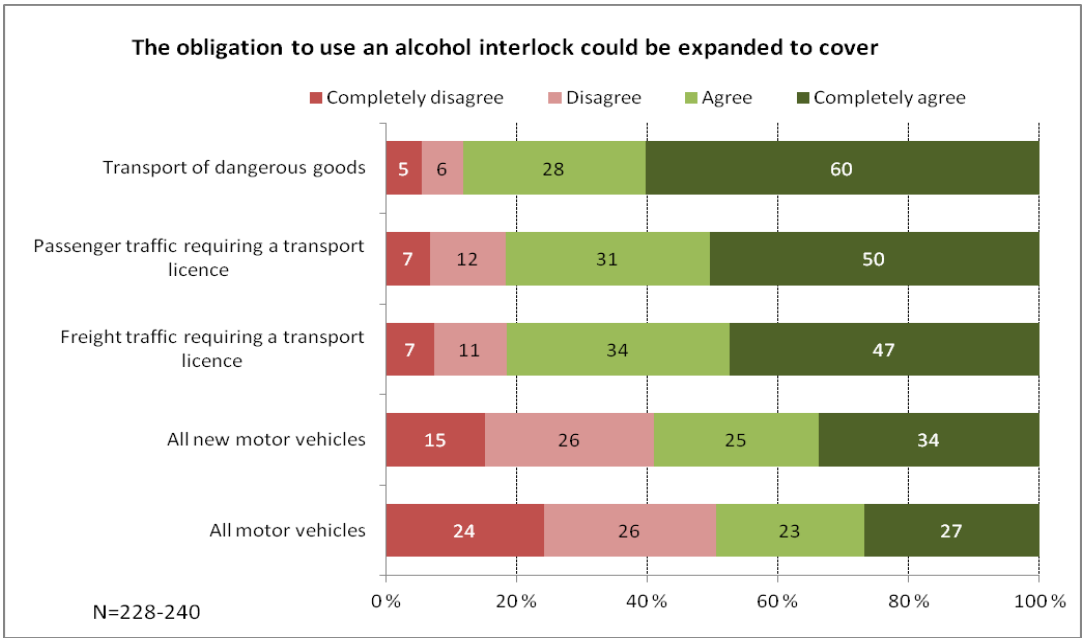


Figure 23. Expanding the obligation to use an alcohol interlock

The results show that most drivers would expand the obligation to use an alcohol interlock to cover all transport requiring a transport licence. In the freeform comments, many demanded that the obligation of use be expanded either to all vehicles requiring a transport licence, or to all vehicles (Annex 4). One driver suggested that a transport licence should not be granted to a person found guilty of driving while intoxicated. Another would expand the obligation to use an alcohol interlock to cover all drivers engaged in transport, even that which did not require a transport licence.

- *The licence process could also be used to screen for possible risk-group drivers in advance. A licence for commercial traffic should not, in other words, be granted if the applicant has been found guilty of driving while intoxicated.*
- *I would hope that the law would one day apply to all company vehicles driven by people, whose actual job is something other than driving the vehicle, e.g. city workers, Itella, electric companies, etc. At least here in Oulu you have to dodge city workers every day, whose conduct in traffic is suspicious to say the least.*

Expanding the obligation of use could, according to some comments, fix some of the problems with the current School Transport Act. An alcohol interlock was wished for, especially for drink-drivers. If alcohol interlocks were to be standard equipment in vehicles, the trouble of installation and problems in function relating to the installation would be avoided.

Close to half of all the respondents would be prepared to have an alcohol interlock in their own/their family's car, if it were available more cheaply or would lead to insurance discounts (Figure 24). Most participants in the trial would have taken an alcohol interlock unconditionally.

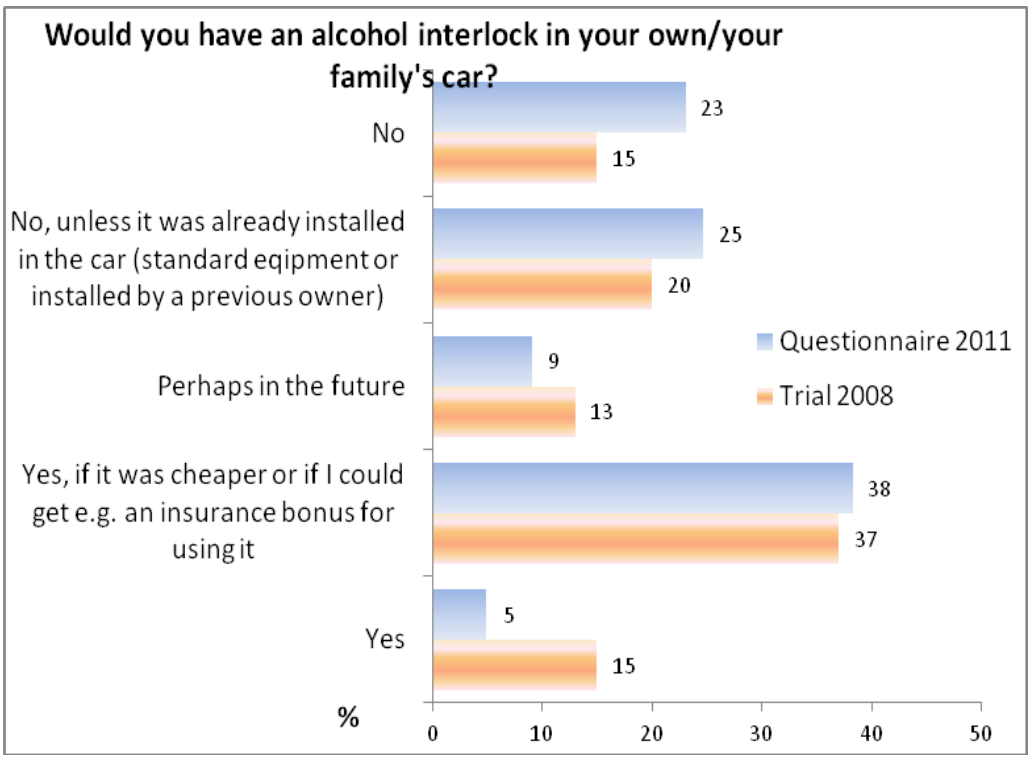


Figure 24. Would you have an alcohol interlock in your own/your family's car

5.4 Problems in the current legislation on school transport

Some problems have been perceived in the current Act on the Use of Alcohol Interlocks in School and Day Care Transport. This survey collected opinions from drivers, companies and workshop representatives, as well as newspaper reports, on the problems in current legislation, in order to prevent them in the future.

Many feel that the alcohol interlock provided for by the School Transport Act does not prevent drink-driving with the required certainty. In buses in particular, drivers are often changed during the day 'on the fly', and the new driver does not need to exhale. In large bus companies, the 'morning man' checks the operation of the buses' doors and brakes, which requires starting the buses. Therefore, one person may start, and therefore also exhale into the alcohol interlocks, of dozens of buses. The driver will not need to exhale at all during the day, as long as the vehicle is not kept turned off for more than 44 minutes at a time.

- *The device is completely pointless in companies where several drivers drive the same vehicles daily. I myself often drive five different vehicles in one day.*
- *In its current function, the alcohol interlock does not prevent anyone from driving while intoxicated. If you are in the habit of driving while*

tipsy, that habit will not change due to an alcohol interlock. You can keep the vehicle running for your whole shift if you like, so you will not need to exhale.

Some respondents to the questionnaire commented that the alcohol interlock is also easy to circumvent.

- *There are far too many easy ways to bypass it, so it absolutely does not prevent driving while drunk.*
- *The system is not watertight. You can always start a vehicle – another person can exhale, you can start the engine with a screwdriver from the end of the starter, etc.*

According to importers, however, bypassing an alcohol interlock will leave a record in the log data. Some alcohol interlocks enter an error state after a bypassed ignition, and will not start again without maintenance.

A man transporting schoolchildren was caught driving while seriously intoxicated in Helsinki in May 2011, even though the minibus was equipped with an alcohol interlock. The bus operator had voluntarily installed alcohol interlocks in their vehicles before the entry into force of the new School Transport Act and, according to the police, "the use of the alcohol interlock was probably voluntary as well". (YLE regional news, 11 May 2011.)

A few drivers did suggest that the surest way to prevent drink-driving would be random breath tests during the period of driving, or every driver being breathalysed by the employer each morning.

- *A preventive effect would be achieved only by a driver having to exhale at random intervals even while driving, and the alcohol interlock would require exhalations at random times when starting the vehicle.*
- *If we have to exhale, then let the employer breathalyse everyone in the morning.*

Many drivers feel the Act on the Use of Alcohol Interlocks in School and Day Care Transport to be unfair, since only certain school transport requires an alcohol interlock. Why not scheduled service traffic as well? Why is not the safety and well-being of all customers equally important? In the name of equality, it was suggested that alcohol interlocks should be used in all transport.

- *It is really humiliating that taxi drivers have been labelled alcoholics.*
- *Why must the entire profession be punished with extra costs and pointing the finger, if a couple of taxi drivers are caught drink-driving?*
- *In my opinion, commercial passenger traffic, especially that paid for by society (Kela and the municipal sector) should require alcohol interlock use, because the safety and well-being of all customers is equally important. I think it odd that alcohol interlocks are not required in all taxis, if they are required in some.*

Another perceived problem is the lessening of competition, when a small part of entrepreneurs have withdrawn entirely from competitive tendering for school transport. Larger companies, on the other hand, have only acquired alcohol interlocks for a small part of their vehicles, which leaves the amount of equipment used in occasional municipal transport needs small.

Some municipalities have changed school transport routes into scheduled service traffic, so that use of an alcohol interlock would not be necessary. Tempo-

rary transport of schoolchildren can also circumvent the use of an alcohol interlock. When a parents' meeting orders transport for a field trip, it does not require an alcohol interlock or an 80 km upper speed limit, like it would do if the school were to order the transport. Higher speeds have been used to try to achieve savings, especially in Northern Finland where distances are longer.

Aamulehti wrote on 6 December 2011 that schoolchildren in Tampere have been transported to places like the circus by city transport service buses, even though the buses do not have the alcohol interlocks required by law. The Chief of Equipment said there are different opinions on the obligatory nature of alcohol interlocks. He thought an alcohol interlock is only required if the chartered transport is recurrent. According to a competing transport company, an alcohol interlock would have been required, and they would have had vehicles equipped with alcohol interlocks available. A representative of the Ministry of Transport and Communications interviewed by the reporter confirmed that an alcohol interlock would have been required. It seems that competing businesses enforce alcohol interlock use in school transport.

6 Defining transport services

The National Strategy for Intelligent Transport prescribed the task of investigating the adoption and effects of the alcohol interlock in transport services, line services and professional freight traffic financed by public funds. Identification of the transport services belonging to this definition, and the numbers of the different kinds of vehicles, is discussed below.

6.1 Passenger transport and line services financed by public funds

Passenger traffic is founded on long-standing agreements. The role of the public sector in procuring traffic services is considerable, the proportion of line services procured being approx. 94% of passenger volume and approx. 80% of kilometres driven. Regular charter services represent approx. 2% of passenger volume and approx. 3% of kilometres driven. The share of domestic and international charter bus tourism is approx. 4% of passenger volume and approx. 17% of kilometres driven. In taxi traffic, the percentage of trips paid by the public sector is approx. 30%, the share of private customers approx. 50% and that of companies approx. 20%. (Finnish Bus and Coach Association 2011 and Finnish Taxi Owners Federation 2011.)

The contractual relationships in passenger transport are mainly direct. The transport is ordered by the state, a municipality or a federation of municipalities. In taxi transport, on the other hand, a significant portion of private passengers' trips is made up of transport provided for in the Disability Services and Social Welfare Acts and remunerated by The Social Insurance Institution of Finland (Kela) or municipalities. Licences for market-based traffic are issued by the competent authority, which is either a Centre for Economic Development, Transport and the Environment, a city or, in the case of Kainuu, the region.

6.2 Freight transport financed by public funds

The freight transport system is a reasonably extensive and multifaceted entity, with a variety of transport and service companies connected to it. Identifying transports financed by public funds is not especially problematic, since the public sector orders the transport directly from the carrier. A single shipment shipped using public funds may be transported by several different carriers in the transport chain, and make up only a small part of the vehicle load. It is also possible that the consignor pays initially for the transport, and invoices the public sector later for expenses incurred.

A fairly lengthy value chain is often related to the procurement of commodities, extending from raw material procurement through processing and the trade system and on to the customer. The life cycle of a commodity will continue for the duration of its use, and possibly end with the disposal of the article (Annex 5). All the interim stages might contain separate transport stages.

Transport services may consist of transport orders made separately, or else form an integral part of the commodity or other service being procured. Where the transport service is undertaken in return for compensation, the law requires the service provider to possess a licence for providing transport services. There is

also much transport for which no transport fee is charged, or in-company transport, for example, where a transport licence is not required. However, in such cases the transport customer may also use a carrier that holds a transport licence.

A transport service can be: procured directly from the carrier as a transport order; a transport service included in the commodity price, where the customer is not necessarily the buyer of the commodity; a transport task integrally related to the service's procurement; or transport within an organisation. These basic options can

also be combined in different ways. For example, a transport order can be made with a service organisation, which will then order the transport from a carrier or transport operator. Annex 5 presents a diagram of the different operating methods and the ways they implement transport.

Transport compensated from public funds is clearly identifiable if the transport order is made by a public organisation directly from the carrier. If, rather than making a separate transport order, a public organisation arranges the transport through a commercial service company producing transport services, the transport unit for the delivery relating to the public procurement cannot be unambiguously specified, nor what

vehicles will be used for transporting the transport unit. A transport service provider can have a fleet of hundreds of vehicles in operation. The supplier is normally the party making the transport order, and information on the agreement between the seller and customer or the details of the shipment will not be passed on to all parties in the transport chain. In this case a transport task procured by public funds cannot be unambiguously identified at various moments in the transport chain.

6.3 Numbers of vehicles and drivers

Numbers of vehicles in various vehicle categories are presented below, as well as categories in which an alcohol interlock should potentially be installed if the requirement for its use is expanded. The number of vehicles recorded on transport licences is presented by vehicle category in Table 3, based on information from Statistics Finland.

Table 3. Number of vehicles in traffic use 30 September 2011 (Trafi, Statistics Finland 2011)

Vehicle type	**Vehicles in total (pcs)**	**Vehicles requiring licences in total (pcs)**
Cars	2 572 523	10 794
Vans	299 892	5 607
Lorries	100 194	35 111
Busses	11 899	10 113
Special vehicles	7 522	95

No accurate estimate is available of the number of vehicles used in transport tasks subject to a professional competence requirement. Vehicles recorded on transport licences and a significant number of other vehicles are used in such transport tasks.

The numbers of drivers subject to a professional competence requirement are estimated at approximately 15,000

taxi drivers (Finnish Taxi Owners Federation 2011) and 80,000–100,000 lorry and bus drivers, when freight traffic, passenger traffic and other drivers needing at least a C1 or D1 class right to drive are totalled (Finnish Transport and Logistics 2011). More accurate numbers will only become known after the date when all professional drivers are required to have professional competence, namely 10 September 2013 for bus drivers, 10 September 2014 for lorry drivers and 1 January 2015 for taxi drivers.

7 Expanding the obligation to use an alcohol interlock

7.1 Alcohol interlock for professional transport

Identification of public-funded passenger traffic is reasonably straightforward, but has proven a challenging task for freight traffic; nor is it always simple to identify professional transport, especially in freight traffic. To achieve a clear and unambiguous definition of transport, we ended up examining the definitions already existing in legislation.

A transport licence is required for transport tasks involving people or goods being transported in return for compensation. Passenger traffic subject to transport licences covers all except public transport services in larger cities, which do not require transport licences. All commercial freight traffic requires a transport licence, but the in-house traffic of companies and organisations (earth construction, municipal maintenance transport, the towing industry), for example, does not. Should the requirement to use an alcohol interlock be limited to transport that requires a transport licence, much traffic would remain unaffected by it.

To arrive at a more comprehensive definition, rather than transport licences we turned to examining traffic subject to a professional competence requirement.

The professional competence requirement makes the examination of alcohol interlock use easier, since all professional passenger traffic will be subject to the requirement. Passenger traffic subject to the Act on the Professional Competence of Bus and Lorry Drivers consists of taxi traffic and market-based bus traffic, as well as bus traffic in accordance with the Regulation on Public Service Contracts. Market-based traffic can take the form of charter traffic, line services or call-a-bus traffic. Professional competence is required of drivers in passenger traffic who drive the buses or taxis used in passenger traffic as salaried employees or entrepreneurs.

In freight traffic, vans not subject to a professional competence requirement will be excluded, but lorry transport will fall extensively under the requirement to use an alcohol interlock. Professional competence is, as a rule, required of drivers who drive lorries used in freight traffic as salaried employees or entrepreneurs.

Lorries operating in Finland in freight traffic tasks come from both within and outside the EU. A national alcohol interlock requirement can only be placed on domestic traffic; a comprehensive requirement concerning all traffic would require EU legislation. A customer can, however, also demand alcohol interlock use from freight traffic operated by foreign lorries.

The national target level regarding the alcohol interlock, set down in the strategy (Ministry of Transport and Communications 2009), has been defined in this study as concerning transport subject to a professional competence requirement. The objective is to have the alcohol interlock in use in professional transport by 2014 at the latest. Customers can demand alcohol interlock use from carriers even before this date.

7.2 Interim objective: Increasing voluntary use

Alcohol interlock use can be increased before any new changes in legislation by investing in voluntary use. The state and municipalities in particular should require alcohol interlock use in competitive tendering relating to transport. For example, the Pirkanmaa Centre for Economic Development, Transport and the Environment requires alcohol interlock use in new road maintenance contracts, and the objective is to make this practice nationwide.

Before the Act on the Use of Alcohol Interlocks in School and Day Care Transport, few municipalities paid heed in their competitive tendering to the alcohol interlock recommendation. Now, as municipalities gain experience of vehicles equipped with alcohol interlocks through school transport, they might also voluntarily extend the requirement to other transport. In the school and day care sectors, competitive tendering has become necessary for occasional transport, in order to ensure the use of vehicles conforming to legislation.

A customer inviting competitive tenders for transport can either require alcohol interlock use, or award extra points for such use in competitive tendering. It would be advisable to clarify the monitoring procedure for alcohol interlock use in competitive tendering documents. In order to increase use, the weighting for alcohol locks as a basis for comparing tenders should be fairly large. On the other hand, if no competing tenders are received for the transport, quality evaluation will not have much effect. Generally speaking, entrepreneurs have a better chance of redeeming the costs of extra investments through extensive long-term contracts, than through individual transport tasks.

Both in this survey and during the voluntary alcohol interlock trial, entrepreneurs emphasised the security that alcohol interlock use provides for a company and its transport. In addition to an improved image and competitive benefits, use of an alcohol interlock makes a company's risk management, quality control, occupational safety and receipt of insurance indemnities more secure by preventing drivers from drink-driving.

7.3 Final objective: alcohol interlock as standard equipment

Many professional drivers feel it would be clearest and fairest for the alcohol interlock to be standard equipment in all vehicles. According to the National Strategy for Intelligent Transport (Ministry of Transport and Communications 2009), Finland will continue international co-operation to make the alcohol interlock standard equipment in all new vehicles. Finland cannot, however, impose an obligation to use an alcohol interlock either in specific or in all vehicles. This would require an EU resolution, and the timetable for such a resolution is difficult to predict. The objective is to have an alcohol interlock as standard equipment in all new vehicles by 2020 at the latest.

8 Effects and prerequisites of expanding the obligation of use

8.1 Installation, maintenance and calibration

An alcohol interlock is installed in a workshop authorised by the manufacturer. The Finnish Transport Safety Agency maintains a list of authorised installation and maintenance workshops. An alcohol interlock may only be installed or serviced by a maintenance workshop authorised by the importer and providing an installation certificate.

In addition to installation, an alcohol interlock requires calibration at six-monthly or yearly intervals, depending on the model. The act on approving the alcohol interlock for traffic (Laki alkolukon hyväksymisestä liikenteeseen 10.12.2010/1109) provides for calibration of alcohol interlocks. Calibration must be carried out in an authorised repair shop that will provide a calibration certificate. The certificate must be kept in the vehicle while driving, in addition to the installation certificate. According to the act on the right to drive controlled by an alcohol interlock (Laki alkolukolla valvotusta ajo-oikeudesta 26.6.2008/439), an alcohol interlock must prevent ignition of the vehicle if the statutory period between calibrations on the alcohol interlock is exceeded by more than seven days. The equipment will issue a reminder that the period between calibrations has expired each time it is switched on.

In the importers' view, alcohol interlocks require little maintenance, and long warranty periods have consequently been granted.

The greatest issue in the installation and maintenance of alcohol interlocks is probably the fact that qualified workshops are centred in Southern and Western Finland (figure 25). Distances to the nearest business carrying out alcohol interlock installation, particularly in the case of Lapland,can be substantial. The longest journey to the nearest installer is around 350 kilometres. The installation network is also sparse in Eastern Finland, since installers are concentrated in the large cities. There are many localities in Eastern Finland, Kainuu, Koillismaa and Lapland where the distance to the nearest installer is over 70 kilometres.

The uneven distribution of the installation network also limits the users' ability to choose their preferred alcohol interlock. Each alcohol interlock model has its own authorised installers. There are many localities where only one authorised alcohol interlock installer is established, leading to limited choice in large parts of the country.

An expansion in alcohol interlock use would probably bring new businesses to the industry, which could mean more maintenance shops available in areas where the network is currently sparse.

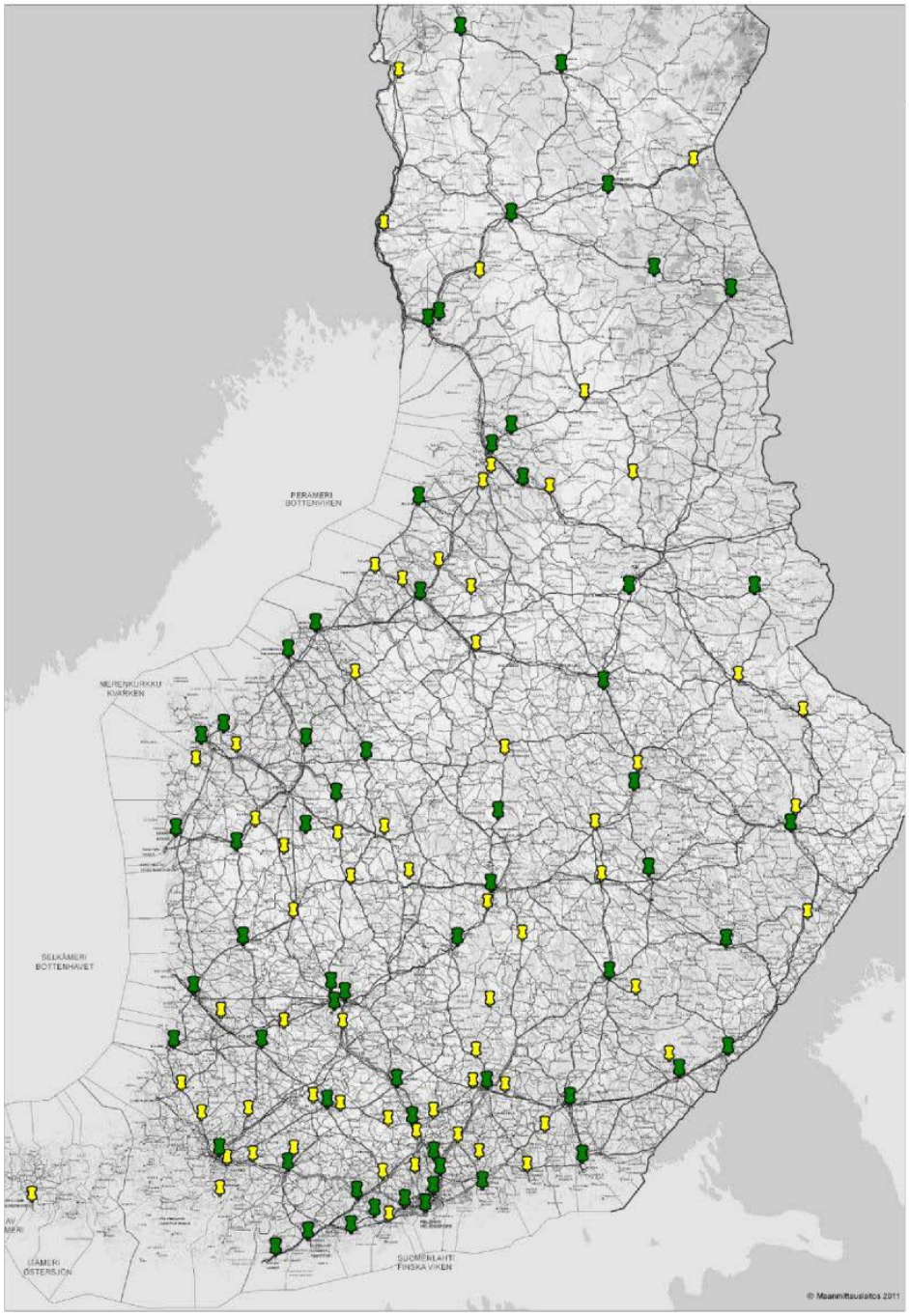


Figure 25. Alcohol interlock installers in Finland on 21 December 2011 (Source: www.trafi.fi/tieliikenne/luvat_ja_hyvaksynnat/autokorjaamot > alkolukkokorjaamot, http://www.ake.fi/AKE/AKEKorjaamot/Korjaamot.aspx?kohde=6)

8.2 Alcohol interlock adjustments

Several drivers can operate the same vehicle both in freight and passenger traffic, and changing drivers does not require, for example, turning off the engine and exhaling into the alcohol interlock. A vehicle will usually start without a new breath sample after a pause of 30 to 60 minutes in voluntary use. In school transport, an alcohol interlock must be adjusted to require a new breath sample

45 minutes after turning off the engine. With the possible future expansion of the obligation to use an alcohol interlock, it would be sensible to implement the same time limit for all professional traffic. The 45 minutes provided in the current decree, or less, would be one alternative.

For the alcohol interlock to prevent drink-driving it might be justified to require each new driver to exhale into the alcohol interlock before the start of a shift and when changing vehicles. A vehicle does not, however, recognise a change of drivers. To fulfil the breath sample requirement by technical means would make the alcohol interlock and its system complicated. According to Sweden's example, the breath sample requirement could be implemented by instructing the drivers.

A company should issue instructions its drivers to end their shift by resetting the alcohol interlock, so that a new driver always needs to provide a breath sample before setting off. If the vehicle is running and a breath sample contains more alcohol than the permitted maximum, the vehicle's hazard lights will start to flash and/or a signal will sound. The reset feature in some current alcohol interlocks is unnecessarily complicated. An easy-to-use reset button could be developed which would set the alcohol interlock to require a new breath sample.

The premise of the requirement to use an alcohol interlock is based on legislation, but there is no essential need to define the method for ensuring its use if the law obligates a company to draw up instructions that will result in the intent and letter of the law being fulfilled. The carrier or service company that controls the vehicle used in the transport is primarily responsible for instructing the drivers. The carrier or service company must also oversee that employees act according to the instructions. An employer can be obligated to collect and maintain a breath sample log and maintain it for inspection by the authorities (cf. monitoring of working hours). Instructions can vary between companies. The minimum requirement provided by the law must be fulfilled by all instructions, but instructions may also exceed the demands of the law.

8.3 Alcohol interlock log data

Alcohol interlocks used to control driving rights contain a recording system for monitoring purposes, which includes the recording of log data on use of the alcohol interlock. Recording is not required for alcohol interlocks approved for other purposes, because the main purpose of the alcohol interlock – preventing vehicle ignition when the driver's breath sample contains excess alcohol – can be fulfilled without such a feature. However, most alcohol interlocks generally record information on the number and results of breath samples, for example. This log data is usually decoded in connection with calibration, at least. In some companies, the alcohol interlock, or a connected monitoring device, may collect further information for the purposes of regular, or even real-time, monitoring. In such cases the provisions of the Personal Data Act must be observed at the workplace.

Alcohol interlock log data have raised the question of the protection of a driver's privacy. If log data from an alcohol interlock are combined with drivers' shift information, a personal data file containing sensitive data may be created. The Transport Workers' Union AKT is concerned that an employer may use in-

formation on breath samples – even those below the legal limit – as a basis for dismissal.

To ensure workers' data security, detailed log data should not be handed over to the employer without modifying it in such a way that it will be impossible to identify drivers from the data, even when combined with shift information.

On the other hand, if a company is obligated to be responsible for its employees giving a breath sample at the start of every shift or change of vehicle, the employer will need the log data for monitoring purposes. If a personal data file is created in the handling of log data, the requirements of the Personal Data Act must be taken into account . According to a statement by the Data Protection Ombudsman (2012), a legal basis provided for by law should be given for handling personal data. The matter should also be discussed in the workplace's co-determination procedure. According to the Occupational Safety Authority (2011), the use of an alcohol interlock must be agreed on in writing in a driver's employment contract and in the workplace rules. Companies should draw up an alcohol interlock policy, which would describe how to act after the first breath sample containing alcohol, and how to handle a repeat of the situation.

The law contains no provisions on the employer's right to breathalyse employees. Should an employee refuse to give a breath sample, the employer probably cannot sanction the employee for his/her refusal (Opuslex 2007). If a driver is suspected of a crime (drink-driving), the police can use the coercive measures provided for in the Coercive Measures Act to determine the level of intoxication. The use of an alcohol interlock is usually not connected to suspicion of a crime. A driver's right to refuse to give a breath sample would seem to conflict with the fact that the use of alcohol interlocks in school and day care transport is required by law. Employers can also be forced into a difficult position in voluntary alcohol interlock use if customers demand the use of an alcohol interlock, but drivers refuse to give a breath sample and employers have no means of sanctioning them. From the employer's point of view it must also be taken into account that handing over a vehicle to an intoxicated person is a crime. For the reasons mentioned, it might be necessary to obligate drivers to use alcohol interlocks.

8.4 Monitoring of alcohol interlock use

The obligation to use an alcohol interlock in school and day care transport is, primarily, an obligation related to the transport task, i.e. it is not related to the vehicle and thus not possible to inspect in connection with a vehicle inspection. The police will – in connection with its other enforcement duties – enforce the installation and proper functioning of the alcohol interlock. A customer may request to see the vehicles' installation and calibration certificates, or log data on breath samples. From the media it can be inferred that competing transport companies in practice also enforce the use of alcohol interlocks in school transport.

In voluntary alcohol interlock use, the use of an alcohol interlock is agreed on with the customer, for example, or the carrier may have autonomously decided on alcohol interlock use in its operations. The monitoring of voluntary alcohol interlock use is the responsibility of the party that set the obligation. If the obli-

gation has been set by the customer, monitoring procedures must also be agreed on at the contract stage. The customer can, for example, request

to view the vehicles' installation and calibration certificates, or log dataon breath samples.

It may be justified to extend the obligation to use an alcohol interlock to cover all transport subject to a professional competence requirement. This would make it in the public interest to enforce its use, and authorities would take care of enforcement. Monitoring is difficult to implement in connection with vehicle inspections, because the obligation to use an alcohol interlock is based on operation and not the vehicle itself. The enforcing authority will primarily be the police, and enforcement will be carried out in connection with other enforcement. Because the obligation of use can only be verified during transport, enforcement will be carried out on the roads. The procedure could be similar to the one used in the enforcement of driving and working hours, and tachograph use. The obligation to use a tachograph is identified according to the transport task, and the police and the Occupational Safety Authority participate in enforcement. An employer can be obligated to collect and maintain a register of breath samples and maintain it for inspection by the authorities.

Alcohol interlock maintenance calibrations are undertaken at regular intervals in authorised workshops. If a repair shop notices defects in the installation or functioning of the alcohol interlock, it is currently not obligated to report the noted defects. The vehicle's owner can easily be notified of the defects, but there are no instructions for reporting these to the authorities. On the other hand, a repair shop cannot be absolutely certain that an alcohol interlock has been installed in a vehicle used in transport tasks that are subject to an obligation to use an alcohol interlock. Authorised repair shops could be obligated to report perceived deficiencies or suspected flaws in alcohol interlocks to, e.g. the police or the Finnish Transport Safety Agency. It may be necessary in an appropriate manner to penalise defective or flawed use of an alcohol interlock.

8.5 Cost effects

The price of an alcohol interlock is in the 1,000–1,500 € range, with installation work costing 100–200 €. Calibration of an alcohol interlock is priced at 20–60 €, depending on the model. The extension of compulsory alcohol interlock use to all transport subject to the Act on the Professional Competence of Bus and Lorry Drivers would increase the number of alcohol interlocks in use by an estimated 90,000. The cost of the alcohol interlocks, totalled for the entire transport industry, would be approx. 108m €, the cost of installation work approx. 13.5m €, and the cost of annual calibrations approx. 3.6m €.

The importers' estimate of the service life of an alcohol interlock is around ten years. The cost of new alcohol interlocks procured annually for the transport industry from 2022 onwards is 12m € / year, and their installation would cost 1.5m €. The prices will probably decrease somewhat in the future, as a result of growing demand and competition.

Other possible cost items for companies include costs incurred from the daily operation relating to the use of an alcohol interlock, such as managing confiden-

tial breath sample data, taking care of incidents, and monitoring of alcohol interlock use handled by the employer (table 4).

The transport companies would primarily bear the costs. The costs would then be transferred to transport prices after a slight delay.

The police will enforce the functioning of alcohol interlocks and their use in connection with other enforcement duties. This extra target for enforcement will incur, e.g., training and management costs for the police. Possible new penal provisions and other control will cause pre-trial investigation, prosecution, trial and enforcement costs. Costs will be incurred if the Occupational Safety Authority participates in enforcement. Extra costs to society will be incurred mainly if the legislation is ambiguous, unclear, or felt to be unequal (e.g. the act on school transport).

Table 4. Costs incurred by transport companies

Type of cost	**Unit price**	**Amount**	**Total price**
Procurement of alcohol interlock	1200 €	90 000	108 M€
Installation of alcohol interlocks	150 €	90 000	13,5 M€
Procurement of new alcohol interlocks			**121,5 M€**
Replacement of alcohol interlocks from 2022 / year	1200 €	10 000	12 M€
Alcohol interlock installation from 2022 / year	150 €	10 000	1,5 M€
Alcohol interlock calibration / year	40 €	90 000	3,6 M€
Monitoring and minor maintenance in the companies	40 €	1 hour / alcohol interlock	3,6 M€
Maintenance costs / year			**20,7 M€**

9 Suggestions for improvement

According to the National Strategy for Intelligent Transport (Ministry of Transport and Communications 2009), Finland will continue international co-operation to make the alcohol interlock standard equipment in all new vehicles. Based on this survey, it would be necessary to take measures to increase the voluntary use of alcohol interlocks and begin drafting a law to place an obligation to use alcohol interlocks in transport subject to a professional competence requirement.

Increasing voluntary use should begin with public transport. Transport procured by the state and municipalities, competitive tendering for transport and new transport contracts should all require alcohol interlock use. Following the Swedish model, it would be advisable to inform and campaign to increase alcohol interlock use, both as a voluntary image benefit for companies and as a security for transport demanded by customers.

Informing about the alcohol interlock and campaigning for its use also belong to the purview of those responsible for other traffic safety work. In addition to traditional media, special emphasis should be placed on using the internet and social media in informing about the alcohol interlock.

When drafting the new law on the use of the alcohol interlock in transport subject to a professional qualification requirement, the following matters should be taken into account:

For the alcohol interlock to succeed in preventing drink-driving, drivers should give a breath sample before starting a shift and always when changing vehicles. Employers can be obligated to instruct their employees and monitor this requirement. For ease of monitoring, approved alcohol interlocks should have a recording option.

Alcohol interlocks should include an easy-to-use reset function which would make the alcohol interlock require a new breath sample. Resetting is required when changing drivers and for enforcement of the alcohol interlock's functioning carried out by the police.

It would be necessary to legislate on a driver's obligation to use an alcohol interlock. The requirements of the Personal Data Act must be taken into account in handling alcohol interlock log data. Information on alcohol interlock policy must be given in a workplace's rules, in its co-determination procedure, and in drivers' employment contracts.

To ensure regional equality, the alcohol interlock installation and maintenance network should also be reasonably comprehensive in Lapland and Eastern Finland.

Enforcement of the functioning of alcohol interlocks and their use

o Companies can be obligated to draw up instructions for each driver to give the alcohol interlock a breath sample before starting a shift, when changing vehicles and after a break of more than 45 minutes. Companies must enforce the fulfilment of this requirement.

o The police will enforce the functioning of alcohol interlocks and their use, in connection with other enforcement duties. An employer can be obligated to collect and maintain a register of breath samples and maintain it for inspection by the authorities. The customer should also make sure that the alcohol interlock is used according to the agreement.

o An alcohol interlock repair shop would be obligated to report any suspicion of misuse to the vehicle's owner and to the police or the Finnish Transport Safety Agency.

o It may be necessary to penalise in an appropriate manner the misuse or faulty installation of an alcohol interlock.

Annexes

Annex 1. Questionnaire form.

ALCOHOL INTERLOCK SURVEY
QUESTIONNAIRE for drivers of vehicles equipped with alcohol interlocks

---

BACKGROUND INFORMATION

1. Your gender
   1☐ Female
   2☐ Male

2. Your age group
   1☐ 18 - 24 years
   2☐ 25 - 34 years
   3☐ 35 - 54 years
   4☐ 55 - 64 years
   5☐ over 65 years

3. Your current situation in life
   1☐ I live alone
   2☐ I live in a relationship
   3☐ I have children

4. How many kilometres do you drive each year on average?

   around _____ km

5. Where do you mostly drive while working? (You can choose more than one option)
   1☐ Etelä-Karjala
   2☐ Etelä-Pohjanmaa
   3☐ Etelä-Savo
   4☐ Kainuu
   5☐ Kanta-Häme
   6☐ Keski-Pohjanmaa
   7☐ Central Finland
   8☐ Kymenlaakso
   9☐ Lapland
   10☐ Pirkanmaa
   11☐ Pohjanmaa
   12☐ Pohjois-Karjala
   13☐ Pohjois-Pohjanmaa
   14☐ Pohjois-Savo
   15☐ Päijät-Häme
   16☐ Satakunta
   17☐ Uusimaa
   18☐ Finland Proper

6. What type of vehicle do you mainly drive while working?
   1☐ Taxi
   2☐ Bus
   3☐ Lorry
   4☐ Van
   5☐ Other, what? _____

7. Your job?
   1☐ Salaried driver employed in passenger traffic
   2☐ Salaried driver employed in freight traffic
   3☐ Transport entrepreneur in passenger traffic
   4☐ Transport entrepreneur in freight traffic

ALCOHOL USE

8. How often do you usually drink alcohol?
(beer, spirits, cider, wine or similar)
1☐ never
2☐ a few times a year or more seldom
3☐ 1-2 times a month
4☐ once a week
5☐ 2-3 times a week
6☐ almost daily/daily

9. How often do you drink enough to get drunk?
(more than 5 units for women and more than 7 units for men, a unit being 0.33 l of medium strength beer, for example)
1☐ never
2☐ a few times a year or more rarely
3☐ 1-2 times a month
4☐ once a week
5☐ 2-3 times a week
6☐ almost daily/daily

10. Which of the following best describes your way of acting before you started operating a vehicle equipped with an alcohol interlock?
1☐ I do not consume alcohol even the night before a workday.
2☐ I count units and breakdown times, so that my blood contains no alcohol when I start driving.
3☐ I have at most one unit of alcohol before driving.
4☐ I count units and breakdown times, so that I will not be above the limit of driving while intoxicated (0.5 ‰).
5☐ I have learned to know my body and know when I am fit to drive.

EXPERIENCES OF ALCOHOL INTERLOCK USE

11. How often do you drive a vehicle equipped with an alcohol interlock?
1☐ never
2☐ a few times a year or more seldom
3☐ 1-2 times a month
4☐ once a week
5☐ 2-3 times a week
6☐ almost daily/daily

12. How long have you operated a vehicle equipped with an alcohol interlock?
1☐ For 2 weeks at most
2☐ More than 2 weeks – 2 months
3☐ More than 2 months – 1 year
4☐ 1-3 years
5☐ Over 3 years

13. Have you experienced problems with the use or functioning of the alcohol interlock? (You can choose more than one option)
1☐ No
2☐ Problems relating to the exhalation
3☐ The range of the wireless device has been inadequate/problematic
4☐ Heat/sunlight has caused problems
5☐ Cold/freezing temperatures have caused problems
6☐ Problems in installation, maintenance or calibration
7☐ Other, what? _____

Please elaborate on your problems: _____

14. What has been the best thing about using an alcohol interlock in your opinion? (You can choose more than one option)
1☐ Being acquainted with new technology
2☐ Emphasis on traffic safety
3☐ The certainty of not setting out by accident while under the influence of alcohol
4☐ Positive feedback from outsiders/customers
5☐ Image benefit as a responsible driver/company
6☐ Other, what? _____

15. What has been the worst thing about using an alcohol interlock in your opinion? (You can choose more than one option)
1☐ Having to learn to use a new technical device
2☐ Technical problems related to the device's functioning
3☐ The times spent and inconvenience caused by using the device when setting out
4☐ Waiting for a device that has been left in freezing temperatures to warm up
5☐ The inconvenience of looking after the palm unit of a wireless device
6☐ The negative or suspicious attitude of outsiders
7☐ The awkwardness of exhaling in a public place
8☐ I don't dare to have even one beer, e.g. when I eat
9☐ Other, what? _____

OPINIONS ON THE ALCOHOL INTERLOCK

16. How well do the following statements describe your opinions?

	Completely disagree	Disagree	Agree	Completely agree
The alcohol interlock has not hindered my driving assignments in practice.	1☐	2☐	3☐	4☐
I did not receive sufficient instruction in the use of the alcohol interlock at first.	1☐	2☐	3☐	4☐
The alcohol interlock gives me the certainty that my blood alcohol level is not more than 0.2‰ while I drive.	1☐	2☐	3☐	4☐
I feel awkward using the alcohol interlock.	1☐	2☐	3☐	4☐
It is a good thing that a transport customer can demand the use of a vehicle equipped with an alcohol interlock in transport where it is not required by law.	1☐	2☐	3☐	4☐

17. What are outsiders' attitudes on your alcohol interlock use?
1☐ Most might think I have an alcohol problem.
2☐ Most think I am a responsible driver.
3☐ Most are aware that it is an obligation related to the work of a professional driver.
4☐ Other, what? _____

18. The Act on the Use of Alcohol Interlocks in School and Day Care Transport entered into force from August 2011.
What has your work community's attitude been towards the obligation to use an alcohol interlock in school and day care transport?
1☐ Extremely negative
2☐ Negative
3☐ Neutral

4☐ Positive
5☐ Extremely positive

19. What is your attitude towards the obligation to use an alcohol interlock in school and day care transport?
(even if you yourself do not operate such transport)
1☐ Extremely negative
2☐ Negative
3☐ Neutral
4☐ Positive
5☐ Extremely positive

20. How do you think alcohol interlock use affects your employer's/company's public image?
1☐ seriously damages it
2☐ slightly damages it
3☐ no effect
4☐ slightly improves it
5☐ improves it a lot

21. How often do you think professional drivers should exhale into the alcohol interlock?
1☐ Just once, when the shift (drive) is starting
2☐ After each break of more than one hour
3☐ After each break of more than half an hour
4☐ Always when starting the vehicle
5☐ Also at random intervals while driving

22. How necessary do you feel the alcohol interlock to be in commercial transport?
1☐ Completely unnecessary
2☐ Rather unnecessary
3☐ Cannot say
4☐ Quite necessary
5☐ Extremely necessary

23. How well do the following statements describe your opinions?

The obligation to use an alcohol interlock could be expanded to cover	Completely disagree	Disagree	Agree	Completely agree
transport of dangerous goods	1☐	2☐	3☐	4☐
passenger traffic requiring a transport licence	1☐	2☐	3☐	4☐
freight traffic requiring a transport licence	1☐	2☐	3☐	4☐
all new motor vehicles	1☐	2☐	3☐	4☐
all motor vehicles	1☐	2☐	3☐	4☐

24. Do you feel that legislation or competitive tendering would require some conditions or changes so that the obligation to use an alcohol interlock could be expanded to cover all transport requiring a transport licence?

_____

_____

25. Would you have an alcohol interlock in your own/your family's car?
1☐ No
2☐ No, unless it was already installed in the car (standard equipment for a certain model or installed by a previous owner)
3☐ Perhaps, in the future
4☐ Yes, if it was cheaper or if I could get, a discount on my insurance for using it, for example
5☐ Yes

TRAFFIC SAFETY

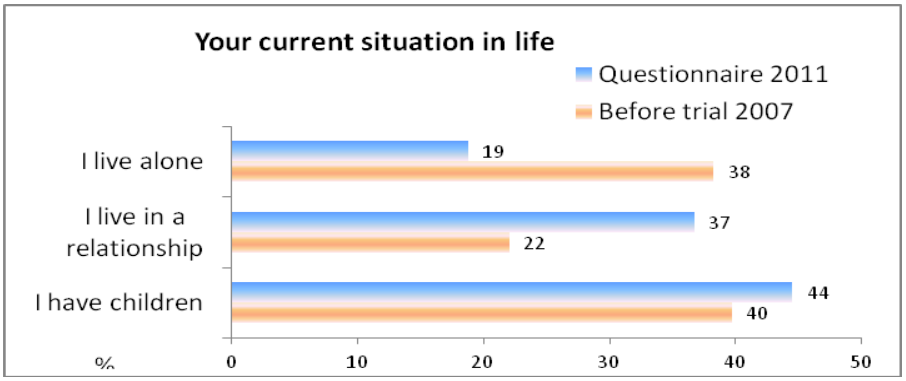
26. How well do the following statements describe your opinions?

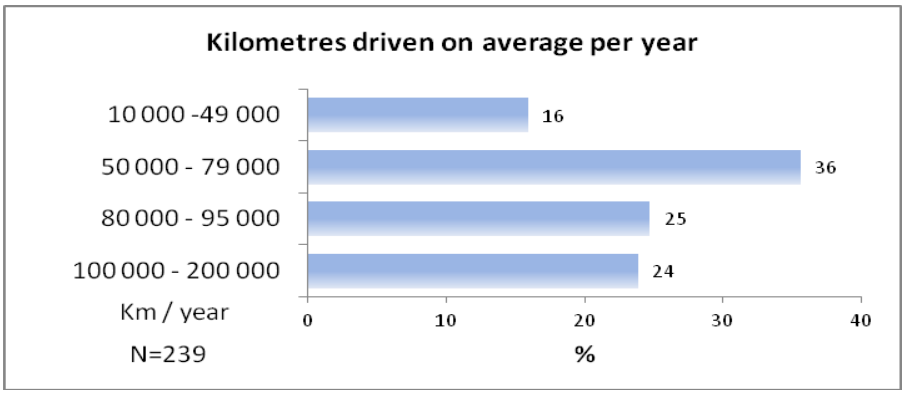
	Complete disagree	Disagree	Agree	Complete agree
Drink-drivers get unreasonably lenient sentences.	1☐	2☐	3☐	4☐
The limit for driving while intoxicated should be changed to 0.2‰	1☐	2☐	3☐	4☐
I tolerate other drivers' mistakes without getting annoyed.	1☐	2☐	3☐	4☐
I observe speed limits.	1☐	2☐	3☐	4☐
I maintain a safe distance between my vehicle and the vehicle in front.	1☐	2☐	3☐	4☐

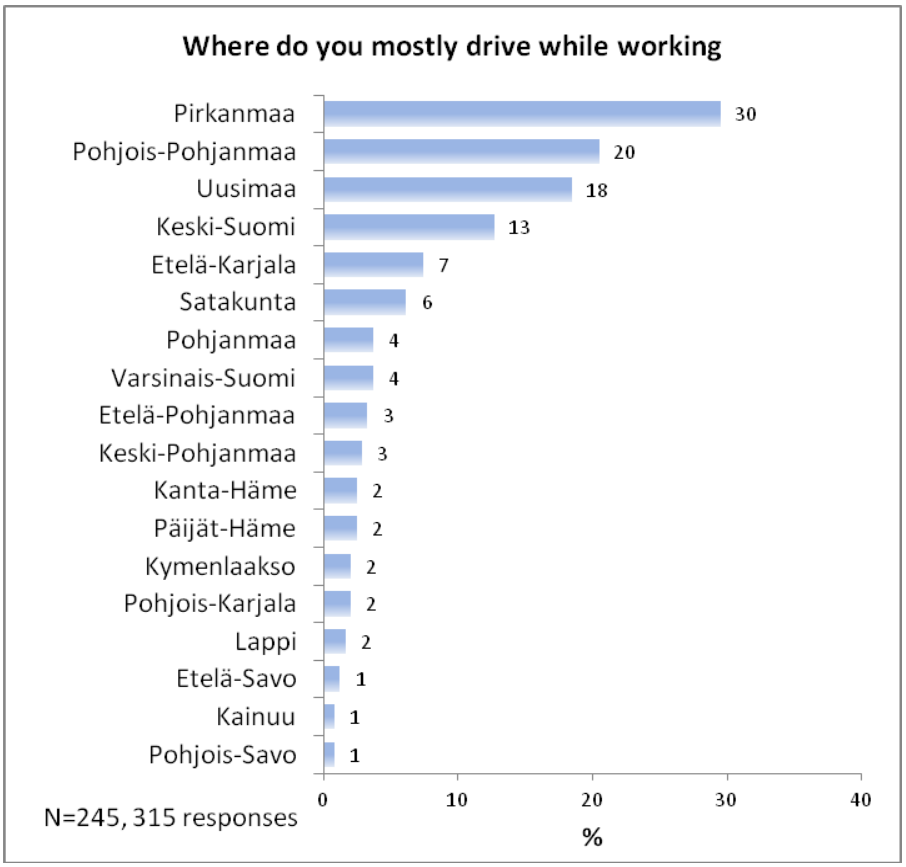
27. What else would you like to say about the alcohol interlock?

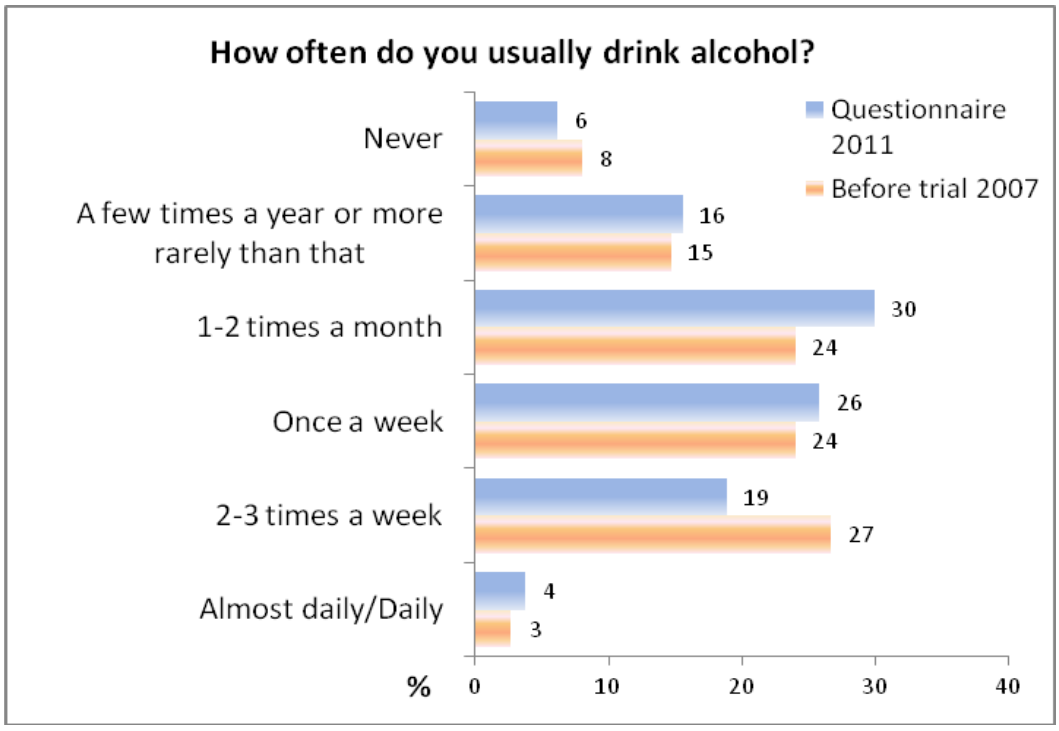
THANK YOU!

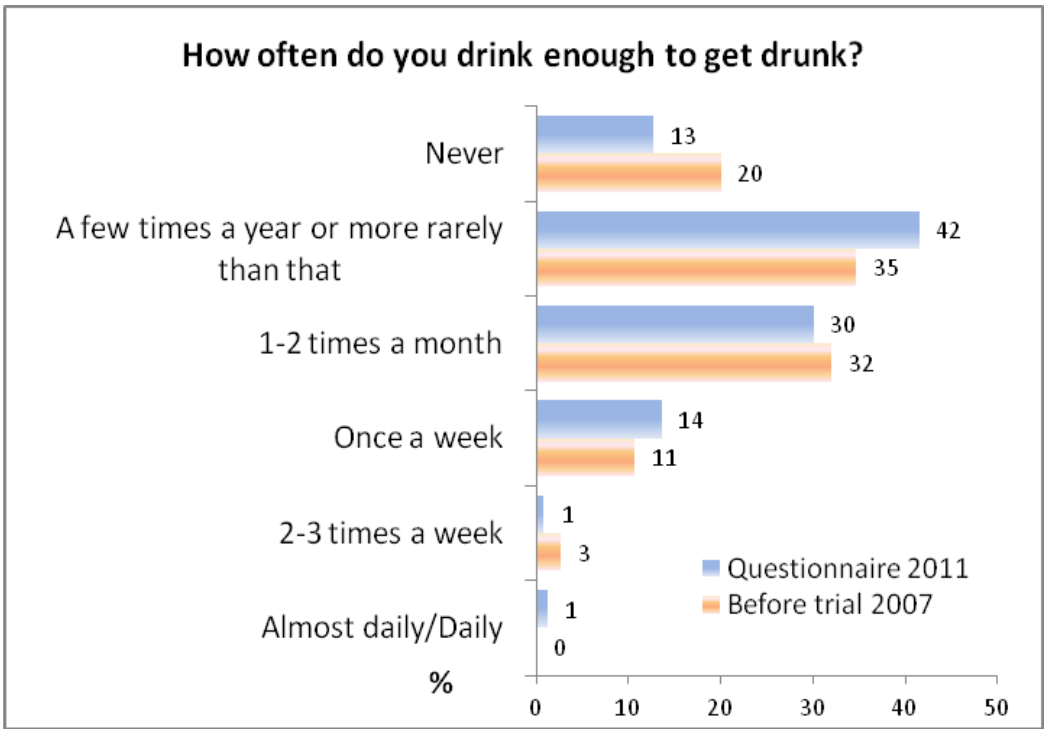
Annex 2. Respondents' background information.

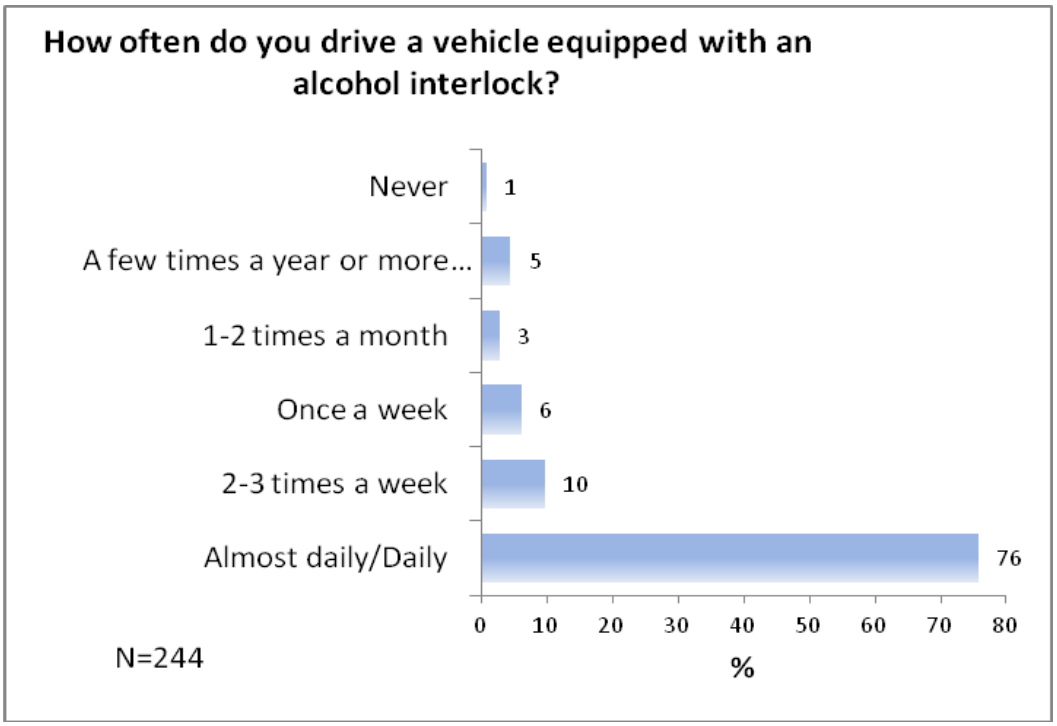


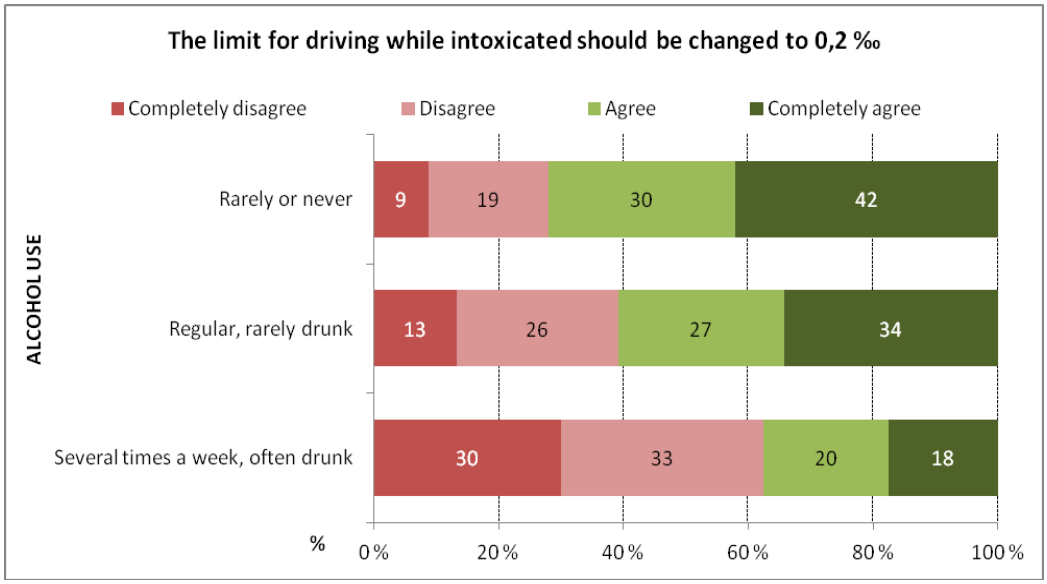




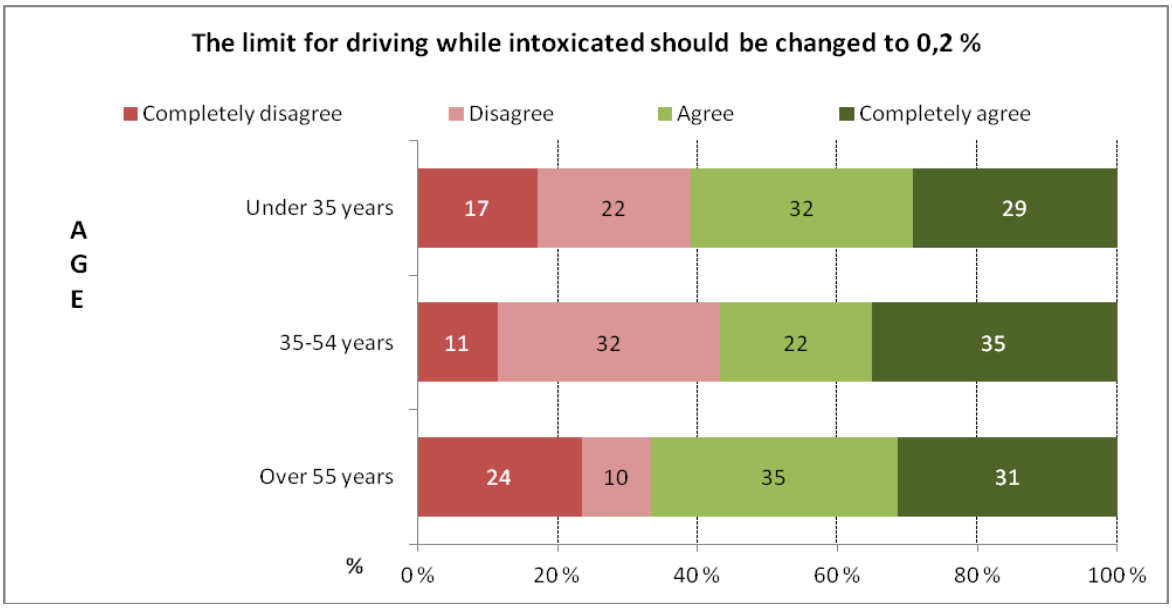

How often do you usually drink alcohol?
Never
A few times a year or more rarely than that
1-2 times a month
Once a week
2-3 times a week
Almost daily/Daily
%
6
8
16
15
30
24
26
24
19
27
4
3
0
10
20
30
40
Questionnaire 2011
Before trial 2007


How often do you drink enough to get drunk?
Never
A few times a year or more rarely than that
1-2 times a month
Once a week
2-3 times a week
Almost daily/Daily
%
13
20
42
35
30
32
14
11
1
3
1
0
0
10
20
30
40
50
Questionnaire 2011
Before trial 2007

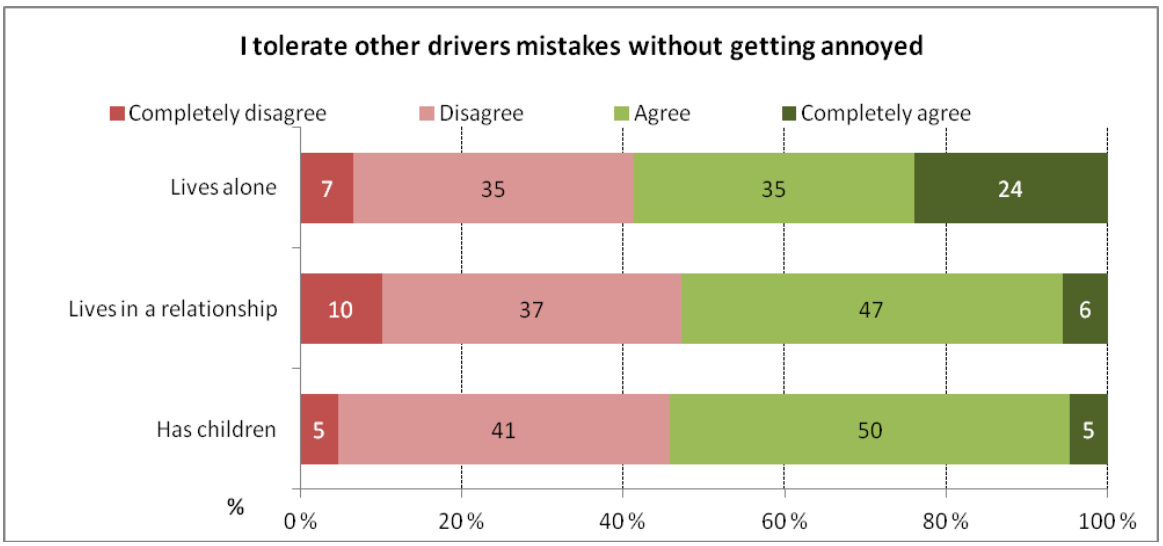




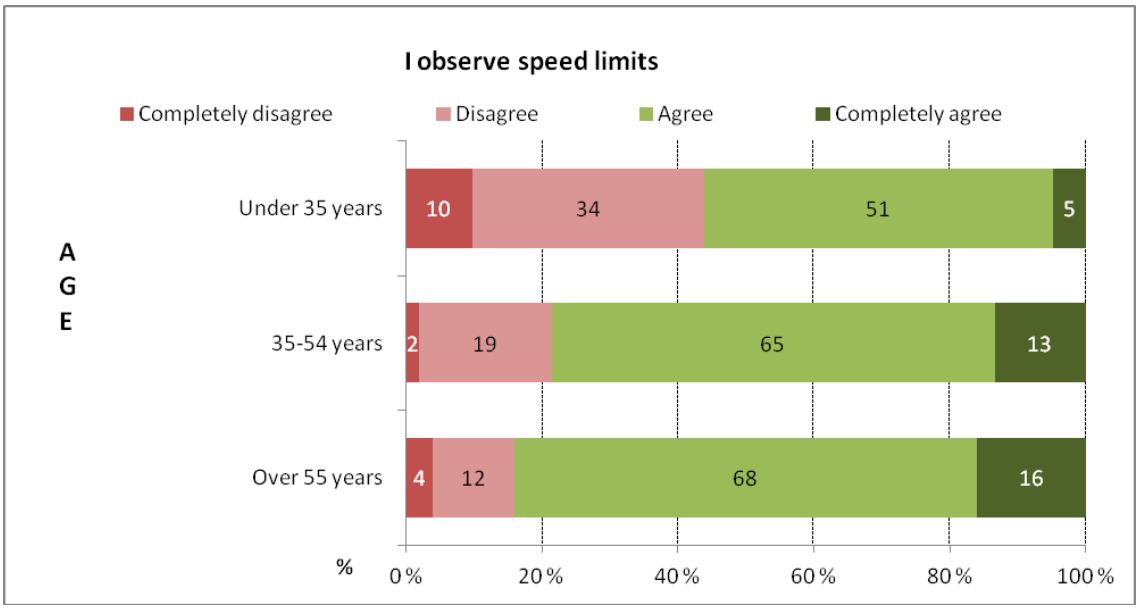
Contingency factor = 0.24
Square of chi = 14.63
Degree of freedom = 6
P-value = 0.0233
Statistically almost significant



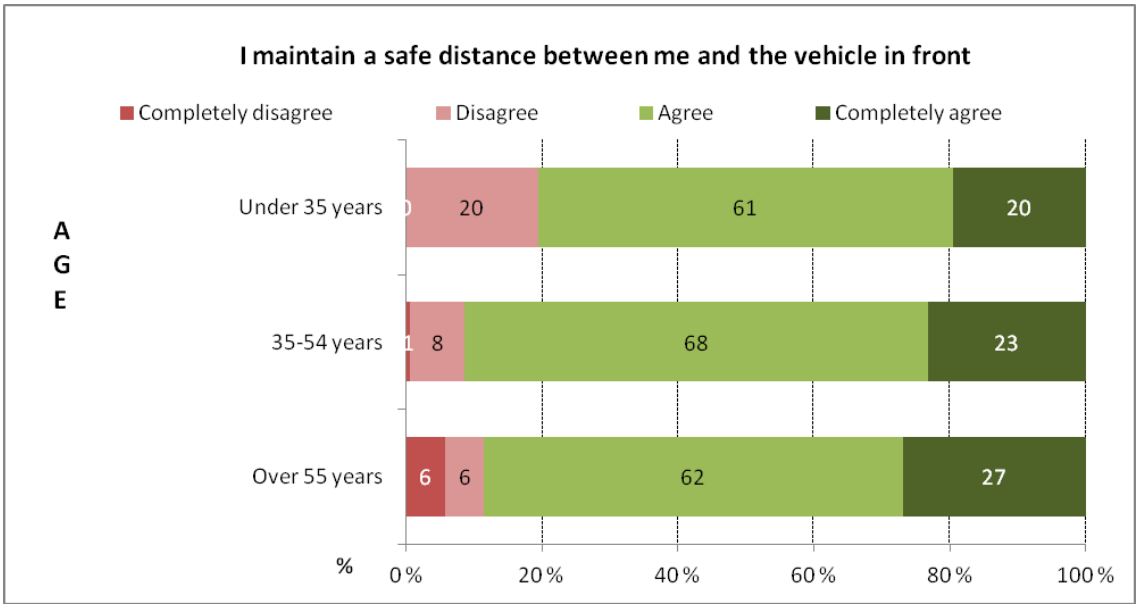
Contingency factor = 0.242
Square of chi = 14.9
Degree of freedom = 6
P-value = 0.021
Statistically almost significant



Contingency factor = 0.272
Square of chi = 19.29
Degree of freedom = 6
P-value = 0.0037
Statistically significant

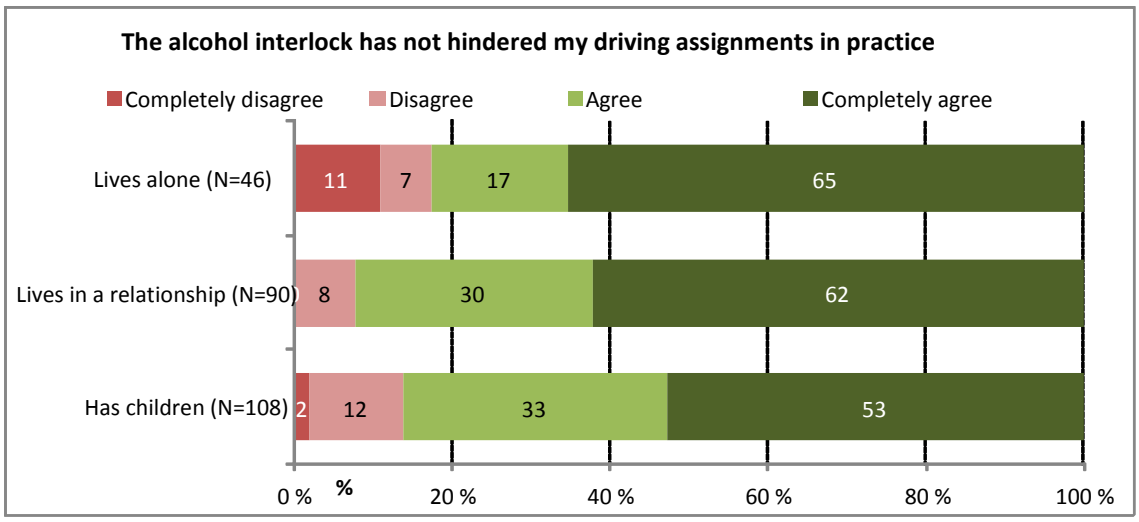


Contingency factor = 0.238
Square of chi = 14.43
Degree of freedom = 6
P-value = 0.0252
Statistically almost significant

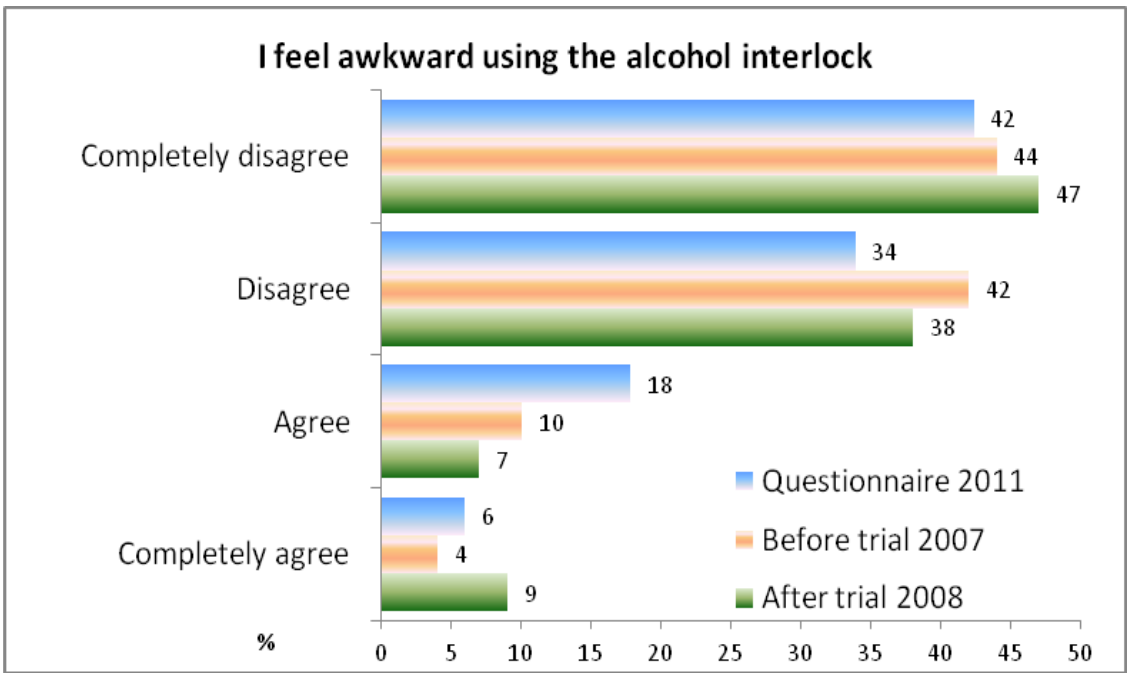


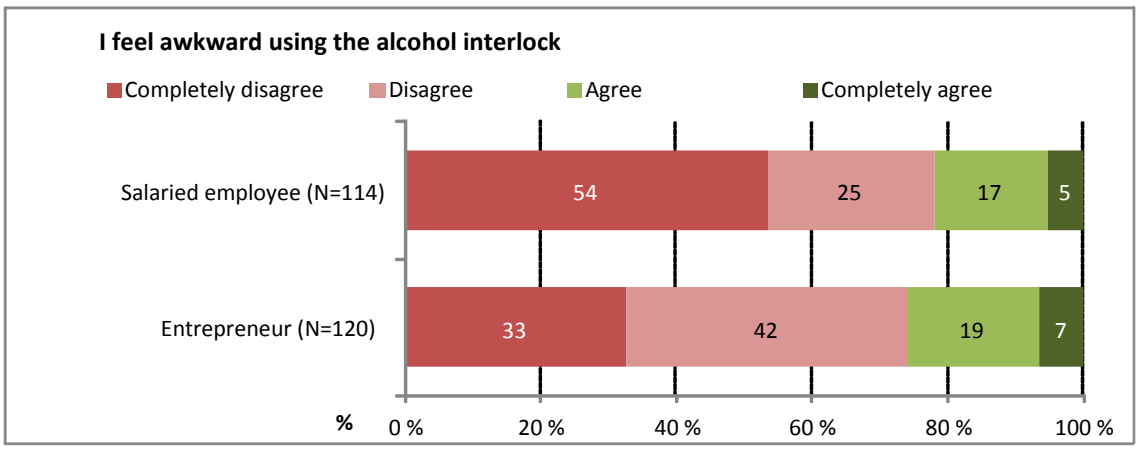
Contingency factor = 0.228
Square of chi = 13.44
Degree of freedom = 6
P-value = 0.0365
Statistically almost significant

Annex 3. Results of the survey in figures.

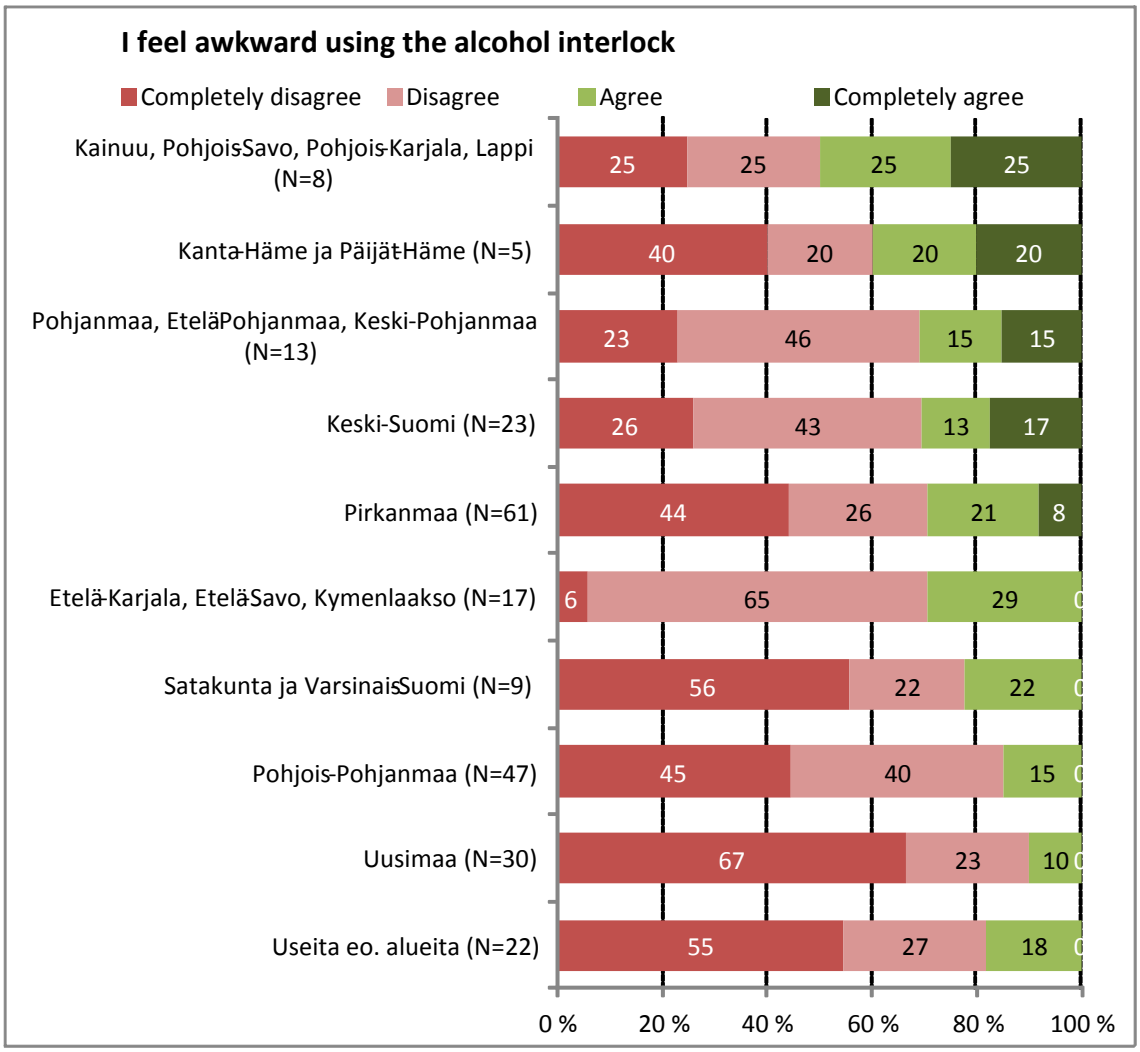


Contingency factor = 0.267
Square of chi = 18.71
Degree of freedom = 6
P-value = 0.0047
Statistically significant

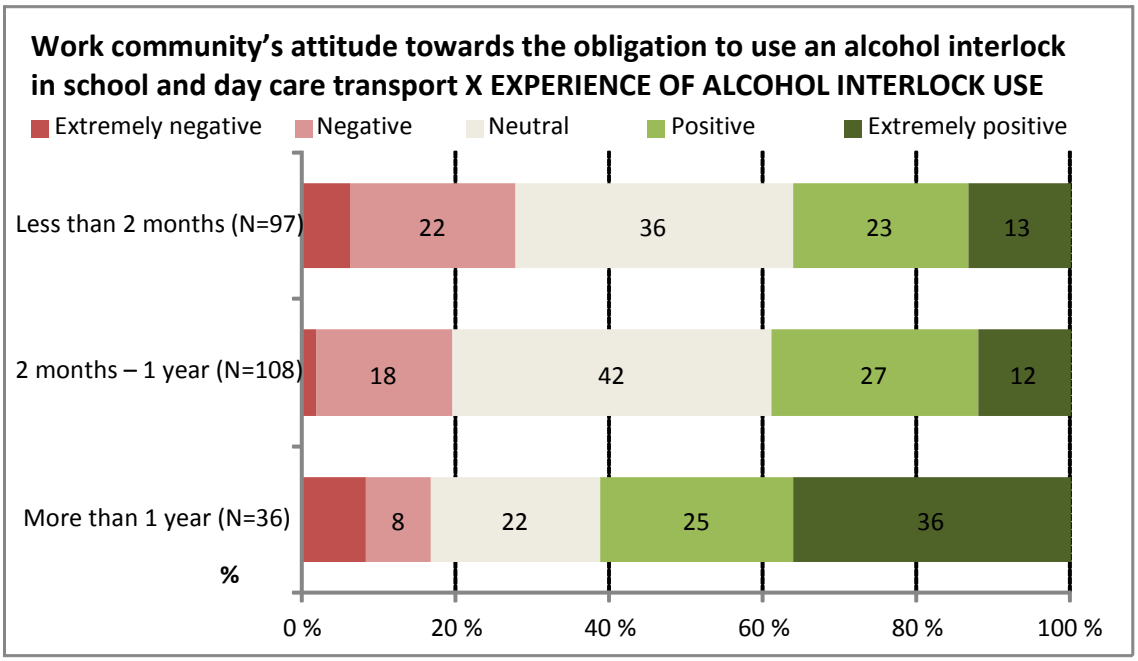




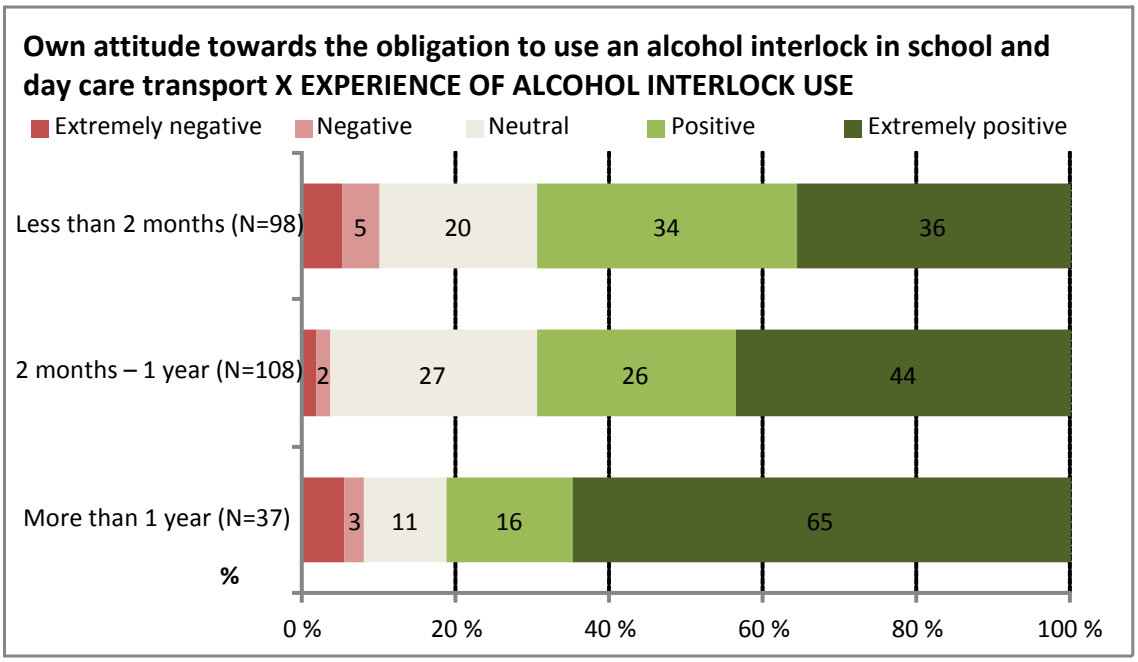
Contingecy factor = 0.217
Square of chi = 11.57
Degree of freedom = 3
P-value = 0.009
Statistically significant



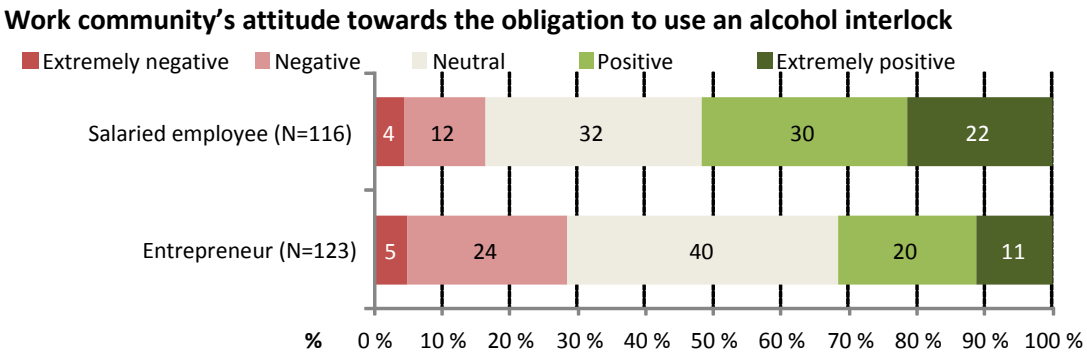
Contingency factor = 0.415
Square of chi = 48.77
Degree of freedom = 27
P-value = 0.0063
Statistically significant

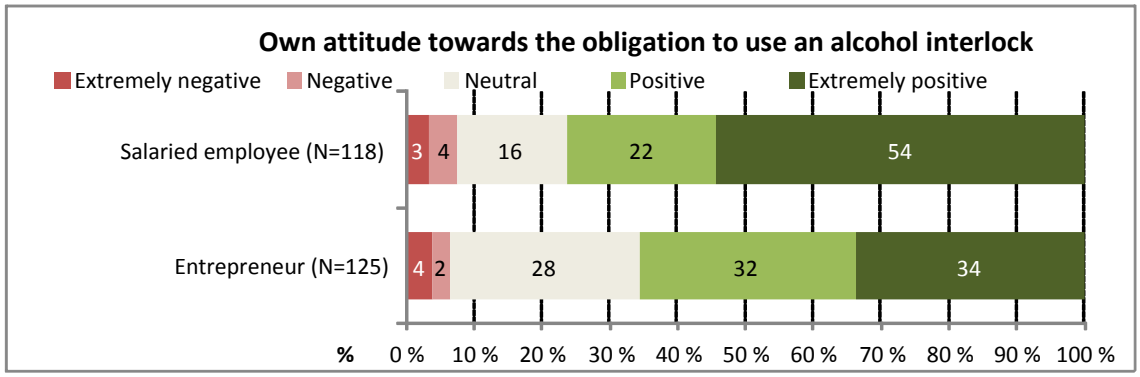


Contingency factor = 0.275
Square of chi = 19.64
Degree of freedom = 8
P-value = 0.0118
Statistically almost significant



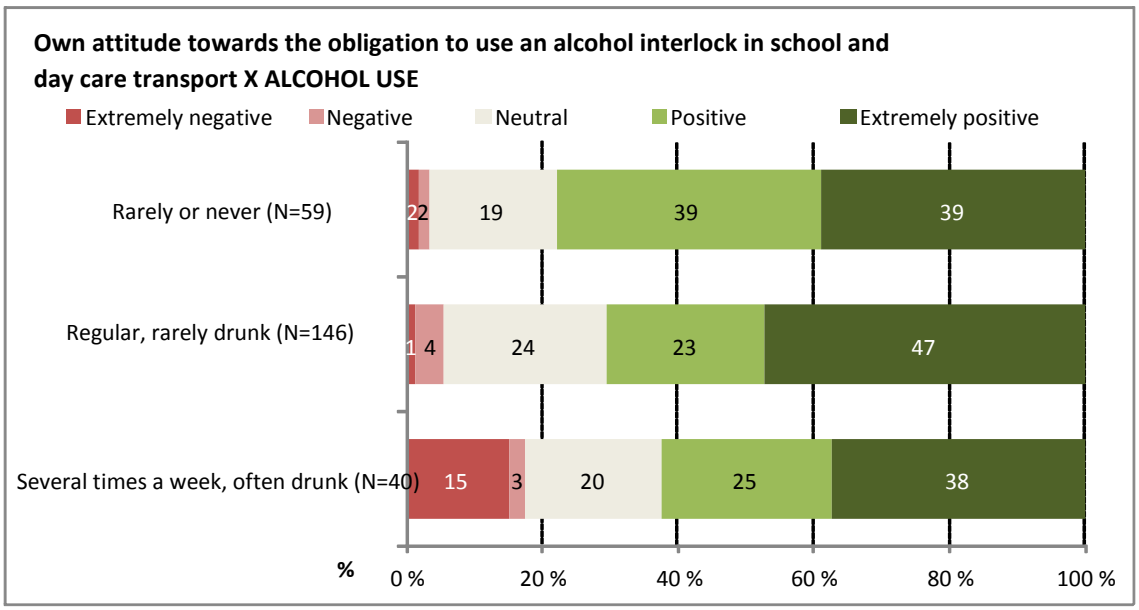
Contingency factor = 0.243
Square of chi = 15.29
Degree of freedom = 8
P-value = 0.0537
Statistically symptomatic



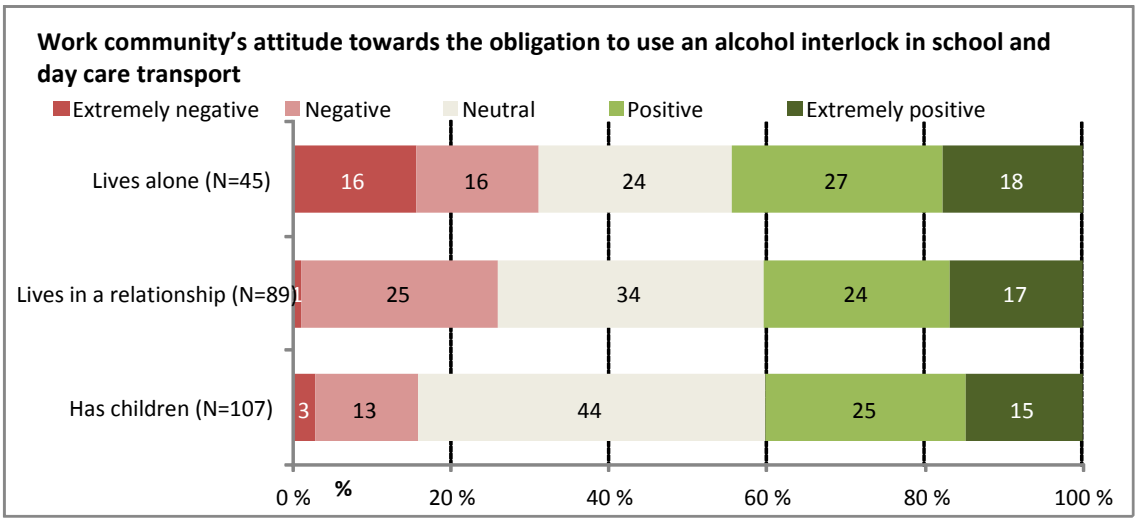


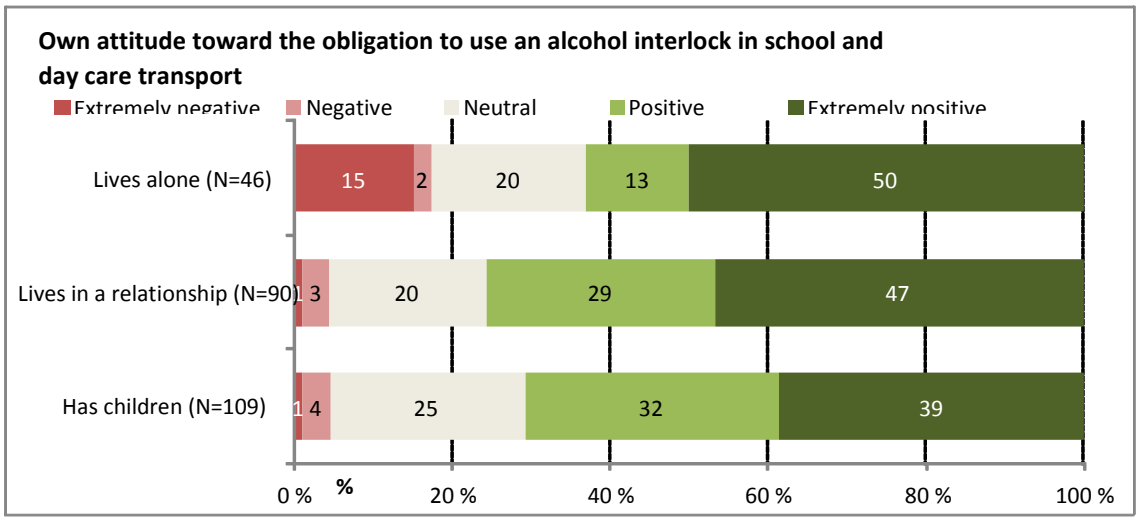
Contingency factor = 0.215
Square of chi = 11.57
Degree of freedom = 4
P-value = 0.0208
Statistically almost significant

Contingency factor = 0,316
Square of chi = 27,13
Degree of freedom = 8
P-value = 0,0007
Statistically very significant



Contingency factor = 0,294
Square of chi = 23,13
Degree of freedom = 8
P-value = 0,0032
Statistically significant





Contingency factor = 0.293

Square of chi = 22.71

Degree of freedom = 8

P-value = 0.0038

Statistically significant

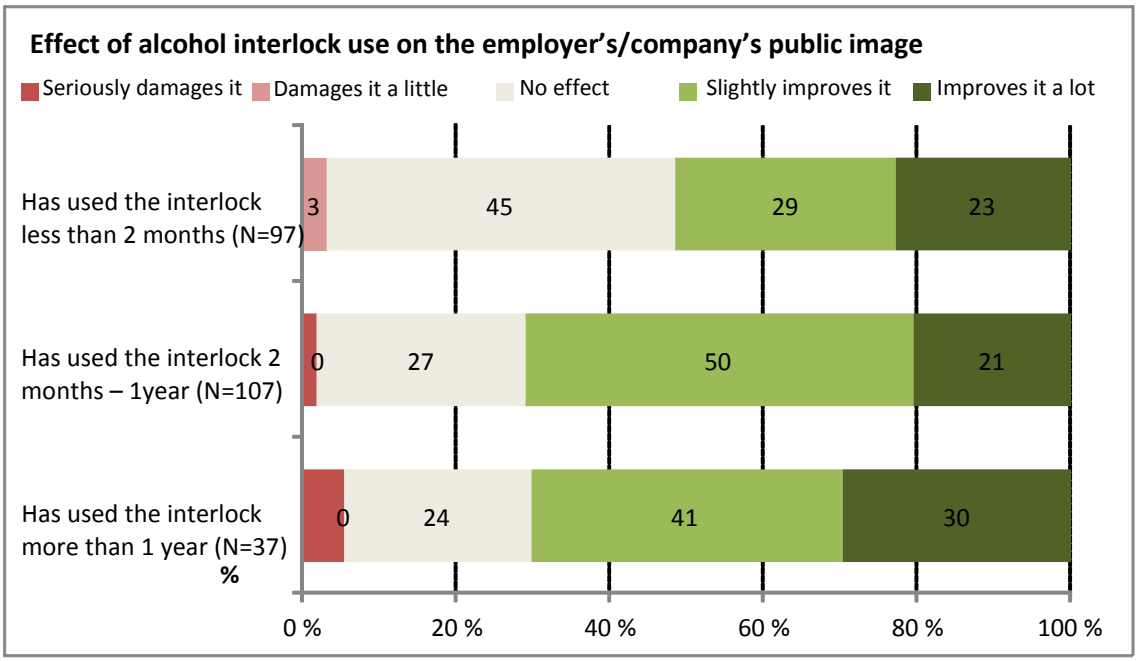
Contingency factor = 0.316

Square of chi = 27.13

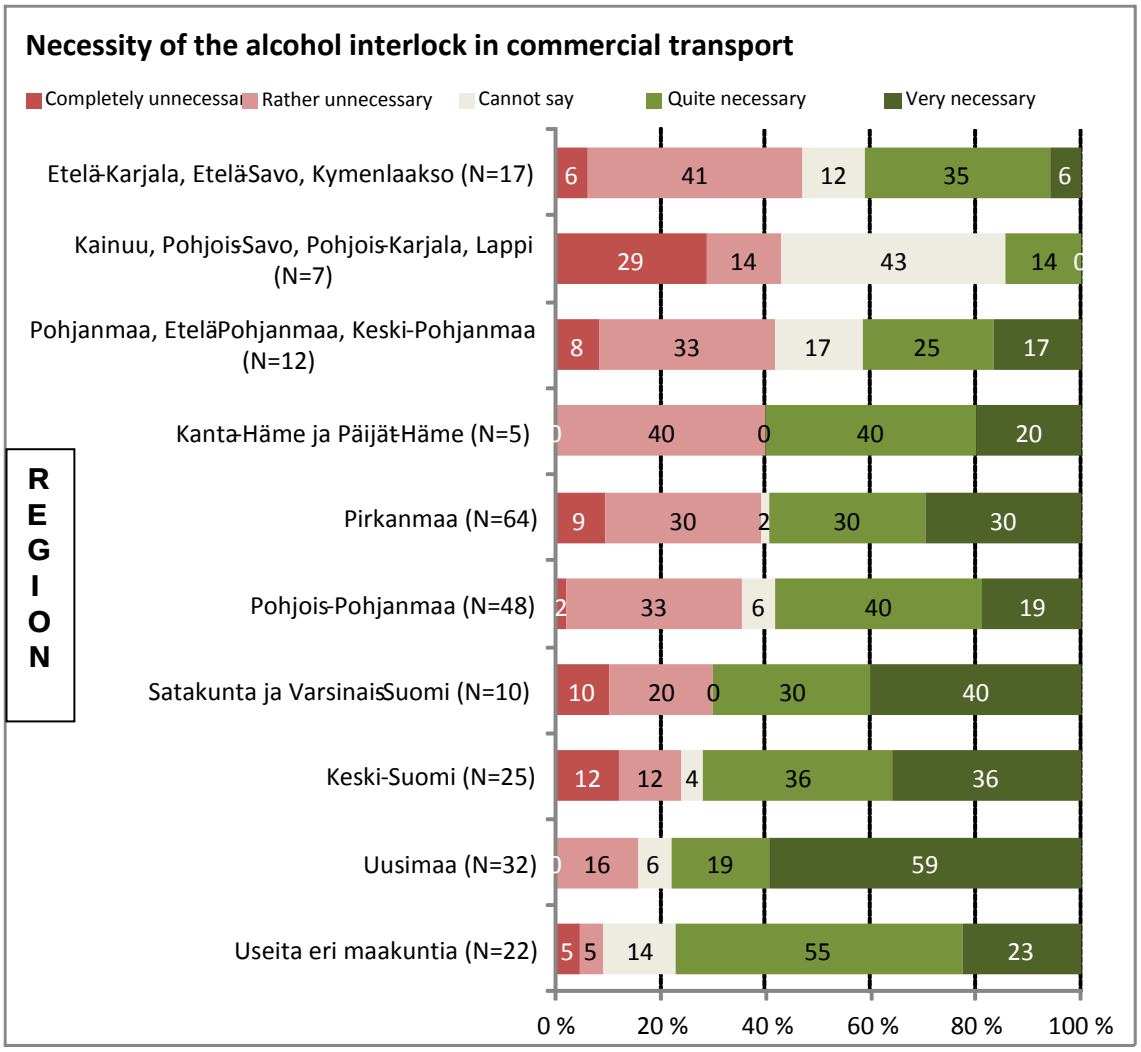
Degree of freedom = 8

P-value = 0.0007

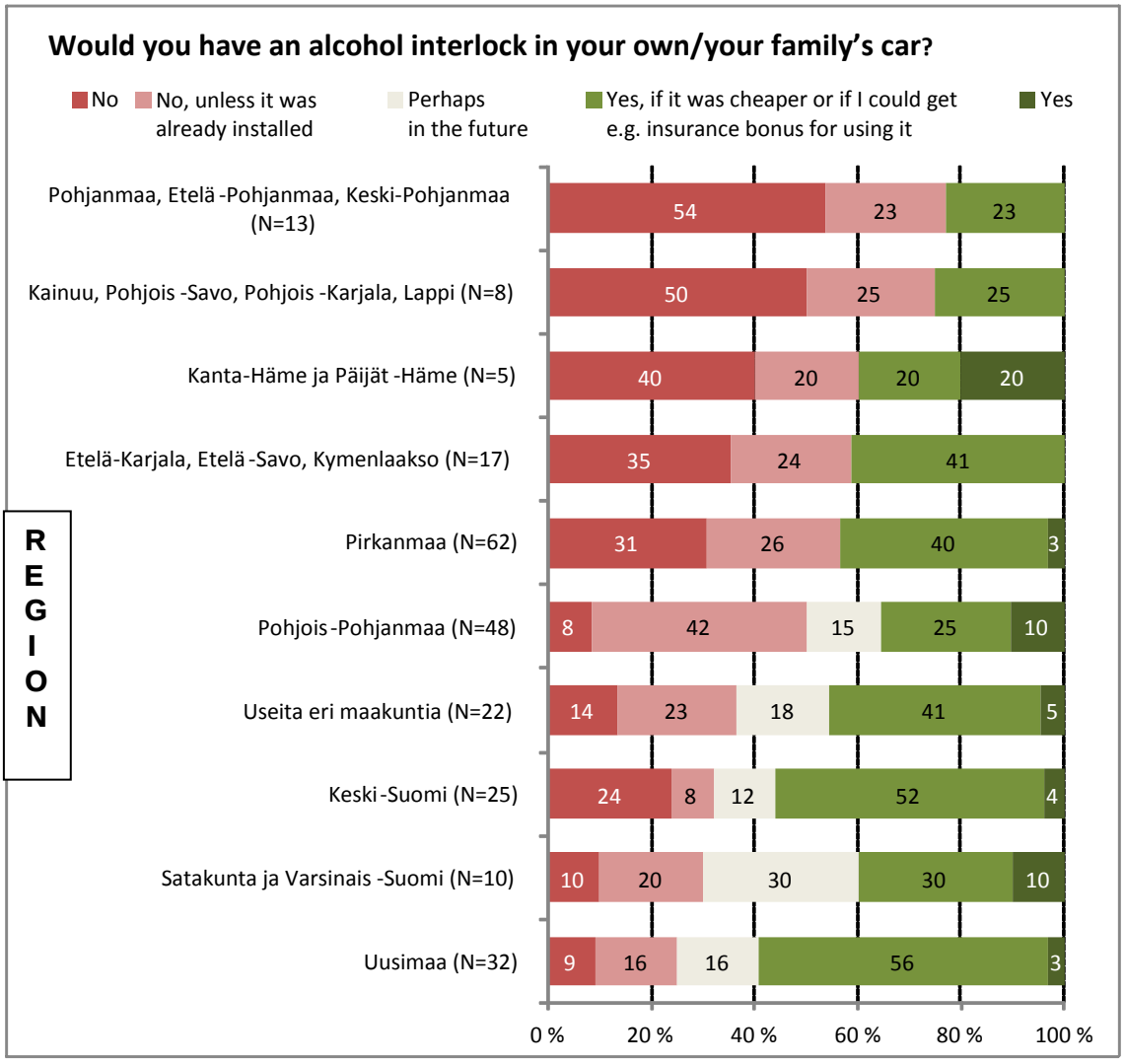
Statistically very significant



Contingency factor = 0.291
Square of chi = 22.33
Degree of freedom = 8
P-value = 0.0043
Statistically significant



Contingency factor = 0.473
Square of chi = 69.56
Degree of freedom = 36
P-value = 0.0007
Statistically very significant



Contingency factor = 0.462
Square of chi = 65.7
Degree of freedom = 36
P-value = 0.0018
Statistically significant

Annex 4. Freeform comments in the questionnaire.

Do you feel that legislation or competitive tendering would require some conditions or changes, so that the obligation to use an alcohol interlock could be expanded to cover all transport requiring a transport licence?

An alcohol interlock for all vehicles

- Obligatory for all motor vehicles
- You could expand the obligation to use an alcohol interlock to cover all new motor vehicles, not as an optional accessory, requirement of its use raises the price considerably
- Alcohol interlock as obligatory.
- I don't think the alcohol use of drivers with transport licences is the biggest problem in weeding out drink-driving. If the alcohol interlock is necessary, all motor vehicles should be equipped with it.
- Yes, the legislation should be changed to require an alcohol interlock to be factory-installed in all new motor vehicles sold in the EU.

An alcohol interlock for all vehicles requiring a transport licence

- The alcohol interlock should be made obligatory for all vehicles in commercial traffic (from cars to trains)
- If you'd want it made obligatory, the matter would of course have to be addressed in the law on transport subject to licences in road traffic. It is another matter whether you can treat cancer with aspirin. A mere technical device will not remove the underlying problem with problem drivers, who should not work in commercial traffic.
- Obligatory for all traffic requiring a licence. The alcohol interlock will not remove alcohol problems, not in freight traffic, passenger traffic, the police, the fire department nor the priesthood. The problem is a national one, when a police officer is caught driving a police car while drunk, the firefighter likewise, without forgetting the vicar on his way to work on Sunday.
- Why is a bus driver allowed to drive 50 passengers with no alcohol interlock?? Or an articulated lorry with no alcohol interlock??? If taxis have to have one with just one child on board!! A costly investment in relation to occasional day care transport. But since customers are fewer anyway, there's no choice.
- Simply put, the alcohol interlock should be obligatory in all vehicles requiring a transport licence.
- Either all taxis or none should be equipped with alcohol interlocks, because it doesn't stop you from drink-driving, if you take the trouble to tinker with it
- I'd say the alcohol interlock should be made obligatory in all school transport in the name of equality, whether it is a taxi or a bus. Special attention should be paid to buses transporting schoolchildren in scheduled service traffic.
- if/when it is required of everyone, it will not affect the competition situation
- The alcohol interlock should be obligatory in all taxis – not just ones operating school and day care transport. If the circle of customers is limited to the above-mentioned, it can be hard in some municipalities to get a taxi equipped with an alcohol interlock for the above-mentioned transport. In such cases the law is commonly broken these days.
- For all or none. It makes work harder not being able to get substitute equipment for the necessary transport during maintenance, for example (taxi traffic)
- If the locks are required in commercial transport at all, they should be obligatory in all vehicles!
- Because it applies to TAXIS, the same obligation must be put on all commercial transport.
- It should have been made obligatory for all transport requiring a transport licence in one go as the equipment is replaced, starting from a certain date.
- In my opinion, commercial passenger traffic, especially that paid for by society (Kela and the municipal sector) should require alcohol interlock use, because the safety and well-being of all customers is equally important. I think it odd that alcohol interlocks are not required in all taxis if they are required in some.

The alcohol interlock can be circumvented

- Anyone can exhale into the alcohol interlock, and the vehicle will start, therefore it is completely useless if the driver has an alcohol problem.
  Larger taxi and bus operators do not install alcohol interlocks in all their vehicles, even if they are used to transport children. These vehicles are in 'temporary traffic', which is another loophole.
- The alcohol interlock will not remove the problem itself. If you have problems with drink, the alcohol interlock is just a device that can be bypassed. Your friend can exhale into it, after all, and off you go. Not everyone should have to pay on account of a problem minority.
- The alcohol interlock will not prevent a person with an alcohol problem from driving if he or she wants to. The alcohol interlock has already caused huge extra costs to the transport industry and thereby to transport customers.

Changes are required

- Yes
- yes
- yes
- Yes
- Yes
- yes
- Yes
- Maybe
- probably
- Needed
- an alcohol interlock 'surcharge' on top of the cost of the journey ....
- A law that is not open to interpretation !!!!!!!
- I feel the 5 day rule for using a vehicle not equipped with an alcohol interlock could use an update.. the time is rather short, e.g. in case of accidents and minibuses used in school transport are in short supply as it is.
- you should get an insurance discount for using an alcohol interlock
- obligatory alcohol interlock use as a condition for submitting tenders
- The customer should require its use.
- you should get a considerable amount of bonus points for safety in competitive tendering
- You could grant a sizeable price/score advantage for alcohol interlock users in competitive tendering
- Yes, e.g. for international freight traffic. Including vehicles coming from abroad.
- alcohol interlock should also be obligatory for those arriving from abroad
- I can't think of anything else other than society, that is the state, municipalities and the companies owned by them, should transfer all purchased transport to vehicles with alcohol interlocks. I think that is the minimum requirement, so that the whole thing will not continue to be an exercise in hypocrisy from society's perspective. I don't see why it would require any more regulating or wrangling. That would move things forward and give the public the message that you mean business. It should already be possible, at least in theory, and it should absolutely have been done in connection with this change, no explanations. Now, it's a case of no, but, whether and if.
- Obligatory use in transport would spare much damage each year - so make the necessary changes to the law

No changes are necessary

- no
- no
- no
- no
- No
- No
- no
- no
- not necessary
- Not necessary

- Not necessary, the whole thing is a useless contraption, another case of coddling by the over-salaried good-for-nothings in the government.

Other comment

- Cannot say
- Cannot say
- Cannot say
- I'm not familiar enough with the rules of competitive tendering or the legislation to comment
- The alcohol interlock must on no account be a factor in competitive tendering!
- The benefits are questionable compared to the investment. If alcohol is felt to be a problem in the industry, breathalysing should be arranged differently. A lock in every car is too much
- At the moment, if the state will not intervene in the plight of transport operators caused by heavy fuel taxes and pressures to increase them further, no extra costs can be contemplated.
- Wouldn't a device like this rather be necessary for people who have a drinking problem? In personal or professional use. Drink-driving.
- No need for such a custodial attitude. If I drink, I don't drive, it's my bread and butter, after all.
- One exhalation at the start of a shift
- IN TAMPERE, ALCOHOL INTERLOCKS ARE ALSO REQUIRED IN TEMPORARY TRANSPORT, E.G., WHEN THE VEHICLE IS BEING SERVICED.
- Yes, the employer must be obligated to pay for drinking days as well, and treat us to a night or two, preferably on weekends.

What else would you like to say about the alcohol interlock?

Positive things about the alcohol interlock

- A good device!
- An OK device.
- A good thing!
- A good thing!
- Nice piece of equipment
- Good piece of equipment.
- A good device!
- A brilliant invention!
- A good invention, if it only would work flawlessly and be very simple to use.
- The alcohol interlock is a good thing, but when required only of school transport in taxi traffic it causes problems in performing my job (spare vehicle, someone else to drive during servicing...)
- A nice device and creates a good image for the industry
- based on 10 months' experience, a working device in a combination tanker-lorry.
- Seemed unnecessary at first, but you hear strange things... you're on a bender and think your mate will blow the car on if necessary...you bet he won't...so it has reduced drink-driving in Finland, even if it doesn't show in the statistics. It's OK
- An OK invention. Nevertheless, it belittles professional drivers, of course it's here because someone always shits on his own doorstep.
- Time improves attitudes, I used to be against it at one time, but now it's a part of the job and I feel it presents a professional image of my work
- A good accessory in the same league with ABS brakes, anti-skid and air bags
- A good thing for improving traffic safety

Negative things about the alcohol interlock

- Excessive state custodianship.
- Well it's a useless contraption because the limit is set at 0.2 per mille. It would be a lot more sensible if the limit was e.g., 0.5 per mille, or the limit for driving while intoxicated defined in the law. This would make it possible to have a beer or two, if you feel like it, with your food.
  A professional driver should know how to use alcohol in a way that he stays fit to drive while working.

- As I've made clear, its sucks, thank you very much. So go on and start developing another foolish idea to have something to do on your lunch and coffee breaks.
- the stupidest thing on the planet. I wonder what's next, a ban on picking your nose at traffic lights?
- Shite contraption.

The Act on alcohol interlocks in school transport is unfair

- It is really humiliating that taxi drivers have been labelled alcoholics.
- humiliating, and low esteem for the industry, I don't think that everybody in the industry is an alcoholic
- There's nothing wrong with the alcohol interlock, but the way the law was passed could use a critical eye. Two drivers get caught so everybody has to pay for locks in their cars. Doesn't sound fair to me. You don't have to react to everything by passing a hasty law. Think about the reasons instead of doling out punishment for everybody.
- I feel that the alcohol interlock automatically wants to label me an alcoholic! Because before, the alcolock was only used for people convicted of several cases of drink-driving. And why must the entire profession be punished with extra costs and pointing the finger, if a couple of taxi drivers are caught drink-driving?
- Making alcohol interlock use obligatory in school transport has made it difficult to take care of occasional transport needs by subcontracting in e.g., exceptional circumstances. The most important thing, after all, is being able to take care of transport in a flexible and quick manner, even in exceptional circumstances.

Obligatory for drink-drivers, professional drivers, everyone

- Mandatory alcolocks and more frequent exhalations for former drink-drivers
- mandatory for all caught drink-drivers when renewing their transport licence
- Necessary equipment. Mandatory for those caught.
- I already said it... an alcolock for all convicted drink-drivers.
- At this stage, the alcohol interlock should be required in other EU countries' school transport as well.
- Mandatory for all vehicles registered for commercial traffic, regardless of industry.
- I repeat what I said - make the alcolock obligatory in ALL taxis as quickly as possible for the above-mentioned reasons.
  The per mille limit is OK for professional driving – maintain the current limit for driving off the job, so set the alcolock limits according to that.
  Have the locks factory-installed in all vehicles.
- Its use would feel fairer if vehicles operating school transport in scheduled service traffic also had alcolocks.
- To recapitulate, I state: the alcohol interlock should be included, type-inspected, in all imported motor vehicles, and it should reduce insurance payments!
  I await with interest when ministers' cars have alcolocks installed! It is after all a matter of passenger traffic at the 'top level'.
- It should be standard equipment in all vehicles or none. It is pointless milking of professional drivers for the sake of a few drunken drivers. They are really easy to circumvent if you want...
- obligation of use should be expanded to cover the largest groups at risk - MPs, police, lease cars and school/day care transport if there are others than members of your own household in the car.
- it's rather a good invention, should be standard equipment already in all new cars, in commercial or personal use!!!!!

Can be bypassed, does not eliminate the problem of alcohol in traffic

- an alcolock will not stop a drink-driver from driving. as I said, anyone can exhale into it and you can drive the vehicle for as long as you like as long as you don't leave it turned off for more than 45 minutes.
  Inspections of school transport vehicles should be held to make sure that only the vehicles fitted with alcolocks are used.
- In companies with several drivers and maintenance staff who drive the same cars every day, and I myself can drive up to five different cars each day, the device is completely pointless.

- Received way too much attention. Both in the negative and positive senses. Use of the device does not in any case remove alcohol problems from traffic in a fool-proof manner.
- Far too many easy ways to bypass it, so it absolutely does not prevent drink-driving.
  A compulsory law for everyone is a very negative thing. The carrot should definitely be used instead of the stick.
- Too many ways to circumvent its use. For example, your mate can blow and start the vehicle.
- In its current function, the alcohol interlock does not prevent anyone from driving while intoxicated. If you are in the habit of driving while tipsy, that habit will not change because of an alcohol interlock. You can keep the car running for your entire shift, if you like, to avoid having to exhale.
  At the moment, the alcohol interlock is mostly an unnecessary nuisance for sober drivers.
- the system is not watertight, you can always start a vehicle – another person can exhale, you can start the engine with a screwdriver at the end of the starter, etc.
- Does not work in the intended manner if it remains in voluntary use
- Makes the customer feel safe. You can cheat it if you want. Sobriety behind the wheel must come from your own conscience, not from some alcolock.
- Otherwise OK, but usually useless since it can be bypassed. You can start the vehicle from the side of the engine.
- the limit should be 0%, why allow a little and why have ‘a little’? An alcoholic will find a way to bypass the lock.
- Pretty useless gadget, because if someone is set on drinking, the lock won’t stop them.

Costs, price

- it would surely be installed in more vehicles if it were a little cheaper
- This was a heavy cost for the taxi industry, €2,000 per car and yearly calibrations are pretty tough, I had enough expenses as it was. I won’t belittle it because it surely is a serious matter (HAVE THE STATE CONFISCATE THE VEHICLE AND THROW THE DRIVER IN JAIL) thank you.
- an expensive toy
- Puts taxi operators in an unequal position already because of the investment.
- too expensive, you will never get your money’s worth, even if it is for a good cause, requires exhalations too often.
- A bloody clever way of income transfer from the professional driver to the manufacturer/importer/installer.
- the alcolock is too expensive. if it were cheaper, more taxis would install it
- too expensive
- the only thing bothering me about it is the price.
- It’s good business, I give you that. The economy will grow, provided the device is manufactured domestically.
- The price should come down dramatically so that others than entrepreneures could get one.

Usability and technology

- no experience of the winter yet, I’d probably have more information on its funtioning in the cold come spring.
- THERE COULD BE PROBLEMS IN WINTER, NO EXPERIENCE
- You should probably do another questionnaire after the winter after those things have fucked with the drivers in the frost.
- The interval between exhalations for vehicles operating, e.g. school and day care transport should be 2 hours. in this way, the lock would not hinder work during the day
- It should be possible to bypass the alcolock (for three minutes, for example) by a ‘giant switch’, for instance, but that would make all lights flash and sound signals go off. The controlled exhalation required by the device may not be possible in situations where there is a risk of a fire or explosion (in the rush to evacuate), for example.
- The devices were still unfinished. Vehicles don’t have enough power for all these devices anymore, because they haven’t been taken into account when designing the vehicles.
- Once they make them more handy, it’ll be a nice device, eliminates unnecessary fools and fooling around in the traffic.

- I suggest a mandatory exhalation after a break of 15 minutes. Random checks. Automatic tightening of settings for someone who 'failed' his breath sample once.

Other comment

- A transport licence already requires a good reputation and good conduct of the driver, on and off the job. So take the licences away from drunks immediately
- obligation to exhale at the port gates
- taxi traffic terminated on 31 August 2011 (did not invest in alcolock)
- no special comments
- Nothing further on this experience.
- I suppose soon you will ban picking your nose in a moving vehicle
- Ha
- I'd like to comment on the SURVEY, that question 26 lacks the option for 'I don't know'. I would like a zero limit for drink-driving. That is, zero tolerance in all traffic, on the water as well. And I don't know a thing about the sentences drink-drivers receive.
- Based on my limited experience of use, no negative feedback as of yet

Several themes

- A good device, only the implementation went all wrong.
  We couldn't transfer the costs of the equipment to school transport costs in the middle of the contract period. A period of transition should have been allowed for valid school transport contracts until their termination. Our costs came to about 45,000 euros
- More expenses for the entrepreneur, but otherwise a fantastic invention, alcohol has no place in traffic. I would hope that the law would one day apply to all company vehicles driven by people, whose actual job is something else than driving the vehicle, e.g. city workers, Itella, electric companies etc. At least here in Oulu you have to dodge city workers every day, whose conduct in traffic is suspicious to say the least.
- the alcolock is an excellent invention. but it shouldn't be made into another extra bill to pay for ordinary drivers. so if it becomes mandatory in all vehicles, their price should not increase at all. (no taxes should be levied on anything clearly related to safety, and the price should be minimal as well: ABS, driving stabilisation, airbags, infrared cameras, automatic emergency braking at city speeds, automatic slowing down/returning back up to the speed set on the cruise control, etc.) but the driver should be given the freedom to choose (esp on/off)
- At last a small change in legislation in the right direction! In my opinion, an entrepreneur or a holder of a professional transport licence who is guilty of drink-driving is incapable of performing any kind of work in traffic = loss of licence. The licence process could also be used to screen for possible risk-group drivers in advance. A licence for commercial traffic should not, in other words, be granted if the applicant has been found guilty of driving while intoxicated. An alcolock will not prevent a drunk from driving, they are a clever bunch, as is well known.
- It's an OK gadget with regard to traffic safety, but a bit embarrassing in public places. As a taxi driver I'd like to say, that it's rather embarrassing to blow into the whistle at, e.g., the taxi rank, if the car has been standing for three-quarters of an hour.
- A brilliant invention after, for example, the warming-up period is made shorter.
- An exhalation after any troubles is OK.
- I think the alcolock is an idle thing as it is, because the driver can, if he likes, drink as much alcohol during the day as he likes. Also the possible next driver can drive off on the first driver's exhalation, having had a few. A preventive effect would be achieved only by a driver having to exhale at random intervals even while driving, and the alcohol interlock would require exhalations at random times when starting the vehicle.
- a useless contraption, no use at all, can always be bypassed. the device is just a question of image for those that made the decisions. the police will breathalyse drivers of vehicles equipped with alcolocks as well, because they don't consider the device to be reliable, so what's the point then. the device has been decided on because it's supposed to create safety. the only thing that creates safety is a driver's professional competence.
- once again we climbed arse-first up the tree in this country. the alcolock was forced on commercial traffic for a few cases that got some publicity. I'd guess that the percentage of professional drivers caught drink-driving is really small compared to all drink-drivers. if it's meant to achieve something, adopt the lock immediately in civilian traffic. but it was naturally easy to try it out on the professionals' money. and finally, I have no better idea how to

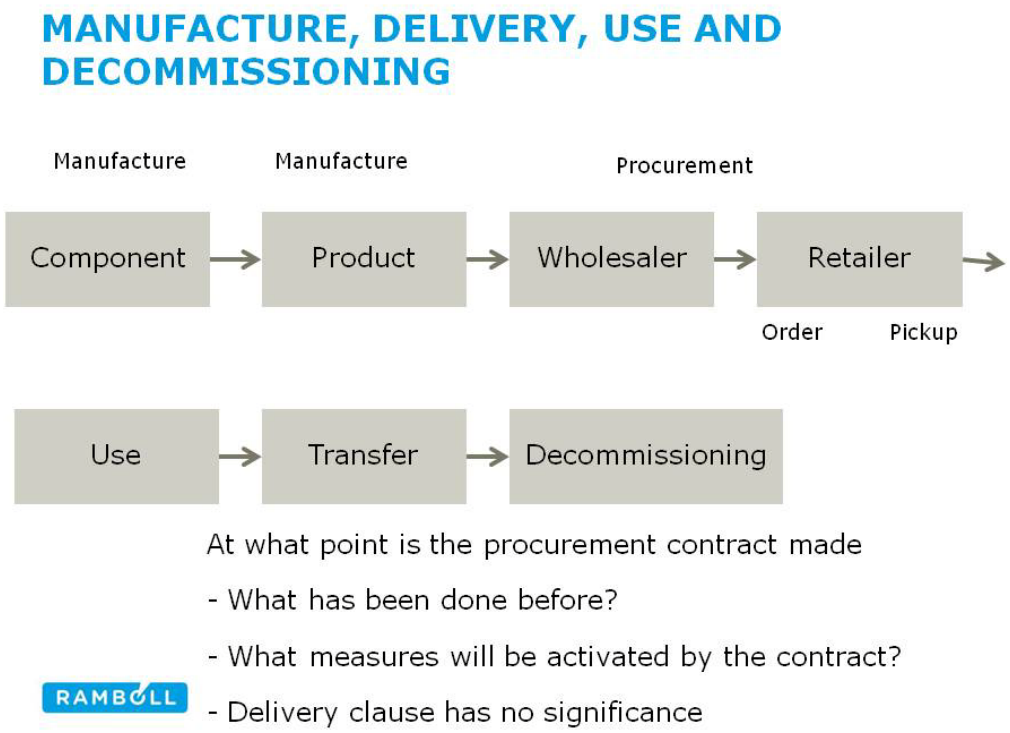
stop people from driving drunk, but I don't think this current lock will slow them down much. it's too easy to have a sober pal exhale into the lock and start the vehicle.

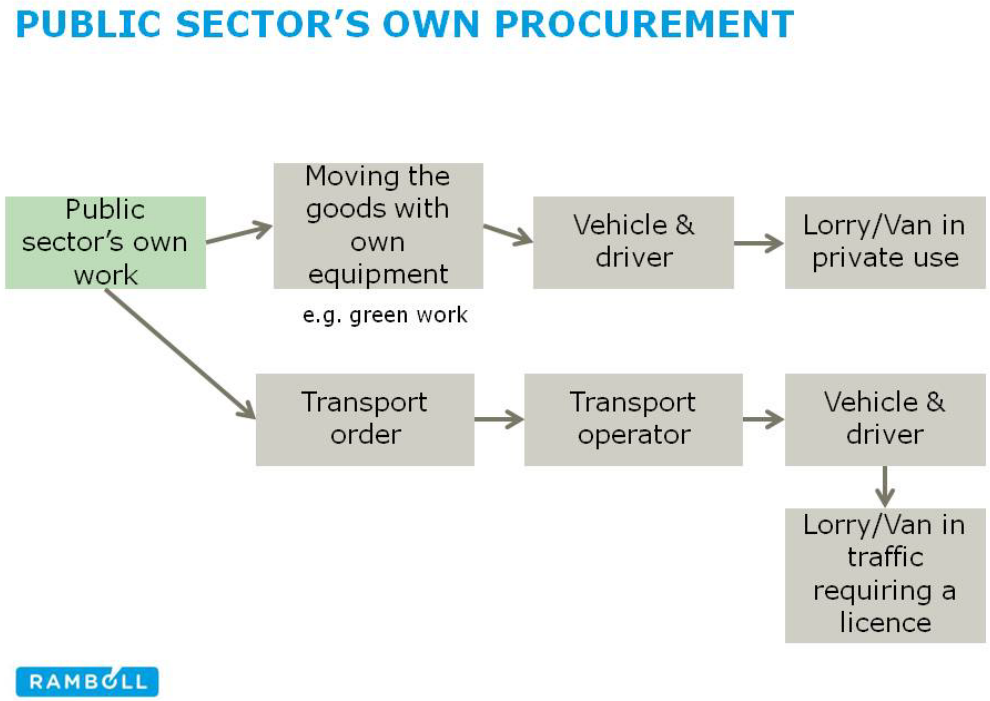
- In large bus companies' depots, the 'morning man' checks and starts departing buses. The functioning of the buses doors and brakes is impossible in practice if the bus is not running. So, one man may take care of the departure inspection and starting of dozens of buses. The drivers only come to the vehicle a few minutes before departure. If each driver had to take care of the departure inspection and starting the bus himself, that would mean more labour costs taken out of the actual working time for the employer. This is a law that was passed in haste and with a lack of knowledge. The reasons why drivers drink heavily should be looked into. But that is another story...
- It's complete nonsense to demand it from taxis operating school transport; other people should be transported sober as well, and why aren't bus drivers in scheduled service traffic required to use an alcolock? They transport more schoolchildren than you can count. You can drive around drunk all day with it in the vehicle, if you like. the pupils' parents probably think their kids get a really safe ride now that there's an alcolock in the vehicle. This awful way of squeezing money out of us was placed on school taxis, and did the taxi association do anything? They should have said 'no chance' like the bus and coach association seems to have done.
- A completely useless and unoperational device in buses, exhaling into it many times a day after every little loading job is totally absurd. And, on the other hand, drivers are often changed 'on the fly', so the person driving the bus might not be the same that exhaled and started it. If we have to exhale, then let the employer breathalyse everyone in the morning, the alcolock in vehicles is not the solution.
- I'm annoyed/infuriated about having to pay 1400 euro for a lock with no purpose, because I don't have a problem in that quarter. if you drive short stretches, and the vehicle is idle for more than 40min., then exhale all over again...infuriating!!!!!! I think the lock should be mandatory for drivers that have one indictment.
- For my part, a completely useless acquisition that will never pay itself back with this school/day care transport!!!
- If all traffic is not subjected to the alcolock, none should be. Nothing protects a driver using a lock from a possible drink-driver in a crash. The number of drink-drivers will not decrease either with the current obligations of use.
  I personally feel I am in an unequal position to nearly every other form of enterprise being carried out in this country. You rarely have to acquire technology to prevent a crime you might commit yourself in other lines of business. I think the device corresponds to a monitoring collar placed on a person under house arrest. Only with the difference that the punishment has been issued beforehand to prevent the possible crime. Now, one profession has been raised into the public eye as a group of people with particular problems with alcohol and is labelled further every day.
  The other alternative is to look at the positive side of the matter. I would not have liked to have to experience this being labelled, and I dislike it so much that I will not be able to have a positive attitude regarding the matter in the future either, if the situation will not be the same for everyone.
  Additionally, I am not in an equal position compared to others in traffic, because I do not have the same technical protection from other traffic.
  I could take a different view of the matter if a. There was no obligation to invest, which some taxis at least have because of their livelihood, b. The law was same for everyone in traffic, c. There was an attempt to reach a true solution in the public interest to alcohol abuse, instead of this mucking about. This is mere cosmetics, which the wrong party has to pay for.
  Why wasn't this implemented as a mandatory accessory in new vehicles? Commercial transport would have started using the lock relatively quickly, and it would surely have been cheaper than this. The solution would actually have helped, in time, to remove the problem itself.
  The kilometres driven by drink-drivers in traffic were not reduced in proportion to the investment. More effective solutions to preventing drink-driving could have been achieved with the same amount of money and work. This path will be rocky in the future as well, if the same model is used to attempt to put the rest of traffic under the lock. That is if....
  In addition, one of my most miserable experiences in acquiring the lock was the service monopolised by the lock installers, where price differences stayed under 0.2%. This for one and the same device. It did not help when I asked for offers from several quarters and dif-

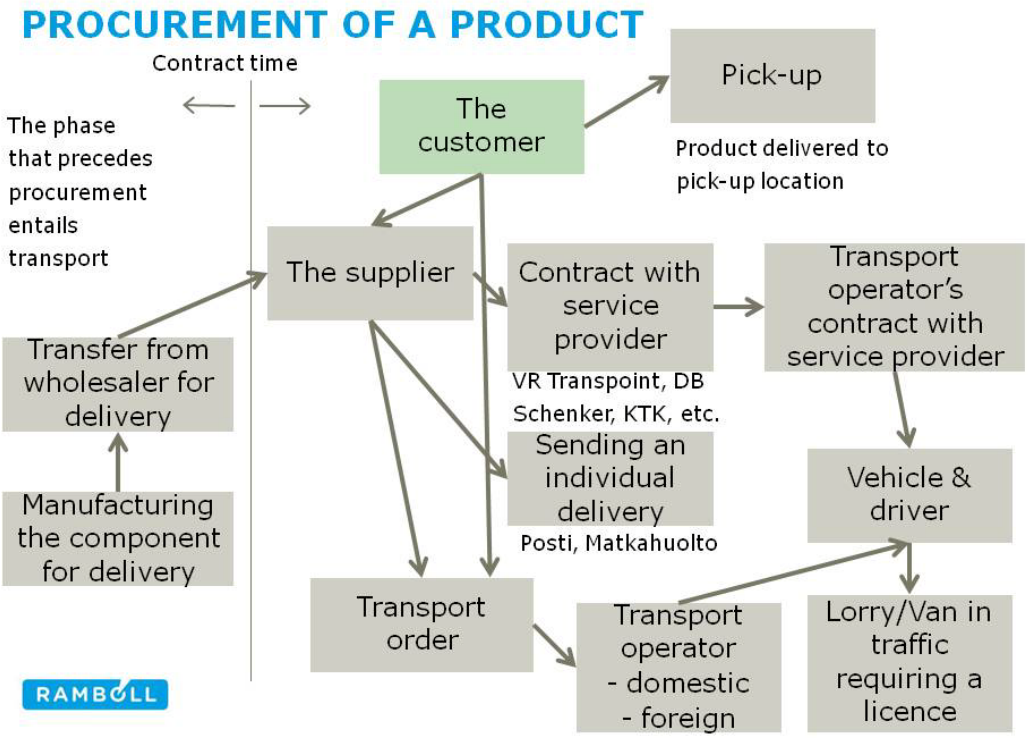
ferent municipalities. This did not improve my opinion of the execution of the alcolock obligation at all.

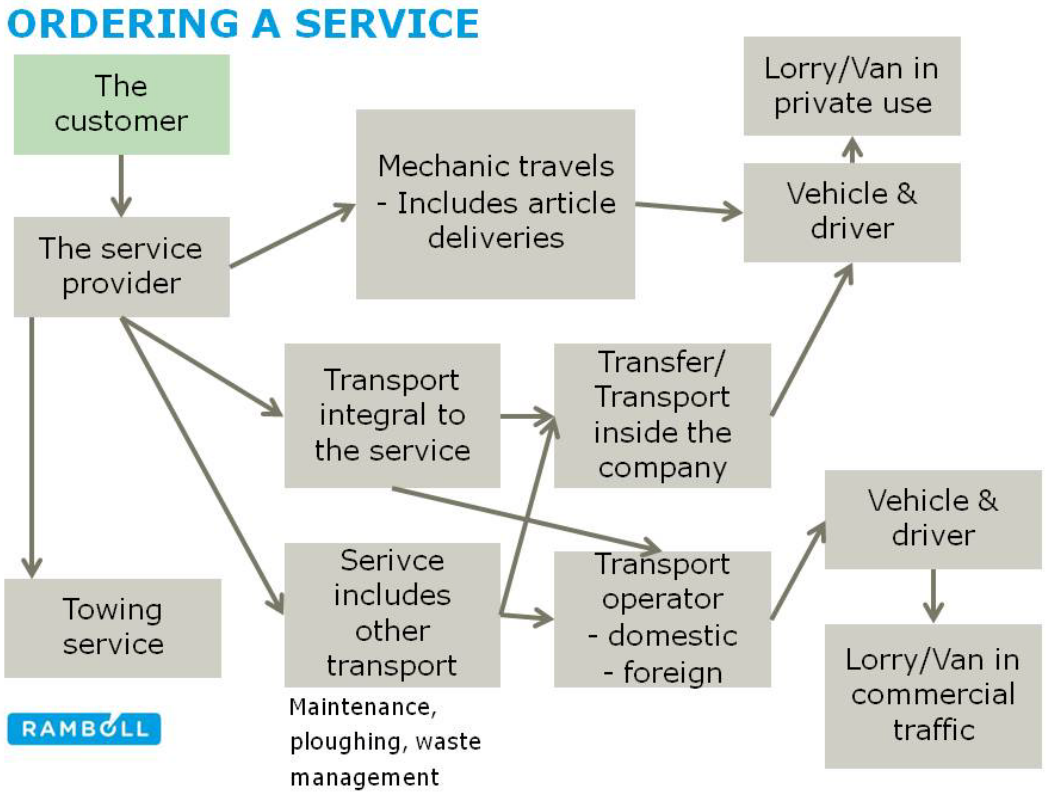
- A half-cocked device, because you can jump-start a vehicle with a manual gearbox without exhaling. The whole business seems like another case of squeezing the money out. Couldn't we have waited until a factory-installed alcolock would have been available. The installation shops and alcolock importers have made a killing from this.
- The alcolock is a useless gadget if somebody is really determined to drive while drunk. They will always find a way. The manufacturers and installation companies will benefit from this more. I don't suppose it has been proven that taxi drivers are at the top of the drink-driving list. So put the same locks in every single machine in commercial transport, then. The installation companies will get rich all the quicker. This is totally unnecessary bullying of a one-man business. That's the way it is..the small entrepreneur always pays...he's got no choice!!
- a 0.0% limit for drink-driving in commercial traffic. A good aid, if the technology works. It is a bad thing that the device is mandatory. The devices are far too expensive at the moment, the installed prices should be 500 euro max. As I pointed out before, the device in itself will not remove the problem drivers' problem, and will not necessarily even prevent them from driving while drunk.
- Obligatory for all traffic requiring a licence. The alcohol interlock will not remove alcohol problems, not in freight traffic, passenger traffic, the police, the fire department nor the priesthood. The problem is a national one, when a police officer is caught driving a police car while drunk, the firefighter likewise, without forgetting the vicar on his way to work on Sunday.
- More expenses and we'll find out about reliability in time.
  You can abuse an alcolock too if you wish, blow in, it who dares? Methinks you'll start the car.
  Once you're caught, did you drink and drive?
  After setting off you can drink just fine.
  And what did we learn? The final responsibility is with the driver, despite gadgets and laws!!!! HAVE A NICE AUTUMN
- Mandatory in every new vehicle, and sizeable reductions in insurance and tax payments. The device could be developed to work faster and be smaller.
- Functioned faultlessly until now. I hope that winter's frosts will not cause trouble with the device in the mornings. The price is absolutely too much.

Annex 5. Transport service chains in freight traffic






PROCUREMENT OF A PRODUCT
Contract time
The phase that precedes procurement entails transport
The customer
Pick-up
Product delivered to pick-up location
The supplier
Contract with service provider
VR Transpoint, DB Schenker, KTK, etc.
Transport operator's contract with service provider
Transfer from wholesaler for delivery
Manufacturing the component for delivery
Sending an individual delivery
Posti, Matkahuolto
Vehicle & driver
Transport order
Transport operator - domestic - foreign
Lorry/Van in traffic requiring a licence
RAMBØLL


ORDERING A SERVICE
The customer
Lorry/Van in private use
Mechanic travels - Includes article deliveries
Vehicle & driver
The service provider
Transport integral to the service
Transfer/ Transport inside the company
Vehicle & driver
Towing service
Serivce includes other transport
Maintenance, ploughing, waste management
Transport operator - domestic - foreign
Lorry/Van in commercial traffic
RAMBØLL