Tuning parameter selection in penalized frailty models: Supplementary Material

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Simulation results concerning the case when the x_i are marginally standard normal and the correlation between x_i and x_j is $\rho^{|i-j|}$ with $\rho = 0.8$.

Table 1: Simulation results for the Gamma frailty

Method	**GCV: MRME(%)**	**GCV: Aver. of 0 coeff.**		**New Method: MRME(%)**	**New Method: Aver. of 0 coeff.**	
		correct	incorrect		correct	incorrect
n=50, J=2						
SCAD	0.8700	4.3700	0.2500	0.7655	4.5300	0.1300
LASSO	0.9340	3.6500	0.1400	0.8462	3.8500	0.1300
Hard	0.8285	4.2100	0.3100	0.7714	4.4700	0.1100
Oracle	0.6711	5	0	0.6711	5	0
n=50, J=5						
SCAD	0.7384	4.1000	0.0100	0.6831	4.7500	0.0100
LASSO	0.9749	3.7200	0.0100	0.8276	3.8600	0.0100
Hard	0.8380	4.4900	0.0400	0.7304	4.6400	0.0200
Oracle	0.5916	5	0	0.5916	5	0
n=100, J=2						
SCAD	0.8463	4.1300	0.0400	0.7549	4.4300	0.0400
LASSO	1.1062	3.1200	0.0500	0.8513	3.4000	0.0400
Hard	0.8173	4.3400	0.1600	0.7674	4.5900	0.0800
Oracle	0.6508	5	0	0.6508	5	0
n=100, J=5						
SCAD	0.7029	4.5300	0.0400	0.5828	4.7800	0
LASSO	0.8499	3.4200	0.0500	0.6915	3.7500	0
Hard	0.8374	4.1400	0.1300	0.6935	4.5700	0.0100
Oracle	0.6116	5	0	0.6116	5	0

Table 2: Simulation results for the Inverse Gaussian frailty

Method	**GCV**: **MRME(%)**	**GCV**: **Aver. of 0 coeff.**		**New Method**: **MRME(%)**	**New Method**: **Aver. of 0 coeff.**	
		correct	incorrect		correct	incorrect
n=50, J=2						
SCAD	0.6581	4.4700	0.1200	0.5302	4.6100	0.0800
LASSO	0.7638	3.5800	0.1400	0.6810	3.9800	0.1000
Hard	0.6680	4.4600	0.3200	0.5053	4.6800	0.1400
Oracle	0.4755	5	0	0.4755	5	0
n=50, J=5						
SCAD	0.7924	4.3400	0	0.6940	4.5300	0
LASSO	1.0976	3.5100	0	0.9492	3.6200	0
Hard	0.8264	4.4600	0.0200	0.7617	4.7000	0.0100
Oracle	0.5323	5	0	0.5323	5	0
n=100, J=2						
SCAD	0.9080	4.4100	0.0800	0.8661	4.7000	0.0100
LASSO	1.2279	3.1000	0.0100	1.0859	3.4400	0.0100
Hard	0.9804	4.3200	0.1900	0.8720	4.5500	0.0800
Oracle	0.8187	5	0	0.8187	5	0
n=100, J=5						
SCAD	1.0553	4.2500	0	0.8860	4.6100	0
LASSO	1.7017	3.7400	0	1.0932	3.8200	0
Hard	0.8998	4.2800	0.0500	0.8370	4.5500	0
Oracle	0.9254	5	0	0.9254	5	0