

Skattningsmetoder för binär data: En simuleringsstudie

Greta Olsson Lööf*

Juni 2017

Sammanfattning

Logistic regression is useful when analyzing binary data, where in the analysis one can use the approximations taken from analyses of large samples. These approximations are not as precise when working with small samples. This thesis aims to test alternative estimation methods - maximum likelihood estimation and exact conditional inference using statistical software SAS and R, and see if the methods are suitable for this type of analysis. A simulation study was constructed containing two models - one with an independent binary variable and one with two independent binary variables. Comparisons were made based on the true parameter values in the models from which the data was generated, and the parameter estimates given from each reviewed method.

The thesis finds some support for the initial theory that when using exact conditional inference the estimated parameters are less biased than when using the maximum likelihood for analysis of small samples. However, more research is needed to try this on non-simulated data and test its applicability.

*Postadress: Matematisk statistik, Stockholms universitet, 106 91, Sverige.
E-post: gretaolsson999@hotmail.com. Handledare: Jan-Olov Persson.