## Supplementary materials for "Multivariate Ordinal Random Effects Models Including Subject and Group Specific Response Style Effects"

Gunther Schauberger <sup>1, 2</sup>, Gerhard Tutz<sup>2</sup>

<sup>2</sup> Department of Statistics, LMU Munich, Munich, Germany

Address for correspondence: Gunther Schauberger, Chair of Epidemiology, Department of Sport and Health Sciences, Technical University of Munich, Georg-Brauchle-Ring 56, 80992 München, Germany.

E-mail: gunther.schauberger@tum.de.

**Phone:** (+49) 89 289 24955.

Fax: (+49) 89 289 24953.

**Abstract:** This document presents supplementary materials for the manuscript "Multivariate Ordinal Random Effects Models Including Subject and Group Specific Response Style Effects" by Schauberger and Tutz (2020).

<sup>&</sup>lt;sup>1</sup> Chair of Epidemiology, Department of Sport and Health Sciences, Technical University of Munich, Munich, Germany

**Key words:** adjacent categories model; cumulative model; multivariate ordinal response; random effects models; response styles

## **1** Further Simulation Results

## 1.1 Adjacent Categories Model



Figure 1: Parameter estimates for covariate effects  $\gamma$  separately for the different simulation settings in the adjacent categories model. True values are marked with red crosses.





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## 1.2 Cumulative Model

Figure 3: Parameter estimates for covariate effects  $\gamma$  separately for the different simulation settings in the cumulative model. True values are marked with red crosses.



Figure 4: Parameter estimates for threshold parameters separately for the different simulation settings in the cumulative model. True values are marked with red crosses.

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