Application Of The Rasch Tree Model In The Detection Of Differential Item Functioning (Case Study: Recruitment Exams Of The Police Of The Islamic Republic Of Iran)

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Abstract

Background and Aim: The purpose of this study is to investigate the application of the Rasch Tree model in revealing the differential action of police recruitment tests. Method: The present study is applied in terms of purpose and descriptive in terms of method called psychometric research. Also, considering that this research examines employment tests, it is of evaluation type in terms of method. The statistical population of the police recruitment test for the year 1398 has been analyzed as 2414 people in full. To determine the detection rate of the differentiation Item Functioning, 100 four-choice questions of the specific test of candidates for employment in the police force were examined using the DIFtree closed the Rasch Tree model in R software. Results: The results of the Rasch Tree model showed that the candidates can be in 5 categories of the mathematical experimental group with 18 years of age (first category); Mathematics with 19 years of age (second category); Department of Experimental Sciences (third category); Department of Humanities with 18 years of age (fourth category) and Department of Humanities with 19 years of age (fifth category) Division as in the designated categories, 9 questions in Persian language and literature courses (2 questions); Arabic language (2 questions); General information (3 questions), English (2 questions) have the differentiation Item Functioning (bias). The orientation of the bias was in favor of the first and second categories and to the detriment of the third and fourth categories. Results: The Rasch Tree model was able to determine the bias of the recruitment test questions.

Keywords: Rasch trees models; Differentia Item Functioning; Bias; Re-

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