Simulation Results for Two-Factor Models

Model

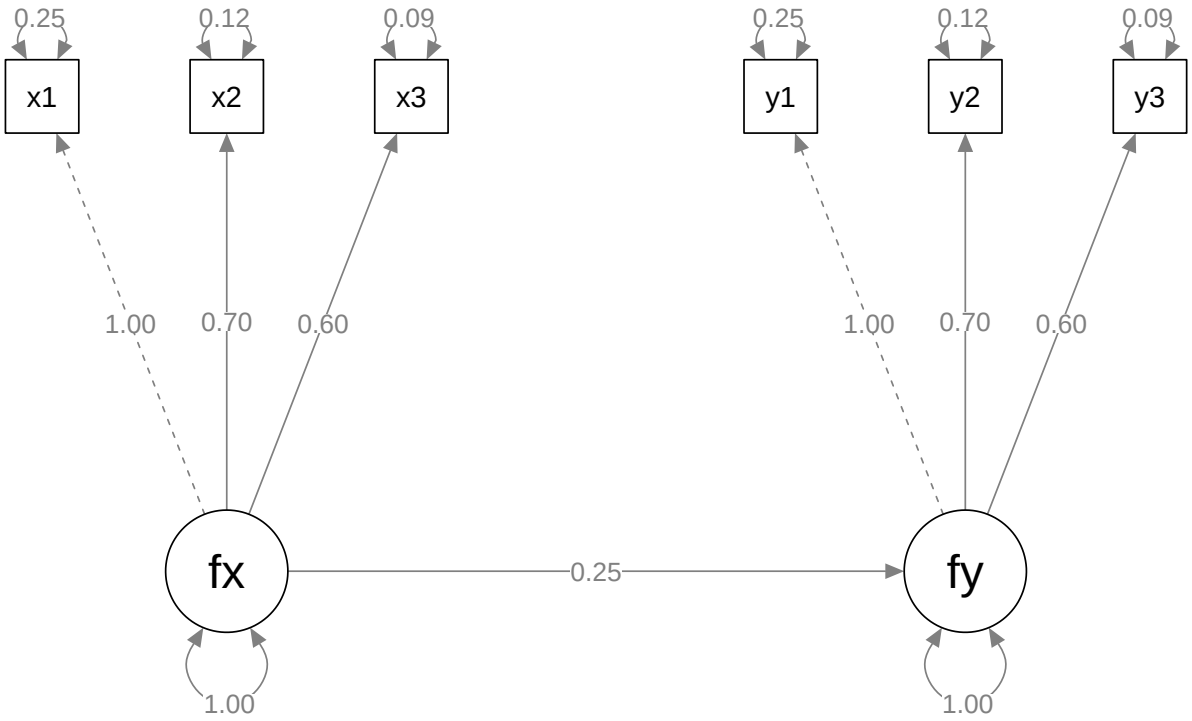

Figure 1

Convergence check

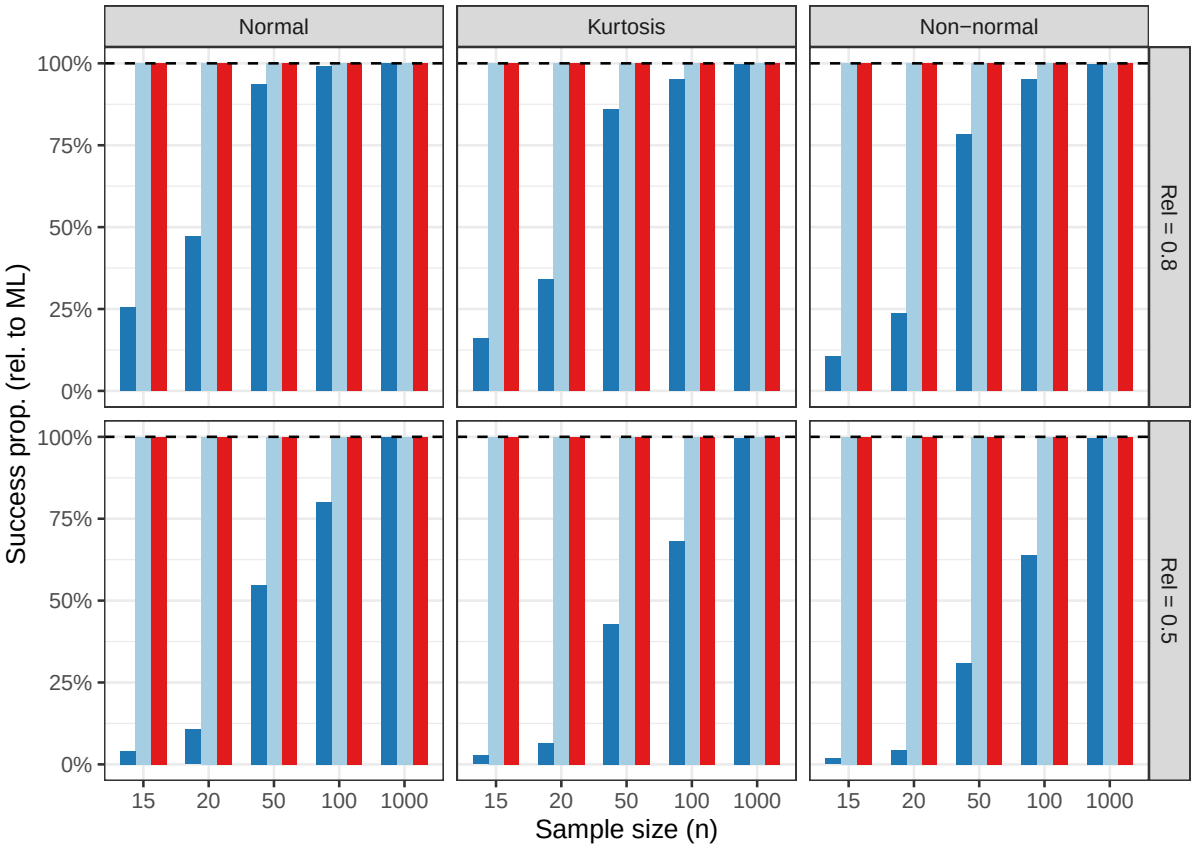

Figure 2: Convergence and success rate for two-factor model simulations.

Table 1: Total number of runs required to reach 1,000 converged iterations.

Reliability	Sample size	ML	eRBM	iRBM
Normal				
0.8	15	3,920	3,920	1,000
0.8	20	2,126	2,126	1,000
0.8	50	1,069	1,069	1,000
0.8	100	1,010	1,010	1,000
0.8	1000	1,001	1,001	1,000
0.5	15	24,160	24,160	1,000
0.5	20	9,366	9,366	1,000
0.5	50	1,823	1,823	1,000
0.5	100	1,249	1,249	1,000
0.5	1000	1,000	1,000	1,000
Kurtosis				
0.8	15	6,193	6,193	1,000
0.8	20	2,935	2,935	1,000
0.8	50	1,162	1,162	1,000
0.8	100	1,051	1,051	1,000
0.8	1000	1,002	1,002	1,000
0.5	15	36,748	36,748	1,000
0.5	20	15,091	15,091	1,000
0.5	50	2,339	2,339	1,000
0.5	100	1,466	1,466	1,000
0.5	1000	1,003	1,003	1,000
Non-normal				
0.8	15	9,475	9,475	1,000
0.8	20	4,220	4,220	1,000
0.8	50	1,275	1,275	1,000
0.8	100	1,052	1,052	1,000
0.8	1000	1,002	1,002	1,000
0.5	15	56,467	56,467	1,000
0.5	20	22,238	22,238	1,000
0.5	50	3,243	3,243	1,000
0.5	100	1,565	1,565	1,000
0.5	1000	1,004	1,004	1,000

Results

Bias distribution

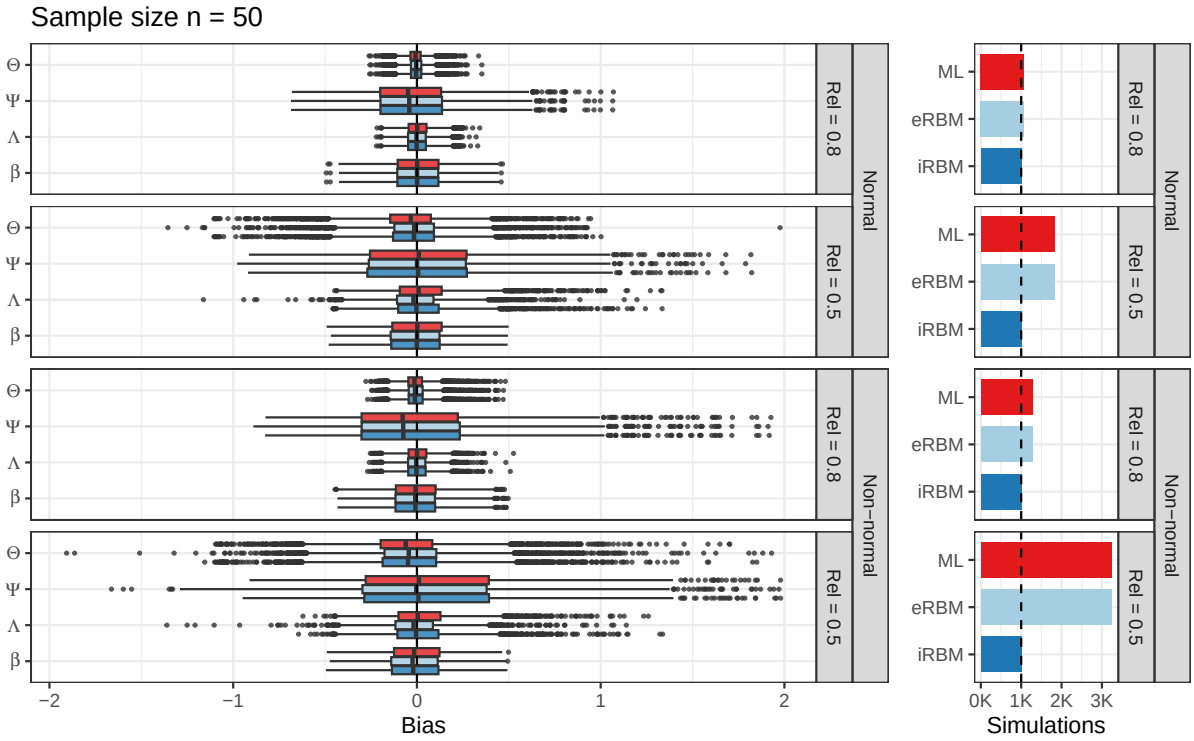

Figure 3: Bias distribution of ML, eRBM and iRBM methods when $n = 50$ for different parameter types.

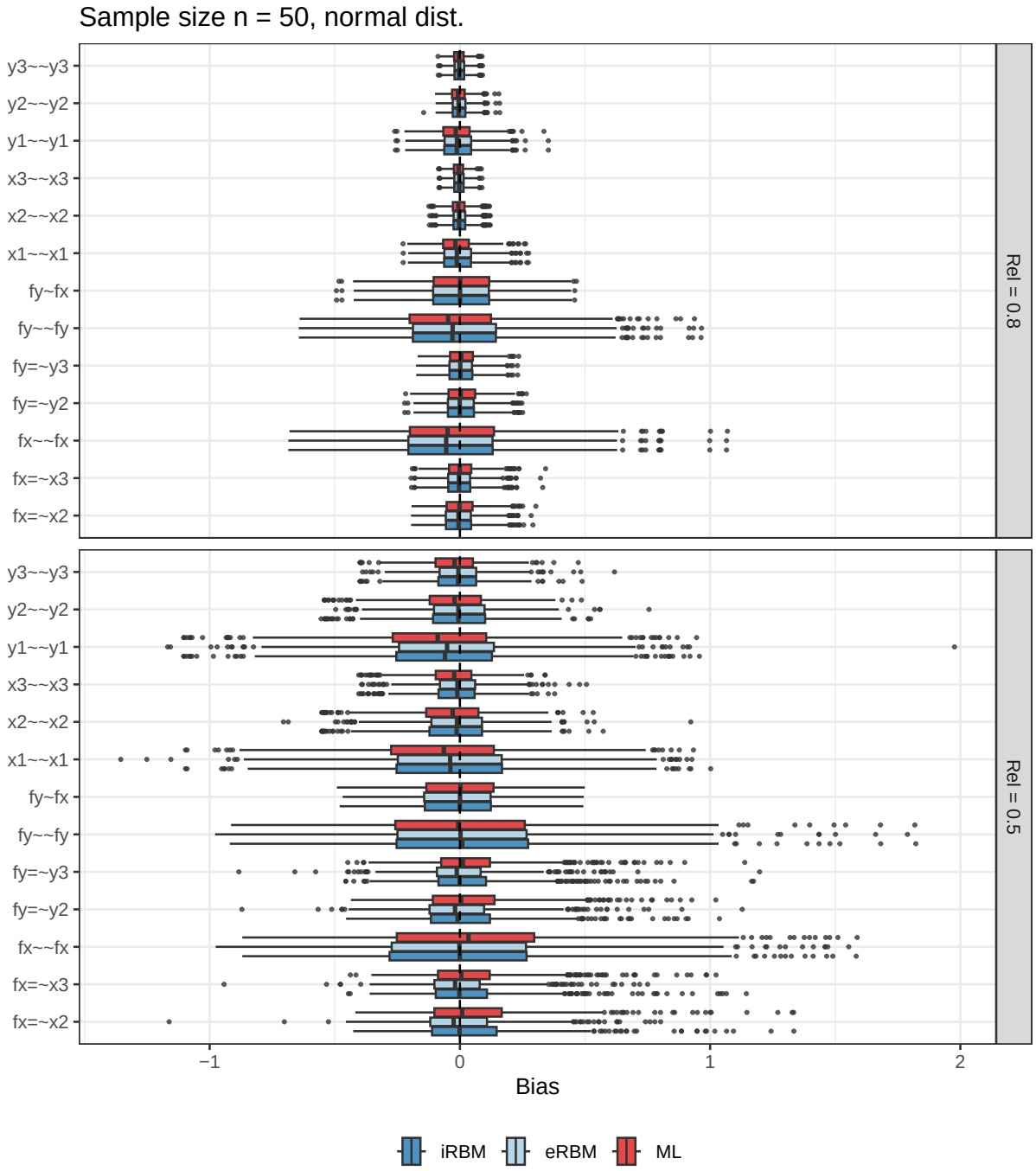

Figure 4: Bias distribution of ML, eRBM and iRBM methods when $n = 50$ for all estimated parameters.

Performance plots

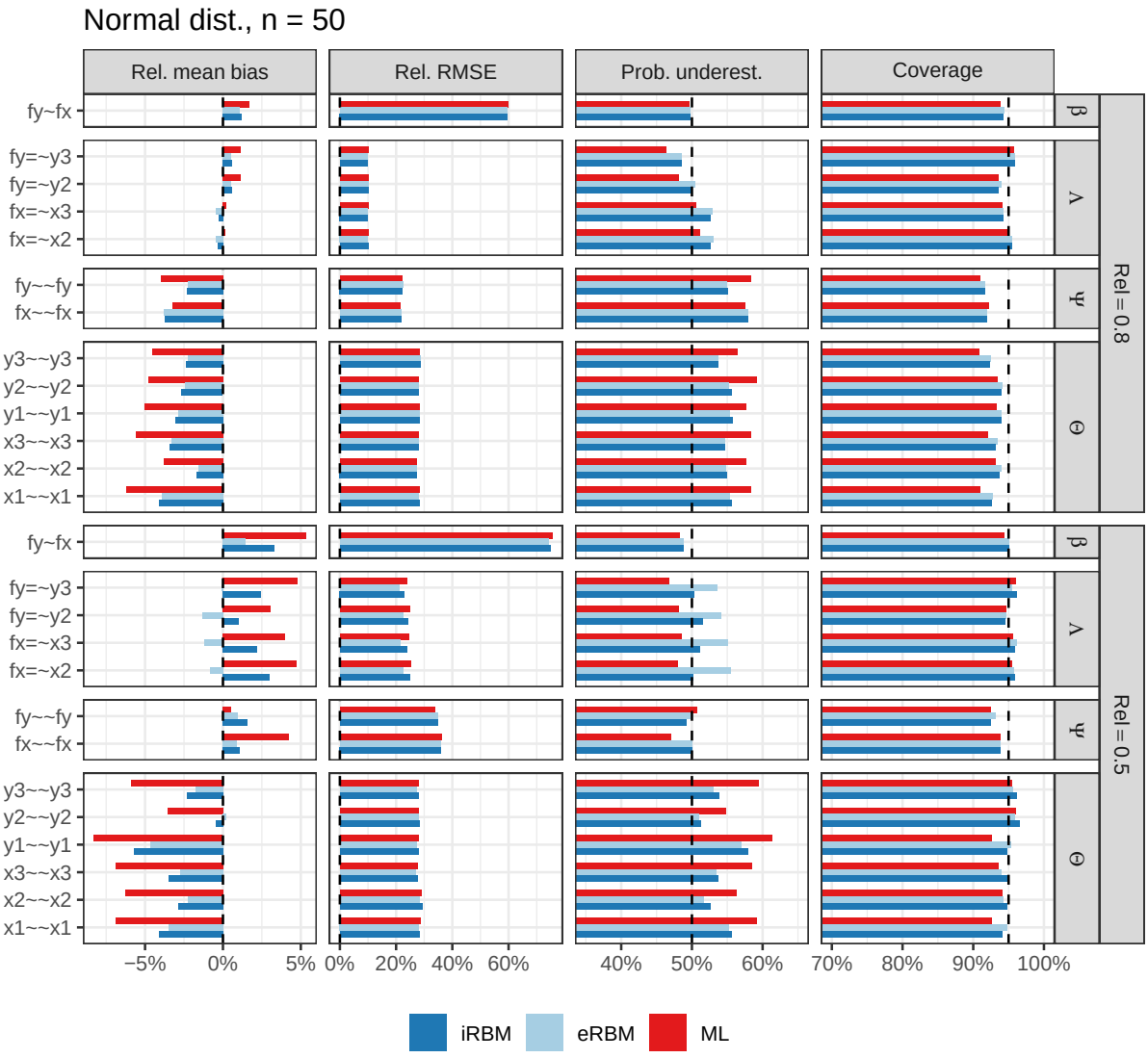

Figure 5: Performance of ML, eRBM and iRBM methods for all estimated parameters when $n = 50$ and normally distributed latent variables.

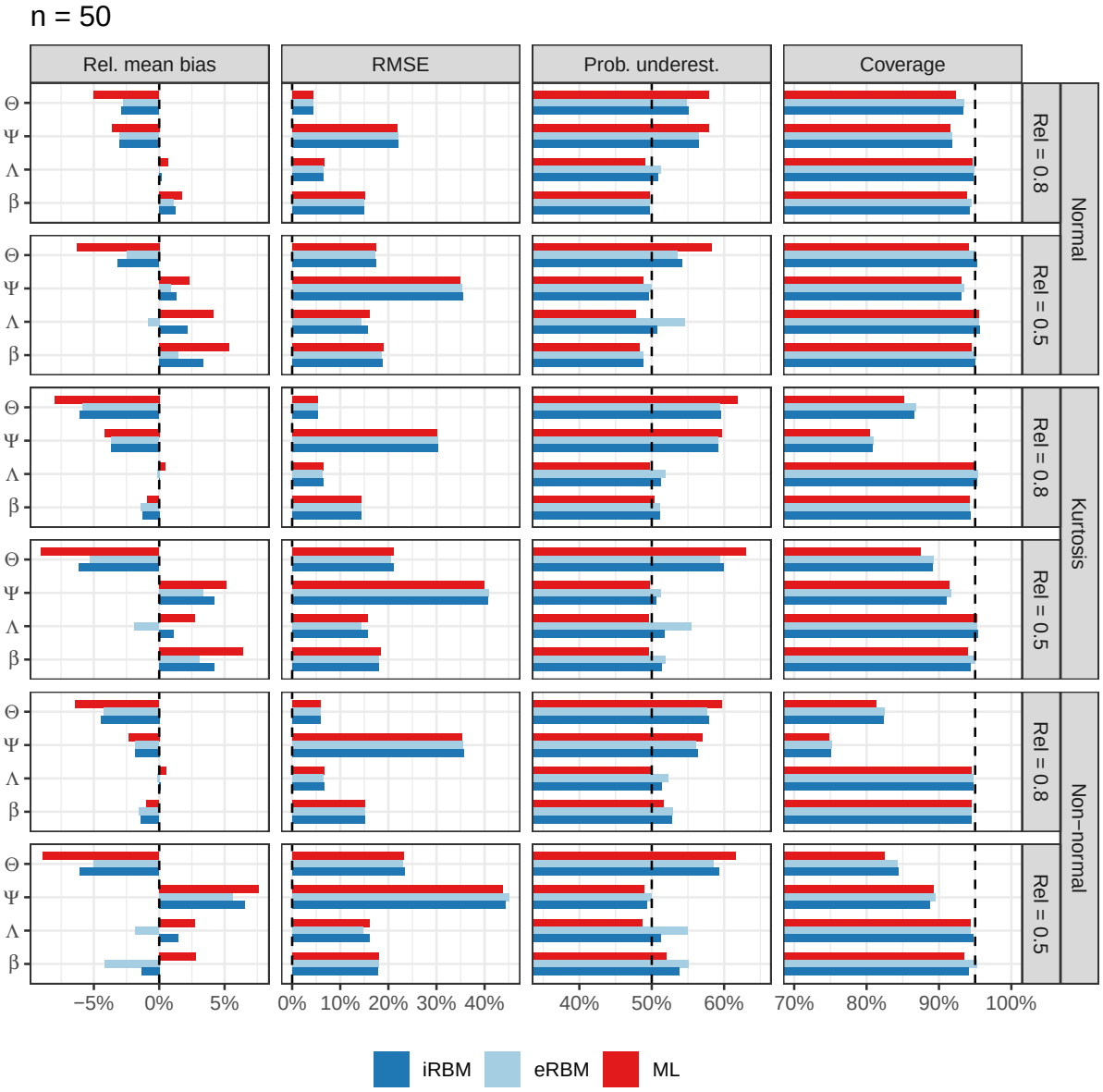

Figure 6: Performance of ML, eRBM and iRBM methods for different parameter types when $n = 50$ and normally distributed latent variables.

Bias vs sample size

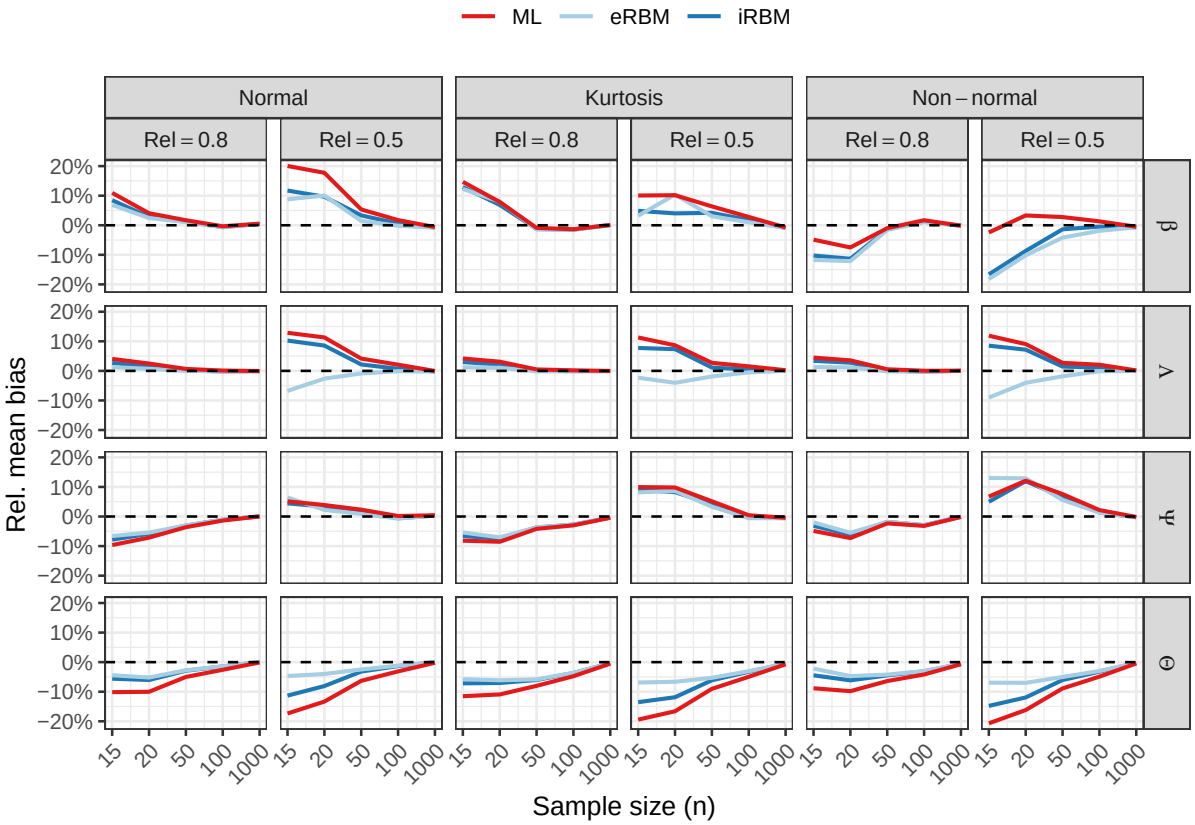

Figure 7: Bias of ML, eRBM and iRBM methods for different sample sizes.

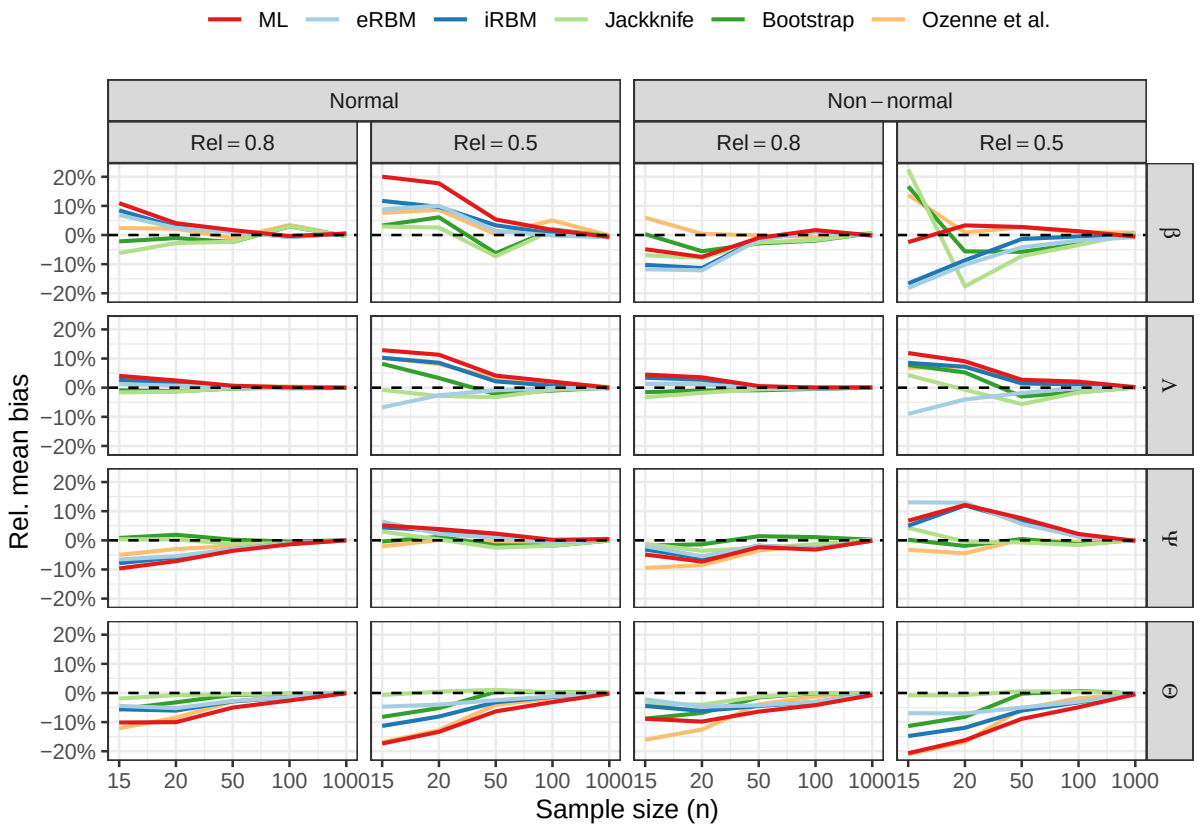

Figure 8: Bias of ML, eRBM, iRBM and all methods considered in D&R paper, for different sample sizes.