

In the presented bachelor thesis, we focused on the Levene's test and its modifications that are used to assess the equality of variances for k independent random samples. At the beginning, we described Analysis of variance (ANOVA) that is a method for analyzing differences between group means for k independent random samples. The following part contains the original Levene's test description, including a discussion about the assumptions' verification for using ANOVA. Considering the fact that the original test is not confident in case of samples from specific distributions (e.g. a chi-square distribution) we summarize some known and suggest some new modifications. The main part of the thesis is dedicated to experimental simulations. In the conclusion, we discuss the simulation results for different versions of the Levene's test and other similar tests for equality of variances.