SUPPLEMENTARY MATERIAL

TABLE S.1 Simulation results for the primary setting

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04642	0.10774	0.9399
		MLT($M = 5$)	0.04800	0.11051	0.9380
		MLT($M = 10$)	0.04814	0.10882	0.9398
	n=100	CPM	0.01915	0.04906	0.9448
		MLT($M = 5$)	0.02083	0.05062	0.9420
		MLT($M = 10$)	0.02032	0.04961	0.9433
	n=500	CPM	0.00452	0.00899	0.9532
		MLT($M = 5$)	0.00712	0.00937	0.9498
		MLT($M = 10$)	0.00629	0.00915	0.9524
	n=1000	CPM	0.00244	0.00459	0.9492
		MLT($M = 5$)	0.00502	0.00478	0.9456
		MLT($M = 10$)	0.00427	0.00467	0.9478
$F(5\|X = 0)$	n=50	CPM	0.00274	0.00851	0.9277
		MLT($M = 5$)	-0.00221	0.00787	0.9493
		MLT($M = 10$)	0.00992	0.00785	0.9600
	n=100	CPM	0.00129	0.00422	0.9410
		MLT($M = 5$)	-0.00154	0.00400	0.9430
		MLT($M = 10$)	0.00823	0.00393	0.9596
	n=500	CPM	-0.00093	0.00084	0.9452
		MLT($M = 5$)	-0.00134	0.00082	0.8935
		MLT($M = 10$)	0.00521	0.00079	0.9575
	n=1000	CPM	-0.00050	0.00041	0.9531
		MLT($M = 5$)	-0.00100	0.00041	0.8308
		MLT($M = 10$)	0.00510	0.00040	0.9505
$F(5\|X = 1)$	n=50	CPM	-0.00159	0.00533	0.9166
		MLT($M = 5$)	-0.00635	0.00496	0.9464
		MLT($M = 10$)	0.00252	0.00502	0.9605
	n=100	CPM	0.00002	0.00266	0.9329
		MLT($M = 5$)	-0.00280	0.00251	0.9450
		MLT($M = 10$)	0.00453	0.00251	0.9586
	n=500	CPM	-0.00115	0.00051	0.9488
		MLT($M = 5$)	-0.00223	0.00050	0.9390
		MLT($M = 10$)	0.00288	0.00048	0.9521
	n=1000	CPM	-0.00065	0.00026	0.9454
		MLT($M = 5$)	-0.00178	0.00026	0.9300
		MLT($M = 10$)	0.00300	0.00025	0.9358
$E(Y\|X = 0)$	n=50	CPM	-0.00438	0.39292	0.9349
		MLT($M = 5$)	-0.02293	0.39143	0.9223
		MLT($M = 10$)	-0.01963	0.39142	0.9330
	n=100	CPM	-0.00138	0.19771	0.9407
		MLT($M = 5$)	-0.01571	0.19880	0.9320
		MLT($M = 10$)	-0.01226	0.19779	0.9379
	n=500	CPM	0.00083	0.03881	0.9490
		MLT($M = 5$)	-0.01148	0.03949	0.9415
		MLT($M = 10$)	-0.00808	0.03912	0.9456
	n=1000	CPM	-0.00230	0.01965	0.9444
		MLT($M = 5$)	-0.01428	0.02008	0.9373
		MLT($M = 10$)	-0.01097	0.01988	0.9417

TABLE S.1 Simulation results for the primary setting *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
$E(Y\|X=1)$	n=50	CPM	-0.01814	0.82857	0.9275
		MLT($M=5$)	-0.07790	0.79589	0.9051
		MLT($M=10$)	-0.07050	0.79704	0.9419
	n=100	CPM	-0.02173	0.41321	0.9379
		MLT($M=5$)	-0.06392	0.40291	0.9189
		MLT($M=10$)	-0.06286	0.40137	0.9471
	n=500	CPM	0.00237	0.07998	0.9499
		MLT($M=5$)	-0.02227	0.07857	0.9420
		MLT($M=10$)	-0.02523	0.07775	0.9517
	n=1000	CPM	-0.00177	0.04069	0.9484
		MLT($M=5$)	-0.02446	0.04048	0.9443
		MLT($M=10$)	-0.02749	0.04008	0.9501
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.20035	0.24566	0.8743
		MLT($M=5$)	0.04432	0.18880	0.9752
		MLT($M=10$)	0.18626	0.19364	0.9755
	n=100	CPM	0.10556	0.11364	0.9560
		MLT($M=5$)	0.02878	0.09116	0.9691
		MLT($M=10$)	0.15908	0.10185	0.9730
	n=500	CPM	0.02232	0.02161	0.9482
		MLT($M=5$)	0.01338	0.01782	0.8539
		MLT($M=10$)	0.13383	0.03273	0.9210
	n=1000	CPM	0.01065	0.01097	0.9467
		MLT($M=5$)	0.00990	0.00882	0.6541
		MLT($M=10$)	0.13064	0.02451	0.8324
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.22521	0.56862	0.9450
		MLT($M=5$)	0.31949	0.48065	0.9541
		MLT($M=10$)	0.15119	0.42908	0.9591
	n=100	CPM	0.10398	0.25717	0.9483
		MLT($M=5$)	0.24913	0.24292	0.9589
		MLT($M=10$)	0.06296	0.19640	0.9502
	n=500	CPM	0.02582	0.04755	0.9497
		MLT($M=5$)	0.21077	0.07880	0.9669
		MLT($M=10$)	0.00438	0.03683	0.8879
	n=1000	CPM	0.01335	0.02417	0.9486
		MLT($M=5$)	0.20332	0.05912	0.9612
		MLT($M=10$)	-0.00774	0.01913	0.7867
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.10563	0.46642	0.9479
		MLT($M=5$)	0.13547	0.33453	0.9483
		MLT($M=10$)	-0.02376	0.39242	0.9616
	n=100	CPM	0.04961	0.23222	0.9480
		MLT($M=5$)	0.11572	0.17180	0.9395
		MLT($M=10$)	-0.04373	0.20316	0.9588
	n=500	CPM	0.01172	0.04694	0.9485
		MLT($M=5$)	0.10096	0.04239	0.8899
		MLT($M=10$)	-0.05468	0.04496	0.9557
	n=1000	CPM	0.00457	0.02290	0.9503
		MLT($M=5$)	0.09721	0.02563	0.8345
		MLT($M=10$)	-0.05971	0.02459	0.9533
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.20048	1.11656	0.9452
		MLT($M=5$)	-0.12001	0.92052	0.9633

TABLE S.1 Simulation results for the primary setting *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT($M = 10$)	0.03007	0.95229	0.9604
		CPM	0.08966	0.54157	0.9511
	n=100	MLT($M = 5$)	-0.18618	0.48877	0.9574
		MLT($M = 10$)	-0.00326	0.47608	0.9573
		CPM	0.02691	0.10205	0.9511
	n=500	MLT($M = 5$)	-0.21455	0.13279	0.9381
		MLT($M = 10$)	-0.01198	0.09274	0.95509
		CPM	0.01260	0.05013	0.9506
	n=1000	MLT($M = 5$)	-0.22718	0.09557	0.9008
		MLT($M = 10$)	-0.02327	0.04707	0.9538
		CPM	0.06688	1.05641	0.9514
	n=50	MLT($M = 5$)	-0.22179	0.93013	0.9534
		MLT($M = 10$)	-0.08754	0.97143	0.9579
		CPM	0.03294	0.52462	0.9488
	n=100	MLT($M = 5$)	-0.23006	0.50334	0.9519
$F^{-1}(0.8\|X = 0)$		MLT($M = 10$)	-0.04745	0.48855	0.9557
		CPM	0.00787	0.10244	0.9507
	n=500	MLT($M = 5$)	-0.24076	0.14714	0.9542
		MLT($M = 10$)	-0.02601	0.09556	0.9419
		CPM	0.00213	0.05195	0.9468
	n=1000	MLT($M = 5$)	-0.24694	0.10570	0.9515
		MLT($M = 10$)	-0.03046	0.04867	0.9186
		CPM	0.31165	2.47150	0.9609
	n=50	MLT($M = 5$)	0.08370	1.70604	0.9587
		MLT($M = 10$)	0.03272	1.89087	0.9628
		CPM	0.14366	1.16903	0.9554
	n=100	MLT($M = 5$)	0.18623	0.90953	0.9593
$F^{-1}(0.8\|X = 1)$		MLT($M = 10$)	0.03091	0.99242	0.9651
		CPM	0.04875	0.22490	0.9517
	n=500	MLT($M = 5$)	0.30724	0.27373	0.8984
		MLT($M = 10$)	0.02032	0.20574	0.9606
		CPM	0.01889	0.11247	0.9512
	n=1000	MLT($M = 5$)	0.30983	0.18657	0.8150
		MLT($M = 10$)	-0.00706	0.10641	0.9509
				Value	
		CPM		-186.896	
	n=50	MLT($M = 5$)		-170.377	
		MLT($M = 10$)		-171.092	
		CPM		-455.055	
	n=100	MLT($M = 5$)		-420.825	
Out-of-sample Log-likelihood		MLT($M = 10$)		-420.056	
		CPM		-3055.871	
	n=500	MLT($M = 5$)		-2852.102	
		MLT($M = 10$)		-2852.031	
		CPM		-6785.049	
	n=1000	MLT($M = 5$)		-6392.950	
		MLT($M = 10$)		-6376.261	

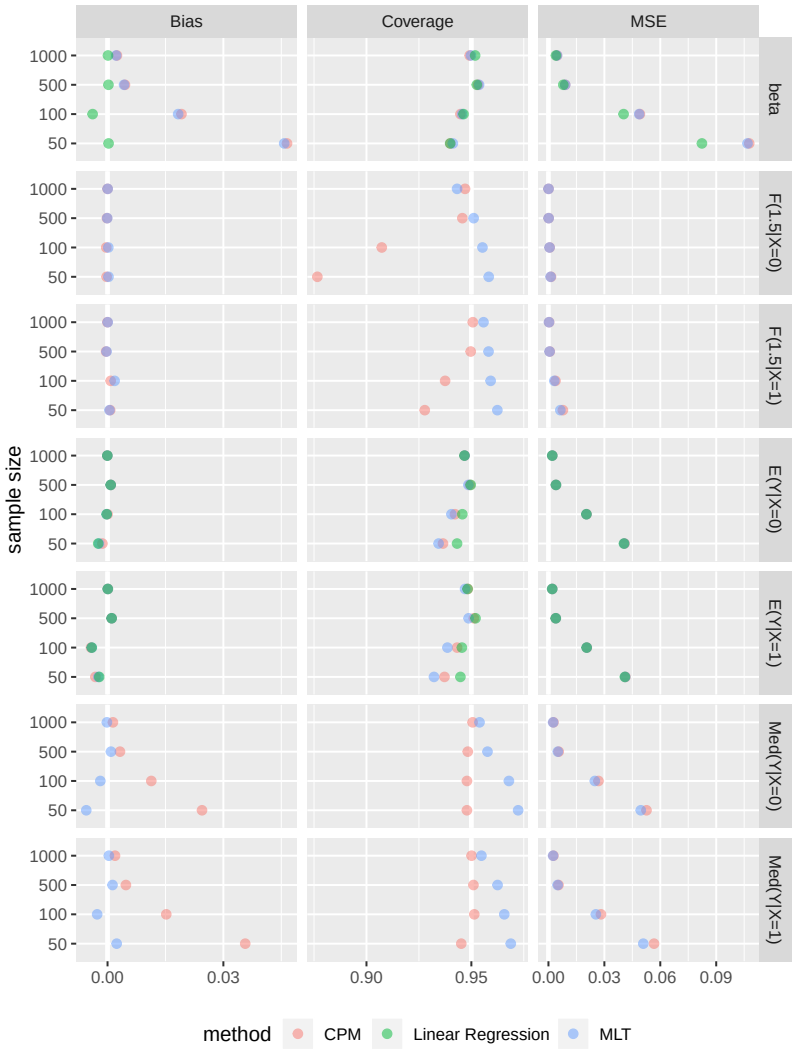

FIGURE S.1 Simulation results for $H(y) = y$

TABLE S.2 Simulation results for $H(y) = y$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.0465	0.1077	0.9400
		MLT	0.0457	0.1068	0.9412
		Linear Regression	0.0003	0.0824	0.9399
	n=100	CPM	0.0192	0.0491	0.9448
		MLT	0.0183	0.0487	0.9456
		Linear Regression	-0.0039	0.0403	0.9463
	n=500	CPM	0.0045	0.0090	0.9532
		MLT	0.0043	0.0090	0.9537
		Linear Regression	0.0002	0.0080	0.9526
	n=1000	CPM	0.0024	0.0046	0.9492
		MLT	0.0022	0.0046	0.9498
		Linear Regression	0.0001	0.0040	0.9518
$F(5\|X = 0)$	n=50	CPM	-0.00024	0.00138	0.8766
		MLT	0.00025	0.00118	0.9583

TABLE S.2 Simulation results for $H(y) = y$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=100	CPM	-0.00034	0.00068	0.9073
		MLT	0.00020	0.00059	0.9553
	n=500	CPM	-0.00014	0.00013	0.9457
		MLT	-0.00008	0.00012	0.9511
	n=1000	CPM	0.00001	0.00007	0.9470
		MLT	0.0004	0.00006	0.9432
$F(5\|X=1)$	n=50	CPM	0.00068	0.00776	0.9278
		MLT	0.00051	0.00638	0.9624
	n=100	CPM	0.00082	0.00379	0.9375
		MLT	0.00184	0.00314	0.9592
	n=500	CPM	-0.00038	0.00072	0.9497
		MLT	-0.00025	0.00061	0.9582
	n=1000	CPM	-0.00003	0.00037	0.9507
		MLT	0.00005	0.00031	0.9558
$E(Y\|X=0)$	n=50	CPM	-0.00133	0.04083	0.9365
		MLT	-0.00221	0.04065	0.9344
		Linear Regression	-0.00242	0.04052	0.9432
	n=100	CPM	0.00001	0.02045	0.9422
		MLT	-0.00021	0.02038	0.9405
		Linear Regression	-0.00022	0.02037	0.9457
	n=500	CPM	0.00084	0.00403	0.9493
		MLT	0.00083	0.00403	0.9486
		Linear Regression	0.00082	0.00403	0.9497
	n=1000	CPM	-0.00006	0.00205	0.9468
		MLT	-0.00005	0.00204	0.9468
		Linear Regression	-0.00005	0.00204	0.9467
$E(Y\|X=1)$	n=50	CPM	-0.00314	0.04129	0.9372
		MLT	-0.00237	0.04117	0.9322
		Linear Regression	-0.00215	0.04102	0.9448
	n=100	CPM	-0.00428	0.02059	0.9432
		MLT	-0.00409	0.02053	0.9386
		Linear Regression	-0.00408	0.02050	0.9455
	n=500	CPM	0.00105	0.00394	0.9512
		MLT	0.00106	0.00394	0.9487
		Linear Regression	0.00107	0.00393	0.9520
	n=1000	CPM	0.00008	0.00202	0.9483
		MLT	0.00007	0.00202	0.9470
		Linear Regression	0.00007	0.00202	0.9482
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.10268	0.09696	0.8819
		MLT	0.04438	0.07366	0.9420
	n=100	CPM	0.05572	0.04877	0.9566
		MLT	0.02392	0.03649	0.9299
	n=500	CPM	0.01184	0.01010	0.9481
		MLT	0.00476	0.00721	0.8975
	n=1000	CPM	0.00541	0.00519	0.9468
		MLT	0.00176	0.00367	0.8756
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.06788	0.07780	0.94519
		MLT	0.03050	0.07139	0.94849

TABLE S.2 Simulation results for $H(y) = y$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=100	CPM	0.03064	0.03743	0.9482
		MLT	0.01176	0.03518	0.9317
	n=500	CPM	0.00753	0.00720	0.9494
		MLT	0.00436	0.00678	0.8200
	n=1000	CPM	0.00351	0.00369	0.9488
		MLT	0.00233	0.00348	0.6570
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.02447	0.05262	0.94789
		MLT	-0.00551	0.04954	0.97230
	n=100	CPM	0.01133	0.02685	0.9479
		MLT	-0.00187	0.02490	0.9679
	n=500	CPM	0.00322	0.00551	0.9483
		MLT	0.00089	0.00506	0.9577
	n=1000	CPM	0.00140	0.00270	0.9506
		MLT	-0.00016	0.00250	0.9539
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.03566	0.05664	0.9452
		MLT	0.00237	0.05088	0.9688
	n=100	CPM	0.01521	0.02819	0.9514
		MLT	-0.00269	0.02545	0.9657
	n=500	CPM	0.00476	0.00540	0.9510
		MLT	0.00129	0.00494	0.9625
	n=1000	CPM	0.00194	0.00266	0.9501
		MLT	0.00035	0.00249	0.9548
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.00518	0.06243	0.9514
		MLT	-0.02582	0.05878	0.9412
	n=100	CPM	0.00274	0.03120	0.9486
		MLT	-0.01281	0.02936	0.9152
	n=500	CPM	0.00121	0.00610	0.9508
		MLT	-0.00118	0.00575	0.7699
	n=1000	CPM	0.00036	0.00310	0.9463
		MLT	-0.00071	0.00292	0.6111
$F^{-1}(0.8\|X=1)$	n=50	CPM	0.04268	0.07296	0.9616
		MLT	-0.02176	0.05473	0.9347
	n=100	CPM	0.01890	0.03555	0.9555
		MLT	-0.01163	0.02827	0.8977
	n=500	CPM	0.00639	0.00696	0.9522
		MLT	0.00109	0.00577	0.5443
	n=1000	CPM	0.00161	0.00350	0.9512
		MLT	0.00019	0.00299	0.2415
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-186.896	
		MLT		-171.731	
	n=100	CPM		-455.055	
		MLT		-417.689	
	n=100	CPM		-3055.871	
		MLT		-2848.799	
	n=100	CPM		-6785.049	
		MLT		-6367.617	

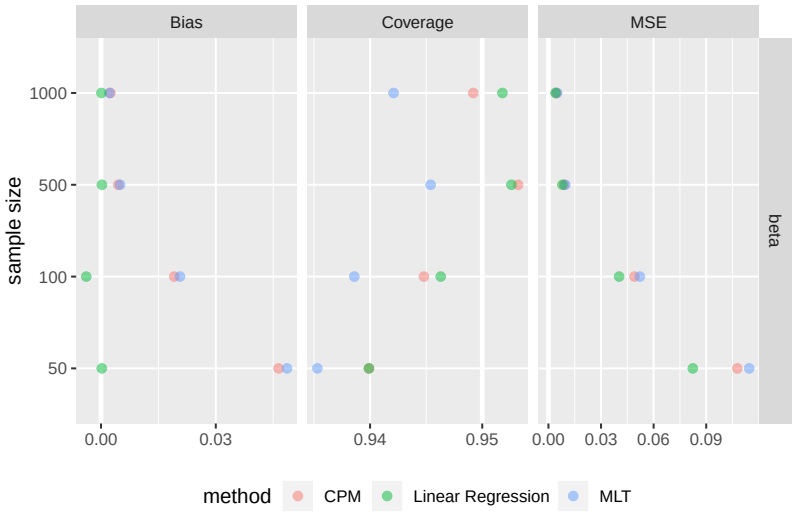

FIGURE S.2 Simulation results for $H(y) = \exp(y)$

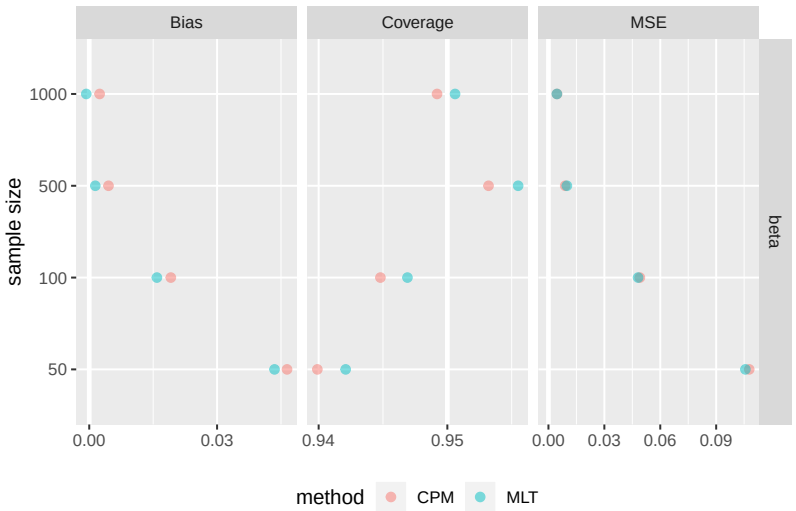

FIGURE S.3 Simulation results for $H(y) = \text{Inv-}logistic(\Phi(y))$

TABLE S.3 Simulation results for $H(y) = \exp(y)$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04642	0.10774	0.9399
		MLT	0.04863	0.11454	0.9353
		Linear Regression	0.00021	0.08238	0.9399
	n=100	CPM	0.01915	0.04906	0.9448
		MLT	0.02065	0.05218	0.9386
		Linear Regression	-0.00386	0.04032	0.9463
	n=500	CPM	0.00452	0.00899	0.9532
		MLT	0.00500	0.00963	0.9454
		Linear Regression	0.00024	0.00796	0.9526
	n=1000	CPM	0.00244	0.00459	0.9492
		MLT	-0.00221	0.00491	0.9421
		Linear Regression	0.00012	0.00402	0.9518

TABLE S.4 Simulation results for $H(y) = \text{Inv-}logistic(\Phi(y))$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04642	0.10774	0.9399
		MLT	0.04348	0.10569	0.9421
	n=100	CPM	0.01915	0.04906	0.9448
		MLT	0.01588	0.04811	0.9469
	n=500	CPM	0.00452	0.00899	0.9532
		MLT	0.00142	0.00990	0.9555
	n=1000	CPM	0.00244	0.00459	0.9492
		MLT	-0.00070	0.00454	0.9506
Out-of-sample Log-likelihood				Value	
	n=50	CPM		-186.8960	
		MLT		-172.0136	
	n=100	CPM		-455.0545	
		MLT		-417.9264	
	n=500	CPM		-3055.871	
		MLT		-2847.904	
	n=1000	CPM		-6785.049	
		MLT		-6372.934	

TABLE S.5 Simulation results for including covariate $Z \sim N(0, 1)$, which is independent of X

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.06728	0.11989	0.9321
		MLT	0.05754	0.11591	0.9365
	n=100	CPM	0.02936	0.05169	0.9442
		MLT	0.02193	0.05116	0.9447
	n=500	CPM	0.00689	0.00911	0.9532
		MLT	0.00151	0.00917	0.9510
	n=1000	CPM	0.00363	0.00462	0.9491
		MLT	-0.00111	0.00464	0.9463
Out-of-sample Log-likelihood				Value	
	n=50	CPM		-178.060	
		MLT		-159.152	
	n=100	CPM		-409.099	
		MLT		-371.022	
	n=500	CPM		-2927.662	
		MLT		-2735.722	
	n=1000	CPM		-6490.808	
		MLT		-6104.455	

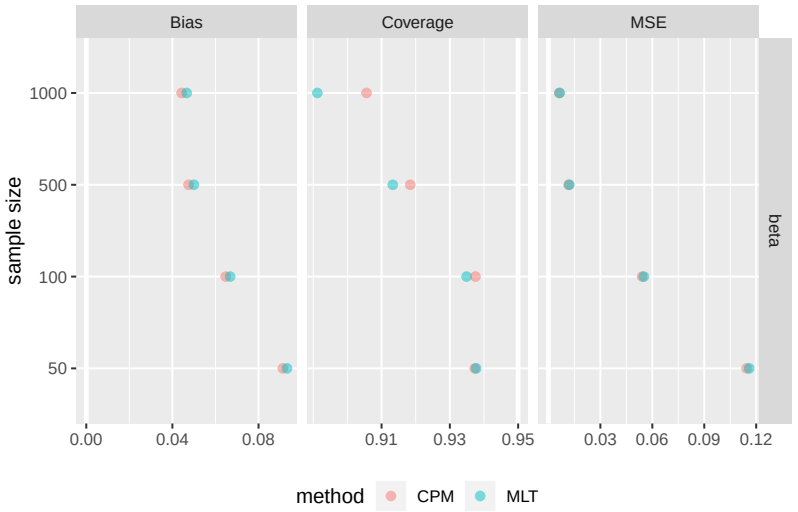

FIGURE S.4 Simulation results for including multiple covariates $Z_1, Z_2, Z_3 \sim N(\mathbf{0}, \mathbf{I}), Z_4 \sim N(X, 1), Z_5 \sim N(Z_1 + X, 1), Z_6 \sim N(Z_3 - Z_4, 1)$

TABLE S.6 Simulation results for including covariate $Z \sim N(X, 1)$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.06902	0.15194	0.9357
		MLT	0.08516	0.15621	0.9321
	n=100	CPM	0.02871	0.06368	0.9409
		MLT	0.04616	0.06668	0.9379
	n=500	CPM	0.00571	0.01128	0.9508
		MLT	0.02372	0.01229	0.9402
	n=1000	CPM	0.00268	0.00574	0.9495
		MLT	0.02088	0.00643	0.9368
Out-of-sample Log-likelihood				Value	
	n=50	CPM		-171.942	
		MLT		-153.132	
	n=100	CPM		-406.006	
		MLT		-371.460	
	n=500	CPM		-2844.186	
		MLT		-2651.443	
	n=1000	CPM		-6375.575	
		MLT		-5983.449	

TABLE S.7 Simulation results for including multiple covariates $Z_1, Z_2, Z_3 \sim N(\mathbf{0}, \mathbf{I}), Z_4 \sim N(X, 1), Z_5 \sim N(Z_1 + X, 1), Z_6 \sim N(Z_3 - Z_4, 1)$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.09129	0.11445	0.9373
		MLT	0.09324	0.11598	0.9377
	n=100	CPM	0.06477	0.05410	0.9375

TABLE S.7 Simulation results for including multiple covariates $Z_1, Z_2, Z_3 \sim N(\mathbf{0}, \mathbf{I}), Z_4 \sim N(X, 1), Z_5 \sim N(Z_1 + X, 1), Z_6 \sim N(Z_3 - Z_4, 1)$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT	0.06684	0.05513	0.9349
	n=500	CPM	0.04753	0.01166	0.9184
		MLT	0.04999	0.01206	0.9133
	n=1000	CPM	0.04430	0.00619	0.9056
		MLT	0.04666	0.00649	0.8912
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-186.919	
		MLT		-170.907	
	n=100	CPM		-449.502	
		MLT		-413.414	
	n=500	CPM		-3055.861	
		MLT		-2856.913	
	n=1000	CPM		-6783.180	
		MLT		-6376.370	

TABLE S.8 Simulation results for using the correct logit link function for $\epsilon \sim Logistic(0, \frac{3}{\pi^2})$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04694	0.10712	1.0000
		MLT	0.05690	0.10856	0.9999
	n=100	CPM	0.02094	0.04841	0.9998
		MLT	0.03347	0.04987	1.0000
	n=500	CPM	0.00423	0.00922	0.9997
		MLT	0.01474	0.00954	0.9997
	n=1000	CPM	0.00209	0.00458	0.9996
		MLT	0.01253	0.00481	0.9996
$F(5\|X = 0)$	n=50	CPM	-0.00001	0.00896	0.9312
		MLT	0.00944	0.00827	0.9659
	n=100	CPM	0.00069	0.00441	0.9403
		MLT	0.01211	0.00425	0.9602
	n=500	CPM	-0.00005	0.00087	0.9507
		MLT	0.01146	0.00094	0.9504
	n=1000	CPM	-0.00006	0.00044	0.9467
		MLT	0.01126	0.00053	0.9306
$F(5\|X = 1)$	n=50	CPM	-0.00046	0.00475	0.9126
		MLT	0.00170	0.00437	0.9636
	n=100	CPM	0.00056	0.00240	0.9306
		MLT	0.00405	0.00227	0.9531
	n=500	CPM	-0.00008	0.00047	0.9452
		MLT	0.00439	0.00046	0.9284
	n=1000	CPM	-0.00006	0.00023	0.9482
		MLT	0.00435	0.00024	0.8942
$E(Y\|X = 0)$	n=50	CPM	0.00901	0.37500	0.9373
		MLT	-0.05876	0.36693	0.9402

TABLE S.8 Simulation results for using the correct logit link function for $\epsilon \sim Logistic(0, \frac{3}{\pi^2})$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=100	CPM	0.00359	0.18297	0.9414
		MLT	-0.06609	0.18365	0.9328
	n=500	CPM	0.00626	0.03743	0.9475
		MLT	-0.05312	0.03960	0.9345
	n=1000	CPM	0.00602	0.01843	0.9473
		MLT	-0.05231	0.02077	0.9266
$E(Y\|X=1)$	n=50	CPM	0.00399	0.86735	0.9228
		MLT	-0.14146	0.75629	0.9050
	n=100	CPM	-0.01119	0.42757	0.9339
		MLT	-0.14248	0.37896	0.9292
	n=500	CPM	0.00414	0.08364	0.9467
		MLT	-0.11026	0.08245	0.9385
	n=1000	CPM	0.00383	0.04241	0.9466
		MLT	-0.10741	0.04733	0.9266
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.19870	0.28072	0.9009
		MLT	0.15886	0.21725	0.9647
	n=100	CPM	0.10327	0.13827	0.9692
		MLT	0.10953	0.10873	0.9662
	n=500	CPM	0.02211	0.02724	0.9492
		MLT	0.09981	0.02952	0.9711
	n=1000	CPM	0.01136	0.01370	0.9483
		MLT	0.09743	0.01918	0.9512
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.21597	0.59737	0.9539
		MLT	0.14212	0.46472	0.9634
	n=100	CPM	0.10216	0.27626	0.9484
		MLT	0.09233	0.21145	0.9544
	n=500	CPM	0.01758	0.05236	0.9500
		MLT	0.02975	0.04010	0.9311
	n=1000	CPM	0.00869	0.02579	0.9490
		MLT	0.02391	0.02018	0.8978
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.11908	0.40509	0.9534
		MLT	-0.02145	0.34071	0.9648
	n=100	CPM	0.05550	0.19342	0.9523
		MLT	-0.03446	0.16103	0.9636
	n=500	CPM	0.01147	0.03881	0.9487
		MLT	-0.05361	0.03521	0.9628
	n=1000	CPM	0.00662	0.01901	0.9490
		MLT	-0.05364	0.01896	0.9578
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.17551	0.93895	0.9518
		MLT	0.02756	0.79539	0.9648
	n=100	CPM	0.06786	0.43809	0.9518
		MLT	-0.00326	0.38323	0.9576
	n=500	CPM	0.00953	0.08394	0.9504
		MLT	0.00346	0.07501	0.9551
	n=1000	CPM	0.00176	0.04187	0.9511
		MLT	0.00166	0.03785	0.9530
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.09922	0.94830	0.9514
		MLT	-0.06426	0.86592	0.9627

TABLE S.8 Simulation results for using the correct logit link function for $\epsilon \sim Logistic(0, \frac{3}{\pi^2})$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=100	CPM	0.04129	0.45649	0.9543
		MLT	-0.07018	0.43292	0.9605
	n=500	CPM	0.01556	0.09357	0.9492
		MLT	-0.02872	0.08995	0.9458
	n=1000	CPM	0.00889	0.04634	0.9466
		MLT	-0.03072	0.04510	0.9265
$F^{-1}(0.8\|X=1)$	n=50	CPM	0.36291	2.53392	0.9574
		MLT	0.08217	1.90985	0.9625
	n=100	CPM	0.14527	1.11688	0.9568
		MLT	0.03524	0.91880	0.9649
	n=500	CPM	0.02104	0.20628	0.9539
		MLT	0.03492	0.18837	0.9568
	n=1000	CPM	0.00504	0.10591	0.9469
		MLT	0.02743	0.09906	0.9380
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-189.186	
		MLT		-173.154	
	n=100	CPM		-455.262	
		MLT		-417.729	
	n=500	CPM		-3053.475	
		MLT		-2852.847	
	n=1000	CPM		-6802.809	
		MLT		-6392.715	

TABLE S.9 Simulation results for using the correct cloglog link function for $\epsilon \sim Gompertz$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.06104	0.12733	0.9437
		MLT	0.06460	0.12534	0.9473
	n=100	CPM	0.03525	0.05469	0.9459
		MLT	0.03718	0.05403	0.9479
	n=500	CPM	0.00680	0.00994	0.9504
		MLT	0.00795	0.00988	0.9499
	n=1000	CPM	0.00368	0.00496	0.9476
		MLT	0.00458	0.00492	0.9476
$F(5\|X=0)$	n=50	CPM	0.00356	0.00698	0.9229
		MLT	0.00714	0.00631	0.9548
	n=100	CPM	0.00185	0.00345	0.9382
		MLT	0.00411	0.00310	0.9625
	n=500	CPM	0.00060	0.00070	0.9461
		MLT	0.00182	0.00063	0.9577
	n=1000	CPM	0.00077	0.00034	0.9495
		MLT	0.00181	0.00031	0.9523
$F(5\|X=1)$	n=50	CPM	-0.00506	0.00729	0.9214
		MLT	-0.00404	0.00671	0.9601

TABLE S.9 Simulation results for using the correct cloglog link function for $\epsilon \sim$ *Gompertz (continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=100	CPM	-0.00432	0.00352	0.9352
		MLT	-0.00343	0.00324	0.9587
	n=500	CPM	-0.00078	0.00068	0.9442
		MLT	-0.00019	0.00063	0.9552
	n=1000	CPM	-0.00017	0.00034	0.9491
		MLT	0.00037	0.00031	0.9528
$E(Y\|X=0)$	n=50	CPM	-0.01111	0.25880	0.9277
		MLT	-0.03566	0.26265	0.9220
	n=100	CPM	-0.00865	0.12678	0.9428
		MLT	-0.03064	0.12896	0.9344
	n=500	CPM	-0.00671	0.02554	0.9480
		MLT	-0.02723	0.02658	0.9387
	n=1000	CPM	-0.00618	0.01268	0.9440
		MLT	-0.02643	0.01351	0.9318
$E(Y\|X=1)$	n=50	CPM	0.00648	0.62496	0.9269
		MLT	0.00869	0.62310	0.9367
	n=100	CPM	0.01666	0.30593	0.9408
		MLT	0.01659	0.30524	0.9423
	n=500	CPM	-0.00251	0.05932	0.9521
		MLT	-0.00502	0.05911	0.9504
	n=1000	CPM	-0.00370	0.02983	0.9490
		MLT	-0.00653	0.02973	0.9471
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.18037	0.18072	0.9252
		MLT	0.22361	0.18316	0.9705
	n=100	CPM	0.09172	0.08122	0.9712
		MLT	0.20968	0.10825	0.9684
	n=500	CPM	0.01696	0.01469	0.9486
		MLT	0.19575	0.05098	0.9365
	n=1000	CPM	0.00799	0.00708	0.9508
		MLT	0.19605	0.04478	0.8661
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.24974	0.46851	0.9495
		MLT	0.33606	0.38757	0.9685
	n=100	CPM	0.13925	0.20991	0.9493
		MLT	0.26547	0.19314	0.9631
	n=500	CPM	0.03264	0.03712	0.9495
		MLT	0.19311	0.05936	0.9612
	n=1000	CPM	0.02289	0.01818	0.9488
		MLT	0.18532	0.04499	0.9511
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.08669	0.40232	0.9506
		MLT	-0.04023	0.33103	0.9640
	n=100	CPM	0.04574	0.20179	0.9510
		MLT	-0.05537	0.17342	0.9671
	n=500	CPM	0.00738	0.04079	0.9474
		MLT	-0.06849	0.04094	0.9659
	n=1000	CPM	0.00190	0.01989	0.9490
		MLT	-0.07029	0.02270	0.9594
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.22305	1.09728	0.9485
		MLT	0.08381	0.93684	0.9624

TABLE S.9 Simulation results for using the correct cloglog link function for $\epsilon \sim$ *Gompertz (continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=100	CPM	0.13725	0.53565	0.9489
		MLT	0.05743	0.46698	0.9581
	n=500	CPM	0.02949	0.10164	0.9506
		MLT	-0.00474	0.09177	0.9544
	n=1000	CPM	0.01880	0.05075	0.9500
		MLT	-0.01397	0.04618	0.9537
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.05483	0.65794	0.9482
		MLT	-0.08004	0.60558	0.9561
	n=100	CPM	0.02389	0.32129	0.9531
		MLT	-0.04480	0.29221	0.9612
	n=500	CPM	0.00143	0.06535	0.9504
		MLT	-0.02236	0.05848	0.9398
	n=1000	CPM	-0.00034	0.03224	0.9488
		MLT	-0.02328	0.02913	0.9189
$F^{-1}(0.8\|X=1)$	n=50	CPM	0.20617	1.59207	0.9623
		MLT	0.00263	1.20935	0.9559
	n=100	CPM	0.12090	0.75820	0.9543
		MLT	0.05491	0.62127	0.9620
	n=500	CPM	0.03115	0.14890	0.9510
		MLT	0.03568	0.13167	0.9574
	n=1000	CPM	0.01950	0.07565	0.9512
		MLT	0.02443	0.06840	0.9413
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-191.801	
		MLT		-178.390	
	n=100	CPM		-446.725	
		MLT		-416.666	
	n=500	CPM		-3054.302	
		MLT		-2876.370	
	n=1000	CPM		-6805.474	
		MLT		-6473.184	

FIGURE S.5 Simulation results for using the correct logit link function for $\epsilon \sim Logistic(0, \frac{3}{\pi^2})$

TABLE S.10 Simulation results for $X \sim Uniform(0, 1)$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04475	0.30304	0.9378
		MLT	0.04285	0.29959	0.9390
	n=100	CPM	0.02040	0.13539	0.9473
		MLT	0.01791	0.13496	0.9486
	n=500	CPM	0.00541	0.02444	0.9551
		MLT	0.00430	0.02446	0.9554
	n=1000	CPM	0.00194	0.01274	0.9473
		MLT	0.00111	0.01278	0.9463
$F(5\|X=0)$	n=50	CPM	0.00092	0.01456	0.9111
		MLT	0.00650	0.01385	0.9492
	n=100	CPM	0.00051	0.00720	0.9347
		MLT	0.00564	0.00685	0.9560
	n=500	CPM	-0.00061	0.00139	0.9487
		MLT	0.00343	0.00134	0.9547

TABLE S.10 Simulation results for $X \sim Uniform(0, 1)$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
$F(5\|X=1)$	n=1000	CPM	-0.00059	0.00071	0.9476
		MLT	0.00312	0.00069	0.9411
	n=50	CPM	0.00374	0.00900	0.8983
		MLT	0.00771	0.00875	0.9534
	n=100	CPM	0.00190	0.00428	0.9278
		MLT	0.00620	0.00424	0.9535
	n=500	CPM	-0.00064	0.00081	0.9495
		MLT	0.00266	0.00079	0.9571
	n=1000	CPM	-0.00028	0.00043	0.9443
		MLT	0.00272	0.00042	0.9428
$E(Y\|X=0)$	n=50	CPM	0.02610	0.80669	0.9279
		MLT	0.00520	0.80453	0.9186
	n=100	CPM	0.01026	0.38698	0.9409
		MLT	-0.00222	0.38872	0.9345
	n=500	CPM	0.00196	0.07398	0.9499
		MLT	-0.00678	0.07468	0.9470
	n=1000	CPM	-0.00015	0.03831	0.9477
		MLT	-0.00855	0.03875	0.9446
$E(Y\|X=1)$	n=50	CPM	-0.01906	1.64840	0.9223
		MLT	-0.07521	1.54617	0.9206
	n=100	CPM	-0.01865	0.80486	0.9379
		MLT	-0.06616	0.76725	0.9361
	n=500	CPM	0.00324	0.15570	0.9517
		MLT	-0.03166	0.14910	0.9519
	n=1000	CPM	-0.00342	0.08022	0.9485
		MLT	-0.03664	0.07791	0.9507
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.12730	0.86396	0.9421
		MLT	0.02457	0.75358	0.9487
	n=100	CPM	0.05858	0.40703	0.9517
		MLT	-0.01387	0.36659	0.9572
	n=500	CPM	0.01294	0.07815	0.9507
		MLT	-0.03928	0.07561	0.9575
	n=1000	CPM	0.00551	0.03984	0.9511
		MLT	-0.04265	0.04005	0.9571
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.23511	2.04371	0.9427
		MLT	0.06687	1.80262	0.9514
	n=100	CPM	0.10632	0.93012	0.9474
		MLT	0.00751	0.84960	0.9509
	n=500	CPM	0.03332	0.16934	0.9528
		MLT	-0.00820	0.16173	0.9555
	n=1000	CPM	0.01483	0.08708	0.9499
		MLT	-0.02251	0.08409	0.9503
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-191.684	
		MLT		-175.702	
	n=100	CPM		-458.573	
		MLT		-422.812	
	n=500	CPM		-3089.845	
		MLT		-2886.741	
	n=1000	CPM		-6858.044	
		MLT		-6445.935	

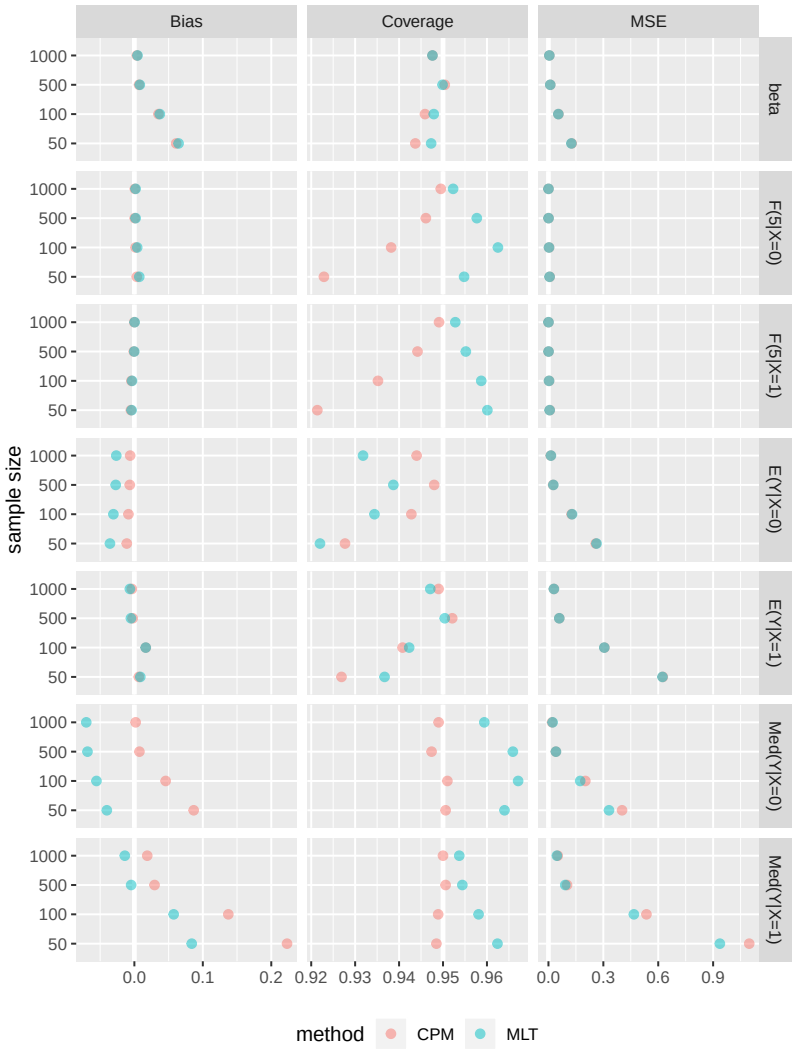

FIGURE S.6 Simulation results for using the correct cloglog link function for $\epsilon \sim Gompertz$

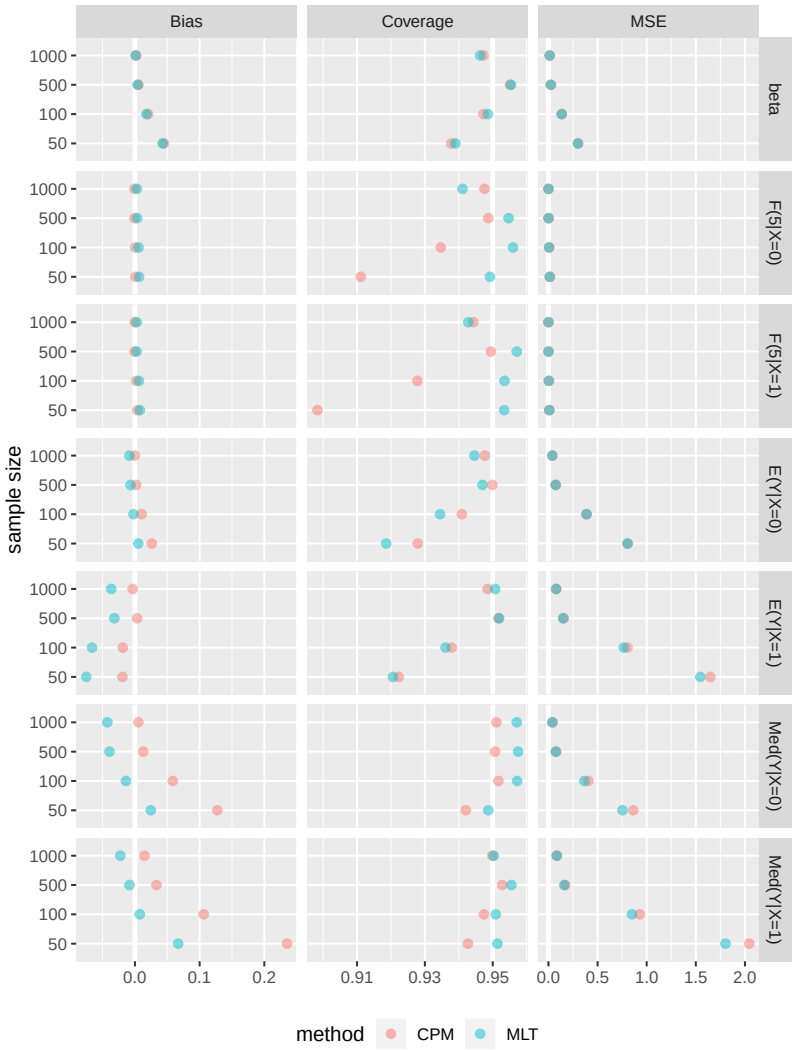

FIGURE S.7 Simulation results for $X \sim Uniform(0, 1)$

TABLE S.11 Simulation results for $X \sim N(0, 1)$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.05438	0.04242	0.9346
		MLT	0.03896	0.03795	0.9464
	n=100	CPM	0.02823	0.01821	0.9420
		MLT	0.01465	0.01682	0.9498
	n=500	CPM	0.00623	0.00318	0.9446
		MLT	-0.00398	0.00305	0.9471
	n=1000	CPM	0.00284	0.00152	0.9509
		MLT	-0.00694	0.00153	0.9475
$F(5\|X=0)$	n=50	CPM	0.00170	0.00643	0.9372
		MLT	0.01273	0.00528	0.9714
	n=100	CPM	0.00073	0.00320	0.9418
		MLT	0.00993	0.00260	0.9704
	n=500	CPM	-0.00053	0.00062	0.9497
		MLT	0.00713	0.00053	0.9637
	n=1000	CPM	-0.00045	0.00031	0.9499

TABLE S.11 Simulation results for $X \sim N(0,1)$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT	0.00712	0.00028	0.9648
$F(5\|X=1)$	n=50	CPM	-0.00422	0.00593	0.9069
		MLT	0.00659	0.00526	0.9654
	n=100	CPM	-0.00281	0.00293	0.9256
		MLT	0.00719	0.00261	0.9601
	n=500	CPM	-0.00129	0.00059	0.9389
		MLT	0.00736	0.00056	0.9408
	n=1000	CPM	-0.00072	0.00028	0.9464
		MLT	0.00783	0.00030	0.9159
$E(Y\|X=0)$	n=50	CPM	-0.01140	0.22060	0.9356
		MLT	-0.03473	0.21979	0.9400
	n=100	CPM	-0.00528	0.10869	0.9443
		MLT	-0.02495	0.10871	0.9436
	n=500	CPM	-0.00077	0.02154	0.9465
		MLT	-0.01904	0.02185	0.9426
	n=1000	CPM	-0.00307	0.01051	0.9529
		MLT	-0.02127	0.01092	0.9427
$E(Y\|X=1)$	n=50	CPM	0.03037	0.92104	0.9277
		MLT	-0.10792	0.84272	0.9475
	n=100	CPM	0.02781	0.43177	0.9427
		MLT	-0.08295	0.40661	0.9543
	n=500	CPM	0.00896	0.08647	0.9467
		MLT	-0.06748	0.08490	0.9455
	n=1000	CPM	0.00312	0.04216	0.9504
		MLT	-0.06911	0.04400	0.9426
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.12767	0.36809	0.9505
		MLT	-0.09699	0.29458	0.9725
	n=100	CPM	0.06259	0.17759	0.9521
		MLT	-0.10707	0.15958	0.9701
	n=500	CPM	0.01362	0.03439	0.9462
		MLT	-0.10659	0.04192	0.9739
	n=1000	CPM	0.00369	0.01671	0.9533
		MLT	-0.10892	0.02666	0.9771
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.31356	1.42888	0.9473
		MLT	-0.00825	1.07147	0.9685
	n=100	CPM	0.17049	0.64786	0.9513
		MLT	-0.05418	0.51316	0.9657
	n=500	CPM	0.03959	0.12480	0.9443
		MLT	-0.08739	0.11372	0.9596
	n=1000	CPM	0.02007	0.06016	0.9487
		MLT	-0.09519	0.06124	0.9556
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-184.301	
		MLT		-169.515	
	n=100	CPM		-420.930	
		MLT		-387.442	
	n=500	CPM		-2935.062	
		MLT		-2737.588	
	n=1000	CPM		-6532.848	
		MLT		-6151.616	

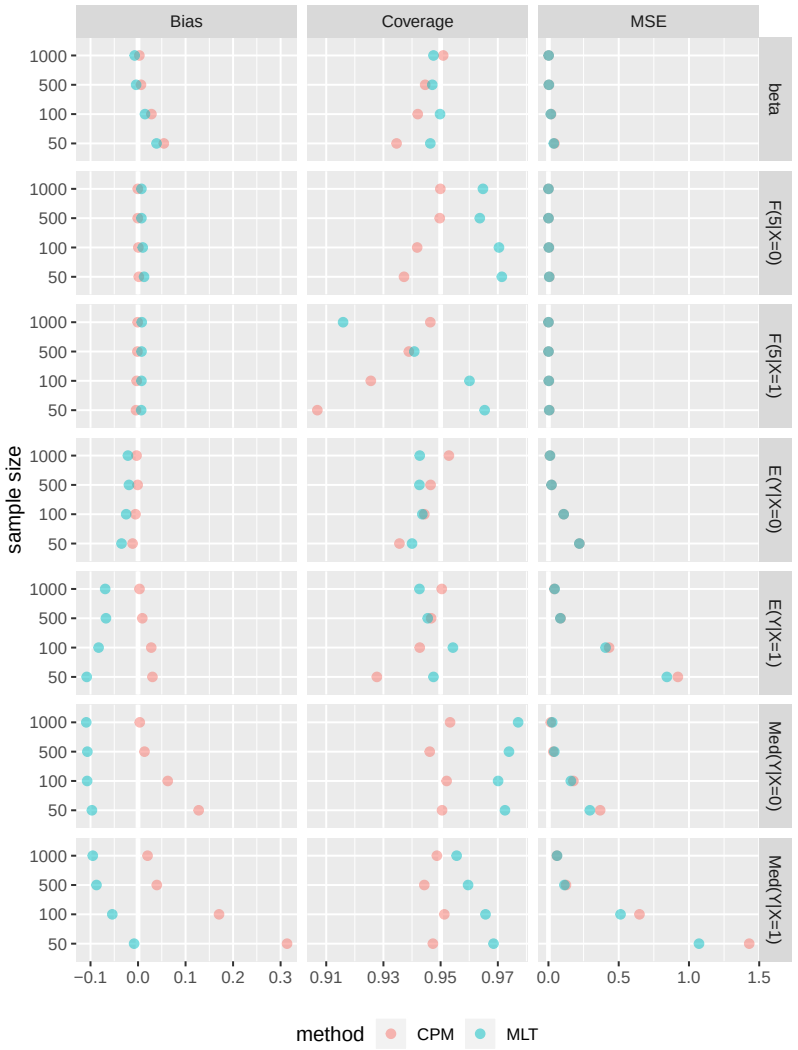

FIGURE S.8 Simulation results for $X \sim N(0, 1)$

FIGURE S.9 Simulation results for $X \sim Binomial(1, p = 0.3)$

TABLE S.12 Simulation results for $X \sim Binomial(1, p = 0.3)$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04705	0.13165	0.9427
		MLT	0.04915	0.13183	0.9454
	n=100	CPM	0.02280	0.05775	0.9458
		MLT	0.02476	0.05775	0.9471
	n=500	CPM	0.00486	0.01053	0.9496
		MLT	0.00678	0.01061	0.9500
	n=1000	CPM	0.00313	0.00541	0.9491
		MLT	0.00506	0.00545	0.9483
$F(5\|X=0)$	n=50	CPM	0.00066	0.00651	0.9326
		MLT	0.00627	0.00579	0.9621
	n=100	CPM	0.00075	0.00322	0.9412
		MLT	0.00557	0.00288	0.9586
	n=500	CPM	-0.00100	0.00063	0.9507
		MLT	0.00238	0.00056	0.9531
	n=1000	CPM	-0.00051	0.00032	0.9492

TABLE S.12 Simulation results for $X \sim Binomial(1, p = 0.3)$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT	0.00227	0.00029	0.9362
$F(5\|X=1)$	n=50	CPM	0.00017	0.00797	0.8993
		MLT	0.00289	0.00766	0.9554
	n=100	CPM	0.00010	0.00390	0.9260
		MLT	0.00271	0.00372	0.9537
	n=500	CPM	-0.00102	0.00075	0.9460
		MLT	0.00088	0.00071	0.9556
	n=1000	CPM	-0.00070	0.00039	0.9452
		MLT	0.00078	0.00037	0.9441
$E(Y\|X=0)$	n=50	CPM	-0.00508	0.28263	0.9357
		MLT	-0.02122	0.28146	0.9350
	n=100	CPM	-0.00730	0.14215	0.9439
		MLT	-0.01922	0.14183	0.9402
	n=500	CPM	0.00085	0.02771	0.9525
		MLT	-0.00717	0.02778	0.9495
	n=1000	CPM	-0.00282	0.01404	0.9495
		MLT	-0.01035	0.01415	0.9475
$E(Y\|X=1)$	n=50	CPM	-0.02920	1.38866	0.9197
		MLT	-0.08721	1.31227	0.9305
	n=100	CPM	-0.01793	0.68027	0.9350
		MLT	-0.06541	0.64494	0.9396
	n=500	CPM	0.00235	0.13261	0.9491
		MLT	-0.03070	0.12714	0.9538
	n=1000	CPM	0.00004	0.06822	0.9465
		MLT	-0.03066	0.06604	0.9512
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.10374	0.36472	0.9524
		MLT	-0.02964	0.31474	0.9675
	n=100	CPM	0.04564	0.17627	0.9491
		MLT	-0.04900	0.16112	0.9656
	n=500	CPM	0.01087	0.03514	0.9499
		MLT	-0.04602	0.03464	0.9673
	n=1000	CPM	0.00432	0.01727	0.9513
		MLT	-0.04767	0.01855	0.9600
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.25922	1.82671	0.9453
		MLT	0.06664	1.57711	0.9559
	n=100	CPM	0.11981	0.83894	0.9467
		MLT	0.00599	0.74058	0.9564
	n=500	CPM	0.03466	0.15817	0.9505
		MLT	-0.00916	0.14763	0.9574
	n=1000	CPM	0.01771	0.07873	0.9486
		MLT	-0.01840	0.07557	0.9561
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-188.865	
		MLT		-172.420	
	n=100	CPM		-452.227	
		MLT		-417.286	
	n=500	CPM		-3068.055	
		MLT		-2864.786	
	n=1000	CPM		-6810.171	
		MLT		-6400.164	

FIGURE S.10 Simulation results for $\beta = 0.5$

TABLE S.13 Simulation results for $\beta = 0.5$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.02284	0.09650	0.9384
		MLT	0.02276	0.09564	0.9409
	n=100	CPM	0.00787	0.04431	0.9463
		MLT	0.00690	0.04427	0.9462
	n=500	CPM	0.00251	0.00827	0.9530
		MLT	0.00210	0.00829	0.9534
	n=1000	CPM	0.00133	0.00419	0.9509
		MLT	0.00101	0.00421	0.9508
$F(5\|X=0)$	n=50	CPM	0.00115	0.00827	0.9307
		MLT	0.00534	0.00756	0.9587
	n=100	CPM	0.00033	0.00410	0.9390

TABLE S.13 Simulation results for $\beta = 0.5$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT	0.00346	0.00377	0.9554
	n=500	CPM	-0.00083	0.00081	0.9465
		MLT	0.00093	0.00075	0.9476
	n=1000	CPM	-0.00057	0.00040	0.9485
		MLT	0.00085	0.00038	0.9432
$F(5\|X=1)$	n=50	CPM	-0.00226	0.00809	0.9273
		MLT	0.00140	0.00748	0.9584
	n=100	CPM	-0.00042	0.00404	0.9380
		MLT	0.00281	0.00370	0.9603
	n=500	CPM	-0.00171	0.00077	0.9496
		MLT	0.00014	0.00071	0.9590
	n=1000	CPM	-0.00126	0.00039	0.9485
		MLT	0.00024	0.00036	0.9571
$E(Y\|X=0)$	n=50	CPM	-0.00492	0.39055	0.9352
		MLT	-0.01941	0.38509	0.9336
	n=100	CPM	-0.00120	0.19607	0.9424
		MLT	-0.00979	0.19508	0.9395
	n=500	CPM	0.00081	0.03862	0.9480
		MLT	-0.00459	0.03864	0.9458
	n=1000	CPM	-0.00222	0.01957	0.9455
		MLT	-0.00724	0.01962	0.9434
$E(Y\|X=1)$	n=50	CPM	-0.01557	0.58278	0.9293
		MLT	-0.03880	0.56750	0.9358
	n=100	CPM	-0.01874	0.29075	0.9385
		MLT	-0.03684	0.28586	0.9420
	n=500	CPM	0.00190	0.05634	0.9495
		MLT	-0.00933	0.05541	0.9497
	n=1000	CPM	-0.00170	0.02855	0.9486
		MLT	-0.01202	0.02831	0.9490
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.17264	0.21298	0.9119
		MLT	0.18992	0.17960	0.9526
	n=100	CPM	0.08944	0.10012	0.9513
		MLT	0.16004	0.09478	0.9231
	n=500	CPM	0.01819	0.01915	0.9465
		MLT	0.13211	0.03092	0.8368
	n=1000	CPM	0.00965	0.00960	0.9483
		MLT	0.12785	0.02306	0.7668
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.17586	0.32541	0.9466
		MLT	0.17742	0.25404	0.9584
	n=100	CPM	0.08356	0.15205	0.9484
		MLT	0.11744	0.11929	0.9427
	n=500	CPM	0.02076	0.02842	0.9522
		MLT	0.07558	0.02551	0.7755
	n=1000	CPM	0.00956	0.01445	0.9449
		MLT	0.06649	0.01456	0.5432
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.10025	0.46589	0.9466
		MLT	-0.02077	0.41633	0.9604
	n=100	CPM	0.04586	0.22615	0.9495

TABLE S.13 Simulation results for $\beta = 0.5$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT	-0.03269	0.21341	0.9589
	n=500	CPM	0.01015	0.04523	0.9477
		MLT	-0.03065	0.04486	0.9545
	n=1000	CPM	0.00367	0.02228	0.9499
		MLT	-0.03132	0.02294	0.9465
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.14988	0.74505	0.9459
		MLT	0.02800	0.66157	0.9595
	n=100	CPM	0.06338	0.36033	0.9477
		MLT	-0.00047	0.32757	0.9600
	n=500	CPM	0.02242	0.06762	0.9525
		MLT	-0.00266	0.06159	0.9587
	n=1000	CPM	0.01071	0.03343	0.9524
		MLT	-0.01044	0.03105	0.9562
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.09239	1.06059	0.9515
		MLT	-0.07025	0.94719	0.9623
	n=100	CPM	0.04724	0.52680	0.9501
		MLT	-0.04584	0.47602	0.9567
	n=500	CPM	0.01153	0.09914	0.9508
		MLT	-0.02804	0.09490	0.9511
	n=1000	CPM	0.00438	0.05124	0.9470
		MLT	-0.03026	0.04971	0.9446
$F^{-1}(0.8\|X=1)$	n=50	CPM	0.21087	1.68003	0.9562
		MLT	-0.00870	1.40610	0.9656
	n=100	CPM	0.09878	0.80246	0.9522
		MLT	-0.02060	0.72827	0.9652
	n=500	CPM	0.03519	0.15369	0.9500
		MLT	-0.02163	0.14466	0.9665
	n=1000	CPM	0.01440	0.07515	0.9529
		MLT	-0.03716	0.07263	0.9673
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-192.250	
		MLT		-176.341	
	n=100	CPM		-460.401	
		MLT		-424.847	
	n=500	CPM		-3094.909	
		MLT		-2891.795	
	n=1000	CPM		-6871.982	
		MLT		-6460.752	

TABLE S.14 Simulation results for $\beta = 0$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=50	CPM	0.00051	0.09294	0.9378
		MLT	0.00039	0.09163	0.9398
	n=100	CPM	-0.00418	0.04321	0.9463
β					

TABLE S.14 Simulation results for $\beta = 0$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT	-0.00396	0.04267	0.9477
	n=500	CPM	0.00019	0.00807	0.9521
		MLT	0.00028	0.00804	0.9524
	n=1000	CPM	0.00019	0.00405	0.9508
		MLT	0.00019	0.00405	0.9508
$F(5\|X=0)$	n=50	CPM	-0.00021	0.00815	0.9311
		MLT	0.00195	0.00761	0.9612
	n=100	CPM	-0.00037	0.00405	0.9390
		MLT	0.00097	0.00380	0.9600
	n=500	CPM	-0.00112	0.00080	0.9481
		MLT	0.00034	0.00076	0.9520
	n=1000	CPM	-0.00066	0.00040	0.9483
		MLT	0.00075	0.00038	0.9424
$F(5\|X=1)$	n=50	CPM	-0.00070	0.00839	0.9269
		MLT	0.00150	0.00777	0.9586
	n=100	CPM	0.00095	0.00411	0.9386
		MLT	0.00220	0.00385	0.9631
	n=500	CPM	-0.00149	0.00079	0.9481
		MLT	-0.00006	0.00074	0.9525
	n=1000	CPM	-0.00103	0.00039	0.9503
		MLT	0.00038	0.00037	0.9412
$E(Y\|X=0)$	n=50	CPM	-0.01021	0.38727	0.9321
		MLT	-0.02377	0.38216	0.9325
	n=100	CPM	-0.00252	0.19634	0.9388
		MLT	-0.01225	0.19412	0.9402
	n=500	CPM	0.00039	0.03855	0.9477
		MLT	-0.00541	0.03841	0.9451
	n=1000	CPM	-0.00253	0.01956	0.9450
		MLT	-0.00774	0.01953	0.9443
$E(Y\|X=1)$	n=50	CPM	-0.00818	0.39449	0.9320
		MLT	-0.02181	0.38806	0.9329
	n=100	CPM	-0.01445	0.19697	0.9390
		MLT	-0.02345	0.19509	0.9395
	n=500	CPM	0.00188	0.03800	0.9504
		MLT	-0.00368	0.03777	0.9474
	n=1000	CPM	-0.00120	0.01922	0.9491
		MLT	-0.00640	0.01918	0.9473
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.14353	0.18357	0.9429
		MLT	0.17897	0.16066	0.9550
	n=100	CPM	0.07530	0.08754	0.9483
		MLT	0.14613	0.08275	0.9099
	n=500	CPM	0.01548	0.01700	0.9452
		MLT	0.11519	0.02523	0.4498
	n=1000	CPM	0.00715	0.00845	0.9459
		MLT	0.10978	0.01797	0.1263
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.14853	0.18764	0.9425
		MLT	0.18166	0.16313	0.9503
	n=100	CPM	0.07010	0.08777	0.9484

TABLE S.14 Simulation results for $\beta = 0$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
		MLT	0.14173	0.08235	0.9082
	n=500	CPM	0.01723	0.01617	0.9514
		MLT	0.11642	0.02499	0.4541
	n=1000	CPM	0.00843	0.00850	0.9435
		MLT	0.11084	0.01825	0.1300
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.10486	0.46978	0.9476
		MLT	0.00160	0.43062	0.9610
	n=100	CPM	0.05100	0.22548	0.9465
		MLT	-0.00835	0.21472	0.9575
	n=500	CPM	0.01174	0.04522	0.9478
		MLT	-0.00869	0.04292	0.9503
	n=1000	CPM	0.00486	0.02222	0.9477
		MLT	-0.00960	0.02147	0.9510
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.10718	0.47960	0.9412
		MLT	0.00554	0.44035	0.9587
	n=100	CPM	0.04277	0.23224	0.9501
		MLT	-0.01656	0.21920	0.9579
	n=500	CPM	0.01472	0.04384	0.9485
		MLT	-0.00540	0.04191	0.9541
	n=1000	CPM	0.00798	0.02196	0.9502
		MLT	-0.00641	0.02110	0.9530
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.12923	1.10047	0.9543
		MLT	-0.05079	0.96618	0.9666
	n=100	CPM	0.06987	0.54428	0.9484
		MLT	-0.04266	0.50030	0.9613
	n=500	CPM	0.01783	0.10171	0.9512
		MLT	-0.02934	0.09465	0.9534
	n=1000	CPM	0.00376	0.05132	0.9515
		MLT	-0.02821	0.04861	0.9396
$F^{-1}(0.8\|X=1)$	n=50	CPM	0.13690	1.12511	0.9530
		MLT	-0.04482	0.98421	0.9682
	n=100	CPM	0.05761	0.53678	0.9489
		MLT	-0.05491	0.49127	0.9612
	n=500	CPM	0.02539	0.10174	0.9528
		MLT	-0.02072	0.09390	0.9534
	n=1000	CPM	0.01155	0.05045	0.9480
		MLT	-0.02073	0.04707	0.9403
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-196.430	
		MLT		-180.425	
	n=100	CPM		-461.252	
		MLT		-424.277	
	n=500	CPM		-3107.826	
		MLT		-2904.348	
	n=1000	CPM		-6908.245	
		MLT		-6496.046	

FIGURE S.11 Simulation results for $\beta = 0$

TABLE S.15 Simulation results for misspecification: $\epsilon \sim N(0, 1)$, link function = logit

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.77590	0.92688	0.7388
		MLT	0.80261	0.97609	0.7280
	n=100	CPM	0.72863	0.67946	0.5302
		MLT	0.75260	0.71829	0.5098
	n=500	CPM	0.70479	0.52417	0.0080
		MLT	0.72678	0.55637	0.0066
	n=1000	CPM	0.70144	0.50599	0
		MLT	0.72287	0.5368	0
$F(5\|X = 0)$	n=50	CPM	0.00898	0.00909	0.9233
		MLT	0.02035	0.00882	0.9612
	n=100	CPM	0.00848	0.00457	0.9338
		MLT	0.01942	0.00456	0.958
	n=500	CPM	0.00713	0.00095	0.9369
		MLT	0.01718	0.0012	0.9598

TABLE S.15 Simulation results for misspecification: $\epsilon \sim N(0,1)$, link function = logit *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=1000	CPM	0.00766	0.00050	0.9298
		MLT	0.01714	0.00070	0.9626
$F(5\|X=1)$	n=50	CPM	-0.00542	0.00515	0.9101
		MLT	-0.00269	0.00486	0.9642
	n=100	CPM	-0.00449	0.00256	0.9268
		MLT	-0.00123	0.00240	0.9620
	n=500	CPM	-0.00619	0.00053	0.9341
		MLT	-0.00298	0.00046	0.9618
	n=1000	CPM	-0.00582	0.00029	0.9252
		MLT	-0.00286	0.00024	0.9574
$E(Y\|X=0)$	n=50	CPM	0.05750	0.40320	0.9381
		MLT	-0.01167	0.40194	0.9374
	n=100	CPM	0.06342	0.20642	0.9475
		MLT	0.0257	0.20336	0.9434
	n=500	CPM	0.06761	0.04439	0.9420
		MLT	0.01392	0.04040	0.9500
	n=1000	CPM	0.06498	0.02428	0.9289
		MLT	0.01260	0.02041	0.9486
$E(Y\|X=1)$	n=50	CPM	-0.06659	0.83691	0.9229
		MLT	-0.14046	0.81146	0.8982
	n=100	CPM	-0.07391	0.42048	0.9287
		MLT	-0.13820	0.41514	0.9280
	n=500	CPM	-0.05200	0.08317	0.9370
		MLT	-0.10688	0.08793	0.9316
	n=1000	CPM	-0.05601	0.04402	0.9334
		MLT	-0.11009	0.05105	0.9166
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.24638	0.27051	0.8866
		MLT	0.20722	0.22113	0.9734
	n=100	CPM	0.15492	0.12948	0.9687
		MLT	0.18939	0.12302	0.9768
	n=500	CPM	0.07665	0.02760	0.9308
		MLT	0.1723	0.04683	0.9560
	n=1000	CPM	0.06554	0.01541	0.9137
		MLT	0.17092	0.03778	0.9314
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.16833	0.57776	0.9553
		MLT	0.12658	0.43810	0.9599
	n=100	CPM	0.03875	0.26215	0.9540
		MLT	0.03123	0.19651	0.9491
	n=500	CPM	-0.04642	0.05197	0.9491
		MLT	-0.03290	0.03766	0.8597
	n=1000	CPM	-0.05900	0.02867	0.9337
		MLT	0.01350	0.01795	0.7775
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.08316	0.46017	0.9521
		MLT	-0.06783	0.39497	0.9621
	n=100	CPM	0.02036	0.22882	0.9483
		MLT	-0.09296	0.20723	0.9555
	n=500	CPM	-0.02391	0.04698	0.9467
		MLT	-0.09524	0.04603	0.9437

TABLE S.15 Simulation results for misspecification: $\epsilon \sim N(0,1)$, link function = logit *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=1000	CPM	-0.03179	0.02365	0.9417
		MLT	-0.11717	0.03399	0.9169
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.23651	1.14031	0.9472
		MLT	0.08698	0.97437	0.9633
	n=100	CPM	0.13560	0.55622	0.9501
		MLT	0.06205	0.48468	0.9570
	n=500	CPM	0.08089	0.10870	0.9433
		MLT	0.06139	0.09642	0.9438
	n=1000	CPM	0.06738	0.05495	0.9373
		MLT	0.05190	0.04926	0.9378
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.01151	1.11193	0.9556
		MLT	-0.18056	1.06432	0.9621
	n=100	CPM	-0.02666	0.55764	0.9526
		MLT	-0.13868	0.54058	0.9580
	n=500	CPM	-0.05658	0.11304	0.9509
		MLT	-0.11033	0.11396	0.9570
	n=1000	CPM	-0.06268	0.05955	0.9451
		MLT	-0.11203	0.06343	0.9535
$F^{-1}(0.8\|X=1)$	n=50	CPM	0.16403	2.32095	0.9651
		MLT	-0.16465	1.82775	0.9684
	n=100	CPM	0.00087	1.11914	0.9606
		MLT	-0.14446	0.96128	0.9631
	n=500	CPM	-0.09039	0.22339	0.9483
		MLT	-0.11637	0.20761	0.9556
	n=1000	CPM	-0.11838	0.12235	0.9377
		MLT	-0.13346	0.11813	0.9507
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-187.049	
		MLT		-170.972	
	n=100	CPM		-457.143	
		MLT		-423.316	
	n=500	CPM		-3060.906	
		MLT		-2860.515	
	n=1000	CPM		-6788.465	
		MLT		-6383.818	

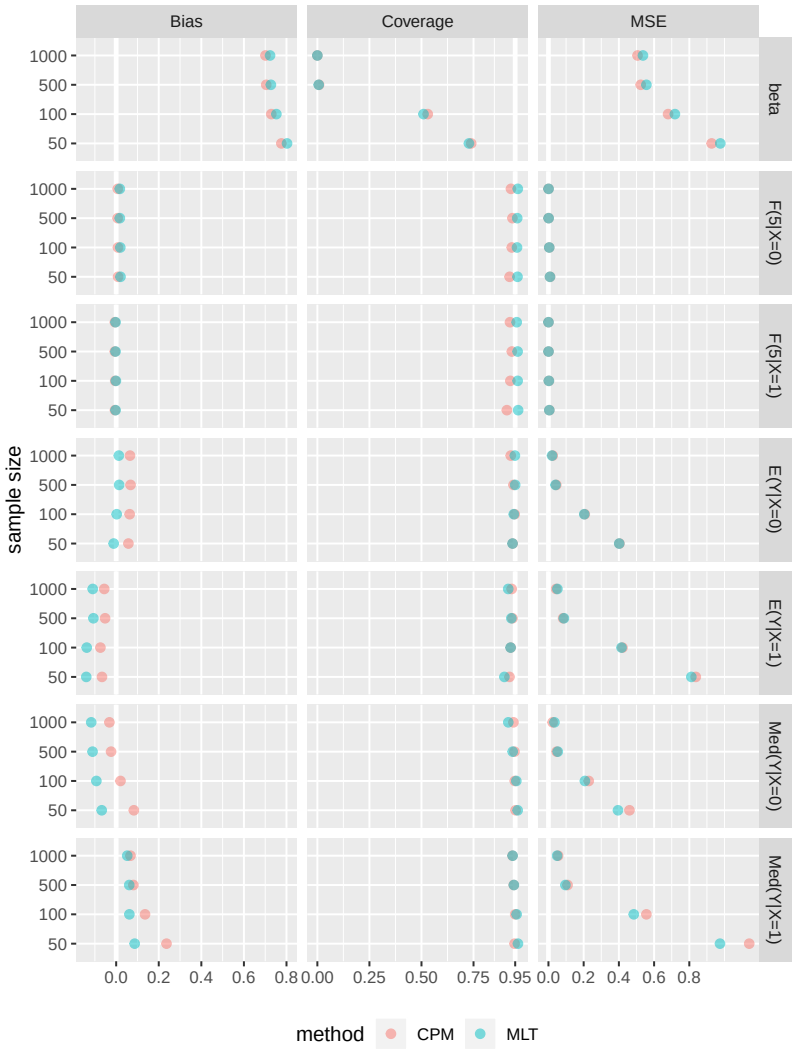

FIGURE S.12 Simulation results for misspecification: $\epsilon \sim N(0,1)$, link function = logit

TABLE S.16 Simulation results for misspecification: $\epsilon \sim Gompertz$, link function = logit

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	-0.14776	0.12024	0.9981
		MLT	-0.13106	0.11882	0.9982
	n=100	CPM	-0.15993	0.06967	0.9955
		MLT	-0.14478	0.06661	0.9960
	n=500	CPM	-0.17641	0.03944	0.9431
		MLT	-0.16223	0.03495	0.9582
	n=1000	CPM	-0.17795	0.0359	0.7844
		MLT	-0.16401	0.0313	0.8372
$F(5\|X=0)$	n=50	CPM	-0.00712	0.00600	0.9456
		MLT	-0.00075	0.00544	0.9710
	n=100	CPM	-0.00770	0.00299	0.9566
		MLT	-0.00299	0.00271	0.9704
	n=500	CPM	-0.00812	0.00066	0.9543
		MLT	-0.00475	0.00057	0.9466

TABLE S.16 Simulation results for misspecification: $\epsilon \sim$ *Gompertz*, link function = logit *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=1000	CPM	-0.00782	0.00035	0.9487
		MLT	-0.00474	0.00029	0.9263
$F(5\|X=1)$	n=50	CPM	-0.01680	0.01034	0.8866
		MLT	-0.01738	0.00985	0.9431
	n=100	CPM	-0.01989	0.00532	0.8992
		MLT	-0.02125	0.00513	0.9293
	n=500	CPM	-0.01898	0.00134	0.8722
		MLT	-0.02119	0.00138	0.8854
	n=1000	CPM	-0.01868	0.00084	0.8232
		MLT	-0.02107	0.00091	0.8371
$E(Y\|X=0)$	n=50	CPM	0.18398	0.30572	0.9585
		MLT	0.12510	0.29897	0.9555
	n=100	CPM	0.18823	0.16896	0.9557
		MLT	0.13496	0.15764	0.9562
	n=500	CPM	0.19011	0.06298	0.8481
		MLT	0.14102	0.04795	0.8986
	n=1000	CPM	0.19031	0.04959	0.7086
		MLT	0.14215	0.03422	0.8272
$E(Y\|X=1)$	n=50	CPM	-0.05325	0.69629	0.9053
		MLT	-0.05738	0.70941	0.9108
	n=100	CPM	-0.03053	0.34354	0.9155
		MLT	-0.03348	0.34924	0.9293
	n=500	CPM	-0.04014	0.06853	0.9212
		MLT	-0.04129	0.06964	0.9481
	n=1000	CPM	-0.03995	0.03540	0.9162
		MLT	-0.04083	0.03596	0.9448
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.12732	0.15789	0.9225
		MLT	0.14124	0.14994	0.9581
	n=100	CPM	0.03308	0.06982	0.9614
		MLT	0.11766	0.07672	0.9487
	n=500	CPM	-0.04725	0.01558	0.9157
		MLT	0.09770	0.02186	0.9203
	n=1000	CPM	-0.05758	0.00978	0.8788
		MLT	0.09731	0.01557	0.9107
$F^{-1}(0.1\|X=1)$	n=50	CPM	0.66103	1.09235	0.8809
		MLT	0.66107	0.92133	0.9197
	n=100	CPM	0.55765	0.62829	0.8317
		MLT	0.58788	0.57164	0.8837
	n=500	CPM	0.44938	0.26269	0.5118
		MLT	0.50103	0.29183	0.6847
	n=1000	CPM	0.43999	0.22455	0.2352
		MLT	0.49108	0.26145	0.45980
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.00281	0.42524	0.9624
		MLT	-0.16451	0.40993	0.9709
	n=100	CPM	-0.04526	0.21744	0.9609
		MLT	-0.18431	0.23166	0.9681
	n=500	CPM	-0.09203	0.05276	0.9389
		MLT	-0.20370	0.08403	0.9559

TABLE S.16 Simulation results for misspecification: $\epsilon \sim$ *Gompertz*, link function = logit *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=1000	CPM	-0.09889	0.03120	0.9151
		MLT	-0.20677	0.06359	0.9388
$F^{-1}(0.5\|X=1)$	n=50	CPM	0.09116	1.00208	0.9373
		MLT	-0.02631	0.92564	0.9497
	n=100	CPM	0.04523	0.49025	0.9321
		MLT	-0.01648	0.45395	0.9406
	n=500	CPM	-0.02448	0.09638	0.9327
		MLT	-0.04396	0.09079	0.9340
	n=1000	CPM	-0.03022	0.04889	0.9314
		MLT	-0.04658	0.04694	0.9305
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.34849	0.88943	0.9429
		MLT	0.16858	0.75153	0.9578
	n=100	CPM	0.32264	0.48415	0.9363
		MLT	0.20811	0.39554	0.9393
	n=500	CPM	0.30268	0.16950	0.8337
		MLT	0.23338	0.12507	0.7428
	n=1000	CPM	0.30186	0.13007	0.7098
		MLT	0.23475	0.09079	0.5032
$F^{-1}(0.8\|X=1)$	n=50	CPM	-0.22993	1.55672	0.9686
		MLT	-0.53588	1.45754	0.9479
	n=100	CPM	-0.31622	0.82751	0.9469
		MLT	-0.46692	0.81245	0.9224
	n=500	CPM	-0.40681	0.30843	0.8121
		MLT	-0.43961	0.31670	0.7970
	n=1000	CPM	-0.41821	0.24745	0.6539
		MLT	-0.43679	0.25499	0.6746
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-192.958	
		MLT		-179.062	
	n=100	CPM		-451.006	
		MLT		-420.752	
	n=500	CPM		-3064.242	
		MLT		-2883.105	
	n=1000	CPM		-6824.644	
		MLT		-6490.792	

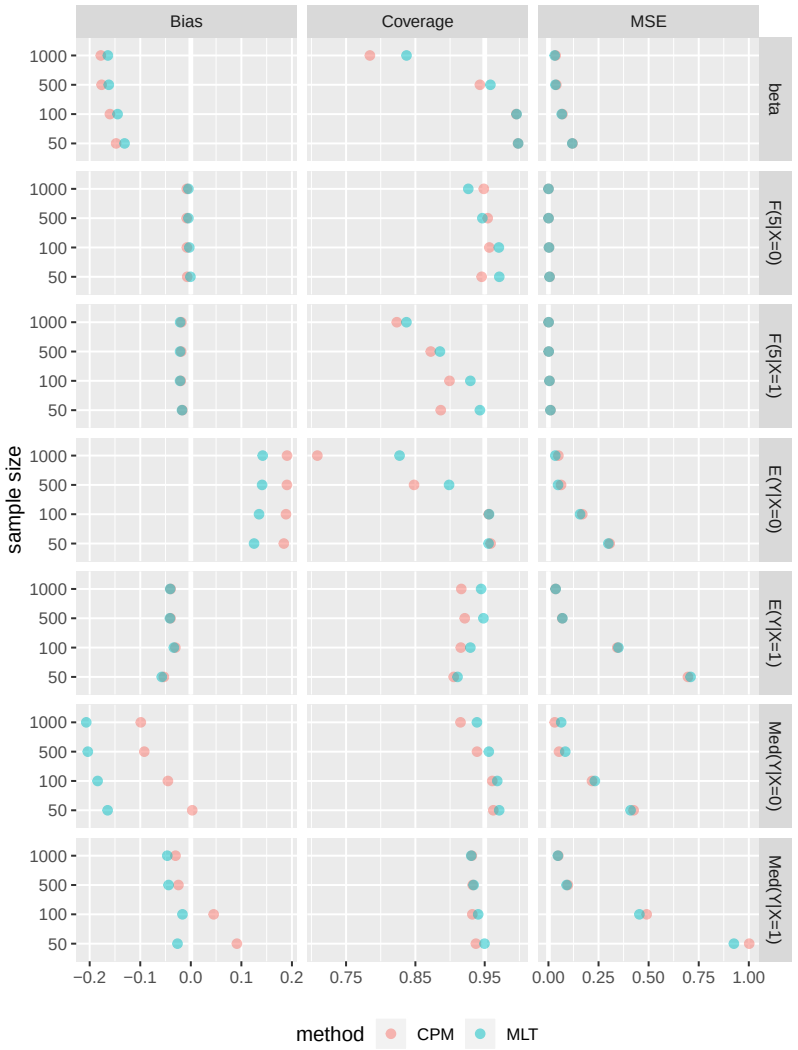

FIGURE S.13 Simulation results for misspecification: $\epsilon \sim Gompertz$, link function = logit

TABLE S.17 Simulation results for misspecification: $\epsilon \sim N(0,1)$, link function = cloglog

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.01065	0.13672	0.9213
		MLT	0.00937	0.13420	0.9219
	n=100	CPM	-0.03729	0.06188	0.9191
		MLT	-0.03800	0.06089	0.9166
	n=500	CPM	-0.07157	0.01580	0.8493
		MLT	-0.06990	0.01546	0.8549
	n=1000	CPM	-0.07619	0.01114	0.7670
		MLT	-0.07417	0.01083	0.7740
$F(5\|X=0)$	n=50	CPM	-0.03124	0.01061	0.8970
		MLT	-0.02419	0.00960	0.9373
	n=100	CPM	-0.03422	0.00594	0.8877
		MLT	-0.02594	0.00513	0.9087
	n=500	CPM	-0.03902	0.00246	0.7082
		MLT	-0.02971	0.00175	0.6405

TABLE S.17 Simulation results for misspecification: $\epsilon \sim N(0,1)$, link function = cloglog *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=1000	CPM	-0.03886	0.00197	0.5092
		MLT	-0.02974	0.00131	0.3618
$F(5\|X=1)$	n=50	CPM	0.04417	0.00644	0.9338
		MLT	0.04839	0.00657	0.8970
	n=100	CPM	0.04985	0.00471	0.8637
		MLT	0.05506	0.00514	0.7711
	n=500	CPM	0.05241	0.00317	0.2981
		MLT	0.05795	0.00376	0.1438
	n=1000	CPM	0.05334	0.00306	0.0435
		MLT	0.05871	0.00365	0.0067
$E(Y\|X=0)$	n=50	CPM	0.09018	0.44355	0.9035
		MLT	0.06796	0.44324	0.9001
	n=100	CPM	0.09747	0.22445	0.9089
		MLT	0.07646	0.22254	0.9086
	n=500	CPM	0.11348	0.05512	0.8811
		MLT	0.08916	0.05072	0.8922
	n=1000	CPM	0.11206	0.03387	0.8337
		MLT	0.08679	0.02914	0.8665
$E(Y\|X=1)$	n=50	CPM	-0.15323	0.85954	0.9283
		MLT	-0.18113	0.84165	0.9342
	n=100	CPM	-0.17479	0.44633	0.9344
		MLT	-0.19302	0.44309	0.9392
	n=500	CPM	-0.16722	0.10775	0.9243
		MLT	-0.16666	0.10637	0.9290
	n=1000	CPM	-0.17296	0.07006	0.8876
		MLT	-0.16891	0.06832	0.8934
$F^{-1}(0.1\|X=0)$	n=50	CPM	0.36060	0.34293	0.8858
		MLT	0.36352	0.31390	0.9906
	n=100	CPM	0.28030	0.18741	0.9584
		MLT	0.35684	0.21606	0.9918
	n=500	CPM	0.21304	0.06779	0.7473
		MLT	0.34896	0.13938	0.9623
	n=1000	CPM	0.20398	0.05289	0.5481
		MLT	0.34843	0.13023	0.9195
$F^{-1}(0.1\|X=1)$	n=50	CPM	-0.48997	0.59171	0.8319
		MLT	-0.43024	0.43626	0.7981
	n=100	CPM	-0.62493	0.55468	0.6362
		MLT	-0.52008	0.38478	0.5335
	n=500	CPM	-0.72610	0.55887	0.0260
		MLT	-0.58516	0.36313	0.0033
	n=1000	CPM	-0.73961	0.56236	0.0002
		MLT	-0.59653	0.36624	0.0000
$F^{-1}(0.5\|X=0)$	n=50	CPM	0.39705	0.63930	0.9183
		MLT	0.28004	0.47767	0.9378
	n=100	CPM	0.34717	0.35933	0.8866
		MLT	0.25974	0.26879	0.9032
	n=500	CPM	0.32349	0.15247	0.6437
		MLT	0.25407	0.10572	0.6779

TABLE S.17 Simulation results for misspecification: $\epsilon \sim N(0,1)$, link function = cloglog *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
$F^{-1}(0.5\|X=1)$	n=1000	CPM	0.31751	0.12413	0.4094
		MLT	0.24862	0.08228	0.4485
	n=50	CPM	0.10261	1.25842	0.9548
		MLT	-0.06703	1.10094	0.9640
	n=100	CPM	-0.07837	0.61030	0.9504
		MLT	-0.16823	0.56816	0.9514
	n=500	CPM	-0.20233	0.15407	0.9125
		MLT	-0.23678	0.15753	0.9053
	n=1000	CPM	-0.22376	0.10526	0.8536
		MLT	-0.25741	0.11619	0.8349
$F^{-1}(0.8\|X=0)$	n=50	CPM	0.15682	1.13436	0.9183
		MLT	-0.00113	1.02389	0.9306
	n=100	CPM	0.11847	0.55292	0.9228
		MLT	0.03498	0.50474	0.9287
	n=500	CPM	0.10465	0.11636	0.9125
		MLT	0.07027	0.10189	0.8749
	n=1000	CPM	0.10081	0.06350	0.8990
		MLT	0.06676	0.05266	0.7988
$F^{-1}(0.8\|X=1)$	n=50	CPM	0.62461	3.08822	0.9621
		MLT	0.43530	2.43644	0.9686
	n=100	CPM	0.45054	1.52173	0.9532
		MLT	0.40836	1.36050	0.9691
	n=500	CPM	0.33662	0.37300	0.9220
		MLT	0.33763	0.36804	0.9218
	n=1000	CPM	0.30132	0.22027	0.8873
		MLT	0.28898	0.21728	0.8539
Out-of-sample Log-likelihood				Value	
	n=50	CPM		-189.412	
		MLT		-173.534	
	n=100	CPM		-453.361	
		MLT		-420.154	
	n=500	CPM		-3061.024	
		MLT		-2860.836	
	n=1000	CPM		-6799.685	
		MLT		-6405.667	

TABLE S.18 Simulation results for mixture of discrete and continuous distribution: $H(y) = 0$ if $y \leq 0$ else $H(y) = \exp(y)$

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04205	0.11432	0.9429
		MLT	0.01687	0.11762	0.9395
		MLT(survival)	0.03716	0.11123	0.9567
	n=100	CPM	0.01670	0.05241	0.9455
		MLT	-0.01277	0.05390	0.9400
		MLT(survival)	0.01190	0.05124	0.9563

TABLE S.18 Simulation results for mixture of discrete and continuous distribution: $H(y) = \exp(-1)$ if $y \leq -1$ else $H(y) = \exp(y)$ *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=500	CPM	0.00437	0.00969	0.9530
		MLT	-0.02862	0.01072	0.9343
		MLT(survival)	-0.00258	0.00952	0.9609
	n=1000	CPM	0.00251	0.00488	0.9512
		MLT	-0.003180	0.00603	0.9141
		MLT(survival)	-0.00493	0.00483	0.9556
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-128.763	
		MLT		-142.921	
	n=100	CPM		-337.646	
		MLT		-357.800	
	n=500	CPM		-2337.830	
		MLT		-2373.479	
	n=1000	CPM		-4791.826	
		MLT		-5104.161	

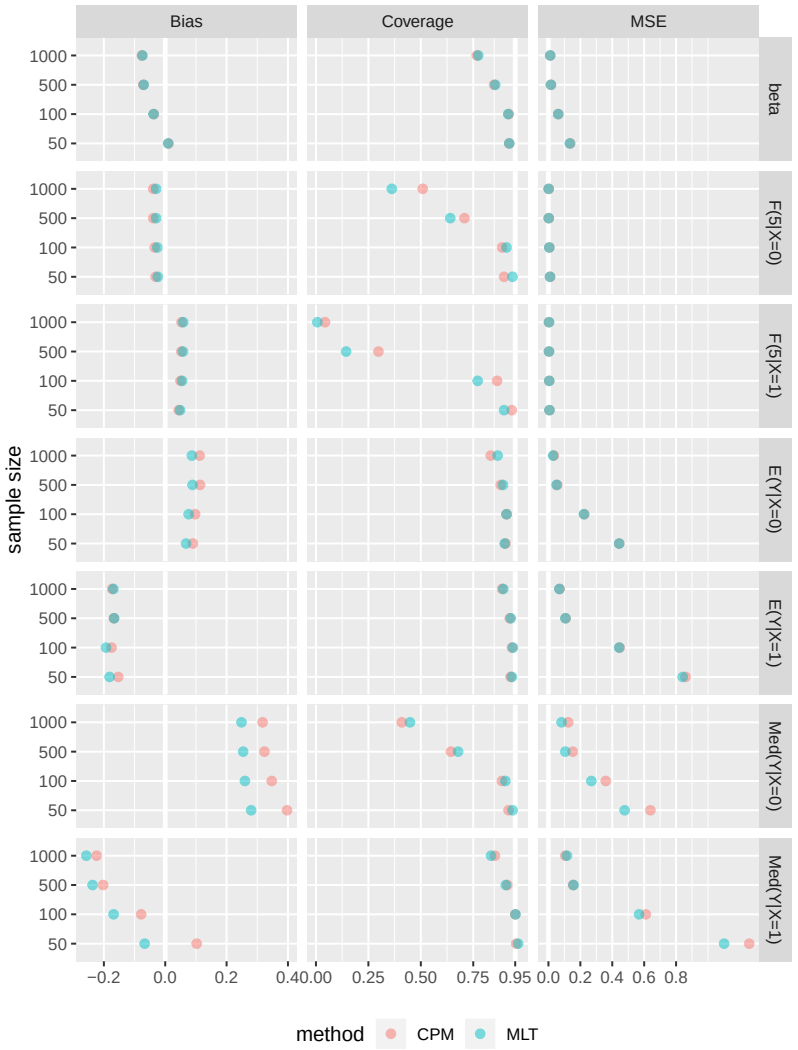

FIGURE S.14 Simulation results for misspecification: $\epsilon \sim N(0,1)$, link function = cloglog

TABLE S.19 Simulation results for discretizing continuous responses into 5 categories: 0, 3, 5, 7, 10

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04324	0.11425	0.9430
		MLT	0.01932	0.11494	0.9326
	n=100	CPM	0.01575	0.05235	0.9475
		MLT	-0.01004	0.05366	0.9348
	n=500	CPM	0.00364	0.00975	0.9535
		MLT	-0.02414	0.01057	0.9337
	n=1000	CPM	0.00230	0.00493	0.9521
		MLT	-0.02562	0.00572	0.9197
$E(Y\|X=0)$	n=50	CPM	-0.00607	0.36455	0.9354
		MLT	-0.00865	0.37464	0.8757
	n=100	CPM	0.00074	0.18621	0.9401
		MLT	0.00096	0.19135	0.8796
	n=500	CPM	0.00291	0.03688	0.9463
		MLT	0.00556	0.03784	0.8848

TABLE S.19 Simulation results for discretizing continuous responses into 5 categories: 0, 3, 5, 7, 10 *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
$E(Y\|X=1)$	n=1000	CPM	-0.00048	0.01852	0.9479
		MLT	0.00220	0.01901	0.8839
	n=50	CPM	-0.00184	0.37449	0.9341
		MLT	0.00423	0.38376	0.9025
	n=100	CPM	-0.00886	0.18647	0.9430
		MLT	-0.00569	0.19101	0.9007
	n=500	CPM	0.00482	0.03550	0.9519
		MLT	0.00594	0.03633	0.9044
	n=1000	CPM	0.00274	0.01832	0.9506
		MLT	0.00362	0.01875	0.9059
Out-of-sample Log-likelihood				Value	
	n=50	CPM		-75.732	
		MLT		-88.033	
	n=100	CPM		-159.409	
		MLT		-180.299	
	n=500	CPM		-762.421	
		MLT		-824.768	
	n=1000	CPM		-1494.791	
		MLT		-1648.610	

TABLE S.20 Simulation results for discretizing continuous responses into 10 categories: 0, 2, 3, 4, 5, 6, 7, 8, 10, 12

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04405	0.10969	0.9418
		MLT	0.03934	0.11182	0.9368
	n=100	CPM	0.01706	0.05014	0.9450
		MLT	0.01214	0.05170	0.9387
	n=500	CPM	0.00429	0.00926	0.9535
		MLT	-0.00096	0.00959	0.9443
	n=1000	CPM	0.00234	0.00470	0.9509
		MLT	-0.00285	0.00488	0.9435
$E(Y\|X=0)$	n=50	CPM	-0.00705	0.36468	0.9374
		MLT	-0.01228	0.36708	0.9005
	n=100	CPM	-0.00137	0.18439	0.9435
		MLT	-0.00375	0.18634	0.9068
	n=500	CPM	0.00167	0.03647	0.9485
		MLT	0.00190	0.03700	0.9154
	n=1000	CPM	-0.00078	0.01830	0.9484
		MLT	-0.00028	0.01855	0.9122
$E(Y\|X=1)$	n=50	CPM	-0.00380	0.44249	0.9357
		MLT	-0.00508	0.44741	0.9033
	n=100	CPM	-0.01078	0.21997	0.9435
		MLT	-0.01143	0.22248	0.9027
	n=500	CPM	0.00554	0.04194	0.9516
		MLT	0.00607	0.04242	0.9034

TABLE S.20 Simulation results for discretizing continuous responses into 10 categories: 0, 2, 3, 4, 5, 6, 7, 8, 10, 12 *(continued)*

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=1000	CPM	0.00183	0.02158	0.9481
		MLT	0.00262	0.02180	0.9034
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-110.317	
		MLT		-116.119	
	n=100	CPM		-227.991	
		MLT		-236.425	
	n=500	CPM		-1095.694	
		MLT		-1152.974	
	n=1000	CPM		-2171.780	
		MLT		-2283.256	

TABLE S.21 Simulation results for discretizing continuous responses into 20 categories: 0, 1, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 9, 10, 11, 12, 15

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04613	0.10813	0.9386
		MLT	0.05430	0.12089	0.9270
	n=100	CPM	0.01818	0.04923	0.9468
		MLT	0.02666	0.05560	0.9304
	n=500	CPM	0.00416	0.00908	0.9524
		MLT	0.01331	0.01039	0.9355
	n=1000	CPM	0.00226	0.00462	0.9515
		MLT	0.01148	0.00532	0.9322
$E(Y\|X=0)$	n=50	CPM	-0.02196	1.02983	0.9345
		MLT	-0.00975	1.05967	0.9080
	n=100	CPM	-0.00840	0.51849	0.9416
		MLT	0.00244	0.53628	0.9203
	n=500	CPM	0.00255	0.10262	0.9470
		MLT	0.01201	0.10619	0.9266
	n=1000	CPM	-0.00153	0.05143	0.9465
		MLT	0.00760	0.05314	0.9270
$E(Y\|X=1)$	n=50	CPM	0.00560	1.08025	0.9327
		MLT	-0.01249	1.11214	0.9158
	n=100	CPM	-0.01182	0.53736	0.9423
		MLT	-0.02783	0.55479	0.9183
	n=500	CPM	0.00970	0.10215	0.9501
		MLT	-0.00438	0.10553	0.9233
	n=1000	CPM	0.00412	0.05249	0.9508
		MLT	-0.00989	0.05449	0.9236
Out-of-sample Log-likelihood				Value	
	n=50	CPM		-142.016	
		MLT		-143.775	
	n=100	CPM		-300.009	
		MLT		-309.736	
	n=500	CPM		-1439.589	
		MLT		-1493.155	
	n=1000	CPM		-2841.223	
		MLT		-2964.074	

TABLE S.22 Simulation results for discretizing continuous responses into 50 categories: 0, 1, 1.4, 1.6, 1.9, 2.1, 2.3, 2.5, 2.7, 2.9, 3.1, 3.3, 3.5, 3.7, 3.8, 4.0, 4.2, 4.4, 4.6, 4.8, 5.0, 5.1, 5.3, 5.5 5.7, 5.9, 6.1, 6.4, 6.6, 6.8, 7.0, 7.3, 7.6, 7.8, 8.2, 8.5, 8.8, 9.0, 9.4, 9.8, 10.2, 10.6, 11.0, 11.5, 12.0, 13.0, 13.5, 14.5, 16.0, 18.0

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
β	n=50	CPM	0.04641	0.10784	0.9401
		MLT	0.05585	0.11921	0.9294
	n=100	CPM	0.01906	0.04905	0.9452
		MLT	0.02859	0.05482	0.9319
	n=500	CPM	0.00432	0.00901	0.9537
		MLT	0.01526	0.01027	0.9375

(continued)

Measure	Sample Size	Method	Bias	MSE	Coverage Rate
	n=1000	CPM	0.00237	0.00460	0.9507
		MLT	0.01344	0.00530	0.9326
$E(Y\|X=0)$	n=50	CPM	-0.05463	6.53464	0.9349
		MLT	0.02347	6.68861	0.9159
	n=100	CPM	-0.02541	3.28806	0.9409
		MLT	0.05314	3.39546	0.9254
	n=500	CPM	0.00495	0.64939	0.9477
		MLT	0.07668	0.67764	0.9298
	n=1000	CPM	-0.00568	0.32671	0.9468
		MLT	0.06408	0.34119	0.9307
$E(Y\|X=1)$	n=50	CPM	0.00706	6.62922	0.9341
		MLT	-0.39988	7.39843	0.9064
	n=100	CPM	-0.02841	3.29753	0.9423
		MLT	-0.39039	3.74305	0.9104
	n=500	CPM	0.02244	0.62732	0.9513
		MLT	-0.30736	0.76786	0.9096
	n=1000	CPM	0.00791	0.32268	0.9487
		MLT	-0.32699	0.44968	0.8822
				Value	
Out-of-sample Log-likelihood	n=50	CPM		-168.705	
		MLT		-164.335	
	n=100	CPM		-383.900	
		MLT		-382.161	
	n=500	CPM		-1920.775	
		MLT		-1947.334	
	n=1000	CPM		-3775.912	
		MLT		-3873.933	

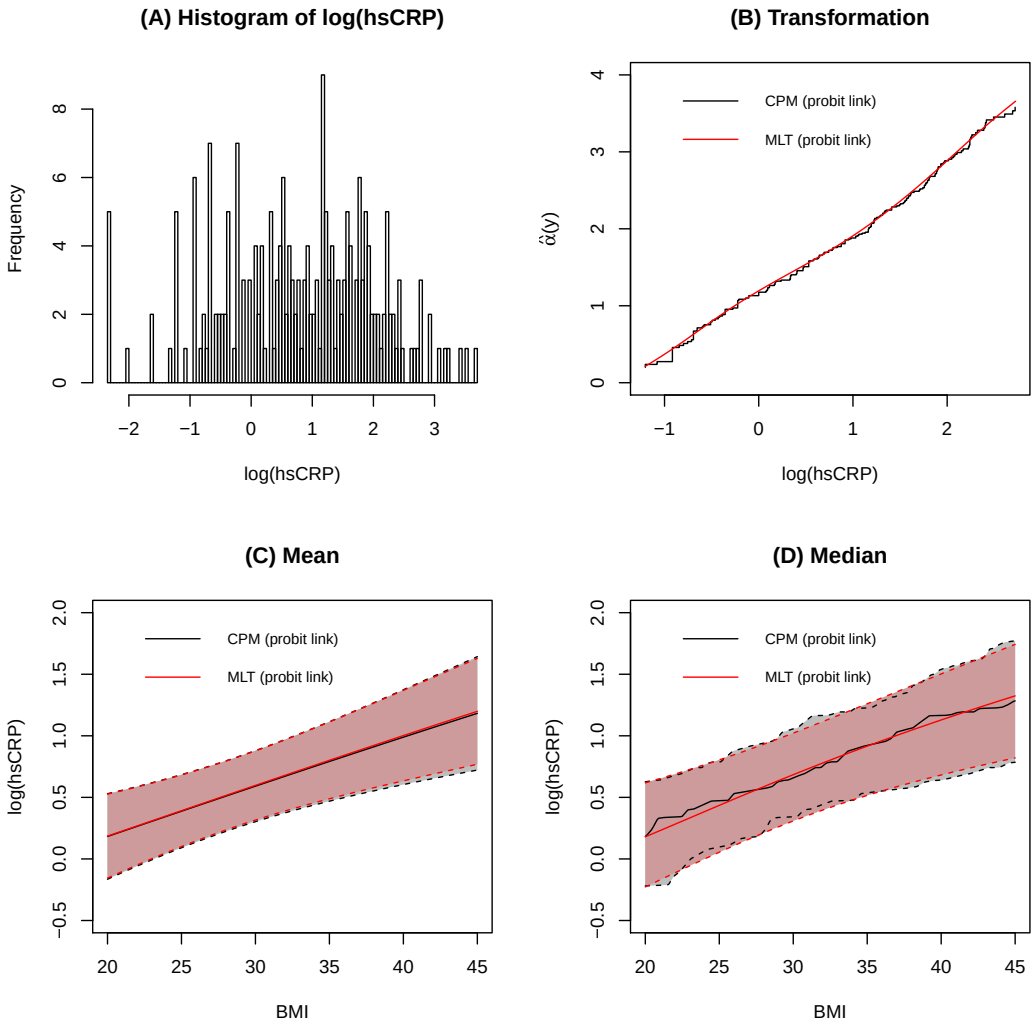

FIGURE S.15 Results for log-transformed hsCRP. A: The distribution of log-transformed hsCRP. B: The estimated transformation functions. C: The estimated conditional means and their confidence intervals. Other covariates are at their most frequent level or median level. D: The estimated conditional medians and their confidence intervals. Other covariates are at their most frequent level or median level.

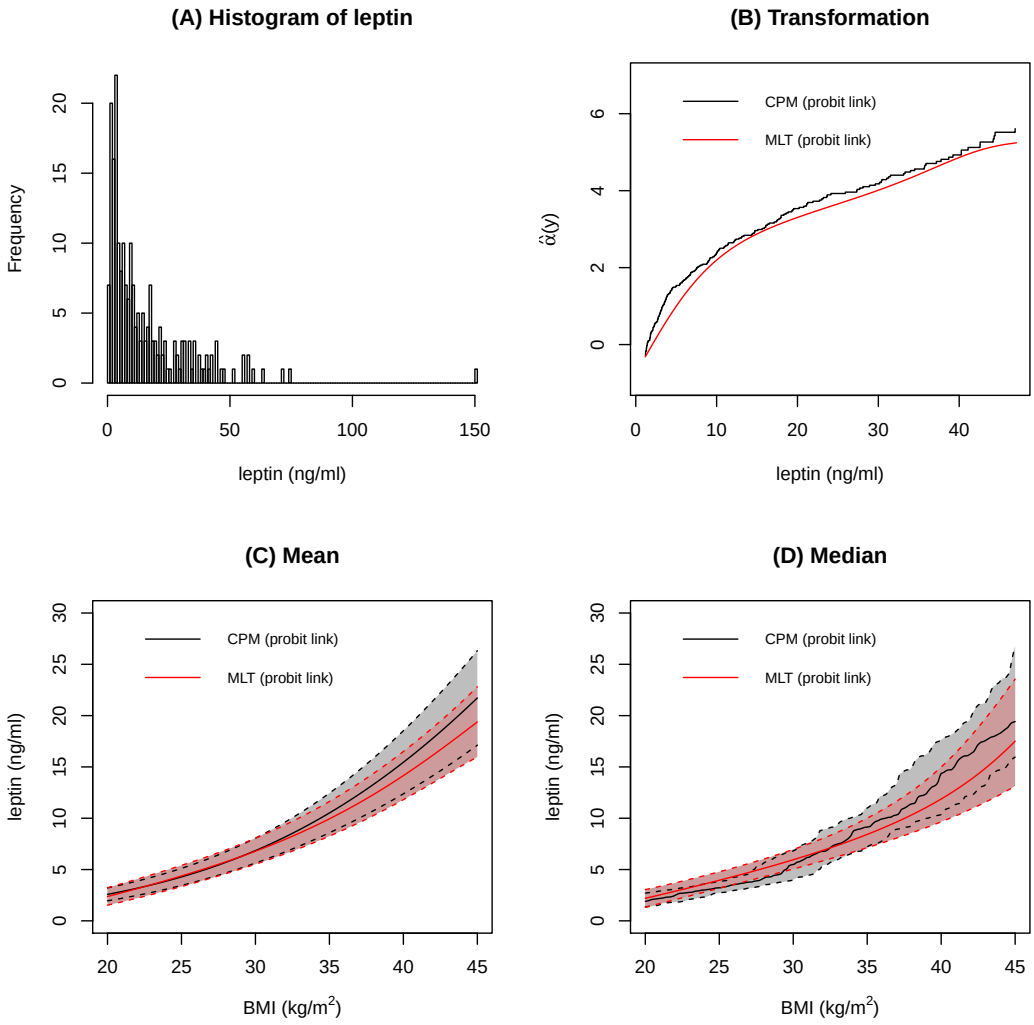

FIGURE S.16 Results for leptin. A: The distribution of leptin. B: The estimated transformation functions. C: The estimated conditional means and their confidence intervals. Other covariates are at their most frequent level or median level. D: The estimated conditional medians and their confidence intervals. Other covariates are at their most frequent level or median level.

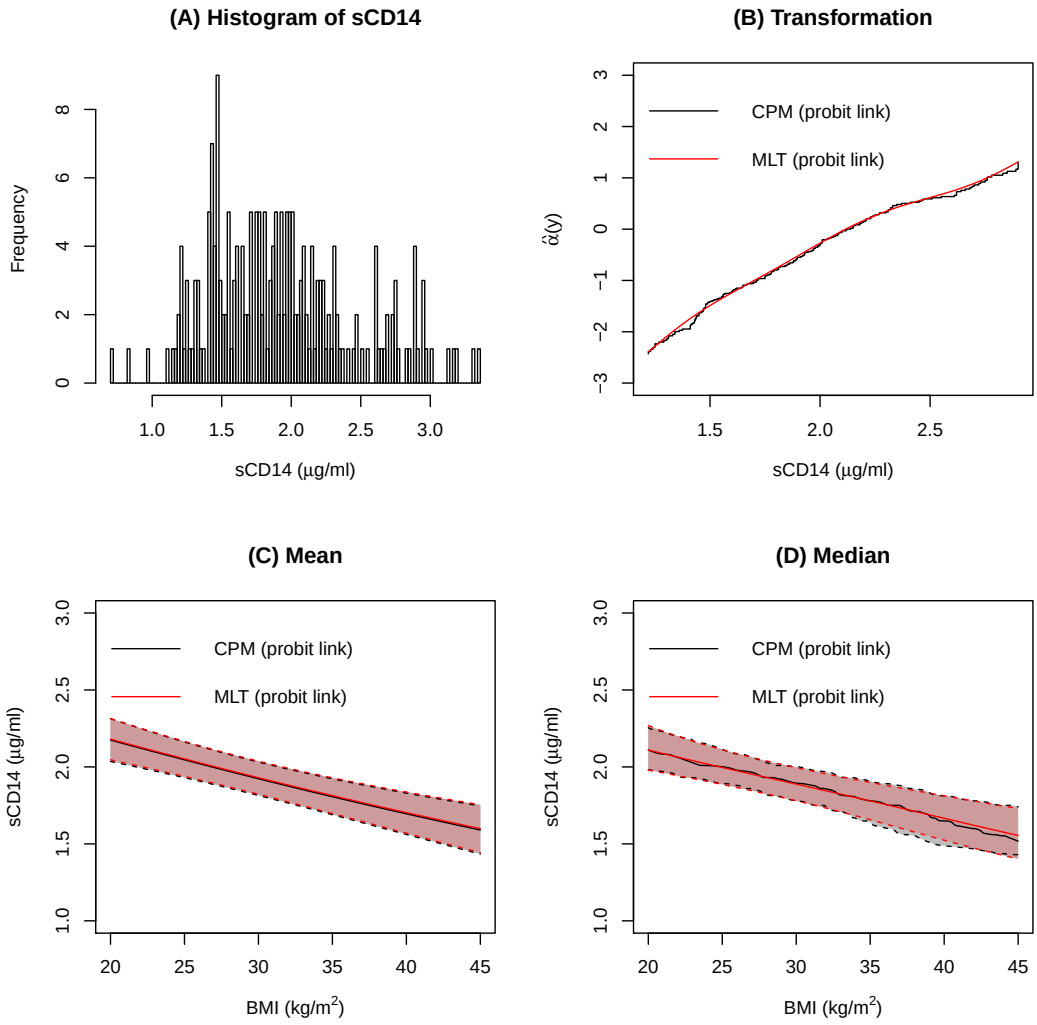

FIGURE S.17 Results for sCD14. A: The distribution of sCD14. B: The estimated transformation functions. C: The estimated conditional means and their confidence intervals. Other covariates are at their most frequent level or median level. D: The estimated conditional medians and their confidence intervals. Other covariates are at their most frequent level or median level.