$\left[\mu, \boldsymbol{lpha}, \sigma \mid \mathbf{y}\right] \propto \prod \prod \left[y_{i,j} \mid g(\mu, \boldsymbol{lpha}, \mathbf{x}), \sigma^2\right] \left[\mu\right] \left[\boldsymbol{lpha}\right] \left[\sigma\right]$

 $g(\mu, \boldsymbol{\alpha}, \mathbf{x}) = \mu + \sum \alpha_j x_{i,j}$