Test performance on simulations

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2023-05-15

Simulations

Simulation setting

2) Results for the binary outcome

2.1) Estimation by g-computation

Note that the standard error was not estimated in 1 simulation out of 1000, resulting in a missing average standard error and coverage for the log RERI indicator.

2.2) Estimation by IPTW

2.3) Estimation by TMLE

3) Results for the continuous outcome

3.1) Estimation by g-computation

3.2) Estimation by IPTW

3.3) Estimation by TMLE

Table 1: Results from g-computation estimation with a binary outcome

	Bias (%)	Variance	Std.bias (%)	MSE	Av.SE (%)	Coverage (%)
p00	-0.012	0.00008	-1.33	0.00008	0.87	93.2
p10	-0.013	0.00009	-1.41	0.00009	0.88	93.5
p01	-0.049	0.00023	-3.21	0.00023	1.50	92.6
p11	-0.063	0.00029	-3.68	0.00030	1.74	94.7
RD__A1__A2is0	-0.002	0.00016	-0.12	0.00016	1.24	93.9
RD__A1__A2is1	-0.014	0.00054	-0.61	0.00054	2.29	94.3
RD__A2__A1is0	-0.037	0.00030	-2.15	0.00030	1.74	94.4
RD__A2__A1is1	-0.050	0.00038	-2.57	0.00038	1.95	94.7
logRR__A1__A2is0	2.344	0.09546	7.59	0.09601	33.73	95.9
logRR__A1__A2is1	2.385	0.05485	10.18	0.05542	23.97	96.2
logRR__A2__A1is0	0.798	0.11634	2.34	0.11640	37.64	97.7
logRR__A2__A1is1	0.839	0.03153	4.72	0.03160	17.37	94.7
a.INT	-0.013	0.00068	-0.49	0.00068	2.59	94.6
log.m.INT	0.041	0.14374	0.11	0.14374	41.20	96.5
logRERI	0.802	0.09444	2.61	0.09451	NA	96.8

Table 2: Results from IPTW estimation with a binary outcome

	Bias (%)	Variance	Std.bias (%)	MSE	Av.SE (%)	Coverage (%)
p00	-0.009	0.00009	-0.97	0.00009	0.96	92.9
p10	-0.019	0.00009	-1.99	0.00009	0.89	93.4
p01	-0.038	0.00025	-2.40	0.00025	1.55	92.9
p11	-0.080	0.00032	-4.47	0.00032	1.83	95.1
RD__A1__A2is0	-0.010	0.00018	-0.72	0.00018	1.31	93.9
RD__A1__A2is1	-0.042	0.00058	-1.76	0.00058	2.39	94.6
RD__A2__A1is0	-0.028	0.00033	-1.58	0.00033	1.82	95.2
RD__A2__A1is1	-0.061	0.00040	-3.04	0.00040	2.03	93.7
logRR__A1__A2is0	2.718	0.10884	8.24	0.10958	32.38	94.4
logRR__A1__A2is1	2.249	0.05803	9.34	0.05854	23.83	94.7
logRR__A2__A1is0	1.328	0.13107	3.67	0.13125	36.20	95.6
logRR__A2__A1is1	0.860	0.03283	4.74	0.03290	17.50	95.2
a.INT	-0.033	0.00074	-1.20	0.00074	2.73	94.4
log.m.INT	-0.469	0.16204	-1.16	0.16206	40.21	94.7
logRERI	0.745	0.10612	2.29	0.10617	32.80	96.6

Table 3: Results from TMLE estimation with a binary outcome

	Bias (%)	Variance	Std.bias (%)	MSE	Av.SE (%)	Coverage (%)
p00	-0.011	0.00009	-1.16	0.00009	0.95	92.7
p10	-0.016	0.00009	-1.65	0.00009	0.89	92.8
p01	-0.035	0.00024	-2.25	0.00024	1.53	92.7
p11	-0.089	0.00032	-4.98	0.00032	1.79	95.0
RD_A1_A2is0	-0.005	0.00018	-0.35	0.00018	1.30	93.3
RD_A1_A2is1	-0.054	0.00057	-2.26	0.00057	2.35	94.2
RD_A2_A1is0	-0.024	0.00032	-1.35	0.00032	1.80	95.2
RD_A2_A1is1	-0.073	0.00040	-3.65	0.00040	1.99	93.7
logRR_A1_A2is0	2.817	0.10891	8.53	0.10970	32.18	94.1
logRR_A1_A2is1	2.137	0.05713	8.94	0.05759	23.54	94.9
logRR_A2_A1is0	1.447	0.12958	4.02	0.12978	35.94	96.3
logRR_A2_A1is1	0.768	0.03287	4.23	0.03293	17.27	94.1
a.INT	-0.049	0.00073	-1.82	0.00073	2.68	94.5
log.m.INT	-0.680	0.15977	-1.70	0.15981	39.87	95.0
logRERI	0.726	0.10522	2.24	0.10528	32.27	96.7

Table 4: Results from g-computation estimation with a continuous outcome

	Bias (%)	Variance	Std.bias (%)	MSE	Av.SE (%)	Coverage (%)
p00	-0.133	1.58	-10.63	1.59	35.7	100.0
p10	0.132	0.89	14.00	0.91	35.4	100.0
p01	-0.058	1.77	-4.36	1.77	35.4	99.9
p11	0.468	1.05	45.56	1.27	35.4	100.0
RD_A1_A2is0	0.266	1.76	20.03	1.83	1.5	96.6
RD_A1_A2is1	0.525	2.18	35.59	2.46	2.3	98.9
RD_A2_A1is0	0.076	2.64	4.65	2.65	2.2	98.1
RD_A2_A1is1	0.335	1.33	29.01	1.45	2.6	99.9
a.INT	0.260	3.93	13.09	4.00	2.3	97.2

Table 5: Results from IPTW estimation with a continuous outcome

	Bias (%)	Variance	Std.bias (%)	MSE	Av.SE (%)	Coverage (%)
p00	-0.007	2.66	-0.44	2.66	33.2	97.4
p10	0.007	1.19	0.63	1.19	32.6	96.7
p01	-0.018	3.19	-1.00	3.19	33.3	95.5
p11	0.014	1.68	1.06	1.68	32.9	96.7
RD_A1_A2is0	0.014	3.84	0.72	3.84	2.2	96.6
RD_A1_A2is1	0.032	5.36	1.37	5.36	2.4	95.3
RD_A2_A1is0	-0.011	5.38	-0.46	5.38	2.6	96.8
RD_A2_A1is1	0.007	2.49	0.43	2.49	1.8	97.8
a.INT	0.017	9.72	0.56	9.72	3.2	95.3

Table 6: Results from TMLE estimation with a continuous outcome

	Bias (%)	Variance	Std.bias (%)	MSE	Av.SE (%)	Coverage (%)
p00	0.013	1.71	0.98	1.71	32.7	94.9
p10	0.004	0.90	0.39	0.90	32.4	94.5
p01	-0.030	1.81	-2.20	1.81	32.8	95.0
p11	0.032	1.10	3.07	1.10	32.5	93.8
RD_A1_A2is0	-0.009	1.96	-0.64	1.96	1.4	94.8
RD_A1_A2is1	0.062	2.23	4.13	2.24	1.5	94.9
RD_A2_A1is0	-0.042	2.81	-2.52	2.82	1.7	94.7
RD_A2_A1is1	0.028	1.36	2.44	1.36	1.1	94.3
a.INT	0.071	4.09	3.49	4.10	2.0	95.5