Variance Comparision with High Correlation

Yifei Wang

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This file is to compare the bias and variance from the simulation result when the correlation is 0.5. For the bias, we calculate the three variance:

1. Bias between the true and the estimated value from Bayesian composite likelihood
2. Bias between the true and the estimated value from gemtc
3. Bias between the true and the estimated value from netmeta

	BA1	CA1	BC1	BA2	CA2	BC2
no adjust	0.0065	0.0235	0.0300	0.0290	0.0213	0.0076
gemtc	0.0185	0.0228	0.0413	0.0189	0.0219	0.0030
netmeta	0.0106	0.0073	0.0033	0.0177	0.0066	0.0111

When the between study correlation is 0.1 and the within study correlation is 0.2 (setting 1 in Duan2020), the bias result is

	BA1	CA1	BC1	BA2	CA2	BC2
no adjust	0.0266	0.0190	0.0371	0.0199	0.0047	0.0107
gemtc	0.0224	0.0044	0.0268	0.0253	0.0125	0.0128
netmeta	0.0021	0.0120	0.0141	0.0302	0.0036	0.0338

For the variance, we calcuate three types of variance.

1. Posterior variance: variance estimated from the posterior distribution, take average of 500 samples
2. Sandwich variance: variance estimated by sandwich method, taking average of 500 samples
3. Simulation variance: variances estimated by 500 simulations

	BA1	CA1	BC1	BA2	CA2	BC2
Posterior	0.0198	0.0197	0.0201	0.0198	0.0198	0.0200
Sandwich	0.1143	0.1236	0.1149	0.1245	0.1057	0.1130
Simulation	0.1291	0.1264	0.1741	0.1331	0.1094	0.1904

When the between study correlation is 0.1 and the within study correlation is 0.2 (setting 1 in Duan2020), the variance result is

	BA1	CA1	BC1	BA2	CA2	BC2
Posterior	0.0198	0.0197	0.0322	0.0198	0.0198	0.0321
Sandwich	0.1140	0.1270	0.1916	0.1237	0.1003	0.1842
Simulation	0.1273	0.1361	0.2337	0.1341	0.1194	0.2303