

ABSTRACT

A Simultaneous Model For The Joint And Marginal Distributions Of Multivariate Product-Multinomial Categorical Responses

Chapter 1 - The Simultaneous Generalised Loglinear Model For Multivariate Product Multinomial Categorical Responses

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1.1 Categorical Data

The use of generalised linear models for modelling the joint distribution of categorical responses has been well established. However, the derivation of the corresponding marginal distributions and the subsequent modelling of them can be difficult. For this reason, the joint and marginal distributions are usually modelled and fitted separately. This report presents an overview of a generalised loglinear model for the simultaneous modelling of the joint and marginal distributions of multivariate product-multinomial categorical responses. The parameters of the model are estimated by maximum likelihood estimation. The large sample asymptotic behaviour of the parameters is examined, and four goodness of fit statistics are presented.

2.4 Assumptions

Keywords: Categorical data; product-multinomial; generalised linear models; joint distribution; marginal distribution.