Calculating Total Scale Scores and Reliability (SPSS)

Daniel Boduszek
Presentation Outline

- Reversing negatively worded items
- Adding up the total scores for the scale
- Checking the reliability of a scale
Reversing negatively worded items

- Recoding allows a researcher to create a new variable
- Click Transform
- Click Recode into Different Variable
Reversing negatively worded items

- Select the item you want to reverse and move it into **Numeric Variable --- Output Variable** box.
- Click on the variable and type a new name in **Output Variable** box.
- Click on the **Change** button.
- Repeat for each of the other variables you wish to reverse.
Click on the **Old and new values** button

In the **Old Value** section, type 1 in the **Value** box

In the **New Value** section, type 4 in the **Value** box

Click on **Add**

Repeat the procedure for the remaining scores

Click on **Continue** and **OK**
Adding up the total scores for the scale

- Computing new variables – create a new variable from multiple variables
  - click **Transform**
  - click **Compute**
Adding up the total scores for the scale

- Fill in the new **Target Variable** (SelfEsteem)
- Click on the first item in the scale and move it into Numeric Expression box
- Click on + on the calculator
- Repeat the procedure until all items appear in the box
Adding up the total scores for the scale

- Click on the **Type and Label** button
- Click on **Label** box and type in a description of the scale
- Click **Continue**
- **OK**
Adding up the total scores for the scale

Your new variable – total scores for Self Esteem
Reliability

- Internal consistency – the items should be correlated

- Cronbach’s Alpha coefficient

- It should be above .7 (DeVellis, 2003)

  - This depends on:
    - Number of items
    - Sample size
Reliability – SPSS Procedure

- Analyze
- Scale
- Reliability Analysis
Reliability – SPSS Procedure

- Move all 10 self esteem items into the **Items** box.
- In the **Model** section select **Alpha**.
- In the **Scale label** box, type in the name of the scale.
Reliability – SPSS Procedure

- Click on the **Statistics** button
- In the **Descriptives for** section, select **Item**, **Scale**, and **Scale if Item deleted**
- In the **Inter-Item** section, click on **Correlations**
- In the **Summaries** section, click on **Correlations**
- **Continue** and **OK**
Reliability – SPSS Output

- Check the number of cases (participants)
- Check the number of items
- Check the reliability
  - Cronbach’s Alpha = .77
Check **Inter-Item Correlation Matrix** table – all values should be positive

<table>
<thead>
<tr>
<th></th>
<th>SE1 On the whole, I am satisfied with myself.</th>
<th>SE2* At times, I think I am no good at all.</th>
<th>SE3 I feel that I have a number of good qualities.</th>
<th>SE4 I am able to do things as well as most other people.</th>
<th>SE5 *I feel I do not have much to be proud of.</th>
<th>SE6 *I certainly feel useless at times.</th>
<th>SE7 I feel that I'm a person of worth, at least on an equal plane with others.</th>
<th>SE8* I wish I could have more respect for myself.</th>
<th>SE9* All in all, I am inclined to feel that I am a failure.</th>
<th>SE10 I take positive attitude toward myself</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE1 On the whole, I am satisfied with myself.</td>
<td>1.000</td>
<td>.327</td>
<td>.280</td>
<td>.223</td>
<td>.085</td>
<td>.289</td>
<td>.255</td>
<td>.026</td>
<td>.274</td>
<td>.303</td>
</tr>
<tr>
<td>SE2* At times, I think I am no good at all.</td>
<td>.327</td>
<td>1.000</td>
<td>.457</td>
<td>.263</td>
<td>.283</td>
<td>.562</td>
<td>.229</td>
<td>.061</td>
<td>.403</td>
<td>.270</td>
</tr>
<tr>
<td>SE3 I feel that I have a number of good qualities.</td>
<td>.280</td>
<td>.457</td>
<td>1.000</td>
<td>.532</td>
<td>.143</td>
<td>.392</td>
<td>.377</td>
<td>-.004</td>
<td>.191</td>
<td>.526</td>
</tr>
<tr>
<td>SE4 I am able to do things as well as most other people.</td>
<td>.223</td>
<td>.263</td>
<td>.532</td>
<td>1.000</td>
<td>.181</td>
<td>.243</td>
<td>.509</td>
<td>-.104</td>
<td>.051</td>
<td>.528</td>
</tr>
<tr>
<td>SE5 *I feel I do not have much to be proud of.</td>
<td>.085</td>
<td>.283</td>
<td>.143</td>
<td>.181</td>
<td>1.000</td>
<td>.283</td>
<td>.269</td>
<td>.199</td>
<td>.240</td>
<td>.161</td>
</tr>
<tr>
<td>SE6 *I certainly feel useless at times.</td>
<td>.289</td>
<td>.562</td>
<td>.392</td>
<td>.243</td>
<td>.283</td>
<td>1.000</td>
<td>.268</td>
<td>.153</td>
<td>.375</td>
<td>.329</td>
</tr>
<tr>
<td>SE7 I feel that I'm a person of worth, at least on an equal plane with others.</td>
<td>.255</td>
<td>.229</td>
<td>.377</td>
<td>.509</td>
<td>.269</td>
<td>.268</td>
<td>1.000</td>
<td>-.025</td>
<td>.104</td>
<td>.506</td>
</tr>
<tr>
<td>SE8* I wish I could have more respect for myself.</td>
<td>.026</td>
<td>.061</td>
<td>-.004</td>
<td>-.104</td>
<td>.199</td>
<td>.153</td>
<td>-.025</td>
<td>1.000</td>
<td>.321</td>
<td>-.009</td>
</tr>
<tr>
<td>SE9* All in all, I am inclined to feel that I am a failure.</td>
<td>.274</td>
<td>.403</td>
<td>.191</td>
<td>.051</td>
<td>.240</td>
<td>.375</td>
<td>.104</td>
<td>.321</td>
<td>1.000</td>
<td>.140</td>
</tr>
<tr>
<td>SE10 I take positive attitude toward myself</td>
<td>.303</td>
<td>.270</td>
<td>.526</td>
<td>.528</td>
<td>.161</td>
<td>.329</td>
<td>.506</td>
<td>-.009</td>
<td>.140</td>
<td>1.000</td>
</tr>
</tbody>
</table>
## Reliability – SPSS Output

### Item-Total Statistics

- **Degree to which item correlates with the total score**
- **The reliability if the particular item is removed**

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE2</td>
<td>19.2981</td>
<td>22.126</td>
<td>.560</td>
<td>.446</td>
<td>.732</td>
</tr>
<tr>
<td>SE3</td>
<td>19.8045</td>
<td>22.582</td>
<td>.560</td>
<td>.457</td>
<td>.733</td>
</tr>
<tr>
<td>SE4</td>
<td>19.7147</td>
<td>22.899</td>
<td>.449</td>
<td>.439</td>
<td>.747</td>
</tr>
<tr>
<td>SE5</td>
<td>19.1346</td>
<td>23.667</td>
<td>.349</td>
<td>.185</td>
<td>.760</td>
</tr>
<tr>
<td>SE6</td>
<td>19.3814</td>
<td>21.561</td>
<td>.567</td>
<td>.397</td>
<td>.729</td>
</tr>
<tr>
<td>SE7</td>
<td>19.8333</td>
<td>23.316</td>
<td>.474</td>
<td>.371</td>
<td>.744</td>
</tr>
<tr>
<td>SE8</td>
<td>18.9615</td>
<td>25.490</td>
<td>.118</td>
<td>.153</td>
<td>.792</td>
</tr>
<tr>
<td>SE9</td>
<td>19.0288</td>
<td>23.051</td>
<td>.408</td>
<td>.295</td>
<td>.752</td>
</tr>
<tr>
<td>SE10</td>
<td>19.6122</td>
<td>22.270</td>
<td>.523</td>
<td>.437</td>
<td>.736</td>
</tr>
</tbody>
</table>