REGIONAL DISPARITIES OF ROAD TRAFFIC ACCIDENTS IN SWITZERLAND

Yvonne Achermann
• There are three main language regions in Switzerland
• The patterns of road traffic accidents differ from one language region to another
• Investigations were made to explain these differences
Contents of the presentation

• Methodological aspects
  – definition of the regions
  – data used in the analyses
  – reference population

• Results of various compilations
  – Road traffic accidents 1997 and 2007
  – « Importation » vs « exportation » of accidents
  – Risk-taking behaviours

• Discussion and conclusions
Definition of the regions

Switzerland and its main language regions (according to the language mainly spoken in the canton)
Data used in the analyses

- police-registered accidents
- annual population statistics (ESPOP)
- microcensus on travel behaviour
- inventory of motor vehicles MOFIS
- road side surveys
- bfu opinion polls
Reference population

- In the case of police-registered accident data, the injured persons are recorded at the place (region) of accident.
- In other data (population statistics, microcensus on travel behaviour), the persons are registered at the place (region) of residence.
- Numerator and denominator of ratios calculated with these data do not refer to the same population.
- Exposure to traffic risk is over-reported ("importation" of accidents) or underreported ("exportation" of accidents).

Regional disparities of road traffic accidents
Yvonne Achermann
### Exposure to road traffic risk

#### Various indicators of road traffic risk

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of severely and fatally injured per 100,000 inhabitants (2007)</th>
<th>Number of severely and fatally injured per 10,000 cars (2007)</th>
<th>Number of severely and fatally injured per 100 million km travelled (2005)</th>
<th>Number of severely and fatally injured per 10 million hours travelled (2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>German-speaking region</td>
<td>67</td>
<td>13</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>French-speaking region</td>
<td>87</td>
<td>16</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Italian-speaking region</td>
<td>125</td>
<td>21</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>14</td>
<td>7</td>
<td>16</td>
</tr>
</tbody>
</table>

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#### Regional disparities of road traffic accidents

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“Importation” vs “exportation” of accidents

• In the Swiss police-registered accident data, we find information on the place of accident but not on the place of residence of the injured persons.
• As a proxy, we used the indications on the license plates of the cars, motorcycles and mopeds involved in severe accidents.
• The place where the vehicle has been registered usually corresponds to the place of residence of the owner.
• According to the microcensus on travel behaviour 2005, 83% of the kilometres driven by car were achieved with the car in the household and only 17% with the company car, rental car or other car.
“Importation” vs “exportation” of accidents

Distribution of the number of severely and fatally injured persons in car accidents, according to the place of residence

Place of accident = German-speaking region

- 92.0%
- 2.3%
- 0.4%
- 5.3%

Place of accident = French-speaking region

- 88.5%
- 7.3%
- 4.0%
- 0.2%

Place of accident = Italian-speaking region

- 74.1%
- 16.1%
- 8.1%
- 1.6%

Place of residence:
- German-speaking region
- French-speaking region
- Italian-speaking region
- Abroad

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Estimation of the number of severely and fatally injured residents per 100,000 inhabitants, 2007

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of severely and fatally injured persons at the place of accident</th>
<th>Correcting factor (place of residence / place of accident) according to the license plates of 3 types of motor vehicles</th>
<th>Estimated number of severely and fatally injured residents</th>
<th>Number of severely and fatally injured persons at the place of accident per 100,000 inhabitants</th>
<th>Estimated number of severely and fatally injured residents per 100,000 inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>German-speaking region</td>
<td>3,574</td>
<td>0.951</td>
<td>3,399</td>
<td>67</td>
<td>64</td>
</tr>
<tr>
<td>French-speaking region</td>
<td>1,639</td>
<td>0.919</td>
<td>1,507</td>
<td>87</td>
<td>80</td>
</tr>
<tr>
<td>Italian-speaking region</td>
<td>406</td>
<td>0.803</td>
<td>326</td>
<td>125</td>
<td>100</td>
</tr>
</tbody>
</table>
Alcohol

Percentage of severely and fatally injured persons with the influence of alcohol, by language region, 1997 and 2007

Regional disparities of road traffic accidents

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Percentage of severely and fatally injured persons with the influence of speed, by language region, 1997 and 2007

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Speed

Speed limits: percentage of the response "rather in favour", by language region, according to the bfu opinion polls 2007

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Percentage of severely and fatally injured car occupants who did not wear the seat belt and percentage of car occupants not wearing the seat-belt, by language region, 1997 and 2007

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Discussion and conclusions

• Every road traffic risk indicator shows that there is a greater probability of getting severely or fatally injured in the Italian-speaking region than in the German-speaking region. The French-speaking region is situated in-between.

• These differences can be partly explained by the fact that the Italian-speaking region "imports" more and "exports" fewer accidents than the other regions.

• Another possible explanation: risk-taking behaviours are generally more widespread in the Italian-speaking and the French-speaking regions than in the German-speaking region.

• Further research is needed in order to assess the causal relationship between these behaviours and the risk of road traffic injuries in the different language regions.

• Other promising fields of investigation include the share of each means of transport, infrastructural aspects and helmet wearing rates.