

Some more calculations for the three way table example

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Posterior summaries for model parameters for obesity data (second example)

Table 1: Posterior summaries of model parameters for models $O + A + H$ in Obesity data (example 2).

	mean	st.dev.	q2.5%	q97.5%	param1	param2
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pA(1)	0.2673	0.0199	0.2291	0.3072	131.5000	360.5000
pA(2)	0.7327	0.0199	0.6928	0.7709	360.5000	131.5000
pB(1)	0.2383	0.0192	0.2017	0.2769	117.2500	374.7500
pB(2)	0.2322	0.0190	0.1960	0.2705	114.2500	377.7500
pB(3)	0.2729	0.0201	0.2344	0.3130	134.2500	357.7500
pB(4)	0.2566	0.0197	0.2190	0.2961	126.2500	365.7500
pC(1)	0.3360	0.0213	0.2950	0.3783	165.3333	326.6667
pC(2)	0.3279	0.0211	0.2872	0.3700	161.3333	330.6667
pC(3)	0.3360	0.0213	0.2950	0.3783	165.3333	326.6667

Table 2: Posterior summaries of model parameters for models $OH + A$ in Obesity data (example 2).

	mean	st.dev.	q2.5%	q97.5%	param1	param2
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pAC(11)	0.0654	0.0111	0.0453	0.0888	32.1667	459.8333
pAC(21)	0.2707	0.0200	0.2324	0.3107	133.1667	358.8333
pAC(12)	0.0816	0.0123	0.0591	0.1074	40.1667	451.8333
pAC(22)	0.2463	0.0194	0.2092	0.2853	121.1667	370.8333
pAC(13)	0.1203	0.0146	0.0930	0.1504	59.1667	432.8333
pAC(23)	0.2158	0.0185	0.1806	0.2532	106.1667	385.8333
pB(1)	0.2383	0.0192	0.2017	0.2769	117.2500	374.7500
pB(2)	0.2322	0.0190	0.1960	0.2705	114.2500	377.7500
pB(3)	0.2729	0.0201	0.2344	0.3130	134.2500	357.7500
pB(4)	0.2566	0.0197	0.2190	0.2961	126.2500	365.7500

Table 3: Posterior summaries of model parameters for models *OAH* in Obesity data (example 2).

	mean	st.dev.	q2.5%	q97.5%	param1	param2
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p(111)	0.0102	0.0045	0.0034	0.0208	5.0417	486.9583
p(211)	0.0814	0.0123	0.0589	0.1071	40.0417	451.9583
p(121)	0.0184	0.0060	0.0085	0.0320	9.0417	482.9583
p(221)	0.0733	0.0117	0.0519	0.0978	36.0417	455.9583
p(131)	0.0163	0.0057	0.0071	0.0293	8.0417	483.9583
p(231)	0.0672	0.0113	0.0468	0.0909	33.0417	458.9583
p(141)	0.0204	0.0064	0.0099	0.0346	10.0417	481.9583
p(241)	0.0489	0.0097	0.0316	0.0696	24.0417	467.9583
p(112)	0.0123	0.0050	0.0045	0.0237	6.0417	485.9583
p(212)	0.0672	0.0113	0.0468	0.0909	33.0417	458.9583
p(122)	0.0184	0.0060	0.0085	0.0320	9.0417	482.9583
p(222)	0.0468	0.0095	0.0300	0.0672	23.0417	468.9583
p(132)	0.0224	0.0067	0.0113	0.0372	11.0417	480.9583
p(232)	0.0712	0.0116	0.0502	0.0955	35.0417	456.9583
p(142)	0.0285	0.0075	0.0157	0.0450	14.0417	477.9583
p(242)	0.0611	0.0108	0.0417	0.0838	30.0417	461.9583
p(113)	0.0184	0.0060	0.0085	0.0320	9.0417	482.9583
p(213)	0.0489	0.0097	0.0316	0.0696	24.0417	467.9583
p(123)	0.0245	0.0070	0.0128	0.0398	12.0417	479.9583
p(223)	0.0509	0.0099	0.0333	0.0720	25.0417	466.9583
p(133)	0.0387	0.0087	0.0235	0.0574	19.0417	472.9583
p(233)	0.0570	0.0104	0.0383	0.0791	28.0417	463.9583
p(143)	0.0387	0.0087	0.0235	0.0574	19.0417	472.9583
p(243)	0.0590	0.0106	0.0400	0.0815	29.0417	462.9583

Table 4: Posterior densities of the joint probabilities $\pi_{ABC}(i, j, k)$ for models $O + A + H$, $OH + A$ and OAH for Obesity data (example 2); All summaries for the first two models have been calculated using Monte Carlo Simulation (1000 iterations).

	MODEL		
	O+A+H	OH+A	OAH
p(111)	0.0214	0.0156	0.0102
p(211)	0.0587	0.0649	0.0814
p(121)	0.0209	0.0152	0.0184
p(221)	0.0574	0.0631	0.0733
p(131)	0.0245	0.0177	0.0163
p(231)	0.0672	0.0734	0.0672
p(141)	0.0230	0.0168	0.0204
p(241)	0.0632	0.0695	0.0489
p(112)	0.0208	0.0195	0.0123
p(212)	0.0571	0.0590	0.0672
p(122)	0.0203	0.0190	0.0184
p(222)	0.0558	0.0574	0.0468
p(132)	0.0238	0.0221	0.0224
p(232)	0.0653	0.0667	0.0712
p(142)	0.0224	0.0209	0.0285
p(242)	0.0614	0.0632	0.0611
p(113)	0.0214	0.0288	0.0184
p(213)	0.0588	0.0517	0.0489
p(123)	0.0209	0.0280	0.0245
p(223)	0.0574	0.0503	0.0509
p(133)	0.0245	0.0325	0.0387
p(233)	0.0673	0.0585	0.0570
p(143)	0.0230	0.0309	0.0387
p(243)	0.0632	0.0554	0.0590

Table 5: Posterior summaries for lambda for model $O+A+H$ for Obesity data (example 2);

[[1]] 0+A+H	Mean	St.dev.	q0.025	q0.975
$\hat{\lambda}^{12}$	-2.209	0.023	-2.256	-2.164
$A2^{\hat{\lambda}^{12}}$	0.508	0.050	0.405	0.603
$B2^{\hat{\lambda}^{12}}$	-0.076	0.081	-0.235	0.088
$A2B2^{\hat{\lambda}^{12}}$	0.000	0.000	0.000	0.000
$B3^{\hat{\lambda}^{12}}$	0.090	0.075	-0.061	0.237
$A2B3^{\hat{\lambda}^{12}}$	0.000	0.000	0.000	0.000
$B4^{\hat{\lambda}^{12}}$	0.027	0.078	-0.123	0.177
$A2B4^{\hat{\lambda}^{12}}$	0.000	0.000	0.000	0.000
$C2^{\hat{\lambda}^{13}}$	-0.017	0.064	-0.150	0.106
$A2C2^{\hat{\lambda}^{13}}$	0.000	0.000	0.000	0.000
$C3^{\hat{\lambda}^{13}}$	0.011	0.065	-0.121	0.143
$A2C3^{\hat{\lambda}^{13}}$	0.000	0.000	0.000	0.000
$B2C2^{\hat{\lambda}^{23}}$	0.000	0.000	0.000	0.000
$B3C2^{\hat{\lambda}^{23}}$	0.000	0.000	0.000	0.000
$B4C2^{\hat{\lambda}^{23}}$	0.000	0.000	0.000	0.000
$B2C3^{\hat{\lambda}^{23}}$	0.000	0.000	0.000	0.000
$B3C3^{\hat{\lambda}^{23}}$	0.000	0.000	0.000	0.000
$B4C3^{\hat{\lambda}^{23}}$	0.000	0.000	0.000	0.000
$A2B2C2^{\hat{\lambda}^{123}}$	0.000	0.000	0.000	0.000
$A2B3C2^{\hat{\lambda}^{123}}$	0.000	0.000	0.000	0.000
$A2B4C2^{\hat{\lambda}^{123}}$	0.000	0.000	0.000	0.000
$A2B2C3^{\hat{\lambda}^{123}}$	0.000	0.000	0.000	0.000
$A2B3C3^{\hat{\lambda}^{123}}$	0.000	0.000	0.000	0.000
$A2B4C3^{\hat{\lambda}^{123}}$	0.000	0.000	0.000	0.000

Table 6: Posterior summaries for lambda for model $OH + A$ and OAH for Obesity data (example 2);

[[2]] OH+A

	Mean	St.dev.	q0.025	q0.975
$\hat{\lambda}_{12}$	-2.207	0.024	-2.257	-2.163
$A2\hat{\lambda}_{12}$	0.503	0.051	0.405	0.607
$B2\hat{\lambda}_{12}$	-0.070	0.080	-0.230	0.088
$A2B2\hat{\lambda}_{12}$	0.000	0.000	0.000	0.000
$B3\hat{\lambda}_{12}$	0.087	0.077	-0.064	0.241
$A2B3\hat{\lambda}_{12}$	0.000	0.000	0.000	0.000
$B4\hat{\lambda}_{12}$	0.027	0.076	-0.116	0.191
$A2B4\hat{\lambda}_{12}$	0.000	0.000	0.000	0.000
$C2\hat{\lambda}_{23}$	-0.016	0.064	-0.149	0.109
$B2C2\hat{\lambda}_{23}$	0.000	0.000	0.000	0.000
$B3C2\hat{\lambda}_{23}$	0.000	0.000	0.000	0.000
$B4C2\hat{\lambda}_{23}$	0.000	0.000	0.000	0.000
$C3\hat{\lambda}_{23}$	0.011	0.063	-0.109	0.132
$B2C3\hat{\lambda}_{23}$	0.000	0.000	0.000	0.000
$B3C3\hat{\lambda}_{23}$	0.000	0.000	0.000	0.000
$B4C3\hat{\lambda}_{23}$	0.000	0.000	0.000	0.000
$A2C2\hat{\lambda}_{123}$	0.032	0.072	-0.108	0.179
$A2B2C2\hat{\lambda}_{123}$	0.000	0.000	0.000	0.000
$A2B3C2\hat{\lambda}_{123}$	0.000	0.000	0.000	0.000
$A2B4C2\hat{\lambda}_{123}$	0.000	0.000	0.000	0.000
$A2C3\hat{\lambda}_{123}$	-0.223	0.070	-0.360	-0.092
$A2B2C3\hat{\lambda}_{123}$	0.000	0.000	0.000	0.000
$A2B3C3\hat{\lambda}_{123}$	0.000	0.000	0.000	0.000
$A2B4C3\hat{\lambda}_{123}$	0.000	0.000	0.000	0.000

Table 7: Posterior summaries for lambda for model *OAH* for Obesity data (example 2);

[[3]] OAH	Mean	St.dev.	q0.025	q0.975
$\hat{\lambda}_1$	-2.233	0.028	-2.291	-2.183
$A_2 \hat{\lambda}_1$	0.529	0.053	0.431	0.633
$B_2 \hat{\lambda}_1$	-0.057	0.095	-0.248	0.128
$A_2 B_2 \hat{\lambda}_1$	-0.008	0.096	-0.195	0.188
$B_3 \hat{\lambda}_1$	0.130	0.089	-0.045	0.308
$A_2 B_3 \hat{\lambda}_1$	-0.062	0.084	-0.220	0.100
$B_4 \hat{\lambda}_1$	0.118	0.086	-0.050	0.279
$A_2 B_4 \hat{\lambda}_1$	-0.194	0.085	-0.361	-0.021
$C_2 \hat{\lambda}_2$	-0.016	0.065	-0.131	0.115
$B_2 C_2 \hat{\lambda}_2$	-0.151	0.121	-0.396	0.077
$B_3 C_2 \hat{\lambda}_2$	0.053	0.109	-0.161	0.267
$B_4 C_2 \hat{\lambda}_2$	0.074	0.107	-0.134	0.284
$C_3 \hat{\lambda}_2$	0.006	0.067	-0.120	0.136
$B_2 C_3 \hat{\lambda}_2$	-0.017	0.112	-0.246	0.194
$B_3 C_3 \hat{\lambda}_2$	0.048	0.105	-0.166	0.248
$B_4 C_3 \hat{\lambda}_2$	0.139	0.105	-0.071	0.336
$A_2 C_2 \hat{\lambda}_{23}$	0.031	0.075	-0.121	0.176
$A_2 B_2 C_2 \hat{\lambda}_{23}$	-0.079	0.134	-0.334	0.167
$A_2 B_3 C_2 \hat{\lambda}_{23}$	0.055	0.132	-0.199	0.298
$A_2 B_4 C_2 \hat{\lambda}_{23}$	0.000	0.122	-0.243	0.227
$A_2 C_3 \hat{\lambda}_{23}$	-0.226	0.074	-0.373	-0.083
$A_2 B_2 C_3 \hat{\lambda}_{23}$	0.076	0.128	-0.164	0.317
$A_2 B_3 C_3 \hat{\lambda}_{23}$	-0.079	0.120	-0.314	0.162
$A_2 B_4 C_3 \hat{\lambda}_{23}$	0.094	0.120	-0.139	0.322
