

Simulation Tables

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Table 1: Model results for simulated data with $n = 1000$, $k = 4$, $p = 2$, $h = 3$, $r = 2$. 1000 iterations were run with a burn in of 250. Missingness mechanism was MAR and $P(\text{miss}) = 0$

Model Component	Parameter	Class 1		Class 2		Class 3	
		True	Est. (95% CrI)	True	Est. (95% CrI)	True	Est. (95% CrI)
MVSN Regression	β_{11}	2.04	-3.44 (-3.76, -3.11)	5.64	0.82 (0.45, 1.19)	9.92	1.3 (1.06, 1.54)
	β_{21}	0.42	-1.96 (-2.13, -1.8)	4.15	-0.27 (-0.43, -0.08)	8.28	3.28 (3.16, 3.4)
	β_{31}	2.35	-3.41 (-3.74, -3.08)	4.46	0.62 (0.23, 0.94)	9.41	1.82 (1.61, 2.07)
	β_{41}	0.81	-3.25 (-3.42, -3.09)	5.53	-0.6 (-0.76, -0.42)	8.76	2.55 (2.45, 2.67)
	β_{12}	1.01	-3.44 (-3.71, -3.18)	4.49	0.4 (0.04, 0.72)	8.7	1.54 (1.31, 1.77)
	β_{22}	3.24	-2.62 (-2.76, -2.5)	0.98	-0.34 (-0.51, -0.18)	9.3	2.08 (1.96, 2.18)
	β_{32}	-0.42	-3.29 (-3.59, -2.97)	4	0.26 (-0.1, 0.62)	9.58	0.72 (0.51, 0.94)
	β_{42}	0.33	-2.65 (-2.8, -2.49)	2.06	0.16 (-0.01, 0.32)	8.17	3.35 (3.24, 3.46)
	σ_{11}	9.59	1.48 (1.21, 1.83)	13.23	1.25 (0.95, 1.68)	7.05	1.74 (1.53, 1.99)
	σ_{12}	-0.63	0.9 (0.69, 1.22)	10.54	0.61 (0.4, 0.95)	6.43	1.28 (1.08, 1.5)
	σ_{13}	0.91	0.48 (0.3, 0.71)	3	0.3 (0.1, 0.56)	0.11	0.93 (0.75, 1.15)
	σ_{14}	6.03	0.46 (0.28, 0.69)	8.56	0.1 (-0.1, 0.34)	6.86	0.78 (0.61, 0.97)
	σ_{22}	8.71	1.42 (1.16, 1.74)	11.39	1.08 (0.81, 1.42)	12.89	1.71 (1.47, 1.95)
	σ_{23}	4.29	0.77 (0.57, 1.01)	3.81	0.66 (0.44, 0.94)	-1.66	1.18 (0.98, 1.38)
	σ_{24}	2.67	0.63 (0.44, 0.88)	9.52	0.27 (0.06, 0.5)	3.46	0.94 (0.76, 1.16)
	σ_{33}	6.55	1.12 (0.91, 1.37)	8.9	0.97 (0.75, 1.3)	1.7	1.67 (1.47, 1.9)
	σ_{34}	5.65	0.71 (0.54, 0.95)	3.8	0.51 (0.33, 0.77)	2.12	1.17 (1, 1.38)
	σ_{44}	7.8	1.28 (1.07, 1.56)	13.64	1.05 (0.81, 1.4)	14.32	1.65 (1.44, 1.89)
	ψ_1	-2	0 (0, 0)	8	0 (0, 0)	-24	0 (0, 0)
	ψ_2	-2	0 (0, 0)	8	0 (0, 0)	-24	0 (0, 0)
	ψ_3	-2	0 (0, 0)	8	0 (0, 0)	-24	0 (0, 0)
	ψ_4	-2	0 (0, 0)	8	0 (0, 0)	-24	0 (0, 0)
Multinom.	δ_{11}	0.61	0.45 (0.22, 0.68)	0.61	0.45 (0.22, 0.68)	0.61	0.45 (0.22, 0.68)
	δ_{12}	0.24	0.4 (0.04, 0.73)	0.24	0.4 (0.04, 0.73)	0.24	0.4 (0.04, 0.73)
	δ_{21}	0.76	0.6 (0.38, 0.83)	0.76	0.6 (0.38, 0.83)	0.76	0.6 (0.38, 0.83)
	δ_{22}	0.31	0.42 (0.12, 0.77)	0.31	0.42 (0.12, 0.77)	0.31	0.42 (0.12, 0.77)
Clustering	π_l	0.19	0.26 (0.23, 0.29)	0.37	0.18 (0.15, 0.21)	0.44	0.56 (0.53, 0.6)