*Figure 1.*Visual depiction of a unidimensional IRT model.
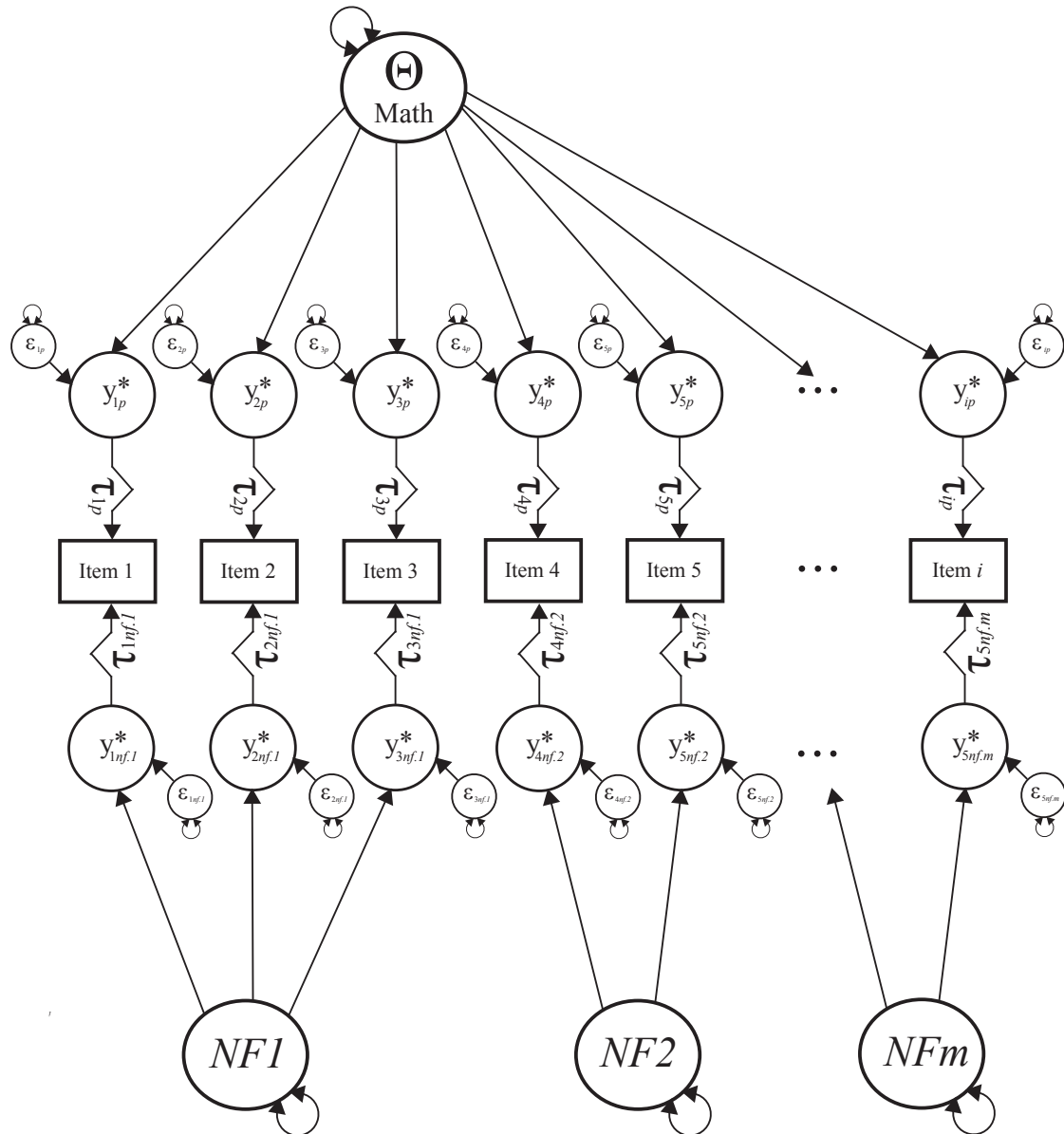
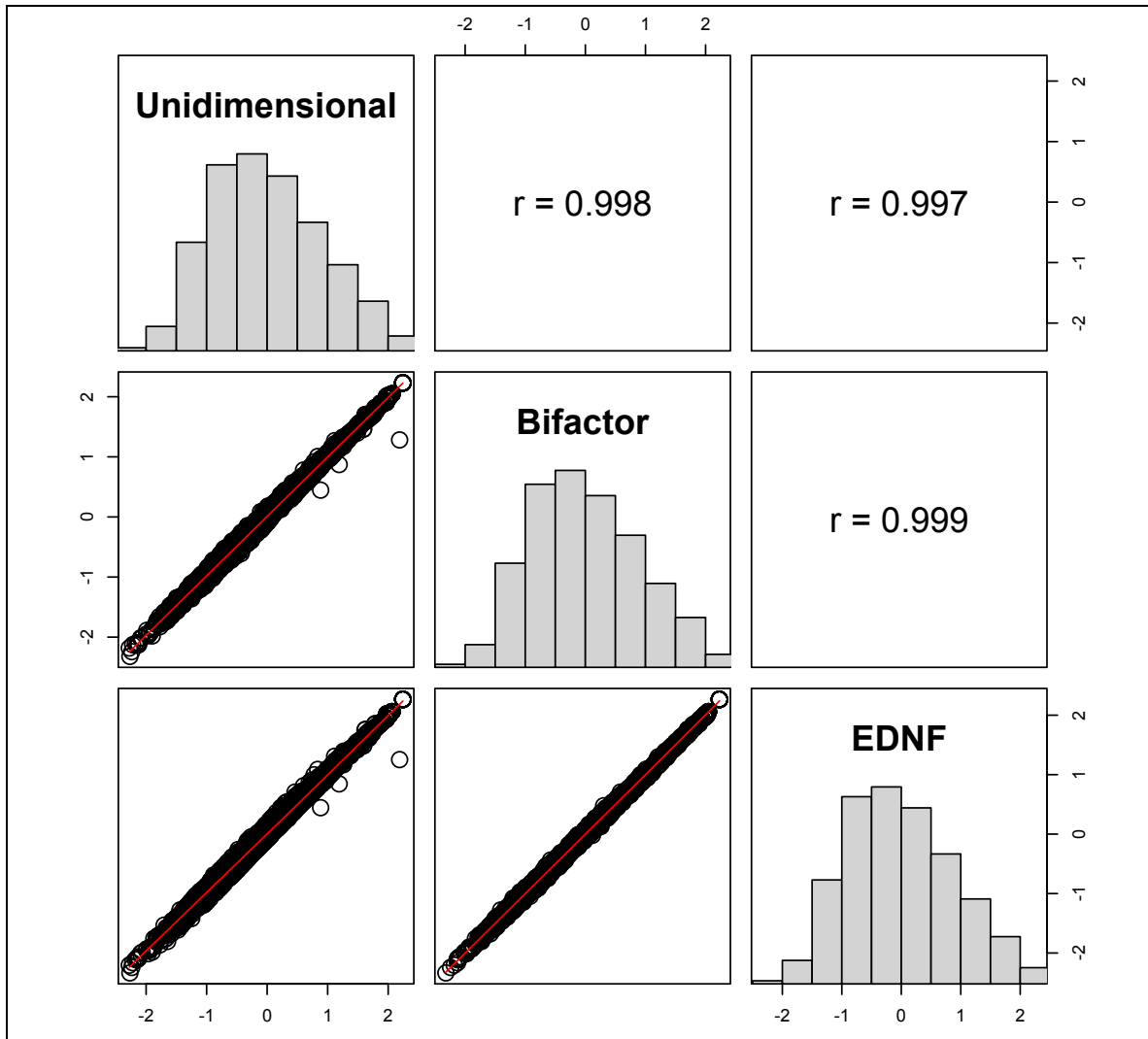*Figure 2.* Visual depiction of a multidimensional bifactor model with nuisance factors.

Figure 3. Person parameter estimates across the three competing models, Grade 7. Univariate distributions of estimates from each model are displayed on the diagonal. The bivariate relation for estimates between each pair of models is displayed in the lower triangle, while Pearson correlation coefficients are displayed in the top right of the figure.
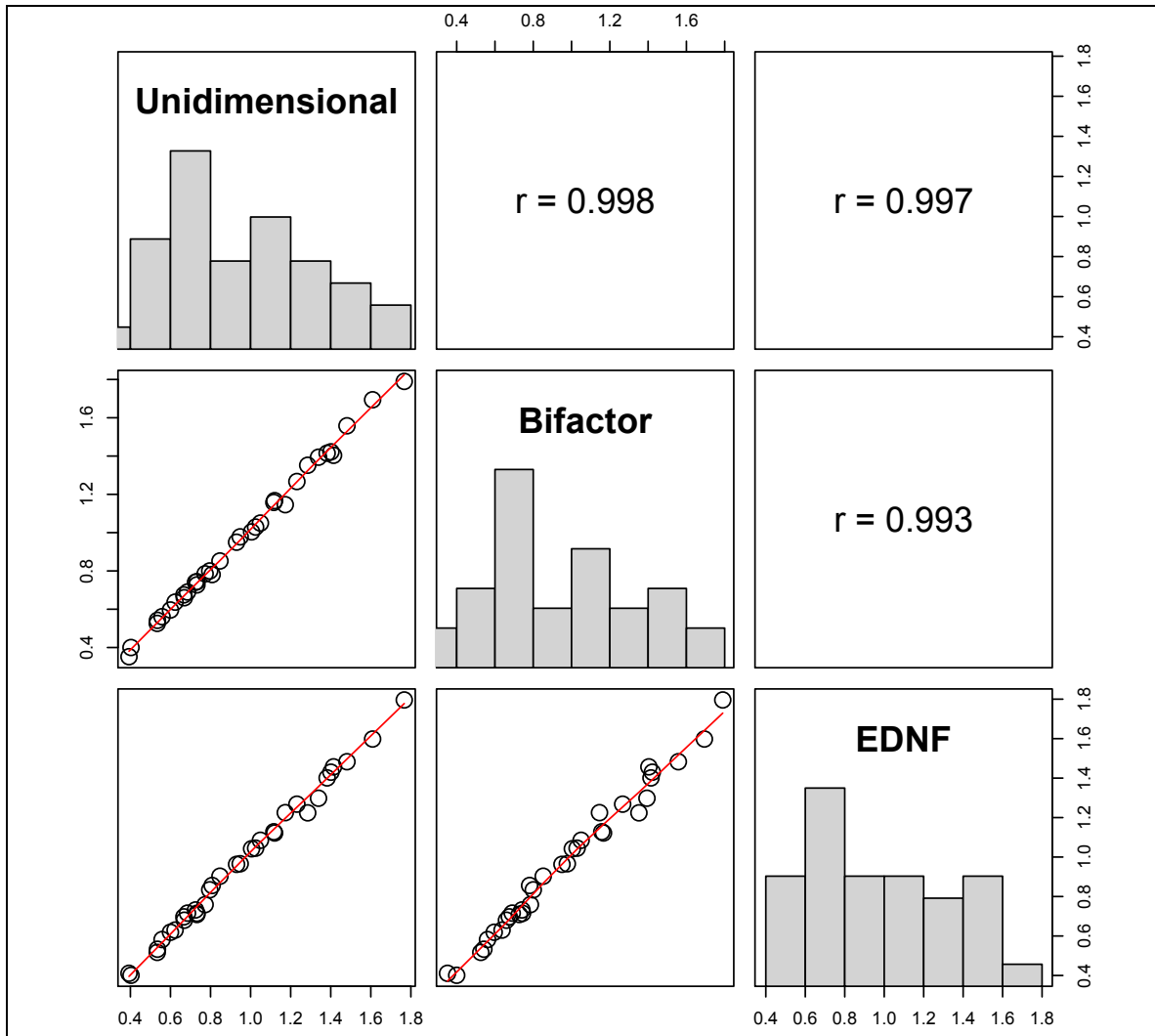
Figure 4. Item discrimination estimates across the three competing models, Grade 8. Univariate distributions of estimates from each model are displayed on the diagonal. The bivariate relation for estimates between each pair of models is displayed in the lower triangle, while Pearson correlation coefficients are displayed in the top right of the figure.