



## Road accident risk factors and big data

Scientific Responsible  
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Road traffic accidents consist a major but neglected global public health issue, constituting the leading cause of death between ages 5 and 29. Indicators of driver state, such as speed, aggressiveness, distraction (i.e. in-vehicle or external), fatigue and drowsiness remain a serious threat to road safety. Furthermore, environmental and traffic complexity indicators (e.g. adverse weather, time of day, traffic intensity, road layout) have received so far notably less attention. To that aim, the main objective of the current PhD thesis is to monitor driving performance in order to investigate the risk factors contributing to road accidents and detect driver reactions on customised safety-oriented interventions. For the purpose of this doctoral research, a naturalistic driving experiment will take place supplementary to a simulator experiment. From the experiments, a large database, delivered from a smartphone application and specially designed technologies in combination with personalized real-time interventions, through an innovative system, will be obtained. The designed experiment will span 12 months and 100 participants aged 18-65 will be asked to drive. After the driving simulator tasks, participants will fill in a questionnaire. Lastly, the entire database will be extensively processed and utilized in a multifaceted subsequent data analysis. To the best of the author's knowledge, it is worth mentioning that the aforementioned experimental process is very innovative. As such, it is expected to have much greater scientific value and effectiveness than the previous, as a huge amount of real-time and post-trip data will be analyzed. Therefore, the benefits of the proposed doctoral research are expected to be both scientific and socio-economic.