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The Impact of Traffic Accident Experience to the Consequent Accident Characteristics – Statistic Analyses of the Driver Database Integrated with Accident and Violation Records

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Introduction

Most of drivers who caused a traffic accident don't want to repeat, but there are some drivers who cause 2 or more accidents in several years. Why are there such drivers? This question incited the author to start this study. There are two factors to show the reason why some drivers experience multiple traffic accidents in a short time. One is the wrong driving behavior and the other is high frequency of driving. Which has a stronger effect on accidents? It depends on a driver. So we must classify accident repeaters and seek the best or better solution for them, otherwise they may repeat unwillingly.

A statistical analysis was carried out to study the impact of accident experience to the consequent accident characteristics using the integrated driver database including general information of all of 80 million drivers in Japan and their accident and violation records since 1995. The hypothesis that drivers drive more carefully immediately after experiencing accidents is confirmed for those who caused a traffic accident after more than 4 year-absence of accident, but not for all drivers in Japan. And other analyses were carried out by using the integrated database.

Major results of the analyses are; 1. The more accidents or violations a drive experienced in the previous years, the higher rate they cause a traffic accident at 2. The levels of the impact of accident experience differ between age-groups and 3. There are some accident types that are easily repeated. The integrated database including all drivers' data in Japan has a great advantage to enable the quantitative comparison between characteristics of accident drivers and non-accident drivers. Such comparison cannot be by analyzing accident drivers only.

Several examples which the author introduced in the paper are the corpus of the author's eight-year study to make the database, but the paper doesn't show the end of the study but the start of the next step.