Controlling for Culture-Specific Response Bias using Ipsatization and Response Style Indicators: Family Orientation in Seventeen Cultures and Two Generations

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Acknowledgements

“Value of Children and Intergenerational Relations”
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South Africa: Prof. Dr. Karl Peltzer
Turkey: Dr. Bilge Ataca, Prof. Dr. Cigdem Kagitcibasi
United States: Prof. Dr. Wolfgang Friedlmeier, Prof. Dr. Mihaela Friedlmeier

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Measurement Equivalence and Response Bias Across Cultures

> “Strong” (scalar) equivalence as precondition for cross-cultural mean comparisons (Byrne, 2008; Cheung & Rensvold, 2000)

> But: MACS CFA cannot control for uniform response bias (Little, 2000)

> Single response style factor (He, Bartram, Inceoglu, & van de Vijver, 2014)

> Further recent developments:

Controlling for culture-specific response bias using ipsatization and response style indicators

Thomas, Abts, & Vander Weyden (2014)

Controlling for culture-specific response bias using ipsatization and response style indicators

(Within-subject) Standardization / Ipsatization

> Ipsatization recommended to control for culture-specific response bias in mean comparisons (Fischer, 2004; Fischer & Milfont, 2010)

> But which kind of ipsatization? “Single Construct” (e.g. Schwartz values) or “All items of a questionnaire”?

> Caution – “fixed pie” – possibly controlling for content in addition to bias!

> Psychological assessment literature: ipsatized measures appropriate with large number of constructs (> 10) and low intercorrelations among constructs (< .30) (Baron, 1996; Bartram, 1996)

> Alternative: random selection of items measuring different underlying constructs and are uncorrelated (Weijters, Schillewaert, & Geuens, 2008)

“Representative Indicators Response Style Means and Covariance Structure” (RIRSMACS)

Current Study: Using RIRS for 1) ipsatization and 2) response style indicators (acquiescence and extremity responding, ANCOVAs) and comparing results
Controlling for culture-specific response bias using ipsatization and response style indicators

VOC-Project: Mothers and Adolescents from 17 Cultural Groups

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Controlling for culture-specific response bias using ipsatization and response style indicators

**Family Values**

- Core aspect of collectivism, substantial cross-cultural variation documented *(Triandis, 1990; Georgas, Berry, van de Vijver, Kagitcibasi, & Poortinga, 2006)*
- Five-item short scale based on Georgas (1991)

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1. One should maintain good relationships with one’s relatives.
2. Children have an obligation to care for their parents when their parents are old.
3. A family’s problems should be solved within the family.
4. We should honor and protect our family’s reputation.
5. Children should obey their parents.

Traditional family values including two main aspects: 1) hierarchy and 2) relationships within the family.

Internal consistencies mixed, but structural equivalence ok (using target rotation approach).
Response Style Indicators 1

Ipsatization across all Likert-scale items of the questionnaire (including target construct)

— Subtract grand mean (+ divide by grand SD)

— Some items/constructs had to be discarded since...
  - not included all cultural groups
  - too many missings (e.g. relationship with grandparents)

— Mothers: 137 items from 13 constructs

— Adolescents: 171 items from 17 constructs
Response Style Indicators 2

> Ipsatization across random subset of 15 items (excluding items from target construct)
  — Subtract grand mean based on 15 items (+ divide by grand SD)
  — Partly the same items for mothers and adolescents

> Acquiescence and Extremity indicators based on the same subset of 15 randomly selected items
  — Acquiescence: double count 5 + count 4
  — Extremity: count 1 + 5

> Check if randomly selected items are (mostly) uncorrelated (see next slide)
Correlations Among the 15 Randomly Selected Items

Mothers: Mean of corrected item-total correlations: .11 (vs. .25)

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Adolescents: Mean of corrected item-total correlations: .11 (vs. .23)
# Response Style Indicators Across Cultures

Controlling for culture-specific response bias using ipsatization and response style indicators

## Table

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Controlling for Response Bias in Mothers’ Family Values

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<td>Germany</td>
<td>3.90</td>
<td>0.90</td>
<td>0.70</td>
<td>0.13</td>
<td>0.12</td>
<td>3.97</td>
<td>4.01</td>
</tr>
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</table>

R² .222 .104 .062 .151 .138 .137 .112
### Controlling for Response Bias in Adolescents’ Family Values

<table>
<thead>
<tr>
<th>Culture</th>
<th>Family Values (Original)</th>
<th>IPS Total Means</th>
<th>IPS Total M + SD</th>
<th>IPS 15 Means</th>
<th>IPS 15 M + SD</th>
<th>ADJ Means AQ</th>
<th>ADJ Means AQ + EX</th>
</tr>
</thead>
<tbody>
<tr>
<td>India (Varanasi)</td>
<td>4.54</td>
<td>1.06</td>
<td>0.75</td>
<td>1.06</td>
<td>0.76</td>
<td>4.43</td>
<td>4.43</td>
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<tr>
<td>Palestinians / Israeli Arabs</td>
<td>4.51</td>
<td>1.02</td>
<td>0.72</td>
<td>0.93</td>
<td>0.68</td>
<td>4.37</td>
<td>4.37</td>
</tr>
<tr>
<td>India (Pondicherry)</td>
<td>4.49</td>
<td>0.85</td>
<td>0.59</td>
<td>0.81</td>
<td>0.58</td>
<td>4.29</td>
<td>4.29</td>
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<tr>
<td>South Africa</td>
<td>4.45</td>
<td>1.08</td>
<td>0.69</td>
<td>0.88</td>
<td>0.57</td>
<td>4.23</td>
<td>4.22</td>
</tr>
<tr>
<td>Indonesia</td>
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<td>1.09</td>
<td>0.85</td>
<td>1.16</td>
<td>0.89</td>
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<td>4.40</td>
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<td>Ghana</td>
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<td>0.47</td>
<td>4.14</td>
<td>4.15</td>
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<tr>
<td>Turkey</td>
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<td>0.92</td>
<td>0.68</td>
<td>0.79</td>
<td>0.61</td>
<td>4.19</td>
<td>4.20</td>
</tr>
<tr>
<td>China</td>
<td>4.22</td>
<td>1.05</td>
<td>0.79</td>
<td>1.12</td>
<td>0.83</td>
<td>4.33</td>
<td>4.32</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>4.19</td>
<td>1.05</td>
<td>0.75</td>
<td>0.86</td>
<td>0.64</td>
<td>4.40</td>
<td>4.39</td>
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<tr>
<td>Israeli Jews</td>
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<td>0.63</td>
<td>0.85</td>
<td>0.58</td>
<td>4.12</td>
<td>4.11</td>
</tr>
<tr>
<td>Poland</td>
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<td>0.64</td>
<td>0.68</td>
<td>0.54</td>
<td>4.03</td>
<td>4.03</td>
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<td>0.59</td>
<td>0.68</td>
<td>0.50</td>
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<td>3.98</td>
</tr>
<tr>
<td>Russia</td>
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<td>0.75</td>
<td>0.63</td>
<td>0.69</td>
<td>0.62</td>
<td>4.05</td>
<td>4.06</td>
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<tr>
<td>France</td>
<td>3.82</td>
<td>0.84</td>
<td>0.62</td>
<td>0.61</td>
<td>0.45</td>
<td>3.88</td>
<td>3.88</td>
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<tr>
<td>Estonia</td>
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<td>0.68</td>
<td>0.56</td>
<td>0.52</td>
<td>0.41</td>
<td>3.85</td>
<td>3.86</td>
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<tr>
<td>Germany</td>
<td>3.70</td>
<td>0.72</td>
<td>0.58</td>
<td>0.52</td>
<td>0.42</td>
<td>3.81</td>
<td>3.81</td>
</tr>
</tbody>
</table>

| R²                       | .216                     | .090            | .068             | .127         | .112         | .119          | .116              |
Controlling for culture-specific response bias using ipsatization and response style indicators

## Culture-level Correlations Among (Corrected) Family Values Scales

<table>
<thead>
<tr>
<th></th>
<th>Family Values (Original)</th>
<th>IPS Total Means</th>
<th>IPS Total M + SD</th>
<th>IPS 15 Means</th>
<th>IPS 15 M + SD</th>
<th>ADJ Means AQ</th>
<th>ADJ Means AQ + EX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Values (Orig.)</td>
<td>.47</td>
<td>.75**</td>
<td>.76**</td>
<td>.81**</td>
<td>.71**</td>
<td>.87**</td>
<td>.85**</td>
</tr>
<tr>
<td>IPS Total Means</td>
<td>.75**</td>
<td>.76**</td>
<td>.24</td>
<td>.12</td>
<td>.65**</td>
<td>.61**</td>
<td></td>
</tr>
<tr>
<td>IPS Total M + SD</td>
<td>.54*</td>
<td>.89**</td>
<td>.21</td>
<td>.26</td>
<td>.56*</td>
<td>.59*</td>
<td></td>
</tr>
<tr>
<td>IPS 15 Means</td>
<td>.72**</td>
<td>.91**</td>
<td>.92**</td>
<td>.96**</td>
<td>.84**</td>
<td>.83**</td>
<td></td>
</tr>
<tr>
<td>IPS 15 M + SD</td>
<td>.62*</td>
<td>.80**</td>
<td>.93**</td>
<td>.96**</td>
<td>.78**</td>
<td>.80**</td>
<td></td>
</tr>
<tr>
<td>ADJ Means AQ</td>
<td>.89**</td>
<td>.86**</td>
<td>.80**</td>
<td>.88**</td>
<td>.84**</td>
<td>.99**</td>
<td></td>
</tr>
<tr>
<td>ADJ Means AQ + EX</td>
<td>.89**</td>
<td>.85**</td>
<td>.80**</td>
<td>.88**</td>
<td>.84**</td>
<td>1.00**</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Mothers: Upper right triangle. Adolescents: lower left triangle. * $p < .05$  ** $p < .01$.
Controlling for culture-specific response bias using ipsatization and response style indicators

### Culture-level Correlations with External Value Indicators (Hofstede, World Values Survey)

<table>
<thead>
<tr>
<th></th>
<th>Mothers</th>
<th>Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 15-16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hofstede PDI</td>
<td>Hofstede IND</td>
</tr>
<tr>
<td>Family Values</td>
<td>.31</td>
<td>-.45</td>
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<tr>
<td>IPS Total Means</td>
<td>.00</td>
<td>.16</td>
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<tr>
<td>IPS Total M + SD</td>
<td>.29</td>
<td>-.04</td>
</tr>
<tr>
<td>IPS 15 Means</td>
<td>.52*</td>
<td>-.56*</td>
</tr>
<tr>
<td>IPS 15 M + SD</td>
<td>.61*</td>
<td>-.64**</td>
</tr>
<tr>
<td>ADJ Means AQ</td>
<td>.45</td>
<td>-.49</td>
</tr>
<tr>
<td>ADJ Means AQ + EX</td>
<td>.50</td>
<td>-.54*</td>
</tr>
</tbody>
</table>

* p < .05  ** p < .01.
Controlling for culture-specific response bias using ipsatization and response style indicators

### Culture-level Correlations with Family Values from Georgas et al. (2006)

<table>
<thead>
<tr>
<th></th>
<th>Mothers</th>
<th>Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Family Hierarchy</td>
<td>Family Relationships</td>
</tr>
<tr>
<td><strong>n = 8</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Values</td>
<td>.92**</td>
<td>.89**</td>
</tr>
<tr>
<td>IPS Total Means</td>
<td>.60</td>
<td>.65</td>
</tr>
<tr>
<td>IPS Total M + SD</td>
<td>.23</td>
<td>.42</td>
</tr>
<tr>
<td>IPS 15 Means</td>
<td>.91**</td>
<td>.90**</td>
</tr>
<tr>
<td>IPS 15 M + SD</td>
<td>.88**</td>
<td>.91**</td>
</tr>
<tr>
<td>ADJ Means AQ</td>
<td>.92**</td>
<td>.91**</td>
</tr>
<tr>
<td>ADJ Means AQ + EX</td>
<td>.89**</td>
<td>.90**</td>
</tr>
</tbody>
</table>

*Note.* Mean values from Georgas et al. kindly provided by Fons van de Vijver. * p < .05  ** p < .01.
Discussion

> Very similar results for RIRS ipsatization and RIRS response style indicators (ANCOVA adjusted means)

> Ipsatizations based on total questionnaire obviously confounds content and style
  — too few and too highly correlated constructs
  — valid only with clear theoretical basis (e.g., Schwartz) and/or low overall correlations of constructs?

> Rank order of original means not strongly affected by controlling for culture-specific response styles (RIRS approach)

> Cross-cultural differences attenuated (from $R^2 \approx .22$ to $R^2 \approx .12$)

> RIRS ipsatization useful approach for controlling response bias?
References


Thank you for your attention!
Controlling for culture-specific response bias using ipsatization and response style indicators

**Culture-level Correlations of Georgas’ Family Values with External Indicators**

<table>
<thead>
<tr>
<th></th>
<th>n = 25</th>
<th>Hofstede PDI</th>
<th>Hofstede IND</th>
<th>WVS TradSec</th>
<th>WVS SurvSelf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Values: Hierarchy</td>
<td></td>
<td>.62**</td>
<td>-.71**</td>
<td>-.55**</td>
<td>-.78**</td>
</tr>
<tr>
<td>Family Values: Relationships</td>
<td></td>
<td>.59**</td>
<td>-.46*</td>
<td>-.84**</td>
<td>-.55**</td>
</tr>
<tr>
<td>Family Values (Mean of above)</td>
<td></td>
<td>.65**</td>
<td>-.67**</td>
<td>-.68**</td>
<td>-.75**</td>
</tr>
</tbody>
</table>

* p < .05  ** p < .01.