

## An Investigation of Item Bias in Free Boarding and Scholarship Examination in Turkey

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**Abstract :** Biased sample is a regression of an observation, design process and all of the specifications lead to tendency of a side or the situation of leaving from the objectivity. It is expected that, test items are answered by the students who come from different social groups and the same ability not to be different from each other. The importance of the expectation increases especially during student selection and placement examinations. For example, all of the test items should not be beneficial for just a male or female group. The aim of the research is an investigation of item bias whether or not the exam included in 2014 free boarding and scholarship examination in terms of gender variable. Data which belong to 5th, 6th, and 7th grade the secondary education students were obtained by the General Directorate of Measurement, Evaluation and Examination Services in Turkey. 20% students were selected randomly within 192090 students. Based on 38418 students' exam paper were examined for determination item bias. Winsteps 3.8.1 package program was used to determine bias in analysis of data, according to Rasch Model in respect to gender variable. Mathematics items tests were examined in terms of gender bias. Firstly, confirmatory factor analysis was applied twenty-five math questions. After that, NFI, TLI, CFI, IFI, RFI, GFI, RMSEA, and SRMR were examined in order to be validity and values of goodness of fit. Modification index values of confirmatory factor analysis were examined and then some of the items were omitted because these items gave an error in terms of model conformity and conceptual. The analysis shows that in 2014 free boarding and scholarship examination exam does not include bias. This is an indication of the gender of the examination to be made in favor of or against different groups of students.

**Keywords :** gender, item bias, placement test, Rasch model

**Conference Title :** ICSSCE 2016 : International Conference on Social Studies, Communication and Education

**Conference Location :** Rome, Italy

**Conference Dates :** May 02-03, 2016