Road User related Risks & Measures in the European Road Safety DSS
The SafetyCube project

Funded by the European Commission under the Horizon 2020 framework programme

Coordinator: Pete Thomas, Loughborough University

Start: May 2015

Finish: April 2018

17 partners from 12 EU countries
Common objective

Creating an evidence based Decision Support System

Safety effects of risk factors and countermeasures related to

• Road users
• Road infrastructure
• Vehicles
• Serious injuries

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SafetyCube DSS Users

- Public Authorities
  local, regional, national, European and international
- Industry
  Infrastructure, Vehicle, Insurance, Technology
- Research Institutes, Experts
- Non Governmental Organizations
- Mass Media
Common methodology

1. Creating **taxonomies** of risks and measures
2. Exhaustive **literature review** and rigorous study selection
3. **Coding of individual study information**
4. Studies analyzed for carrying out meta-analyses to estimate the effects of risk factors and measures
5. **Synopses** > summarizing study results (meta-analysis, vote-count, review)
6. **Quality assurance** process
Systems approach

- Links between infrastructure, road users and vehicles
- Cooperation on common topics e.g. ‘alcohol interlock’

- Speed choice
  - Speeding
  - Speed of traffic

- Demerit point system
- Increase sanctions
- Speed awareness course
- Speed campaign
- Zero tolerance, reduction of tolerance
- Mobile speed enforcement
- Change speed limits
- Speed cameras
- Section control
- Variable traffic signs
- Dynamic speed warning 😊😊😊
- Speed humps
- Adaptiv cruise control
- Intelligent Speed Adaptation

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Type of content for various topics

- Information of individual studies
- Synopses of risks and measures
- Colour code >
- Cost-benefit analyses

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Red</strong></td>
<td>Results consistently show that the countermeasure reduces road safety risk.</td>
</tr>
<tr>
<td><strong>Yellow</strong></td>
<td>Results consistently show that exposure to the presumed risk factor does not increase risk.</td>
</tr>
<tr>
<td><strong>Grey</strong></td>
<td>Results consistently show that the countermeasure reduces road safety risk, but results are not consistent.</td>
</tr>
<tr>
<td><strong>Light green</strong></td>
<td>There is some indication that the countermeasure reduces road safety risk, but results are not consistent.</td>
</tr>
<tr>
<td><strong>Green</strong></td>
<td>No conclusion possible because of few studies with inconsistent results, or few studies with weak indicators, or an equal amount of studies with no (or opposite) effect.</td>
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</tr>
<tr>
<td><strong>Red</strong></td>
<td>Results consistently show that this measure does NOT reduce road safety risk and may even increase it.</td>
</tr>
</tbody>
</table>

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Challenges

• Is a protective device a risk or measure?
• Not all human related risk factors are directly observable e.g. emotions
• Actual contribution to accidents occurrence?
• Confounding risk factors
Results

Road user related content

• 450+ considered individual studies
• ~50 synopses on human related risk factors and measures
Delivering a long-awaited tool

- **1st integrated road safety support system developed in Europe**
- Scientific evidence on
  - risks, not only measures
  - risks and measures related to road users and vehicles, not only on infrastructure
  - a very large number of estimates of risks and measures effects
  - links between risks factors and measures
- **SafetyCube DSS aims to be a reference system for road safety in Europe, constantly improved and enhanced**
The SafetyCube DSS is the European Road Safety Decision Support System, which has been produced within the European research project SafetyCube, funded within the Horizons 2020 Programme of the European Commission, aiming to support evidence-based policy making. The SafetyCube Decision Support System provides detailed interactive information on a large list of road accident risk factors and related road safety countermeasures. A Quick Guide on using the SafetyCube DSS, with instructions on how to browse the system, make a search and further refine the results, is available for download here.
Thank you!
Join us in Vienna!

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