Measuring the construct of Optimism-Pessimism with single item indicators

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Survey Design and Methodology
The construct of Optimism-Pessimism

- Generalized expectancies concerning future events
  - anticipating good vs. anticipating bad
  - broad and generalized versions of confidence and doubt

- Positive outlook on life Dember, Martin, Hummer, Howe, & Melton (1989)
  - biases for the positive or negative features of life
  - also includes present perceptions and appraisals
Optimism-Pessimism and well-being

- Optimists report less distress before surgery or treatments and more life satisfaction afterwards. 

- Optimists report higher relationship satisfaction mediated by the perceived higher relative supportiveness of their partners. 
  Srivastava, McGonigal, Richards, Butler, & Gross, 2006
Optimism-Pessimism and health

- Mean effect size for the relationship between optimism and physical health outcomes in a meta-analysis was .17 (p < .001) Rasmussen, Scheier, & Greenhouse (2009)

- Women’s Health Initiative (WHI): N = 95,000 women across the US; 8 year period Tindale, Chang, Kuller, Manson, Robinson, & Rosal (2009)
  - Optimists were less likely to develop coronary heart disease (CHD)
  - Optimists were less likely to die from CHD-related causes
Optimism-Pessimism and socioeconomic status

- Dispositional optimism predicts income of law schools students 10 years later Segerstrom (2007)

- Dispositional optimism before starting school is associated with a significantly higher probability of returning the second year Solberg Nes, Evans, & Segerstrom (2009)
Latent structure of Optimism-Pessimism
Polar opposites or two dimensions?

- Structure is one-dimensional
  - a person can either be optimistic or pessimistic – not both
  - dominant view for a long time
    Scheier & Carver (1985), Segerstrom, Evans, & Eisenlohr-Moul (2011)

- Structure is two-dimensional
  - partially independant constructs
Measurement

- Life Orientation Test (LOT) \textit{Scheier \& Carver (1985)}
  - 12 Items
  - one-dimensional

- Life Orientation Test-Revised (LOT-R) \textit{Scheier, Carver, \& Bridges (1994)}
  - 10 Items
  - one-dimensional

- Optimism and Pessimism Scale (OPS)
  \textit{Dember, Martin, Hummer, Howe, \& Melton (1989)}
  - 56 Items
  - two-dimensional
Measurement

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  - 56 Items
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Goals

- Construction of
  - an ultra-short measure for survey research
  - with sufficient psychometric quality
- Achieve sufficient psychometric quality
  - by replicating relationships reported in the Optimism literature
    - Internal structure
    - convergent and discriminant validity
  - by estimating reliability of the measure
Construction of the Optimism-Pessimism-2 Scale (OP2)

(The next question deals with optimism.) Optimists are people who look to the future with confidence and who mostly expect good things to happen. How would you describe yourself?

How optimistic are you in general?

<table>
<thead>
<tr>
<th>not at all optimistic</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>very optimistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
(The next question is about pessimism.) Pessimists are people who are full of doubt when they look to the future and who mostly expect bad things to happen. How would you describe yourself?

How pessimistic are you in general?

<table>
<thead>
<tr>
<th>not at all pessimistic</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>very pessimistic</th>
<th>7</th>
</tr>
</thead>
</table>

19.07.2011
### Sample Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Sample 1</th>
<th>Sample 2*</th>
<th>Sample 3*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sampling</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>539</td>
<td>741</td>
<td>1206</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPI, self-assessment</td>
<td></td>
<td>online</td>
<td>CAPI</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>52.5%</td>
<td>51.8%</td>
<td>55.4%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>47.2 (15.2)</td>
<td>48.3 (13.0)</td>
<td>52.6 (18.5)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 9 yrs</td>
<td>44.7%</td>
<td>40.1%</td>
<td>38.8%</td>
</tr>
<tr>
<td>10 yrs</td>
<td>30.2%</td>
<td>29.1%</td>
<td>34.2%</td>
</tr>
<tr>
<td>≥ 11 yrs</td>
<td>23.7%</td>
<td>30.8%</td>
<td>25.5%</td>
</tr>
</tbody>
</table>

* preliminary analyses
One dimension with polar opposites?

Optimism-Pessimism

χ²(df) = 15.3 (3), p < .001
RMSEA = .11 (.06 - .17)
SRMR = .025
CFI = .975
CAIC = 4010.6

Sample 1, Wave 1 and 2.
**Two oblique dimensions?**

\[ \chi^2(df) = 0.07 (1), \ p > 0.05 \]
\[ \text{RMSEA} = 0.00 (0.00 - 0.09) \]
\[ \text{SRMR} = 0.004 \]
\[ \text{CFI} = 1 \]
\[ \text{CAIC} = 3995.3 \]

Sample 1, wave 1 and 2.
Reliability (McDonald’s ω) of the OP2

Optimism

Pessimism

O1

O2

P1

P2

ω = .75

ω = .65

-.86

.76

.79

.69

.70

Sample 1, Wave 1 and 2.
### OP2 and the LOT-R

<table>
<thead>
<tr>
<th></th>
<th>Scale Level Correlations</th>
<th>Latent Correlations</th>
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<tbody>
<tr>
<td></td>
<td>LOT-R Optimism</td>
<td>LOT-R Pessimism</td>
</tr>
<tr>
<td>OP2-Optimism</td>
<td>.63</td>
<td>-.43</td>
</tr>
<tr>
<td>OP2-Pessimism</td>
<td>-.51</td>
<td>.50</td>
</tr>
</tbody>
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Sample 1. All $ps < .01$. 

*Dr. Christoph J. Kemper | GESIS | ESRA 2011*
OP2 and the LOT-R

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Sample 1. All $p$s < .01.
OP2 and well-being

<table>
<thead>
<tr>
<th></th>
<th>OP2-Optimism</th>
<th>OP2-Pessimism</th>
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</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life</td>
<td>.49</td>
<td>-.43</td>
</tr>
<tr>
<td>Work</td>
<td>.26</td>
<td>-.26</td>
</tr>
<tr>
<td>Partner</td>
<td>.25</td>
<td>-.21</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.42</td>
<td>-.32</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>.49</td>
<td>-.48</td>
</tr>
</tbody>
</table>

Samples 1-3. All ps < .01.
# OP2 and health

<table>
<thead>
<tr>
<th>Health status</th>
<th>physical</th>
<th>mental</th>
<th>Health satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP2-Optimism</td>
<td>-.27</td>
<td>-.32</td>
<td>.33</td>
</tr>
<tr>
<td>OP2-Pessimism</td>
<td>.30</td>
<td>.38</td>
<td>-.31</td>
</tr>
</tbody>
</table>

Sample 3. All $p$s < .01.
## OP2 and sociodemographic variables

<table>
<thead>
<tr>
<th></th>
<th>OP2-Optimism</th>
<th></th>
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<th>OP2-Pessimism</th>
<th></th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
<td>S3</td>
<td>Mr</td>
<td>S1</td>
<td>S2</td>
<td>S3</td>
</tr>
<tr>
<td>Sex</td>
<td>-.02</td>
<td>.05</td>
<td>.06*</td>
<td>.04</td>
<td>-.02</td>
<td>-.03</td>
<td>.00</td>
</tr>
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<td>-.09**</td>
<td>-.00</td>
<td>.00</td>
<td>-.18**</td>
<td>.06*</td>
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<tr>
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<td>.18**</td>
<td>.02</td>
<td>.08</td>
<td>-.21*</td>
<td>.00</td>
<td>-.10**</td>
<td>.00</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>.15**</td>
<td>.02</td>
<td>.12**</td>
<td>.10</td>
<td>-.16**</td>
<td>-.05</td>
<td>-.10**</td>
</tr>
<tr>
<td>No. of books</td>
<td>.11*</td>
<td>.14*</td>
<td>.13</td>
<td></td>
<td>-.11*</td>
<td>-.15**</td>
<td></td>
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Samples 1-3 (S1 – S3). * = p < .05, ** = p < .01.
Discussion

- The OP2 is a very efficient, reliable, and valid measure of the Optimism-Pessimism construct (2 single item indicators)

- Limitation: no modeling of measurement error in cross-sectional designs

- Application of the OP2
  - surveys with severe monetary or time constraints
  - mixed mode surveys (CAPI, self-assessment)
  - preferably in panel studies
Thank you for your attention!

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E-Mail: christoph.kemper@gesis.org
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*************** Please cite this scale as ***************