

# 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	$\beta_{11}$	-2.13	-2.78 (-3.35, -2.12)	0.36	0.49 (-0.08, 1.25)	2.98	1.95 (1.21, 2.87)
	$\beta_{21}$	-2.94	-2.91 (-3.07, -2.75)	-0.06	-0.11 (-0.23, 0.01)	3.61	3.5 (3.3, 3.66)
	$\beta_{31}$	-2.05	-2.88 (-3.4, -2.03)	-0.31	-0.05 (-0.73, 0.58)	3.22	2.62 (1.5, 3.38)
	$\beta_{41}$	-3.06	-3.04 (-3.18, -2.89)	-0.87	-0.9 (-1.01, -0.79)	3.71	3.62 (3.39, 3.8)
	$\beta_{12}$	-3.08	-3.44 (-3.92, -2.94)	-0.71	-0.27 (-0.9, 0.23)	3.36	2.71 (1.55, 3.59)
	$\beta_{22}$	-3.47	-3.36 (-3.51, -3.21)	0.4	0.27 (0.15, 0.4)	3.35	3.19 (2.97, 3.38)
	$\beta_{32}$	-2.16	-2.35 (-3.11, -1.87)	-0.06	0.37 (-0.33, 0.94)	3.06	2.47 (1.37, 3.21)
	$\beta_{42}$	-3.05	-2.99 (-3.13, -2.85)	-0.33	-0.41 (-0.52, -0.29)	3.01	2.89 (2.68, 3.08)
	$\sigma_{11}$	1	1.41 (1.1, 1.75)	1	1.06 (0.76, 1.38)	1	1.44 (0.95, 2.09)
	$\sigma_{12}$	0.5	0.78 (0.51, 1.08)	0.5	0.45 (0.2, 0.69)	0.5	1.2 (0.71, 1.88)
	$\sigma_{13}$	0.25	0.59 (0.38, 0.86)	0.25	0.28 (0.05, 0.54)	0.25	1.01 (0.53, 1.72)
	$\sigma_{14}$	0.12	0.39 (0.18, 0.64)	0.12	0.16 (-0.04, 0.4)	0.12	0.82 (0.37, 1.42)
	$\sigma_{22}$	1	1.15 (0.8, 1.48)	1	0.86 (0.53, 1.15)	1	1.68 (1.15, 2.52)
	$\sigma_{23}$	0.5	0.75 (0.52, 1)	0.5	0.41 (0.13, 0.67)	0.5	1.33 (0.82, 2.13)
	$\sigma_{24}$	0.25	0.5 (0.26, 0.76)	0.25	0.18 (-0.05, 0.41)	0.25	1.04 (0.55, 1.73)
	$\sigma_{33}$	1	1.18 (0.91, 1.49)	1	0.93 (0.67, 1.29)	1	1.89 (1.34, 2.83)
	$\sigma_{34}$	0.5	0.75 (0.51, 1.01)	0.5	0.44 (0.2, 0.74)	0.5	1.32 (0.8, 2.08)
	$\sigma_{44}$	1	1.17 (0.87, 1.47)	1	0.92 (0.61, 1.22)	1	1.68 (1.1, 2.37)
	$\psi_1$	-0.67	0.12 (-0.7, 0.8)	0.33	0.04 (-0.97, 0.75)	-1.33	-0.29 (-1.73, 0.66)
	$\psi_2$	-0.67	0.39 (-0.68, 1.01)	0.33	-0.04 (-0.89, 0.82)	-1.33	-0.71 (-1.94, 0.7)
	$\psi_3$	-0.67	-0.26 (-0.87, 0.3)	0.33	-0.18 (-0.81, 0.61)	-1.33	-0.6 (-2.02, 0.84)
	$\psi_4$	-0.67	-0.44 (-1.01, 0.52)	0.33	-0.17 (-0.91, 0.71)	-1.33	-0.67 (-1.85, 0.69)
Multinom.	$\delta_{11}$	0.55	0.42 (0.23, 0.62)	0.55	0.42 (0.23, 0.62)	0.55	0.42 (0.23, 0.62)
	$\delta_{12}$	-0.51	-0.52 (-0.82, -0.23)	-0.51	-0.52 (-0.82, -0.23)	-0.51	-0.52 (-0.82, -0.23)
	$\delta_{21}$	-0.29	-0.1 (-0.32, 0.12)	-0.29	-0.1 (-0.32, 0.12)	-0.29	-0.1 (-0.32, 0.12)
	$\delta_{22}$	0.19	-0.04 (-0.35, 0.27)	0.19	-0.04 (-0.35, 0.27)	0.19	-0.04 (-0.35, 0.27)
Clustering	$\pi_l$	0.32	0.32 (0.28, 0.35)	0.39	0.4 (0.35, 0.43)	0.29	0.29 (0.26, 0.32)