Multidimensional Self-Esteem: Factorial Invariance and Latent Mean Differences across Age and Gender

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Introduction

Previous research on the structure of self-esteem has partly produced inconsistent findings. Up to date, it is not entirely clear, whether self-esteem becomes increasingly differentiated with age (Byrne, 2002; Marsh, 1990; Shavelson, Hubner, & Stanton, 1976). Existing results suggest that self-esteem becomes more differentiated during preadolescence (Marsh & Ayotte, 2003). However, only little research investigated whether there is further differentiation beyond adolescence.

Methods

Approach

Adolescent and adult participants responded to a self-esteem scale. Invariance testing procedures were applied within the framework of confirmatory factor analyses.

Participants

- 661 adolescents (350 female) from 13 to 17 years of age (M = 14.2, SD = 0.6)
- 348 adults (191 female) from 22 to 65 years of age (M = 39.5, SD = 12.8)

Measure of self-esteem

- Multidimensional Self-Esteem Scale (MSES; Fleming & Courtney, 1984; German adaptation by Schütz & Sellin, 2006)
- 32 items

1. Structure of Self-esteem:

A multidimensional and hierarchical model revealed the best fit across all relevant groups (adolescents, adults, females, males).

Results

2. Invariance of self-esteem structure

Age: Analyses revealed invariance of structural parameters (i.e. factor loadings, factor covariances and variances, factor residuals) across age.

Gender: Analyses revealed invariance of structural parameters (i.e. factor loadings, factor covariances and variances, factor residuals, measurement residuals) also across gender.

3. Latent mean differences

Testing for latent mean differences additionally requires invariance of item and factor intercepts. We found invariance of item and factor intercepts across gender but not across age. As expected, female participants exhibited significantly lower factor means than male participants across the four domains of self-regard, academic self-esteem, social self-esteem, and in particular body self-esteem.

Conclusion

- The best model was less hierarchic than originally suggested by several authors (e.g. Shavelson et al., 1976).
- Results show that self-esteem in adults reveals the same differentiation as in adolescents.
- Self-esteem structure was found to be invariant across gender as well.
- Females participants exhibited significant lower levels of self-esteem across the domains of emotional, social, academic and body self-esteem.

References


Note: Model χ² df χ²/df CFI RMSEA (90% CI) Model Comparison

<table>
<thead>
<tr>
<th>Model</th>
<th>χ²</th>
<th>df</th>
<th>χ²/df</th>
<th>CFI</th>
<th>RMSEA (90% CI)</th>
<th>Model Comparison</th>
<th>ΔCFI</th>
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<td>Females vs. Males</td>
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<tr>
<td>Model 1 (no constraints)</td>
<td>2,526.514</td>
<td>908</td>
<td>2.783</td>
<td>.883</td>
<td>.042 (.040 – .044)</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Model 2 (equal first order factor loadings)</td>
<td>2,580.747</td>
<td>908</td>
<td>2.783</td>
<td>.883</td>
<td>.042 (.040 – .044)</td>
<td>2 vs. 1</td>
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<td>Model 3 (equal second order factor loadings)</td>
<td>2,622.530</td>
<td>946</td>
<td>2.772</td>
<td>.878</td>
<td>.046 (.044 – .048)</td>
<td>4 vs. 3</td>
<td>.003</td>
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<td>946</td>
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<td>Model 5 (equal second order factor loadings)</td>
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<td>946</td>
<td>2.760</td>
<td>.875</td>
<td>.043 (.041 – .045)</td>
<td>6 vs. 5</td>
<td>.008</td>
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Note. CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, 90% CI = 90% Confidence Interval.

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