# Measuring Distinct Social Skills via Multiple Speed Assessments – A Behavior-Focused Personnel Selection Approach

## Online Supplementary Material

## Online Supplement S1

*Variance Components and Reliability Estimates of Ratings. Comparing Results Across Samples and Different Exclusion Criteria*

| Variance component | Main results | Sample 1 | Sample 2 | Sample 3 | Applying exclusion criteria | Missings imputed |
|---|---|---|---|---|---|---|
| *N* (number of observations) | 589 (5,268) | 202 (1,616) | 191 (1,802) | 196 (1,868) | 489 (3,912) | 589 (7,068) |
| $\sigma^2$ assessee | 18.15 | 20.05 | 16.64 | 16.69 | 18.89 | 13.89 |
| $\sigma^2$ assessee × skill dimension | 19.55 | 17.32 | 19.33 | 18.74 | 16.03 | 22.04 |
| $\sigma^2$ assessee × exercise | 62.29 | 62.63 | 64.03 | 64.57 | 65.08 | 64.07 |
| Estimated $G(q,1)$ | .53 | .57 | .56 | .45 | .50 | .55 |
| Estimated $G(q,2)$ | .69 | .72 | .72 | .62 | .67 | .71 |

*Note.* Results refer to the amount of reliable variance in %. Estimated $G(q,k)$ = reliable variance subtotal/(reliable variance subtotal + unreliable variance subtotal/$k$). Assessors were nested in exercises. Exercises were nested in dimensions. All assessees and assessors were nested within subsamples. In the model with the exclusion criteria, we excluded (a) all participants who did not have multiple skills assessed via two exercises per skill.

**Online Supplement S2**

*Overview of Skill Dimension Ratings: Correlations with Age and Gender*

| Dimension Rating | *N* | Age correlation | Age *p*-value | Gender correlation | Gender *p*-value |
|---|---|---|---|---|---|
| 1 Assertiveness: Persuasion | 589 | .07 | .07 | .04 | .33 |
| 2 Assertiveness: Unreasonable | 202 | .03 | .68 | -.05 | .51 |
| 3 Warmth: Crisis | 589 | -.01 | .76 | .17 | < .01 |
| 4 Warmth: Bad news | 535 | .02 | .63 | .14 | < .01 |
| 5 Resilience: Presentation | 387 | -.05 | .34 | -.04 | .46 |
| 6 Resilience: Mistake | 341 | .11 | .04 | .01 | .83 |

*Note.* These results refer to skill dimension ratings across all samples (pairwise deletion) and their correlations with age (in years) and gender (0 = male, 1 = female).

**Online Supplement S3**

*Variance Components and Reliability Estimates of Ratings Including Other Components*

| Variance component | Total variance (%) | Total between-assessee variance (%) | Reliable variance (%) | Reliable dimension variance (%) |
|---|---|---|---|---|
| Reliable variance | | | | |
| $\sigma^2$ assessees | 7.99 | 9.56 | 18.15 | 26.36 |
| $\sigma^2$ assessee × skill dimension | 8.61 | 10.30 | 19.55 | 28.40 |
| $\sigma^2$ assessee × exercise | 27.42 | 32.80 | 62.29 | 45.24 |
| Unreliable variance | | | | |
| $\sigma^2$ assessor * | 6.96 | 8.28 | | |
| $\sigma^2$ assessee × assessor + residual | 32.65 | 39.06 | | |
| Other components | | | | |
| $\sigma^2$ skill dimension | 11.02 | | | |
| $\sigma^2$ exercise x dimension | 1.29 | | | |
| $\sigma^2$ subsample | 0.62 | | | |
| $\sigma^2$ subsample x skill dimension | 0.58 | | | |
| $\sigma^2$ subsample x exercise x dimension | 2.86 | | | |
| Estimated $G(q,1)$ | | | .53 | .61 |
| Estimated $G(q,2)$ | | | .69 | .75 |

*Note.* $N$ = 589. Estimated $G(q,k)$ = reliable variance subtotal/(reliable variance subtotal + unreliable variance subtotal/$k$). Assessors were nested in exercises. Exercises were nested in dimensions. All assessees and assessors were nested within six subsamples (i.e., three samples x two majors). For the reliable dimension variance (i.e., dimension-level scores), all variance components concerning exercises were divided by the number of exercises that assessed a given skill dimension (i.e., 2).

* This variance component contributed primarily to unreliable variance because assessees were not fully crossed with assessors. This contribution to between-assessee variance was rescaled.