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The predictive validity of the mental alertness, reading comprehension, arithmetic reasoning and conceptual reasoning tests as used by the Wits Business School.

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Abstract

In this research, the scores on four National Institute for Personnel Research (NIPR) tests (the Mental Alertness, Reading Comprehension, Arithmetic Reasoning and Conceptual Reasoning Tests) formed the independent variables and course results on the Master of Business Administration (MBA) programme the dependent variables. The analysis involved examining data of 741 MBA students to determine the relationship between the four NIPR tests and academic performance in the ten core courses of the MBA as one dependent variable, and academic success in completing the MBA degree as a second dependent variable. The language background and racial classification of the students were also examined in relation to the two dependent variables of academic performance and academic success.

The results from stepwise regression indicated that Mental Alertness was the best predictor of academic performance overall but that this explained only 10% of the variance in academic performance. Adding the additional predictor variables into the regression equation added only an additional 2% to the amount of variance which could be predicted through use of the four NIPR tests in combination. Arithmetic Reasoning Test was the only test that was not accepted into the regression model. Logistic regression showed that none of the variables were significant in predicting whether students would successfully complete their MBA studies or fail to. None of the four NIPR tests were able to meet the significance level necessary to be entered into the model.

A number of differences in academic performance were found which could be attributed to language preference. It was evident that the group that preferred using English for communication had higher odd ratios than the group that did not prefer English as a language of communication. However, the effect sizes of these differences were small.

With regards to differences between the academic performances of the different racial groups, it was evident from the analyses that Black students were outperformed by White and Asian students. The difference between Asian and White mean scores was very small compared to the difference between mean scores of Black and White students, and the effects were medium to large confirming significant differences between the three racial groups. In terms of differences in the academic success of different racial groups, White students had better odds of successfully completing their studies than Black students. In addition, Asian students also had better odds of succeeding than Black students.

The overall conclusion from this study was that, while the abilities tapped by all four NIPR tests contributed towards determining academic performance, their overall contributions were not high. They could only account for 12% of the variation in academic performance of the Wits MBA student sample. In contrast, extraneous variables explained 88% of the variance in academic performance. This indicated that the four NIPR tests contributed information which was only marginally useful to the selection decision.