

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}	-2.57	-2.74 (-3.12, -2.42)	-0.39	-0.68 (-1.04, 0.77)	2.6	1.19 (0.56, 2.88)
	β_{21}	-2.95	-2.97 (-3.09, -2.85)	-0.19	-0.22 (-0.33, -0.11)	2.64	2.66 (2.47, 2.82)
	β_{31}	-2.58	-2.8 (-3.18, -2.46)	0.17	0.4 (-0.14, 0.85)	3.58	3.09 (2.36, 3.7)
	β_{41}	-1.65	-1.61 (-1.72, -1.51)	-0.02	0.01 (-0.11, 0.12)	3.96	4.03 (3.85, 4.21)
	β_{12}	-2.78	-3.03 (-3.4, -2.69)	-0.08	-0.05 (-0.51, 0.67)	2.77	2.29 (1.5, 2.97)
	β_{22}	-3.29	-3.23 (-3.34, -3.13)	-0.26	-0.23 (-0.35, -0.12)	2.11	2.22 (2.04, 2.38)
	β_{32}	-3.78	-4.18 (-4.5, -3.87)	0.79	0.38 (0, 1.67)	2.47	1.72 (1.02, 2.86)
	β_{42}	-3.2	-3.17 (-3.29, -3.05)	-0.18	-0.16 (-0.27, -0.05)	3.11	3.24 (3.07, 3.4)
	σ_{11}	1	1.13 (0.91, 1.35)	1	0.87 (0.59, 1.14)	1	1.52 (1.05, 2.02)
	σ_{12}	0.5	0.07 (-0.07, 0.23)	0.5	-0.04 (-0.21, 0.15)	0.5	0.71 (0.15, 1.04)
	σ_{13}	0.25	0.37 (0.22, 0.53)	0.25	0.2 (0.02, 0.37)	0.25	0.97 (0.34, 1.31)
	σ_{14}	0.12	0.86 (0.69, 1.04)	0.12	0.55 (0.34, 0.79)	0.12	1.36 (0.73, 1.78)
	σ_{22}	1	1.04 (0.83, 1.24)	1	1.05 (0.84, 1.22)	1	1.76 (1.29, 2.19)
	σ_{23}	0.5	1.01 (0.81, 1.21)	0.5	0.98 (0.75, 1.16)	0.5	1.64 (1.14, 2.06)
	σ_{24}	0.25	0.69 (0.53, 0.87)	0.25	0.57 (0.34, 0.76)	0.25	1.24 (0.72, 1.6)
	σ_{33}	1	1.09 (0.88, 1.29)	1	1 (0.76, 1.21)	1	1.65 (1.11, 2.07)
	σ_{34}	0.5	0.93 (0.77, 1.13)	0.5	0.74 (0.47, 0.97)	0.5	1.43 (0.85, 1.82)
	σ_{44}	1	1.2 (1.03, 1.4)	1	0.85 (0.52, 1.15)	1	1.67 (0.96, 2.1)
	ψ_1	-0.67	-0.6 (-0.97, -0.15)	0.33	0.66 (-1.17, 1.08)	-1.33	0.6 (-1.53, 1.35)
	ψ_2	-0.67	-0.45 (-0.87, -0.01)	0.33	0.14 (-0.42, 0.84)	-1.33	-0.6 (-1.36, 0.32)
	ψ_3	-0.67	-0.43 (-0.84, 0.02)	0.33	0.36 (-0.51, 0.95)	-1.33	-0.56 (-1.39, 0.43)
	ψ_4	-0.67	-0.26 (-0.64, 0.14)	0.33	0.85 (-0.72, 1.36)	-1.33	-0.19 (-1.62, 0.65)
Multinom.	δ_{11}	0.23	0.29 (0.1, 0.49)	0.23	0.29 (0.1, 0.49)	0.23	0.29 (0.1, 0.49)
	δ_{12}	-0.91	-0.88 (-1.16, -0.6)	-0.91	-0.88 (-1.16, -0.6)	-0.91	-0.88 (-1.16, -0.6)
	δ_{21}	-0.68	-0.48 (-0.72, -0.24)	-0.68	-0.48 (-0.72, -0.24)	-0.68	-0.48 (-0.72, -0.24)
	δ_{22}	0.23	0.1 (-0.2, 0.39)	0.23	0.1 (-0.2, 0.39)	0.23	0.1 (-0.2, 0.39)
Clustering	π_l	0.39	0.4 (0.39, 0.41)	0.35	0.35 (0.34, 0.35)	0.26	0.26 (0.24, 0.26)