

Summary:

Road Traffic Risk in Norway 1997/98

Road traffic risk may be defined as the probability of accident, injury or death for a given amount of activity or exposure. This report presents new risk estimates for different groups of road users. Risk estimates are also given for specific age/gender groups for the most common road user groups.

Two sources of exposure data have been used in the calculations: The annual estimates of transport performance in Norway given by the Institute of Transport Economics, and the Norwegian National Travel Survey 1997/98 (RVU 1997/98). Different sources of accident- and injury data have also been used: The official road accident data from the Central Bureau of Statistics (SSB), data on road accident injuries from the National Institute of Public Health (Folkehelsa), and road accident data from Norwegian insurance companies (TRAST).

Risk calculations have been done by use of the same sources and methods that were used in a similar study based on the Norwegian National Travel Survey 1991/92. One important purpose of the present study is, accordingly, to investigate possible changes in road traffic risk for different road user groups.

The results show that the overall road traffic risk had been fairly stable during the nineties. Both the risk being injured and the risk of death were at the same level in 1997/98 as in 1991/92, but it seems that risk levels decreased somewhat up to 1995 and increased slightly from then on. There has, however, been changes for specific road user groups. The risk of being injured and to some extent the risk of death for motorcyclists and moped drivers have decreased during the nineties. This is also the case for pedestrians, but car drivers, car passengers and cyclists are at risk to approximately the same degree now as at the beginning of the decennium. Thus, cyclists are now at risk to the same extent in road traffic as drivers of motorcycles and mopeds, according to estimates based on SSB-figures.

If one uses data from Folkehelsa (hospital data) to calculate risk, cyclists are much more at risk than any other road user group. The reason for the difference is that single accidents with bicycle seldom are reported to the police, and accordingly not included in the SSB-figures. Nevertheless, the results imply that cyclists have a very much larger chance of being injured in traffic than other road user groups.

For car drivers and passengers the overall risk is not changed from 1991/92 til 1997/98. The distribution of risk over age/gender groups is also the same as before: the risk figures decrease with increasing age until drivers are about fifty years old, then risk figures increase with increasing age. The oldest drivers are, however, less at risk than the youngest drivers. Female drivers are somewhat more at risk than male drivers.

Even if this distribution is the same as earlier, substantial changes have occurred for specific groups. Young male drivers are significantly more at risk than before, elderly drivers (64-75 years) are significantly less at risk than before.

For car passengers, the exposure data from RVU 1997/98 are inaccurate, and thus it is not possible to give reliable risk estimates of age/gender groups. Risk estimates based on RVU give larger figures than risk estimates based on TØIs reports of transport performance, probably because of lack of car passenger data in RVU.

Risk figures of pedestrians are also unevenly distributed between age/gender groups. The oldest pedestrians are most at risk, a result that has also been found in earlier studies. The figures indicate a slight decrease in the risk figures from the beginning of the decennium, especially for the oldest pedestrians, but these changes are not statistically significant.

Also for cyclists, the exposure data from RVU 1997/98 are not adequate to give reliable risk estimates for age/gender groups. There are few cyclists in RVU 1997/98 and the amount of accidental variation in exposure data is large. Thus, the risk estimates vary extremely between age/gender groups. The risk figures show, however, that older cyclists are more at risk than young and middle aged cyclists, replicating the results from similar risk calculations based on RVU 1991/92.

Risk estimates based on hospital data show by and large the same distribution between age/gender groups as estimates based on SSB-data. Folkehelsa has changed their registration procedure somewhat during the last years, making it difficult to compare risk estimates from 1991/92 and 1997/98. One may suspect that the change in procedure leads to a loss in registered injuries of some road user groups, especially car drivers, car passengers and motorcyclists.

In addition to calculations of risk of different road users, the report also presents risk figures of car drivers and passengers by day of week and time of day. Both risk of injuries to car occupants based on SSB-data and risk of material damage based on insurance data are calculated. The results show that the risk of personal injury is generally higher at night, and in particular the night between Friday and Saturday and between Saturday and Sunday. One does find the same tendency for the risk of material damage, but the risk of material damage is in general higher during the afternoon than during the night.

The distribution of risk between weekdays and time of day follows the same pattern as was found in 1991/92, but the relative risk at night during weekends has increased during the nineties, both for personal injury and material damage.

There is reason to believe that the risk increase for young car drivers is connected to the increased risk at night at weekends. Accidents by young drivers are typically single accidents especially at night during weekends. Other sources seem to confirm that the risk of young has increased during the nineties. This might be a result of the change in driver education in Norway, with less mandatory driver education. It may, however, also be result of the decrease in the number of youths (in cities) who acquire a driving license. This may have as a consequence that relatively more of young drivers exposure now takes place where and when they are particularly at risk; on rural roads in the night time.