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Forschungspaket VeSPA: Synthesebericht Phase 1

**Paquet de recherche VeSPA:
Synthese phase 1**

**Research Package VeSPA:
Synthesis phase 1**

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Summary

Since January 2011, it is possible to link data of the Road Traffic Accident Register (VU) with other registers of the Swiss Federal Roads Office (FEDRO) and with data from various other sources. This newly created pool of data allows detailed analysis of various factors on accident rates. The according research package "road safety gains resulting from datapooling and structured data analysis" (VeSPA) comprises six sub-projects (TP). The scientific sub-projects examine in two phases impacts of persons/society, situation/infrastructure, vehicle, weather, and medical consequences.

This summary report documents the work of the various sub-projects during the first phase of VeSPA, and summarizes the most important results. Proposed future research for phase 2 is also presented.

Major goals during phase 1 included enriching the VU data set with additional relevant information such as situation, reviewing data quality and co-linearity among variables, and creating a common framework in terms of datasets, classification/categorization and nomenclature. Additional relevant information included

- Register of the Administrative Procedures (ADMAS)
- Vehicle and Owner Data Register (MOFIS)
- Data on cantonal and municipal roads
- Model-based weather data
- Degree of injury of persons involved

which were linked to the VU-dataset.

The results of the subsequent multivariate analyses already disclosed patterns that were often surprising. For example, the probability of a passenger car accident being caused by young women is low compared with men of the same age, but increases with age. Serious injuries were, however, more frequent among young female drivers. With regard to infrastructure, we were able to show that accident probability increased with increasing daily traffic volume (DTV); however, those accidents tend to be less severe. With regard to vehicles, we were able to show that the probability of having an accident is slightly reduced as the passenger car's weight increases. Yet, this may be attributed to the drivers and their driving behaviour. Accident severity also increased significantly with increasing power to weight ratio. It appears that road users adjust their behaviour during bad weather. Accident severities were lower during snow and rain events. Nonetheless, the severity of injuries during snow and rain events at night increased significantly when high speeds were permitted.

The integration of all aspects of accidents into an overall VeSPA model is pending. This will be implemented in the second phase of VeSPA. The objective of the second phase is to combine the factors that affect accident events and to detect interactions among those effects, for example, the driver (age and gender) and the vehicle (weight and power). Unexpected results from the first phase will be analysed in depth.