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CSDA

Computational Statistics & Data Analysis 00 (2018) 1–5

Supplementary material for ‘Modelling and estimation of nonlinear quantile regression with clustered data’

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Abstract

This report contains supplementary results from the simulation study presented in Section 4 of the article entitled ‘Modelling and estimation of nonlinear quantile regression with clustered data’.

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Table 1. Estimates of the variance-covariance parameters from nonlinear quantile mixed-effects regression with $\tau \in \{0.1, 0.5, 0.9\}$ for all scenarios with $M = 100$ and $n = 10$. The estimates are averaged over 500 replications.

	$\tau = 0.1$	$\tau = 0.5$	$\tau = 0.9$
<i>First scenario</i>			
σ_1^2	1.73	0.97	1.68
σ_{12}	-3.30	-1.83	-3.19
σ_2^2	6.61	3.67	6.36
<i>Second scenario</i>			
σ_1^2	1.76	0.99	1.73
σ_{12}	-3.34	-1.85	-3.25
σ_2^2	6.62	3.65	6.38
<i>Third scenario</i>			
σ_1^2	0.01	0.04	0.00
<i>Fourth scenario</i>			
σ_1^2	0.16	0.22	0.04
σ_2^2	0.24	0.25	0.08
σ_3^2	0.16	0.18	0.17
σ_4^2	0.09	0.17	0.01

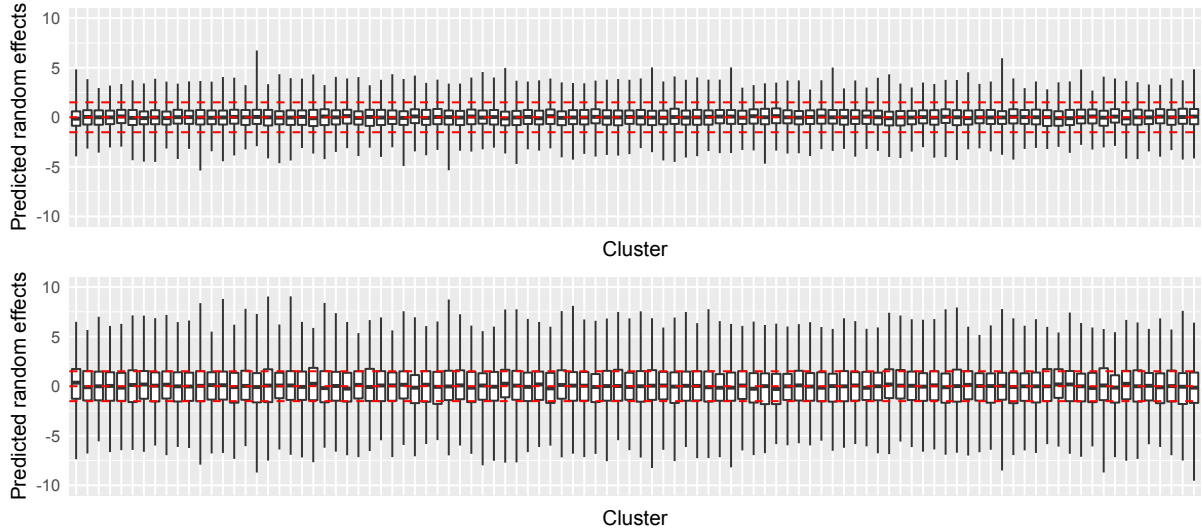


Figure 1. Boxplots of random effects predicted from the median model for 100 clusters based on 500 replications from the first scenario with $M = 100$ and $n = 10$. The dashed red lines mark the 25th, 50th, and 75th percentiles of the true distribution of the random effects.

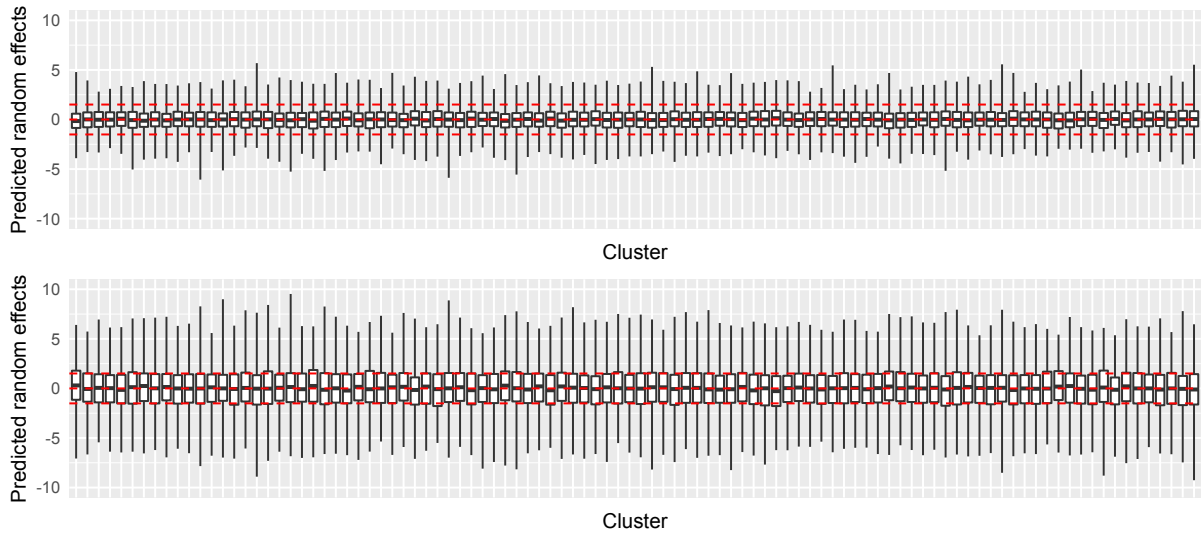


Figure 2. Boxplots of random effects predicted from the median model for 100 clusters based on 500 replications from the second scenario with $M = 100$ and $n = 10$. The dashed red lines mark the 25th, 50th, and 75th percentiles of the true distribution of the random effects.

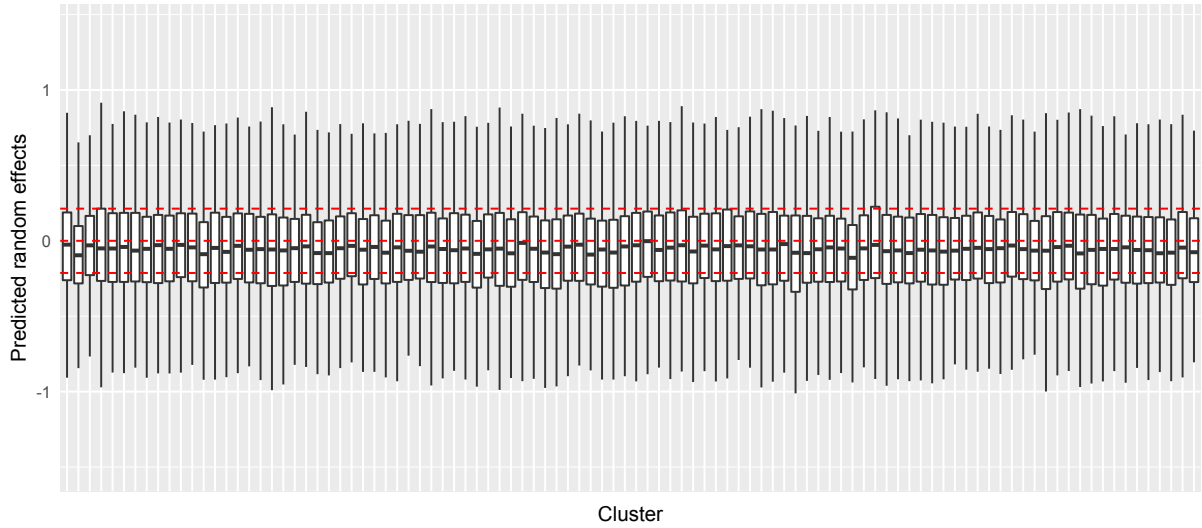


Figure 3. Boxplots of random effects predicted from the median model for 100 clusters based on 500 replications from the third scenario with $M = 100$ and $n = 10$. The dashed red lines mark the 25th, 50th, and 75th percentiles of the true distribution of the random effects.

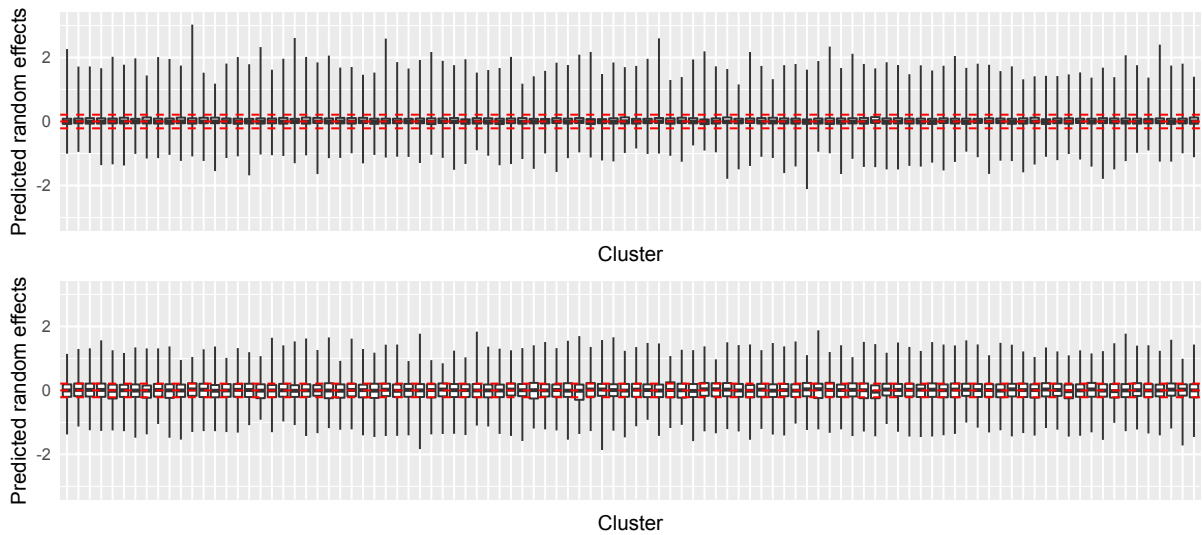


Figure 4. Boxplots of random effects predicted from the median model for 100 clusters based on 500 replications from the fourth scenario with $M = 100$ and $n = 10$. The dashed red lines mark the 25th, 50th, and 75th percentiles of the true distribution of the random effects.

Acknowledgements

This work was supported by the National Institutes of Health – National Institute of Child Health and Human Development [grant number 1R03HD084807-01A1].