The following is only an abstract of one of our earlier reports. An email request for a printed or PDF copy of the complete report can be generated by clicking on the **Report Number** of this report in the table of reports on the Research Studies and Reports page. The PDF copy of the complete report was created by scanning an original, printed copy, and thus is only *partially* searchable and *is not* accessible, but is fully printable.

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TITLE: Longitudinal Study of California Driver Accident Frequencies I: An Exploratory Multivariate Analysis

DATE: June 1976

AUTHOR(S): Karen W. Kwong, Jensen Kuan, & Raymond C. Peck

REPORT NUMBER: 55

NTIS NUMBER: PB-267435/ AS

FUNDING SOURCE: Federal Highway Administration

PROJECT OBJECTIVE:

To attempt to develop an optimum accident-prediction system.

SUMMARY:

Detailed driving-record and questionnaire data were collected on a large sample of drivers, including an additional six years of driving record data on the subjects used in the 1964 Driver Record Study (California DMV, Report #20). An exploratory non-concurrent regression analysis (without questionnaire data) on the most recent 3-year accident interval produced a prediction equation with 29 predictor variables and a multiple correlation coefficient of .271. Among the variables which discriminated between accident and non-accident drivers were prior conviction frequencies and prior accidents. Drivers with prior accidents and convictions were more likely to have accidents in subsequent time periods. Two probabilistic models, the simple Poisson and the negative binomial, were employed to fit the observed accident distributions of three non-overlapping 3-year intervals for the same group of drivers, with the best result obtained by the negative binomial in the last triennium *(p>.70).* The report also delineates a conceptual framework of the subsequent phases of the entire process of developing a prediction system.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

The data provided by this study have been used for numerous public informational, planning and research purposes. Much of the information in the California Driver Fact Book came from this study and the project also provided norm groups and statistical baseline data used in other research studies.

SUPPLEMENTARY INFORMATION:

See also Peck and Kuan, Report # 84.