

Young Researchers' Seminar 2009

Torino, Italy, 3 to 5 June 2009

REGIONAL DISPARITIES OF ROAD TRAFFIC ACCIDENTS IN SWITZERLAND

Yvonne Achermann



Context

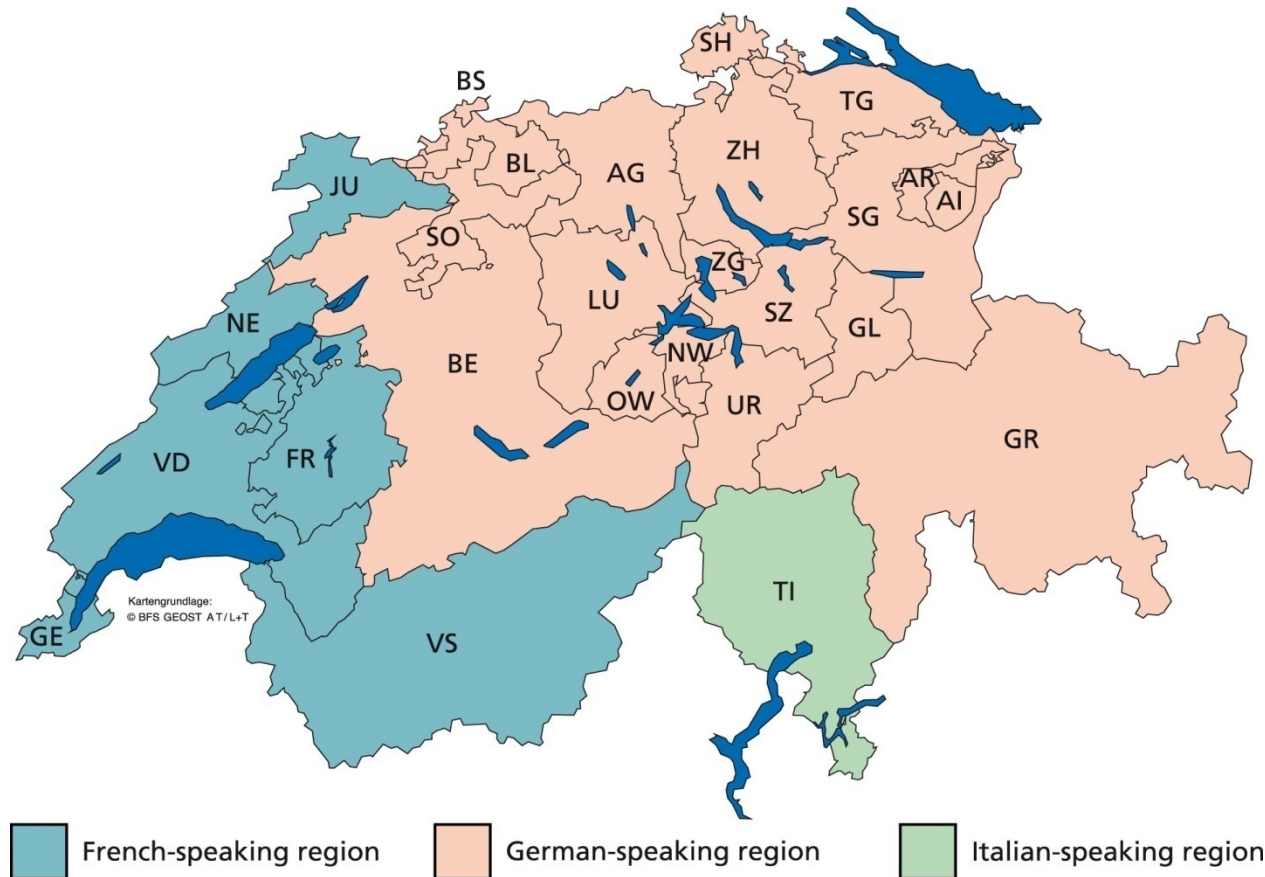
- There are three main language regions in Switzerland
- The patterns of road traffic accidents differ from one language region to another
- Investigations were made to explain these differences

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)



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Data used in the analyses

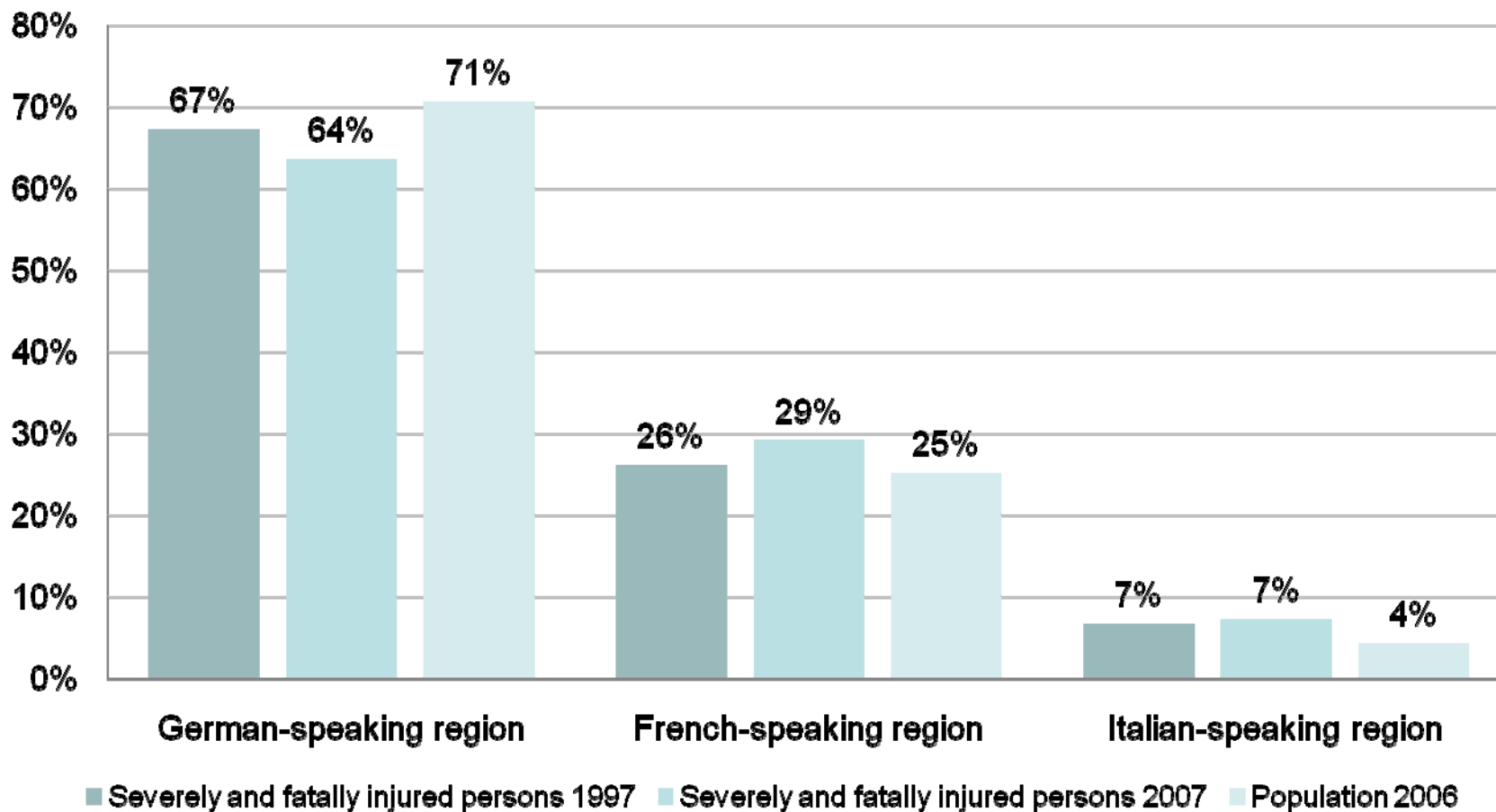
- police-registered accidents
- annual population statistics (ESPOP)
- microcensus on travel behaviour
- inventory of motor vehicles MOFIS
- road side surveys
- bfu opinion polls

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)

Road traffic accidents by language region

Share of severely and fatally injured persons by language region, 1997 and 2007, as well as population share 2006



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Exposure to road traffic risk

Various indicators of road traffic risk

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

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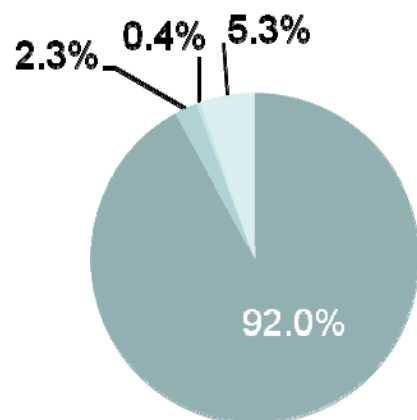
“Importation” vs “exportation” of accidents

- 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

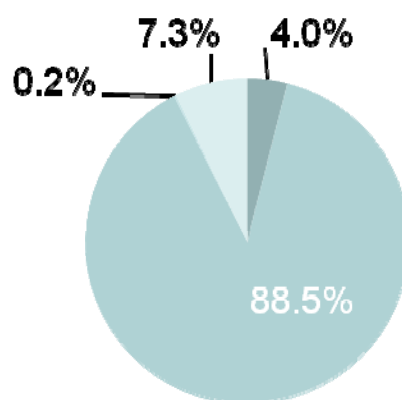
“Importation” vs “exportation” of accidents

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

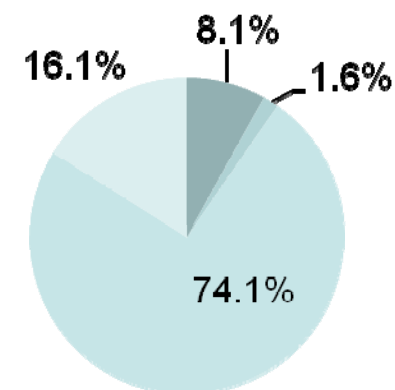
**Place of accident =
German-speaking region**



**Place of accident =
French-speaking region**



**Place of accident =
Italian-speaking region**



Place of residence:

- German-speaking region
- French-speaking region
- Italian-speaking region
- Abroad

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“Importation” vs “exportation” of accidents

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

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

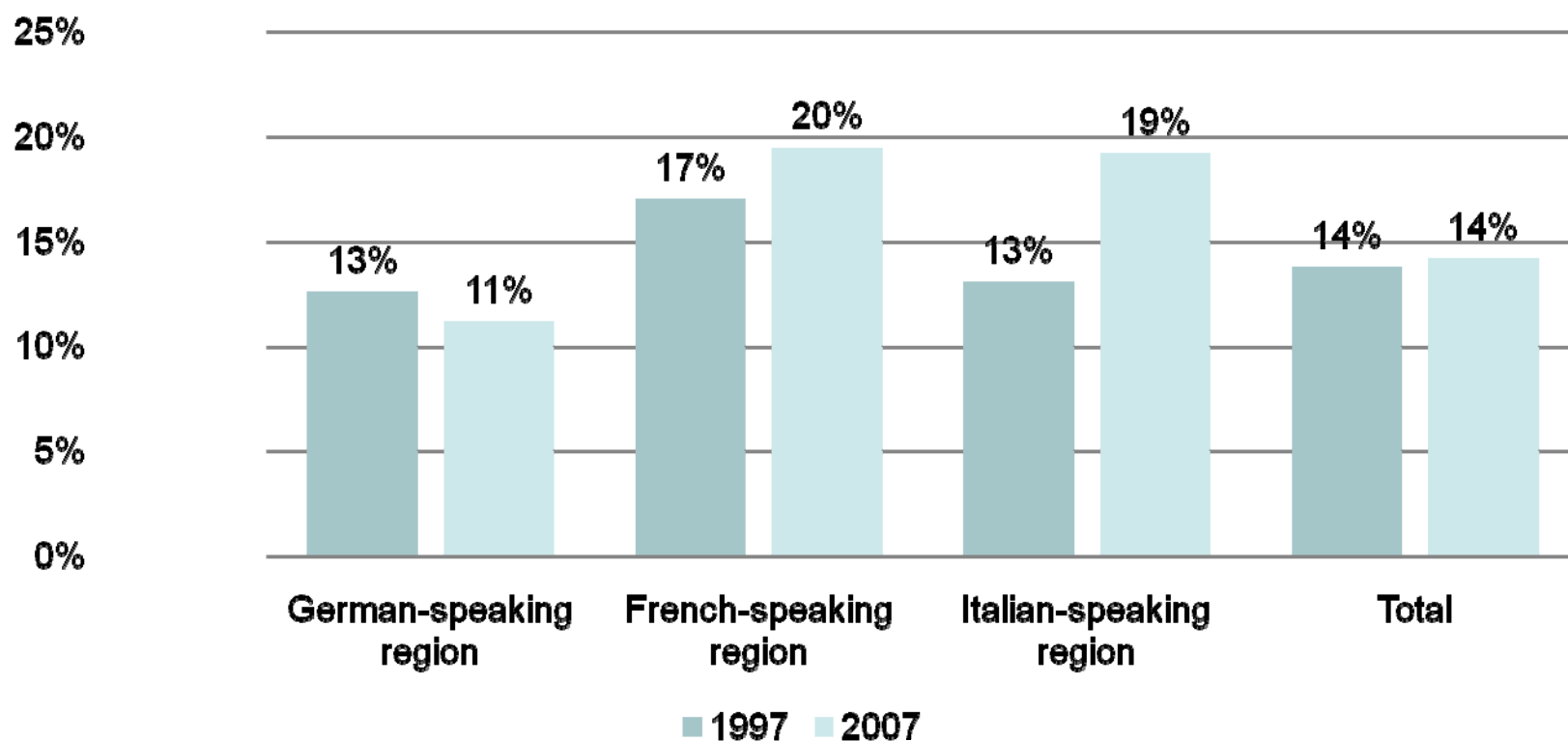
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Alcohol

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



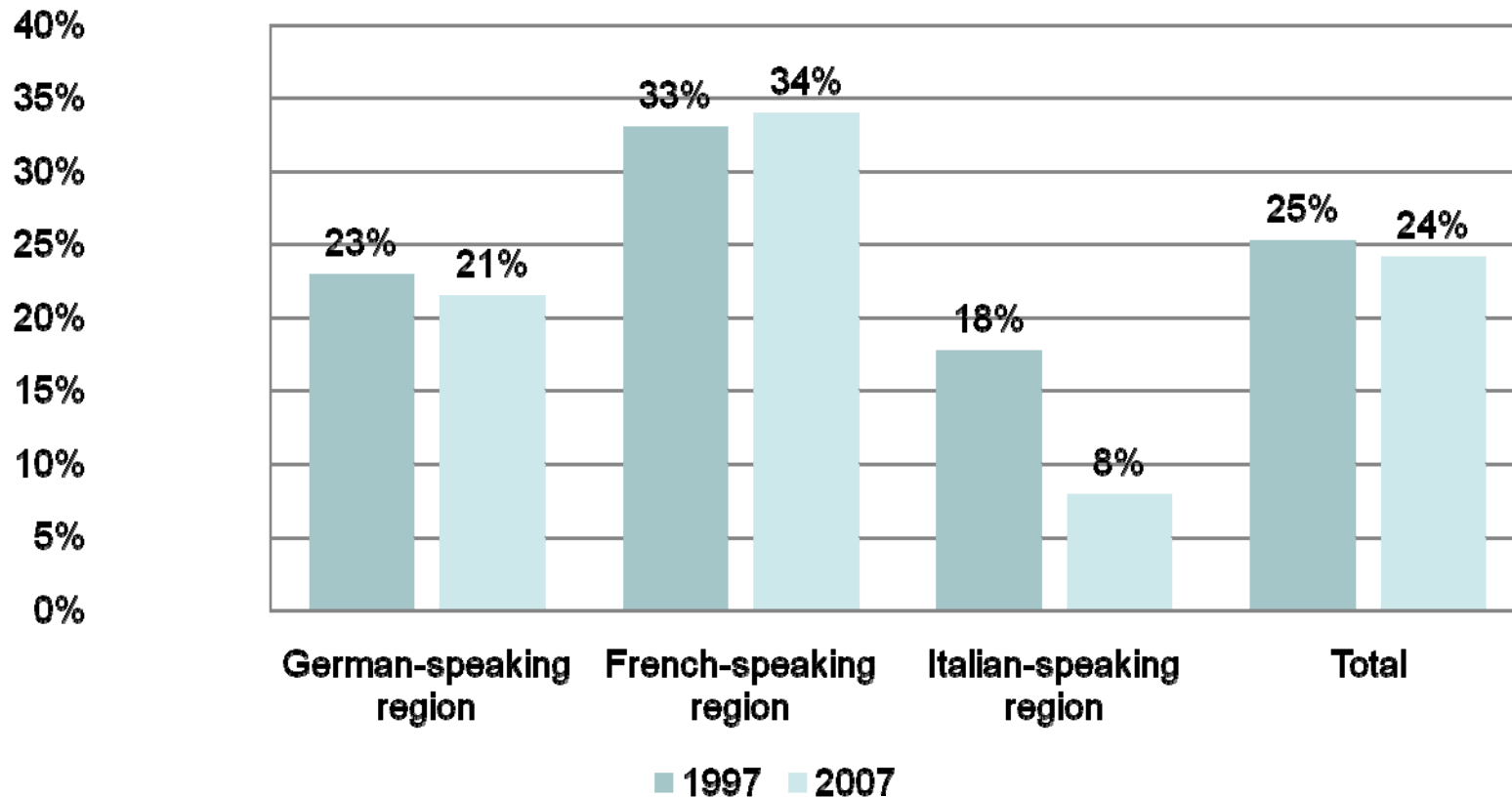
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Speed

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



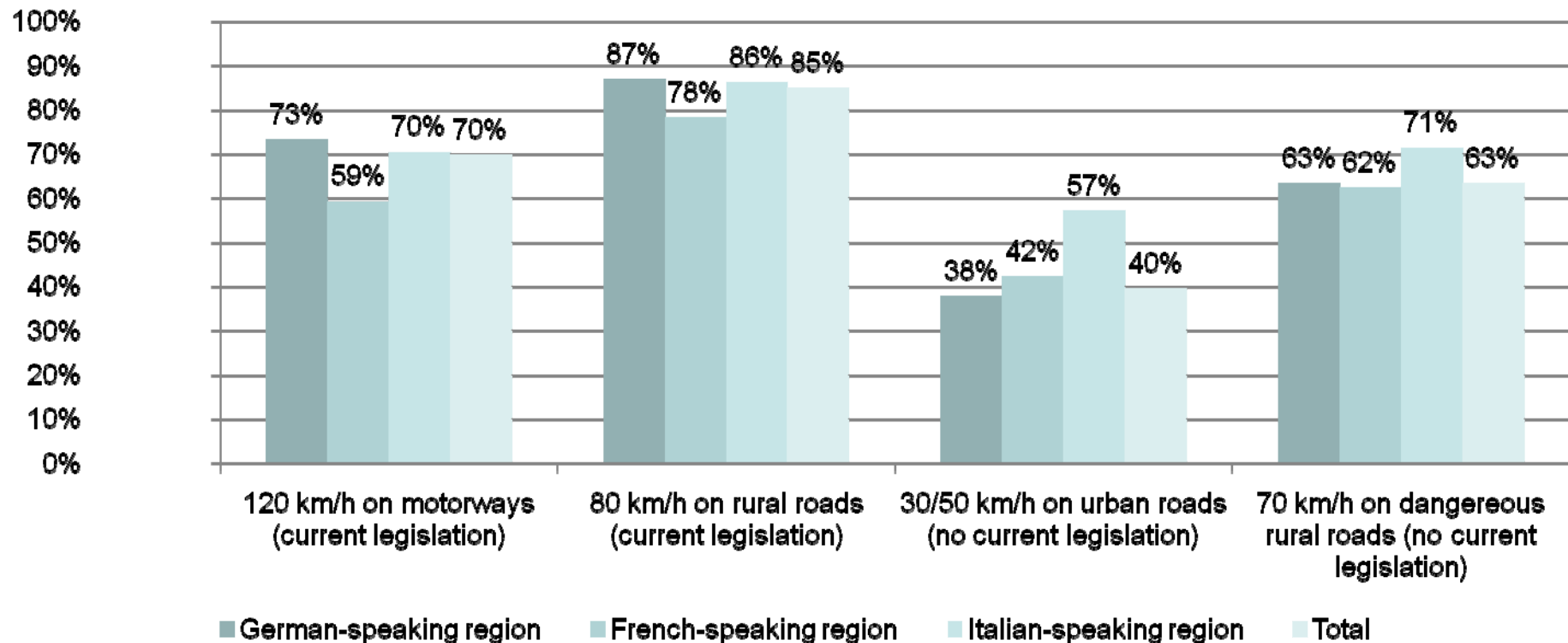
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Speed

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



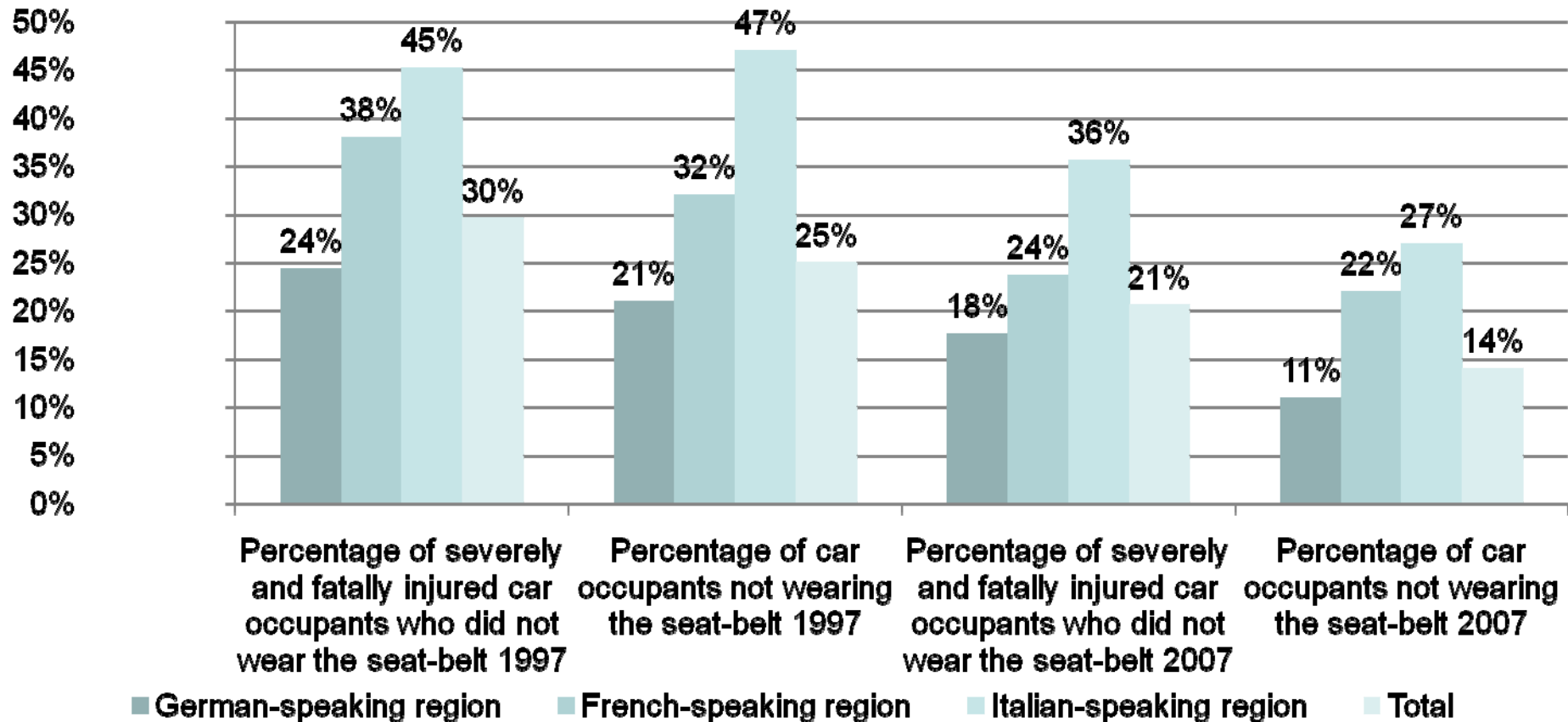
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Seat belt

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