

Online Supplement H: Tables with Information on Posterior Distributions

This Online Supplement contains information on the posterior distributions of the general effects and individual variation estimated by **rstan** and **brms** for the normal and log-normal models. In the first table, the estimated mean of the posterior distribution, the standard error of this mean, the lower and upper bound of the 95% credible interval, the \hat{R} and the number of effective samples are provided. In the second table, the estimated variance of the posterior distribution, the standard error of this variance, the lower and upper bound of the 95% credible interval, the \hat{R} and the number of effective samples are provided.

Normal model

Rstan

Table G 1: Posterior Mean, Standard Error (SE) of the Mean, Lower and Upper Bound of the 95% Credible Interval, the Number of Effective Samples, and the \hat{R} of the General Effect Parameters as estimated by Rstan.

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
μ_γ	0.592	0.000	0.541	0.643	20,179.891	1.000
μ_β	-0.007	0.000	-0.046	0.031	22,094.378	1.000
μ_{δ_7}	0.012	0.000	-0.028	0.051	22,167.881	1.000
μ_{δ_6}	0.043	0.000	0.004	0.081	20,324.803	1.000
μ_{δ_4}	0.057	0.000	0.017	0.095	20,461.260	1.000
μ_{δ_3}	0.022	0.000	-0.017	0.062	17,136.664	1.000

Table G 2: Posterior Variance, Standard Error (SE) of the Variance, Lower and Upper Bound of the 95% Credible Interval, the Number of Effective Samples, and the \hat{R} of the Variance Parameters as estimated by Rstan.

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
σ_γ^2	0.034	0.000	0.024	0.049	17,556.041	1.000
σ_β^2	0.020	0.000	0.014	0.029	20,115.358	1.000
$\sigma_{\delta_7}^2$	0.020	0.000	0.014	0.029	20,340.216	1.000
$\sigma_{\delta_6}^2$	0.020	0.000	0.014	0.029	19,716.061	1.000
$\sigma_{\delta_4}^2$	0.020	0.000	0.014	0.029	18,989.012	1.000
$\sigma_{\delta_3}^2$	0.020	0.000	0.014	0.029	18,357.620	1.000

brms

Table G 3: Posterior Mean, Standard Error (SE) of the Mean, Lower and Upper Bound of the 95% Credible Interval, the Number of Effective Samples, and the \hat{R} of the General Effect Parameters as estimated by brms.

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
μ_γ	0.592	0.021	0.552	0.632	1,547.347	1.004
μ_β	-0.008	0.014	-0.035	0.021	4,945.505	1.002
μ_{δ_7}	0.012	0.014	-0.015	0.040	5,228.635	1.001
μ_{δ_6}	0.043	0.014	0.014	0.071	5,391.944	1.001
μ_{δ_4}	0.057	0.015	0.028	0.086	4,936.908	1.001
μ_{δ_3}	0.022	0.015	-0.007	0.051	5,249.322	1.000

Table G 4: Posterior Standard Deviation, Standard Error (SE) of the Standard Deviation, Lower and Upper Bound of the 95% Credible Interval, the Number of Effective Samples, and the \hat{R} of the Standard Deviation Parameters as estimated by brms

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
σ_γ	0.151	0.016	0.122	0.187	5,163.776	1.000
σ_β	0.096	0.012	0.076	0.121	10,814.538	1.000
σ_{δ_7}	0.096	0.012	0.076	0.122	11,182.428	1.000
σ_{δ_6}	0.097	0.012	0.077	0.122	11,488.401	1.000
σ_{δ_4}	0.100	0.012	0.079	0.126	10,445.266	1.000
σ_{δ_3}	0.098	0.012	0.078	0.123	11,104.771	1.000

Log normal model

Rstan

Table G 5: Posterior Mean, Standard Error (SE) of the Mean, Lower and Upper Bound of the 95% Credible Interval, the Number of Effective Samples, and the \hat{R} of the General Effect Parameters as estimated by Rstan.

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
μ_γ	-0.558	0.000	-0.605	-0.512	15,235.072	1.000
μ_β	-0.008	0.000	-0.022	0.007	3,185.941	1.000
μ_{δ_7}	0.019	0.000	0.005	0.033	3,873.976	1.001
μ_{δ_6}	0.064	0.000	0.050	0.079	3,786.405	1.001
μ_{δ_4}	0.081	0.000	0.066	0.097	4,255.289	1.000
μ_{δ_3}	0.031	0.000	0.016	0.046	4,143.743	1.000

Table G 6: Posterior Variance, Standard Error (SE) of the Variance, Lower and Upper Bound of the 95% Credible Interval, the Number of Effective Samples, and the \hat{R} of the Variance Parameters as estimated by Rstan.

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
σ_γ^2	0.030	0.000	0.021	0.043	15,617.383	1.000
σ_β^2	0.001	0.000	0.001	0.002	7,815.681	1.000
$\sigma_{\delta_7}^2$	0.001	0.000	0.001	0.002	6,805.297	1.000
$\sigma_{\delta_6}^2$	0.001	0.000	0.001	0.002	7,325.299	1.000
$\sigma_{\delta_4}^2$	0.001	0.000	0.001	0.002	6,237.497	1.000
$\sigma_{\delta_3}^2$	0.001	0.000	0.001	0.002	6,841.198	1.001

brms

Table G 7: Posterior Mean, Standard Error (SE) of the Mean, Lower and Upper Bound of the 95% Credible Interval, Number of Effective Samples, and \hat{R} of the General Effect Parameters as estimated by brms.

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
μ_γ	-0.560	0.023	-0.608	-0.515	583.573	1.009
μ_β	-0.008	0.007	-0.022	0.007	12,909.505	1.000
μ_{δ_7}	0.019	0.007	0.005	0.033	13,771.944	1.000
μ_{δ_6}	0.065	0.007	0.050	0.079	12,739.547	1.000
μ_{δ_4}	0.081	0.008	0.066	0.097	11,759.558	1.000
μ_{δ_3}	0.031	0.007	0.017	0.046	14,046.688	1.001

Table G 8: Posterior Variance, Standard Error (SE) of the Standard Deviation, Lower and Upper Bound of the 95% Credible Interval, Number of Effective Samples, and \hat{R} of the Variance Parameters as estimated by brms.

Parameters	Mean	SE	Lower Bound	Upper Bound	n_{eff}	\hat{R}
σ_γ	0.165	0.017	0.136	0.201	1,811.737	1.001
σ_β	0.033	0.005	0.025	0.043	8,860.093	1.000
σ_{δ_7}	0.032	0.005	0.023	0.042	10,763.913	1.000
σ_{δ_6}	0.033	0.005	0.024	0.043	11,432.334	1.000
σ_{δ_4}	0.036	0.005	0.027	0.048	9,918.653	1.000
σ_{δ_3}	0.033	0.005	0.024	0.043	8,952.156	1.000