

In this thesis, we describe various tests used to determine differential item functioning in tests with dichotomous items. We focus on two types of tests: tests based on estimation of item parameters in Item Response Theory (IRT) models and tests based on other methods, e.g., three-way contingency tables or logistic regression. This thesis also contains an analysis of an admission exam for a university in Czech Republic. We found six items potentially biased in favor of men and four items potentially biased in favor of women. The thesis also involves a simulation study in which we estimate the power and type 1 error rate of the tests for different numbers of examinees. In most cases we get the best results for the logistic regression test. IRT models allow for simultaneous and more complex descriptions of item properties and student abilities and can provide for more precise detection of differential item functioning. We point out the possible difficulties connected with parameter estimation in IRT models.