Analyzing the Relationship Between Car Generation and Severity of Motor-Vehicle Crashes in Denmark - DTU Orbit (17/11/2018)

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While the number of fatalities on Danish roads has decreased in the last 40 years, research has not investigated the contribution of legislation changes, enforcement measures, technological enhancements, infrastructural improvements and human factors to this reduction. In the context of a Danish car market with remarkably high registration tax that causes potential buyers to hold longer onto old cars, the relationship between technological enhancements of vehicles and severity of crashes requires particular attention.

The current study investigated the relationship between car generation (i.e., car's first registration year) and injury severity sustained by car drivers involved in accidents in Denmark between 2004 and 2010. A generalized ordered logit model was estimated while controlling for several characteristics of the crash, the vehicle and the persons involved, and a sensitivity analysis was performed to assess the effect of car generation on drivers’ injury severity. Results illustrate that newer car generations are associated to significantly lower probability of injury and fatality, and that replacing older cars with newer ones introduces significant and not to be overlooked benefits for both population and society.

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