

This thesis concentrates on regression models with a categorical response. It focuses on the model of logistic regression with binary response and its generalization in which two models are distinguished: multinomial regression with nominal response and multinomial regression with ordinal response. For all three models separately, the Wald test and the likelihood ratio test are derived. These theoretical derivations are then used to calculate the test statistics for specific examples in statistical software R. The theory described in the thesis is illustrated by examples with small and large number of explanatory variables.