

# Simulation Tables

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Table 1: Model results for simulated data with  $n = 1500$ ,  $k = 4$ ,  $p = 1$ ,  $h = 3$ ,  $v = 1$ . 5000 iterations were run with a burn in of 1000. 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	$\beta_0$	-3.21	-3.34 (-3.8, -2.99)	-0.32	-0.33 (-0.48, -0.14)	3.35	3.33 (3.22, 3.44)
	$\beta_1$	-3.08	-3.3 (-3.73, -2.87)	-0.75	-0.72 (-0.87, -0.52)	2.6	2.5 (2.39, 2.6)
	$\beta_2$	-2.97	-3.18 (-3.58, -2.76)	-0.45	-0.44 (-0.58, -0.26)	3.43	3.42 (3.31, 3.53)
	$\beta_3$	-2.91	-3.08 (-3.49, -2.68)	-0.66	-0.68 (-0.83, -0.48)	3.04	2.98 (2.87, 3.09)
	$\sigma_{11}$	1	0.95 (0.84, 1.02)	1	1 (0.89, 1.11)	1	1.06 (0.97, 1.16)
	$\sigma_{12}$	0.74	0.7 (0.59, 0.76)	0.68	0.68 (0.59, 0.78)	-0.45	-0.41 (-0.47, -0.36)
	$\sigma_{13}$	0.74	0.69 (0.58, 0.75)	-0.16	-0.13 (-0.2, -0.06)	0.82	0.88 (0.79, 0.97)
	$\sigma_{14}$	0.98	0.93 (0.81, 0.99)	0.64	0.65 (0.56, 0.75)	0.7	0.75 (0.67, 0.83)
	$\sigma_{22}$	1	0.94 (0.82, 1.01)	1	1.03 (0.93, 1.13)	1	1.07 (0.99, 1.16)
	$\sigma_{23}$	0.83	0.79 (0.67, 0.85)	-0.43	-0.4 (-0.46, -0.34)	-0.66	-0.62 (-0.68, -0.57)
	$\sigma_{24}$	0.81	0.77 (0.66, 0.83)	0.63	0.67 (0.58, 0.77)	0.01	0.07 (0.01, 0.13)
	$\sigma_{33}$	1	0.96 (0.84, 1.03)	1	1 (0.91, 1.09)	1	1.05 (0.96, 1.15)
	$\sigma_{34}$	0.85	0.81 (0.69, 0.87)	0.15	0.15 (0.08, 0.23)	0.59	0.64 (0.56, 0.72)
	$\sigma_{44}$	1	0.95 (0.83, 1.01)	1	1.02 (0.92, 1.13)	1	1.06 (0.97, 1.15)
	$\psi_1$	-0.33	-0.17 (-0.62, 0.39)	0.67	0.7 (0.46, 0.89)	-1	-1.01 (-1.13, -0.87)
	$\psi_2$	-0.33	-0.08 (-0.61, 0.44)	0.67	0.63 (0.38, 0.82)	-1	-0.88 (-1.01, -0.75)
	$\psi_3$	-0.33	-0.08 (-0.61, 0.39)	0.67	0.64 (0.43, 0.82)	-1	-1.01 (-1.14, -0.88)
	$\psi_4$	-0.33	-0.13 (-0.63, 0.37)	0.67	0.7 (0.45, 0.89)	-1	-0.94 (-1.07, -0.81)
Multinom.	$\delta_{11}$	0.9	0.88 (0.81, 0.95)	0.9	0.88 (0.81, 0.95)	0.9	0.88 (0.81, 0.95)
	$\delta_{12}$	0.23	0.22 (0.14, 0.3)	0.23	0.22 (0.14, 0.3)	0.23	0.22 (0.14, 0.3)
Clustering	$\pi_l$	0.28	0.28 (0.27, 0.28)	0.42	0.43 (0.42, 0.43)	0.3	0.3 (0.3, 0.3)