



BRSI

Summary: Speed(ing) in built-up areas

Results of the BRSI behavioural survey speed in built-up areas in 2015

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SUMMARY

Goal

Speed plays an important role in road (un)safety: it influences both the probability of an accident and its severity. If the speed of a vehicle increases, the reaction distance and braking distance increase. It also makes it harder for other road users to react appropriately. Given the fact that the amount of energy released in an accident, is directly proportional to the mass of the vehicle and the square of its impact speed, speed is a determinant factor of the severity of an accident and the injuries.

Considering the impact on road safety, speed is one the performance indicators observed by the BRSI since 2003.

Methodology

Radar devices measured traffic speed at 78 sites inside built-up areas. In order for the results to be comparable with previous surveys, the same sites were re-used as much as possible. The sites were chosen in a way that drivers were could freely choose their driving speed. More precisely, speeds were measured on locations without special environmental elements like sharp turns of traffic calming measures.

Locations situated either in (1) a 30 km/h zone, (2) a school zone with a permanent speed limit of 30 km/h, or (3) roads with the default 50 km/h speed limit of built-up areas. In 30 km/h zones, only locations without traffic calming measures (like speed bumps) had to be found. For that reason they are all situated in the Brussels Capital Region (BCR). In order to obtain a representative figures on a national scale, the measured values on each location were multiplied with a weighing factor. The coefficients used represent the proportion of the total length of the roads with that particular speed regime in the national road network and the number of observation sites belonging to that speed regime in the current sample.

On each site, speeds were measured during an entire week. All measures were performed between May 2nd and June 19th. Only the observations of vehicles with a length between 2.5 and 8 m were used in the analysis. The observations were filtered on the basis of actual traffic volume. Only observations at which the vehicle followed the vehicle in front with at least 5 seconds in between were selected, so that the speed chosen by the driver was not affected by preceding traffic. Ultimately, nearly 900 000 observations were used in the analysis.

Three indicators were calculated: (1) the mean speed, (2) the 85th percentile of measured speeds, and (3) the frequency of speed infringements.

Main results

The mean speed in 30 km/h zones (in Brussels) was 33.6 km/h. The mean V85 reached 40 km/h, which is way above the speed limit. In school zones, the mean speed and V85 amounted 43.4 and 52.8 km/h respectively. On 50 km/h roads, the mean speed remained under the speed limit with 48.5 km/h. The mean V85 was 56 km/h, clearly above the speed limit.

In 30 km/h zones, 36% of the car drivers complied to the speed limit. 64% drove more than 10 km/h too fast (>40 km/h). In school zones, 10% of the car drivers respected the 30 km/h speed limit. 60% drove more than 10 km/h too fast. On 50 km/h roads, 64% of the drivers complied to the speed limit. 10% of drove more than 10 km/h too fast (>60 km/h). Speed infringements of more than 30 km/h were rarely observed, irrespective of the speed regime.

The Brussels Capital Region showed the lowest measured speeds. The mean speed in the Brussels school zones amounted 37.4 km/h and on 50 km/h roads 41.5 km/h. The mean speed in Flemish school zones was 42 km/h. The mean speed on Flemish 50 km/h roads was 48 km/h. In Wallonia, the mean speed amounted 44 km/h in school zones and nearly 50 km/h on 50 km/h roads.

The frequency of speed infringements varied as well between regions. In Flemish an Walloon school zones, respectively 55% and 62.5% of drivers drove more than 10 km/h too fast, as opposed to 35% in

Brussels. The 50 km/h speed limit was respected by much more drivers: 60% (3 out of 5) in Wallonia, 67% (2 out of 3) in Flanders and 80% (4 out of 5) in Brussels.

In 30 km/h zones and school zones, measured speeds during weekend were a bit higher than during work days. In 30 km/h zones, the mean speed during weekend was half a km/h higher than during work days. In school zones, this difference was about 2 km/h.

In comparison with previous surveys we see that the measured speeds in school zones continually declined since 2007. During the last 8 years, the mean speed and V85 dropped with 8.5 and 10.4 km/h respectively. 50 km/h roads show a general drop in speeds as well. The mean speed on these roads dropped to 48.5km/h and remained under the speed limit for the first time. The speed in 30 km/h zones (BCR) could only be compared to the most recent previous survey of 2012. Here as well, a positive evolution occurs: a decrease in mean speed with almost 3 km/h since 2012. The mean V85 even shows a decrease of 4.5 km/h.

Conclusion and recommendations

We can conclude that the downward trend in measured speed inside built-up areas is still continued. Nevertheless, the results still demonstrate frequent speed infringements, especially at night and in school zones.

For better compliance of the speed limits in built-up areas, we recommend the following measures:

1. 30 km/h zones should be delimited consistently and designed appropriately.
2. School zones outside general 30 km/h zones should have a variable speed limit for better recognition, a clearer distinction from 30 km/h zones, and better compliance with the speed limits.
3. Built-up areas should be delimited according to a distinct transition in building density.
4. Traffic signs should be clearly visible and readable, allowing innovative driver assistance systems using traffic sign recognition to work properly.
5. Implement credible and stringent enforcement.



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