

*Ključne reči:* školski uspeh, obrazovanje roditelja, osobine ličnosti, Velikih pet plus dva

### Personality traits of the big five plus two model and parental educational status as predictors of children's success in school

The main goal of this research was to examine the relations between parents' educational status, personality traits and children's school achievement. The sample consisted of 417 higher grade elementary school students (58.8% girls). A short version of The Big Five Plus Two questionnaire was applied, as well as a short measure of general information. Hierarchical regression analysis was used to predict children's school achievement, with parents' educational status and personality traits as predictors. Results of the first block of predictors ( $R^2=.14$ ) point to mother's educational status as a significant predictor ( $\beta=.36, p<.001$ ). The second block ( $\Delta R^2=.07$ ) highlights Openness ( $\beta=.13, p<.01$ ), Extraversion ( $\beta=.11, p<.05$ ), Conscientiousness ( $\beta=.13, p<.01$ ) and Aggression ( $\beta=.15, p<.01$ ) as significant predictors. Contribution of the third block (Positive and Negative Valence) was insignificant. The results point to a significant contextual contribution of environmental factors in school achievement.

*Keywords:* school achievement, parents' education, personality, Big Five Plus Two

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### A PRELIMINARY EXAMINATION OF THE ICAR PROGRESSIVE MATRICES TEST OF INTELLIGENCE

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International Cognitive Ability Resource ("ICAR") is a collaborative effort which aims to encourage an assessment of cognitive abilities in research and practice. ICAR compiles several public domain tests, including the progressive matrices intelligence test (PM) "clone". ICAR PM currently consists of 30 "select the missing piece" items with 8 answer choices each. The goal of this research was

to conduct a preliminary psychometric validation of the ICAR PM test in a high school setting of the Republic of Srpska. The sample comprised 762 students (65.1% females, 2.9% non-disclosed) from three large high schools (grades II and III): gymnasium, economy school, and civil engineering school. ICAR PM was administered during regular school classes. General school achievement (GSA) from a previous school year was also measured ( $M=3.96$ ,  $SD=0.66$ ). Using a confirmatory factor analysis (CFA) it was determined that a single-factor model had good fit:  $\chi^2(405)=688.40$ ,  $p<.001$ ; CFI=.951; TLI=.947; RMSEA=.030, 90% CI [.026, .034]. Internal consistency was also good ( $\alpha=.89$ ,  $\omega=.84$ ). However, 7 items had low loadings, thus they were removed. One item was also removed due to local dependency violations with two other items. After the item deletion, remaining item loadings ( $\Lambda$ ) were in a .34 to .77 range, and both fit ( $\chi^2(209)=403.97$ ,  $p<.001$ ; CFI=.965; TLI=.962; RMSEA=.035, 90% CI [.030, .040]) and internal consistency ( $\alpha=.92$ ,  $\omega=.86$ ) slightly improved. Following this, item response theory (IRT) analysis was conducted. 2PL had better fit than 1PL, but in both cases over half of the items showed indications of misfit with the IRT models. Item difficulties were in -2.75 to 2.02 range and most discriminations were moderate or high. The majority of the test information (i.e., 91.75%) was located in the -3 to 3 logit range, and the information was mostly evenly distributed, with slightly higher concentrations just below the mean. Reduced 22-item ICAR PM score correlated only slightly higher with the GSA ( $r=.396$ ,  $p<.001$ ) than the non-reduced 30-item score ( $r=.372$ ,  $p<.001$ ), with both values being in line with typical correlations reported in the literature. There were no differences in the average ICAR PM scores between male and female students. In conclusion, the ICAR PM test appears to be a promising intelligence test, but several items are problematic in a high school student sample and a pronounced non-conformity to IRT models can be viewed as a potential shortcoming.

*Keywords:* international cognitive ability resource (“ICAR”), progressive matrices, general school achievement, confirmatory factor analysis (CFA), item response theory (IRT)