

In this bachelor thesis binary logistic regression model is described. Its parameters are estimated by maximum likelihood method. Newton-Raphson's algorithm is used for enumeration of these estimates. There are defined some statistics for testing the significance of the coefficients. Then stepwise regression is described. For assessing the quality of the model Pearson's Chi Square Test and Hosmer-Lemeshow's Test of the goodness of fit are defined. Diversification ability of the model is illustrated by the Lorenz curve and is quantified by Gini coefficient, Kolmogorov-Smirnov statistics and generalized coefficient of determination. The theoretical knowledge is applied to insurance area data.