

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.

A printed or PDF copy of our studies and reports may also be requested by mail or phone at:

Department of Motor Vehicles  
Research and Development Branch  
2570 24th Street, MS H-126  
Sacramento, CA 95818-2606  
(916) 657-5805

For a request by mail, please include the report number and your name, address, and phone number. Also, please state whether you are requesting a printed copy, a PDF copy, or both. For a PDF copy, please include your email address.

TITLE: The Prediction of Accident Liability through Biographical Data and Psychometric Tests

DATE: March 1973

AUTHOR(S): Richard M. Harano, Robin S. McBride, & Raymond C. Peck

REPORT NUMBER: 39

NTIS NUMBER: PB-220369

FUNDING SOURCE: Federal Highway Administration

PROJECT OBJECTIVE:

To evaluate the role of human factors in traffic accidents.

SUMMARY:

A highly contrasted sample of accident-involved and accident-free drivers was evaluated in order to determine factors related to accident involvement. Collected information represented biographical and driving-related data, personality traits and attitudes, parental relationships, perceptual style, perceptual-motor coordination, and driving simulator performance. For males, the final construct sample multiple regression equation for predicting accident-group membership resulted in a multiple R of .69, which subsequently shrank to an R of .48 upon cross-validation. The concurrent prediction equation correctly classified 68.9% of the accident-free drivers and 71.2% of the accident-involved drivers, approximately 20% better than chance prediction. The variables which were significant upon cross-validation were marital status, mileage, traffic conviction record, socioeconomic factors, rating of one's driving ability in comparison to that of elderly drivers, and personality and attitudinal factors derived from a psychometric inventory called the CIDAO. None of the vast array of perceptual-motor and simulator performance measures proved significant, although there was some suggestive relationship between simulator speed variability, two psychomotor measures of field dependence, and accidents. Classification of drivers through cluster analytical procedures revealed several high- and low-accident types. The findings indicated that a combination of cluster analyses and multiple regression analyses is a more powerful method than either alone, and that conventional multiple regression procedures can obscure complex relationships. The results for females closely paralleled the findings for males.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

The findings were not considered to be sufficiently positive for the test battery and simulator to be incorporated into departmental programs.

SUPPLEMENTARY INFORMATION:

Published in the *Journal of Safety Research*, 7(1), 16-52, 1975.