Statistical tool to facilitate accident-data analysis

Are the measures that have been implemented to date to improve road safety effective? Do the accident data gathered in recent years reveal any trends or conspicuous developments? Working in the context of a joint research project, EBP developed a new statistical tool to evaluate accident data. One of the criteria applied in the tool's development was practicality, i.e. traffic-safety officers would need to be able to easily integrate the tool into their standard operating procedures, and therefore readily benefit from an enhanced data interpretation that would enable the implementation of appropriate measures and increase traffic safety in Switzerland.

One central task of those who work in the area of traffic safety is the examination of accident data and the implementation of carefully calibrated follow-up measures whenever necessary. However, the work of traffic-safety officers has been impeded by a lack of effective methodological approaches and corresponding tools to facilitate accident-data analysis.
The results of our research project gave rise to just such an effective tool for traffic-safety experts. The tool takes account of all of the relevant regulations and legal standards. Moreover, it can be integrated into existing IT environments for convenient daily use and it enables an intuitive visualization of results to significantly facilitate the task of interpretation.
The focus is on two main applications:
Time-series monitoring enables safety officers to examine general accident-related developments (e.g. the annual number of bicycle accidents within the city of Zurich). Safety officers can use the new tool to quantify observed trends and evaluate

Client

Swiss Association of Transportation Experts (VSS), Swiss Federal Roads Office (FEDRO)

Facts

Period	2017 - 2018
Project Country	Switzerland
Project partners	ETH Zurich, Zurich University
articipating experts	11
Relevance	Basis for new Swiss standard

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the results in terms of their significance and reliability. Furthermore, the tool includes an early-warning system to help safety officers respond to conspicuous spikes in traffic accidents, assisting users when it comes evaluating the urgency of counteractive measures.

Impact analysis enables safety officers to evaluate the effectiveness of earlier measures implemented to improve traffic safety. For instance, the tool helps its users to answer questions concerning the extent to which sharp reductions in the number of accidents at a certain location can be attributed to certain measures. Using various model situations, the impact can be quantified (e.g. reduction in the average number of accidents by X cases per year) and intuitively represented.

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