

Objective Items

$$R_{s,j} \sim \text{Bernoulli}(\phi_{s,j})$$

$$\phi_{s,j} = A_s + D_j$$

Subjective Items

$$R_{s,i} \sim \text{OrderedLogit}(\phi_{s,i}, \kappa)$$

$$\phi_{s,i} = A_s + S_s + D_i$$