Data and monitoring on road safety performance in Hungary

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Road safety data: collection and analysis
for target setting and monitoring performances and progress

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1. The system of data collection

- from 1992 onwards, carried out by the TÜV NORD-KTI Kft.

- yearly sample size > 10.000 motor vehicles (passenger cars, minibuses, small vans) (Categories M1 and N1)

- sample size by road types > 3000 motor vehicles (country roads, motorways, roads inside built-up areas)

- survey of the safety belt wearing and DRL usage rates carried out in combination

- always in the same period of the year (May, June)

1. The system of data collection /2

Both rates (safety belt wearing and DRL usage) are behaviour related

They can be influenced by
–   education, awareness campaigns
–   police enforcement

Hungary has relatively long time-series in the field, in the SafetyNet project the method of data collection has been considered as "best practice"

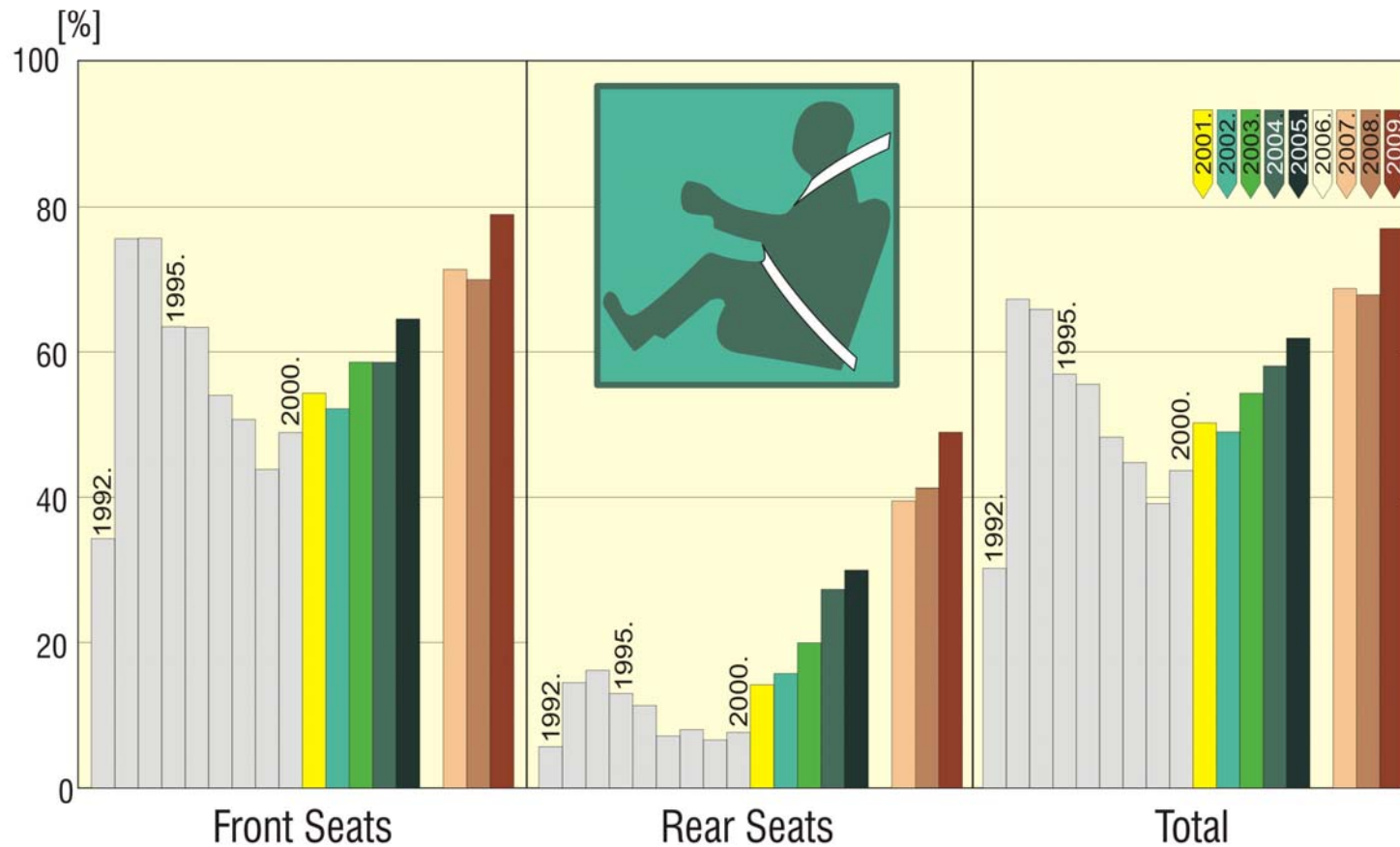# 2. Safety belt wearing rates

2.1. Hungarian data

Fig. 1.   Safety belt wearing rates in Hungary

2. Safety belt wearing rates

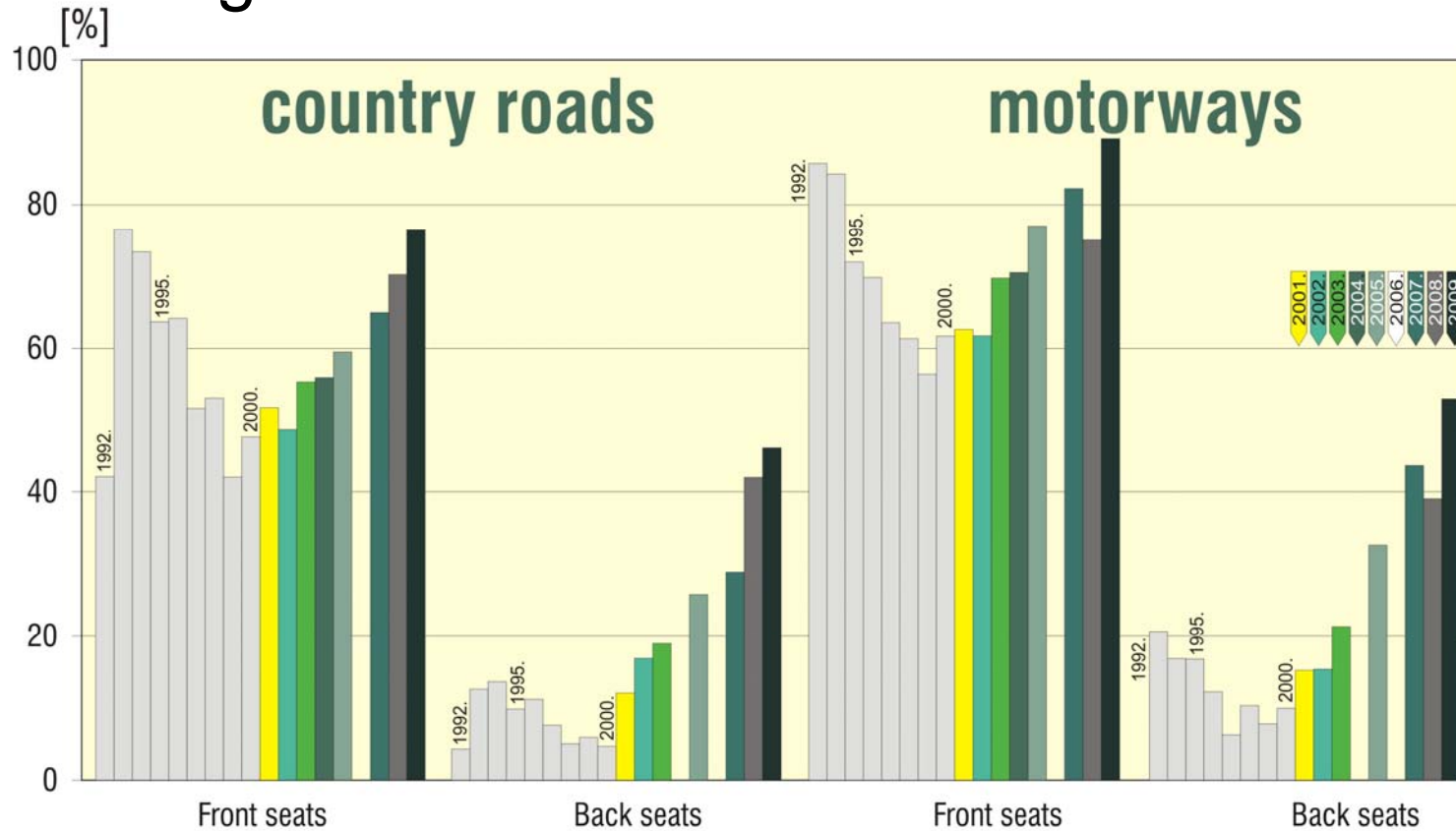## 2.1. Hungarian data /2

Fig. 2. Safety belt wearing rates outside built-up areas on rural roads and on motorways

2. Safety belt wearing rates
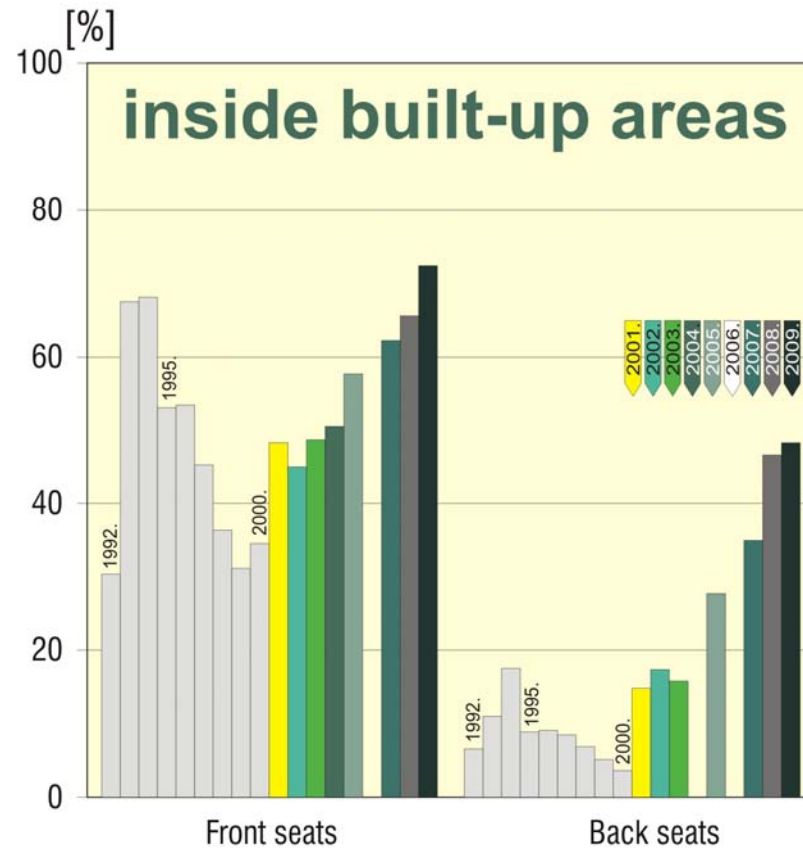
2.1. Hungarian data /3

Fig. 3. Safety belt wearing rates inside built-up areas (in Budapest)

2.   Safety belt wearing rates
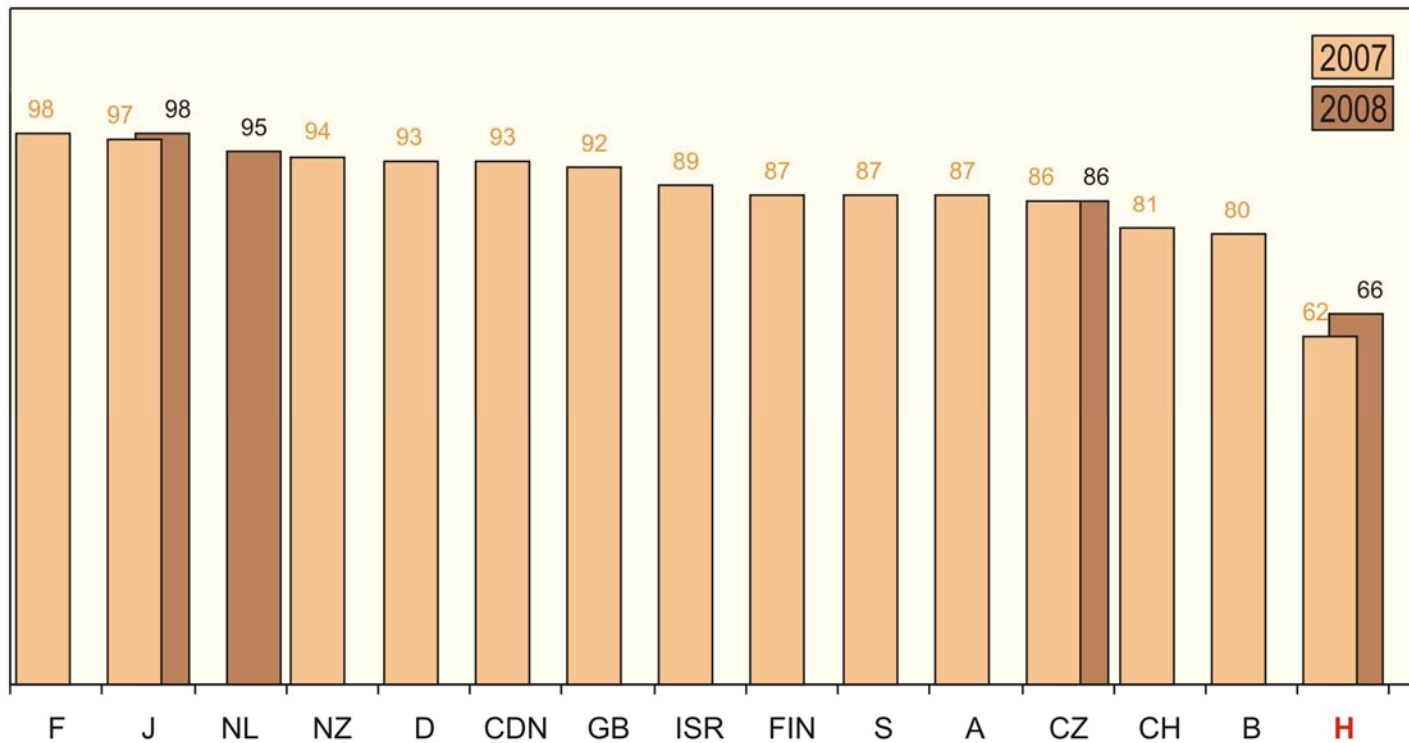
2.2. International comparison

Fig. 4.   International comparison of safety belt wearing rates in front seats of passenger cars inside built-up areas
(Source: IRTAD)

2. Safety belt wearing rates

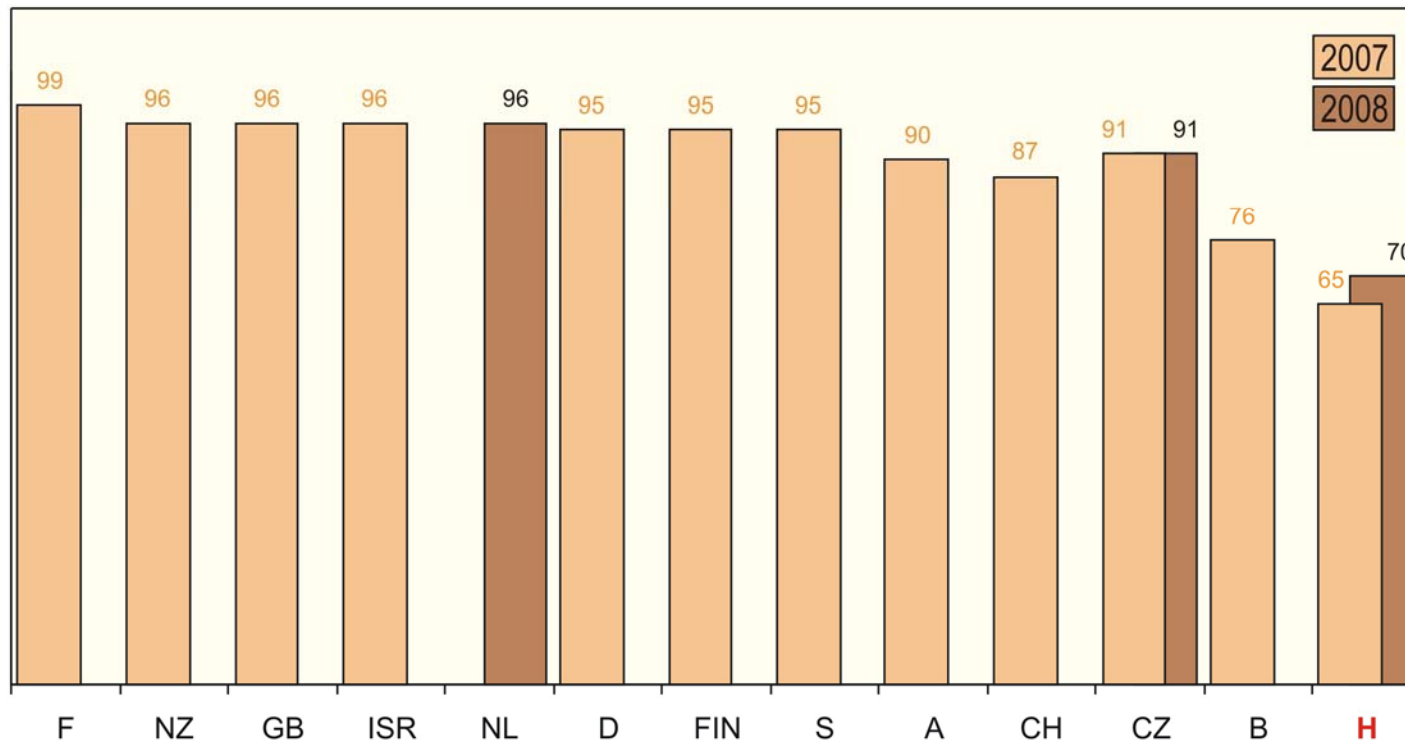## 2.2. International comparison /2

Fig. 5. International comparison of safety belt wearing rates in front seats of passenger cars on rural roads
(Source: IRTAD)

2. Safety belt wearing rates
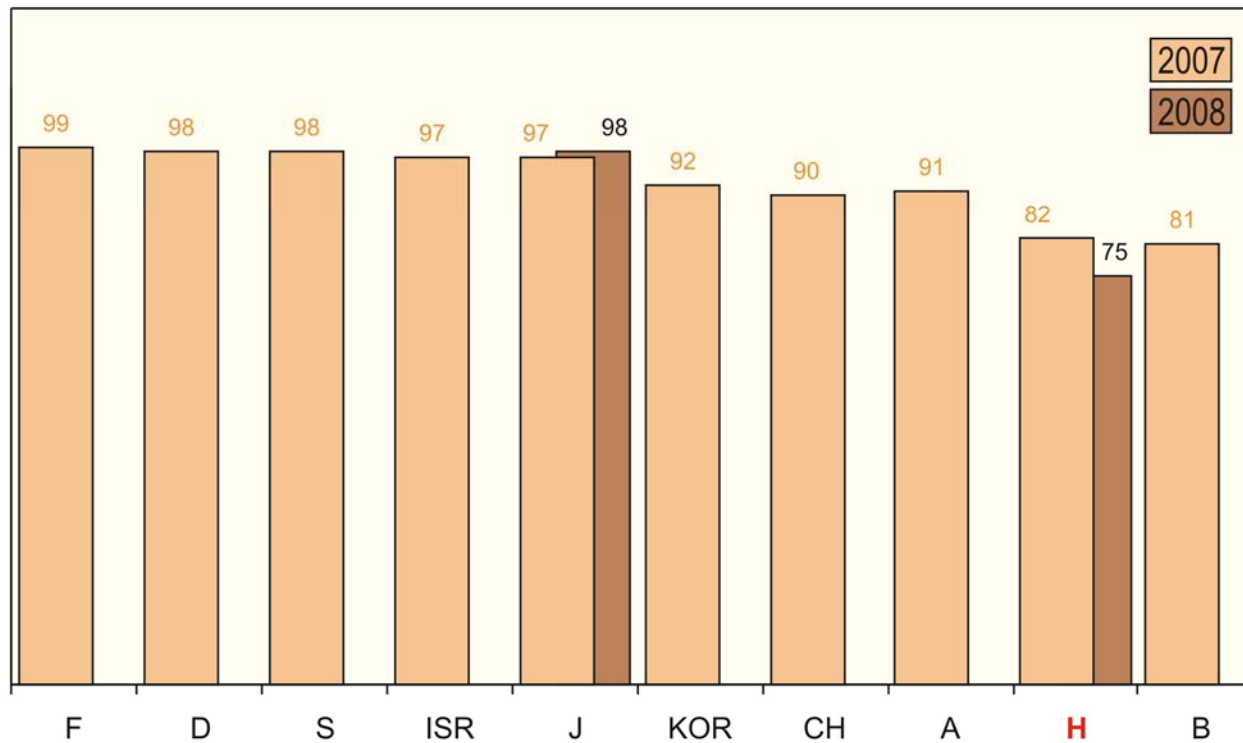
2.2. International comparison /3

Fig. 6. International comparison of safety belt wearing rates in front seats of passenger cars on motorways
(Source: IRTAD)

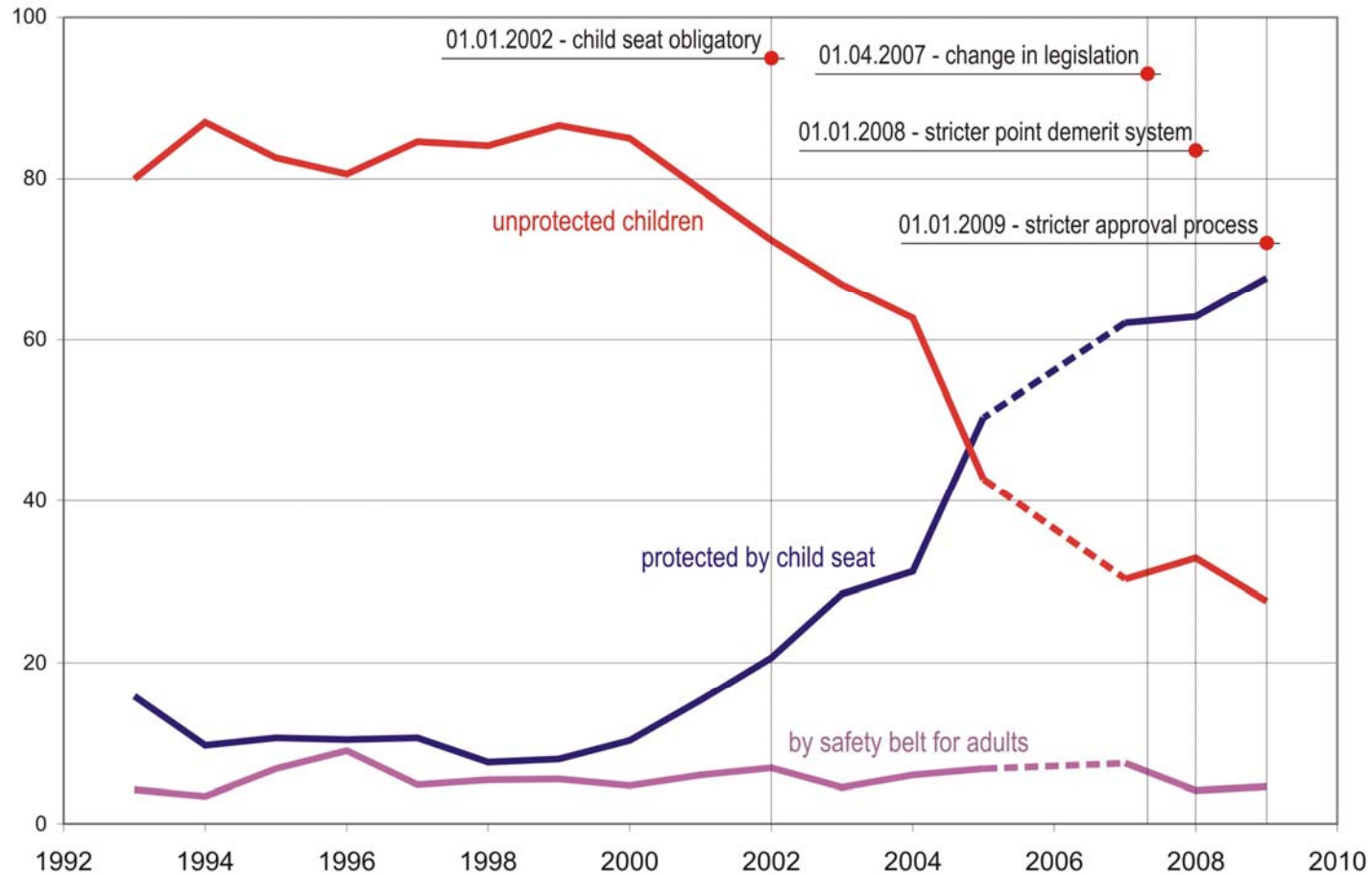# 3. Safety of children vehicle-occupants

Fig. 7.   Usage rate of child safety devices in Hungary

3. Safety of children vehicle-occupants /2

Year	Killed	Seriously injured	Slightly injured	All casualties
2000	13	128	641	782
2001	15	114	837	966
2002	17	124	843	984
2003	15	156	907	1078
2004	22	142	988	1152
2005	19	135	1044	1198
2006	23	134	1033	1190
2007	18	118	1063	1199
2008	13	104	915	1032

Table 1: Number of killed and injured child (0-14 years) car-occupants

4. Remaining safety potential of safety belt wearing in Hungary

According to Elvik and Vaa [1], the effect of safety belt on the fatality and injury risk of passenger car drivers is the following:

risk of fatal injury: - 50%
risk of serious injury: - 45%
risk of slight injury: - 25%

[1] Elvik, R.; Vaa, T.: The handbook of road safety measures, Elsevier, 2004

4. Remaining safety potential of safety belt wearing in Hungary /2

For the front seat passengers the values are as follows [1]:

risk of fatal injury: - 45%

risk of serious injury: - 45%

risk of slight injury: - 20%

4. Remaining safety potential of safety belt wearing in Hungary /3

For back seat passengers [1]:

risk of fatal injury: - 25%

risk of serious injury: - 25%

risk of slight injury: - 20%

4. Remaining safety potential of safety belt wearing in Hungary /4

In Hungary, last year 146 drivers sustained fatal, 511 serious and 1096 slight injuries without wearing safety belt. In case of 100% wearing rate

146   x 0,5 =   73   fatal
511   x 0,45 =   230   serious
1096 x 0,25 =   274   slight

injuries could have been prevented.

4. Remaining safety potential of safety belt wearing in Hungary /5

Similar calculation for the front seat passengers.

59 x 0,45   =   27   fatal

203 x 0,45 =   91   serious

526 x 0,20 =   105   slight

injuries could have been prevented.

4. Remaining safety potential of safety belt wearing in Hungary /6

In the back seats:

55 x 0,25	=	14	fatal
266 x 0,25	=	67	serious
622 x 0,20	=	124	slight

injuries could have been avoided.

4. Remaining safety potential of safety belt wearing in Hungary /7

Summarized the above calculations, in case of 100% safety belt wearing rate

114 fatal

388 serious

503 slight

injuries could have been avoided.

4. Remaining safety potential of safety belt wearing in Hungary /8

Taking into account that 100% wearing rate is unreal – especially in Hungary -, 95% could be taken as a realistic target.

In case of 95% safety belt wearing rate

      108 fatal

      369 serious

      478 slight

injuries could have been prevented
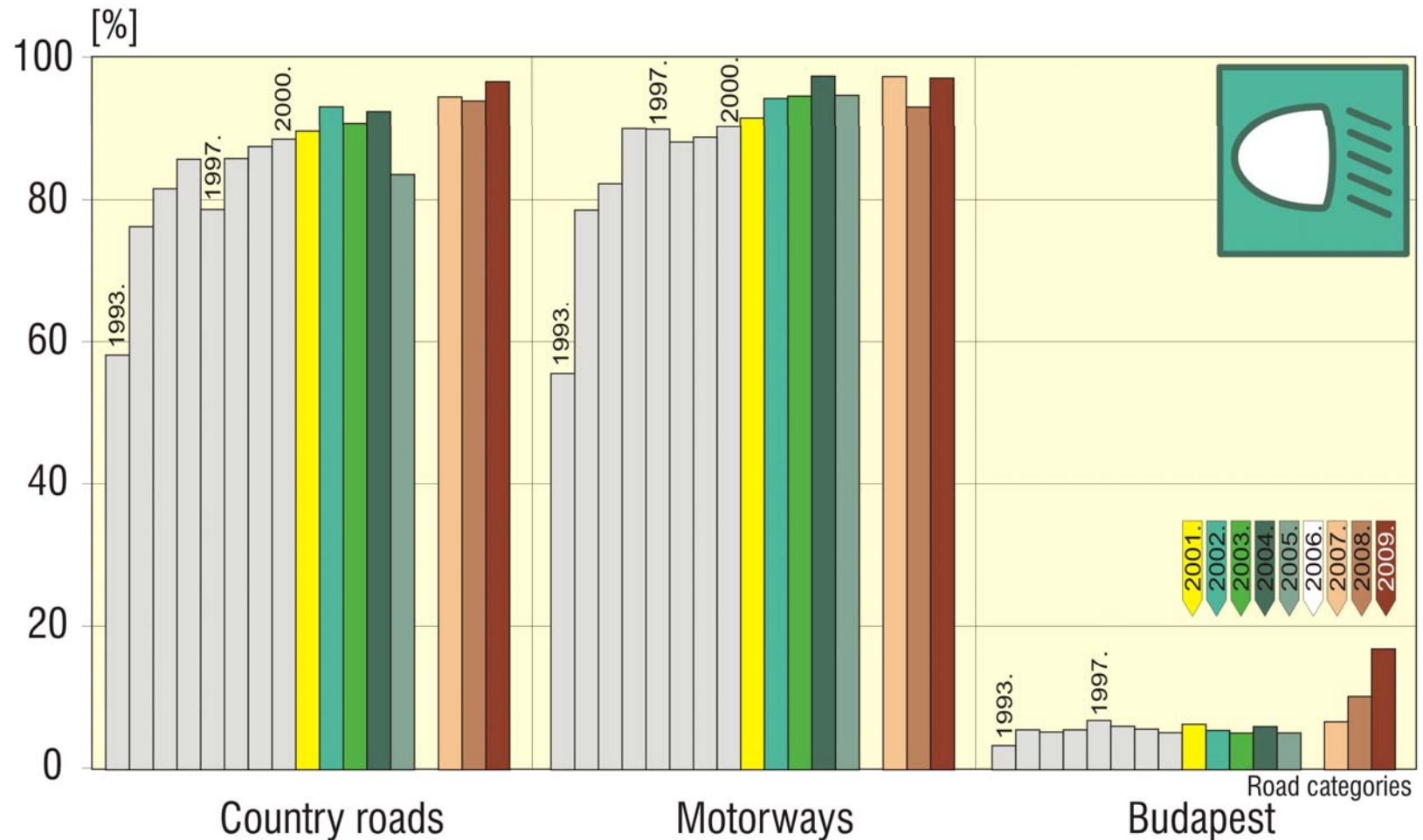
5. Daytime Running Lights (DRL)

Fig. 8.   DRL usage rates in Hungary according to road categories

6. Conclusions and recommendations

– Hungary has reliable performance indicators in the field of safety belt wearing, the usage of child restraint systems and DRL.

– The trend of safety belt wearing is the same in case of all road types and seat positions:

from 1992-93 to 1999: decreasing

from 2000 until now: increasing

6. Conclusions and recommendations /2

– Based on the performance indicators, the road safety activity of the last years could be rated as successful.

The increasing safety belt wearing rate is the result of:

– further improved demerit point system,
– awareness campaigns,
– intensified and targeted police enforcement,
– more serious sanctions

In spite of this, there are further safety potentials in this field.

6. Conclusions and recommendations /3

According to the estimations based on results of meta-analysis (Elvik & Vaa):

    108 fatal
    369 serious
    478 slight

injuries could have been avoided in case of 95% wearing rate of safety belts.

6. Conclusions and recommendations /4

The usage rate of child restraint systems shows also significant improvement.

The rate of unprotected children

 was 65% in 1994
 and 28% in 2009

This is the result of updated legislation, the more effective awareness campaigns and police enforcement.

In spite of this, almost every third child is travelling unprotected, which cannot be allowed.

6. Conclusions and recommendations /5

- The rate of DRL users shows a continuously increasing trend

- The introduction and widespread usage of other performance indicators detecting the behavioural characteristics in the field of legislation regarding **speed, drinking and driving,** etc. would be very important in the near future.

Thank you for your Attention