

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}	0.87	-5 (-5.22, -4.76)	3.04	10.92 (10.68, 11.16)	6.96	-9.83 (-10.2, -9.42)
	β_{21}	2.24	-3.99 (-4.09, -3.88)	3.08	12.02 (11.88, 12.16)	8.35	-10.84 (-11.05, -10.63)
	β_{31}	2.47	-2.91 (-3.12, -2.69)	4.08	13 (12.73, 13.29)	9.73	-11.89 (-12.32, -11.45)
	β_{41}	-0.18	-2 (-2.1, -1.91)	3.71	13.98 (13.81, 14.12)	9.16	-12.8 (-13.05, -12.55)
	β_{12}	0.11	4.94 (4.71, 5.17)	3.97	1.98 (1.77, 2.18)	8.85	-1.94 (-2.25, -1.62)
	β_{22}	2.09	5 (4.88, 5.1)	3.8	2 (1.9, 2.1)	9.12	-1.83 (-2, -1.66)
	β_{32}	0.13	4.88 (4.67, 5.11)	2.82	1.94 (1.74, 2.16)	8.58	-1.98 (-2.28, -1.69)
	β_{42}	1.23	4.97 (4.86, 5.08)	5.05	1.92 (1.82, 2.02)	6.26	-2 (-2.14, -1.86)
	Ω_{11}	23.5	1.04 (0.89, 1.24)	77.17	1.63 (1.42, 1.89)	591.27	2.14 (1.77, 2.67)
	Ω_{12}	10.83	0.49 (0.37, 0.62)	79.89	1.24 (1.04, 1.49)	580.88	2 (1.59, 2.6)
	Ω_{13}	13.41	0.08 (-0.03, 0.2)	69.23	0.33 (0.2, 0.47)	584.5	0.53 (0.29, 0.82)
	Ω_{14}	6.25	-0.02 (-0.15, 0.09)	62.8	0.17 (0.04, 0.31)	575.71	0.38 (0.18, 0.64)
	Ω_{22}	9.97	0.99 (0.86, 1.16)	88.8	1.95 (1.71, 2.23)	578.02	2.9 (2.38, 3.63)
	Ω_{23}	5.44	0.47 (0.34, 0.61)	75.11	0.64 (0.5, 0.8)	579.01	0.92 (0.61, 1.28)
	Ω_{24}	5.72	0.13 (0.01, 0.25)	63.9	0.38 (0.24, 0.54)	575.04	0.64 (0.4, 0.95)
	Ω_{33}	14.61	1.19 (1.03, 1.4)	71.41	1.01 (0.88, 1.16)	589.23	1.2 (0.97, 1.49)
	Ω_{34}	7.75	0.65 (0.52, 0.81)	65.11	0.51 (0.41, 0.64)	576.78	0.63 (0.47, 0.82)
	Ω_{44}	10.53	1.12 (0.97, 1.34)	64.59	0.99 (0.86, 1.14)	578.51	1.01 (0.82, 1.23)
	α_1	0.68	0 (0, 0)	24.14	0 (0, 0)	18.65	0 (0, 0)
	α_2	-1.01	0 (0, 0)	9.6	0 (0, 0)	-70.21	0 (0, 0)
	α_3	-0.7	0 (0, 0)	-51.02	0 (0, 0)	5.37	0 (0, 0)
	α_4	-0.2	0 (0, 0)	138.62	0 (0, 0)	-29.34	0 (0, 0)
Multinom.	δ_{11}	0	0.09 (-0.12, 0.32)	0	0.09 (-0.12, 0.32)	0	0.09 (-0.12, 0.32)
	δ_{12}	0.86	0.79 (0.49, 1.08)	0.86	0.79 (0.49, 1.08)	0.86	0.79 (0.49, 1.08)
	δ_{21}	-0.01	0.03 (-0.17, 0.26)	-0.01	0.03 (-0.17, 0.26)	-0.01	0.03 (-0.17, 0.26)
	δ_{22}	-0.66	-0.59 (-0.95, -0.21)	-0.66	-0.59 (-0.95, -0.21)	-0.66	-0.59 (-0.95, -0.21)
Clustering	π_l	0.28	0.37 (0.34, 0.4)	0.48	0.42 (0.39, 0.45)	0.23	0.21 (0.18, 0.23)