Exploring the Discriminant Validity of an Entry Test in the Study Domain of Business and Economics -

Results from a National Representative Large-scale Assessment

**Aims**
- Multiple studies indicate prior knowledge as the strongest predictor for study success.
- This correlation was mostly studied using a cross-sectional method so far (e.g., comparisons of study progress between beginners and graduates).
- In the quasi-experimental longitudinal large-scale study WiWiKom II, bachelor students complete various tests at four measurement points.

**Sample**
- First-year students (Bachelor studies, N=9,025)
- German-wide from 54 universities and universities of applied sciences
- Domains: Social sciences and Business & Economics

<table>
<thead>
<tr>
<th></th>
<th>Social</th>
<th>Economics</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>833 (48.9%)</td>
<td>3469 (45.4%)</td>
<td>4302</td>
</tr>
<tr>
<td>Male</td>
<td>569 (40.2%)</td>
<td>4154 (54.4%)</td>
<td>4723</td>
</tr>
<tr>
<td>Migration background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1092 (77.2%)</td>
<td>5343 (69.99%)</td>
<td>6435</td>
</tr>
<tr>
<td>Yes</td>
<td>318 (22.49%)</td>
<td>2276 (29.81%)</td>
<td>2594</td>
</tr>
<tr>
<td>Vocational training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1346 (95.2%)</td>
<td>6404 (83.9%)</td>
<td>7750</td>
</tr>
<tr>
<td>Yes</td>
<td>63 (4.5%)</td>
<td>1211 (15.86%)</td>
<td>1274</td>
</tr>
<tr>
<td>Age</td>
<td>20.7</td>
<td>20.5</td>
<td>20.5</td>
</tr>
<tr>
<td>Total</td>
<td>1402</td>
<td>4723</td>
<td>9025</td>
</tr>
</tbody>
</table>

**Results**

**Test instruments and Design**

**Measurement of economic knowledge**
- Test of Economic Literacy IV (TEL IV, 15 Items)
- Test of Understanding College Economics IV (TUCE IV, 10 Items)
- Cronbach’s α: .74

**Berlin test of fluid and crystallized intelligence**
- Measurement of fluid intelligence (BEFKI, 16 Items)
- Cronbach’s α: .66

**Method**

**Comparison of two groups of students** (Social science and Business & Economics) and comparative analysis of the economic knowledge and the intelligence test.
- **Confirmatory Factor Analyses (CFA):** Comparison of unidimensional vs. multidimensional structures
- **Multilevel Analyses:** Clustered by universities

**Results CFA:**
- Best fit for two-dimensional model compared to one- and three-dimensional models
- Likelihood-ratio test: Chi² = 4529.56, p < .001

**Multilevel Analyses:**
- On average economics students achieve 1.02 points more in the knowledge test. (If only courses of studies included in model)
  - significant influence of study domain
  - This effect persists when gender, vocational training and migration background are taken into account.

**Discussion**

Results confirm the discriminant validity and domain-specificity of the knowledge test:
- CFA’s confirm the two-dimensional structure, indicating that the assessed economic knowledge and general cognitive abilities are empirically substantially separated.
- Business & Economics students achieve significantly better results in the economic knowledge test than Social science students.

**Literature:**