

Summary:

Evaluating the effect of signposting seat belt checkpoints

Road side surveys have shown that signposting control posts by the Public Roads Administration “Set belt control” fails to increase the subjective risk of detection of non-use of seat belts, but that the deterrence effect for other traffic law violations may decrease.

Seat belts are an effective road safety measure. About 10-15% of all drivers are not using a seat belt. The authorities are aiming at increasing the use of seat belts. One possible measure is increasing the visibility of control posts by the Public Roads Administration by setting up a sign “Seat belt control” (Figure S.1). Even without the sign the control posts are visible, but drivers cannot know what type of control is conducted. The purpose of using the sign is to increase the subjective risk of detection for not using seat belts and, consequently, the use of seat belts.

Road side surveys show that, even if the sign increases the visibility of the control posts, signposting control posts does not lead to a higher subjective risk of detection for not using seat belts. It is unlikely that seat belt use increases among drivers not always wearing seat belts. The deterrence effect of the control posts for other types of traffic law violations may be reduced because drivers who have seen the sign become less aware of other traffic violations.



Figure S.1: Sign used for increasing the visibility of seat belt control posts.

Roadside interviews

Roadside interviews were conducted in 12 sessions on 6 different sites in the Oslo and Akershus counties. 10 of these sessions were conducted on sites within short distance of a control post, where seat belt control was conducted at the same time. In 6 of these sessions, the control post was signposted, the other 4 times the control posts were not signposted. 2 sessions of road side interviews were conducted when no control was being conducted at the same time. In all, 1112 drivers were interviewed.

Several factors are assumed to affect seat belt use

The present study is based on the following assumptions:

- Signposting control posts increases the visibility of the control posts, and more drivers will know what type of control is being conducted.
- Knowledge about the type of control that is being conducted increases the subjective risk of detection for non-use of seat belts.
- Increased subjective risk of detection for non-use of seat belts will lead to increased use of seat belts.

Based on the data that has been collected, only conclusions about the reported intentions of drivers can be drawn. Investigating effects on actual seat belt use would require studies over longer time periods. conclusions from the present study about actual seat belt use must be based on assumptions about the relationship between self-reported intended seat belt use and actual seat belt use. The relationships between seat belt controls and drivers perceptions and intentions that have been investigated are summarized in Figure S.2.

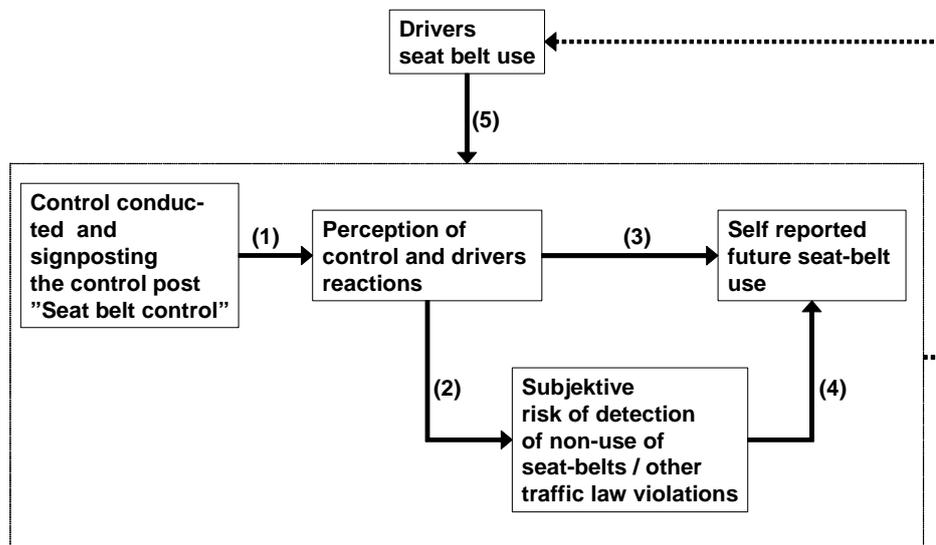


Figure S.1: Hypotheses in the evaluation of signposting seat belt controls.

Based on the results from the road side interviews, the following variables are included in the analyses:

- **Drivers perceptions and reactions** refers to questions about whether the drivers have seen a control post, if they have seen a sign “Seat belt control”, what type of control the drivers thought it was, and what they thought and did as they saw the control post.
- **Subjective risk of detection** refers to questions about expectations about traffic control and seat belt control in the near future.
- **Self-reported seat belt use** refers to questions about how often the drivers use the seat belt, and how much they will use the seat belt in the future, drivers were also asked about reasons for wearing and not-wearing the seat belt.

In order to investigate the effects of the sign, drivers were divided into different user groups (always, sometimes, and never using the seat belt), and into group of drivers who had and who had not worn the seat belt before passing the control or interview post.

Most drivers notice the sign (1)

The sign “Seat belt control” has the intended effect on how drivers perceive the control posts. When the sign is used, most drivers noticed the control posts than when the sign was not used. The control posts are perceived as seat belt control by most drivers only with, but not without the sign. When the sign is not used, most drivers do not know what type of control is being conducted, and almost none think of seat belt control.

The subjective risk of detection does not increase when the sign is used (2)

The sign does not seem to have any effect on the subjective risk of detection, which had been measured as the drivers expectations about future traffic and seat belt controls. The results are however not very consistent and it is uncertain to what degree drivers have any expectations concerning seat belt control at all. Drivers who have seen a control post with sign do not have higher subjective risk of detection than drivers who have seen a control post without sign, and they will not to a larger degree think about seat belt control than other drivers.

The subjective risk of detection in general is somewhat higher among drivers having seen a signposted control post. This effect is larger among drivers who did not wear the seat belt before they passed the control post. A possible explanation is a larger proportion of drivers who commit other violations among drivers not always using seat belts than among drivers always using seat belts.

The only variable that has been found to be related to the subjective risk of detection for non-use of seat belts is the degree to which drivers thought about what they might have done wrong as they passed the control post. Among drivers who are not always using the seat belt and who thought about what they might have done wrong, is larger than among drivers who did not have any such thoughts.

Drivers who have seen the sign "Seat belt control" report to a larger degree that they will increase seat belt use (3)

Whether or not drivers have passed a control post does not seem to affect self-reported future seat belt use, independent of how much drivers are using the seat belt. The sign "Seat belt control" increases the proportion of drivers who say that they in the future will increase seat belt use. This effect is greatest among drivers who are not always using the seat belt. It is however likely that this result is due to a wish of showing compliance in the interviews, especially among drivers who just have passed a control post. It can therefore not be concluded that also actual seat belt use will increase.

Drivers who expect more control say that they will increase seat belt use (4)

Among drivers who expect more control in the same area during the next weeks, a larger proportion said that they will increase seat belt use. The subjective risk of detection, or the expectation of control, is also related to the reasons drivers report for using or not using the seat belt. Drivers who have higher expectations about seat belt control than other drivers also report "avoid control" as a reason for using the seat belt more often than other drivers. Again, it is not sure to what degree the self-reported increase of future seat belt use can be interpreted as an indicator of actually increasing seat belt use.

The effects of the sign are for the most part not larger among drivers who are not always using the seat belt (5)

The hypotheses that signing control posts has larger effects among drivers who are not always using the seat belt is supported by the result that show that avoiding control is a more important reason for using the seat belt among drivers who are not always wearing seat belts, than among drivers who are always wearing seat belts.

However, no direct effects on subjective risk of detection or self-reported future seat belt use have been found, neither among all drivers, nor among drivers not always using seat belts or not having worn the seat belt when they approached the control post. Signposting only lead to more thoughts about own violations and speed reductions among drivers who are not always using seat belts than among all drivers. Among all drivers the effect is contrary, thoughts about own violations decrease. These results indicate that signposting control posts causes some immediate reactions among drivers who are not (always) wearing seat belts, but that these immediate reactions are not relevant for future expectations or behavior.

Signposting control posts has some unintended effects

Among the drivers who have seen the sign "Seat belt control" a smaller proportion has been thinking about what they may have done wrong, than among drivers who have not seen the sign. A possible unintended effect of the sign may therefore be a decreased subjective risk of detection for other violations than non-use of seat belts. Control posts might consequently loose some of their general deterrent effect. Based on the present study it is however not possible to evaluate the consequences of such an effect.