

Cost-benefit analysis from Oslo Economics (produced 2016), excerpt:

Summary and conclusions

Driving under influence of alcohol is a major risk to safety in road traffic in Norway and abroad. It is widely known that alcohol alone, or in combination with drugs, affects the central nervous system and reduces driving skills. Commissioned by the Norwegian Public Roads Administration, Oslo Economics has conducted a cost-benefit analysis of the implementation of alcolocks for commercial passenger transport on roads in Norway. An alcolock, or alcohol ignition interlock, is a system that prevents the driver from starting the vehicle if the driver has a breath alcohol concentration above 0.02 %.

The study is limited to include bus and taxi in Norway. We have identified costs and benefits of the initiative and as far as possible quantified these effects. Costs mainly relates to the purchase and installation of alcolocks, as well as costs for service and calibration. The greatest benefit of the initiative is reduced risk of traffic accidents. Moreover, the measure will have a positive signal effect, and lead to an increased sense of security for passengers. The latter two are measured as non-monetized impacts, while reduced risk of traffic accidents is quantified. There is great uncertainty regarding the underlying assumptions of the reduction in number of accidents, particularly the extent of driving under influence. The cost-benefit analysis is therefore calculated with low, medium and high estimates of the extent of drinking and driving among taxi and bus drivers.

[...]

There is considerable uncertainty associated with the extent of driving under influence among taxi and bus drivers, and we have therefore used three different estimates in the analysis. The results are sensitive to assumptions about the extent of driving under influence, and the net benefit is positive or negative depending on which estimate is used. If we use low or medium estimates, respectively 0.05% and 0.13% for taxi and 0.035% and 0.07% for bus, the initiative gives negative net benefit. If we use high estimates of the extent of driving under influence, 0.2% and 0.1% for taxi and bus respectively, the initiative gives positive net benefit.

The non-monetized impacts are mainly considered positive to society, and suggests that it would be beneficial to to society to implement alcolocks in taxis and buses. An injunction of alcolock can in many ways act as a form of insurance against accidents caused by driving under influence of alcohol.

Severe accidents with multiple fatalities and serious injuries occur with irregular intervals. Although the statistical probability of such events are small, we know from previous studies that driving under influence increases the likelihood of incidents significantly. Moreover, the historical statistics does not capture the full range of outcomes for single events. Theoretically, an injunction of alcolock could prevent severe accidents involving loss of life

and health. This would justify the cost of introducing the injunction in an economic perspective.

Alcolock, as a form of insurance against severe accidents caused by driving under influence, can also increase the feeling of safety for passengers and drivers. Break-even analysis shows that even relatively modest willingness to pay per trip for such a sense of security will make this initiative viable.

In the calculations above, we have assumed that the injunction is implemented with immediate effect, and that it occurs as a change in the rules without use of incentives. To ease the burden for the operators, it may be natural that the implementation process reflects the average exchange rate for vehicles in the affected industries. This implies an implementation period of three years for taxis and five years for buses. This will shift the both the costs and benefits forward in time. However, it may be advantageous to provide the operators flexibility in terms of when it is most cost effective for them to install alcolocks in their vehicles.