

## **Incremental validity of personality traits over and above cognitive abilities in predicting fitness to drive**

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### ABSTRACT:

Despite the wealth of literature supporting the predictive validity of various driving-related ability and personality traits, both kinds of predictor variables have previously been studied in isolation. While some studies focus entirely on the predictive validity of ability tests, others solely investigated the contribution of driving-related personality traits in predicting fitness to drive. This separation of the research on personality and ability determinants of safe driving behaviour can be partially explained by a lack of a coherent and unified theoretical model of driving behaviour that takes both determinants of safe driving behaviour into account. In the present study we thus attempted to contribute to bridging the gap between personality- and ability-based models of safe driving behaviour by investigating utility of combining driving related personality and ability trait measures in the prediction of safe driving behaviour as measured in a standardized on-road test (Vienna Driving Test: Risser, 1985). A total of 159 predominately male respondents participated in this study. The respondents completed a standardized test battery measuring simple reaction time, perceptual speed, selective and divided attention, complex choice reaction time, fluid intelligence, 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 were cross-validated in an independent sample of 50 respondents referred to a traffic psychological examination. Taken together, the results indicate that complex choice reaction time, perceptual speed, simple reaction time, emotional stability, social responsibility and subjectively accepted level of risk contributed significantly to the identification of risky drivers. These findings are in line with previous studies but extend them by demonstrating the incremental validity of driving-related personality traits over and above ability test measures. The theoretical implications of the present results will be discussed in the light of the hierarchical model of driving behaviour (Michon, 1985) with an emphasis on the importance of compensatory mechanisms in assessing fitness to drive.