

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}	-2.69	-3.09 (-3.55, -2.45)	0.42	1.06 (0.33, 1.52)	3.55	2.62 (1.91, 3.18)
	β_{21}	-2.97	-3.14 (-3.24, -3.05)	-0.48	-0.5 (-0.6, -0.4)	3.15	3.09 (3, 3.19)
	β_{31}	-3.57	-4.42 (-4.86, -3.51)	-0.07	0.6 (-0.36, 1.04)	3	1.99 (1.35, 2.61)
	β_{41}	-3.45	-3.56 (-3.67, -3.46)	0.14	0.16 (0.05, 0.27)	3.42	3.37 (3.27, 3.47)
	β_{12}	-3.17	-3.46 (-4.02, -2.86)	0.29	0.91 (0.19, 1.38)	3.49	2.44 (1.79, 3.25)
	β_{22}	-2.46	-2.64 (-2.73, -2.54)	0.2	0.09 (0, 0.19)	2.79	2.8 (2.7, 2.9)
	β_{32}	-3.58	-3.97 (-4.47, -3.57)	0.38	1.07 (0.04, 1.5)	2.84	1.87 (1.21, 2.64)
	β_{42}	-3.01	-3.03 (-3.12, -2.93)	0.17	0.16 (0.06, 0.27)	3.26	3.26 (3.16, 3.35)
	σ_{11}	1	1.03 (0.78, 1.19)	1	0.96 (0.68, 1.16)	1	1.4 (1.15, 1.6)
	σ_{12}	0.35	0.46 (0.31, 0.62)	0.69	0.73 (0.47, 0.92)	0.67	1.12 (0.87, 1.31)
	σ_{13}	0.98	1.02 (0.76, 1.19)	0.5	0.43 (0.16, 0.6)	-0.17	0.38 (0.17, 0.56)
	σ_{14}	0.32	0.39 (0.27, 0.53)	0.64	0.68 (0.41, 0.88)	0.31	0.77 (0.55, 0.95)
	σ_{22}	1	1.25 (0.99, 1.49)	1	1.06 (0.75, 1.33)	1	1.5 (1.21, 1.71)
	σ_{23}	0.22	0.33 (0.18, 0.49)	0.4	0.41 (0.16, 0.6)	0.13	0.73 (0.51, 0.92)
	σ_{24}	0.26	0.51 (0.35, 0.67)	0.97	1.03 (0.71, 1.29)	0.19	0.72 (0.51, 0.91)
	σ_{33}	1	1.04 (0.77, 1.22)	1	0.89 (0.58, 1.09)	1	1.54 (1.22, 1.77)
	σ_{34}	0.29	0.35 (0.22, 0.49)	0.58	0.57 (0.31, 0.78)	0.83	1.31 (0.99, 1.53)
	σ_{44}	1	1.06 (0.9, 1.23)	1	1.06 (0.74, 1.32)	1	1.42 (1.07, 1.64)
	ψ_1	-0.67	-0.05 (-0.85, 0.53)	0.33	-0.44 (-1, 0.44)	-1.33	-0.2 (-0.89, 0.7)
	ψ_2	-0.67	0.4 (-0.73, 0.94)	0.33	-0.53 (-1.04, 0.68)	-1.33	-0.14 (-0.92, 0.69)
	ψ_3	-0.67	-0.18 (-0.92, 0.53)	0.33	-0.4 (-0.99, 0.48)	-1.33	-0.01 (-1.02, 0.8)
	ψ_4	-0.67	-0.19 (-0.68, 0.44)	0.33	-0.55 (-1.04, 0.73)	-1.33	-0.1 (-1.05, 0.74)
Multinom.	δ_{11}	-0.67	-0.62 (-0.83, -0.42)	-0.67	-0.62 (-0.83, -0.42)	-0.67	-0.62 (-0.83, -0.42)
	δ_{12}	0.94	0.95 (0.68, 1.23)	0.94	0.95 (0.68, 1.23)	0.94	0.95 (0.68, 1.23)
	δ_{21}	0.34	0.34 (0.19, 0.5)	0.34	0.34 (0.19, 0.5)	0.34	0.34 (0.19, 0.5)
	δ_{22}	-0.17	-0.11 (-0.35, 0.12)	-0.17	-0.11 (-0.35, 0.12)	-0.17	-0.11 (-0.35, 0.12)
Clustering	π_l	0.31	0.31 (0.31, 0.32)	0.28	0.27 (0.26, 0.28)	0.41	0.42 (0.41, 0.42)