

## Cognitive and personality determinants of fitness to drive

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### ABSTRACT:

Despite a wealth of literature supporting the predictive relevance of various driving-related ability and personality traits in predicting different aspects of traffic safety, these predictors have in previous studies been studied in isolation. The present study investigated the utility of combining these predictor variables in the prediction of safe driving behaviour as measured in a standardised driving test. A total of 159 predominately male respondents participated in this study. The respondents completed a standardised test battery measuring the driving-related ability traits reaction speed, perceptual speed, selective and divided attention, resilience of attention and reaction speed, fluid intelligence, and driving-related personality traits such as subjectively accepted level of risk, sensation seeking, social responsibility, self-control and emotional stability. The incremental validity of these predictor variables was investigated by means of a multivariate logistic regression analysis and artificial neural network. The results indicate that the artificial neural network outperforms the logistic regression analysis, suggesting a more complex relation between psychometric tests and standardised driving tests. The results replicate previous findings with regard to the incremental validity of ability and personality tests and extend them in demonstrating the incremental validity of selected personality measures over and above other driving-related predictor variables.