

Objective Items

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

$$\phi_{s,i} = A_{s,i} + D_{s,i}$$

Subjective Items

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

$$\phi_{s,i} = A_{s,i} + S_s + D_{s,i}$$