List of responses to the comments for the author of: A multinomial generalized linear mixed model for clustered competing risks data

March 20, 2023

Co-Editor

Based on the advice received, I have decided that your manuscript can be accepted for publication after you have carried out the corrections as suggested by the reviewer(s).

Author's response

We thanks the positive evaluation and we addressed in the paper the corrections and suggestions of the reviewers.

Reviewer 1

The authors have positively answered to all the issues arisen.

Reviewer 2

1. Please incorporate the comparison with He et al. (2022) discussed in the author's response into the paper (Introduction/Discussion).

Author's response

We thanks for the literature recommendation. The robust approach proposed by He et al. (2022) has been incorporated into the paper (na verdade eu ja tinha incorporado na introducao, na linha em que cito os linear transformation models. Ela ficou discreta, é só mais uma citacao no meio de várias. Dou um jeito de dar mais destaque, o que vai ficar meio sem nocao, ou deixo como está?).

Reviewer 2

2. The authors mentioned that the Laplace-approximated MLE converges faster than the EM (which has a linear convergence rate), do we know at what rate it converges, e.g., approximately quadratic?

Author's response

We thanks fot the insightful comment. The Laplace approximation for the latent effects of a mixed model consists of two optimizations, an inner and an outer optimization. The inner one is made through a Newton-Raphson algorithm, Newton´s method with a quadratic convergence rate. The external optimization is made through a Quasi-Newton Method, the BFGS for instance, which in our class of models has a superlinear convergence rate (tá bom assim ou preciso por referencias? acho que assim ja ta bom. tambem nao acrescentei nada no paper, só respondi aqui).

References

He, Y., Kim, S., Mao, L. and Ahn, K. W. (2022). Marginal semiparametric transformation models for clustered multivariate competing risks data, *Statistics in Medicine* **41**: 5349–5364.