

In the presented thesis the issue of dependency between response variables within the subjects in the generalized linear models framework is investigated. Reserving in non-life insurance is a key factor for the financial position of a company. The text introduces the basic actuarial notation, terminology and methods. The main part is focused on panel data framework, especially Generalized Linear Mixed Models (GLMM) as well as Generalized Estimating Equations (GEE), and their application on claims reserving. The aim of this thesis is to show the advantages, disadvantages, limitations and the comparison of these approaches on representative datasets, which were chosen according to results obtained from whole database analysis. Significant focus is on model selection and diagnostics used for this purpose. Finally, the obtained results are summarized in tables, figures and the comparison of the methods is provided.