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Title:

**Modelling Strategies for Repeated Multiple Response Data**

Abstract:

This article discusses modelling strategies for repeated measurements of multiple response variables. Such data arise in the context of categorical variables where one can select more than one of the categories as the response. We consider each of the multiple responses as a binary outcome and use a marginal (or population-averaged) modeling approach to analyze its means. Generalised estimating equations are used to account for different correlation structures, both over time and between items. We also discuss an alternative approach using a generalised linear mixed model with conditional interpretations. We illustrate the methods using data from a panel study in Australia called the Household, Income and Labour Dynamics Survey.