BRIEF REPORT

Dimensionality of the Rosenberg Self-Esteem Scale and Its Relationships With the Three- and the Five-Factor Personality Models

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We investigated the dimensionality of the French version of the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) using confirmatory factor analysis. We tested models of 1 or 2 factors. Results suggest the RSES is a 1-dimensional scale with 3 highly correlated items. Comparison with the Revised NEO-Personality Inventory (NEO–PI–R; Costa, McCrae, & Rolland, 1998) demonstrated that Neuroticism correlated strongly and Extraversion and Conscientiousness moderately with the RSES. Depression accounted for 47% of the variance of the RSES. Other NEO–PI–R facets were also moderately related with self-esteem.

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is composed of five positively worded and five negatively worded items. Although the RSES is supposed to be a single-factor scale, Carmines and Zeller (1979) obtained a two-factor structure for the RSES, with positive and negative items loading on different factors. Carmines and Zeller concluded that the bifactorial structure was a function of a single theoretical dimension of self-esteem contaminated by a method artefact. Marsh (1996) argued such an artefact might occur because younger and less verbally able students would have greater difficulty responding appropriately to negatively worded items. Greenberger, Chen, Dmitrieva, and Farruggia (2003) tested the RSES original version and two alternative versions (10 positively worded or 10 negatively worded items). Greenberger et al. concluded that the two-factor structure is an artefact of the item wording. However, other authors (Kaufman, Rasinski, Lee, & West, 1991) concluded the scale reflects a two-dimensional construct comprised of positive and negative images of the self. Each dimension would be influenced by different experiences (Owens, 1994). Dunbar, Ford, Hunt, and Der (2000) reported that the single-factor model with correlated errors for the negatively worded items had a better fit than the two-factor model, although the single-factor model with correlated positive errors produced the best fit of all. Thus, correlating some of the errors produced a superior fit to the data than the simple one-factor or the often reported two-factor models.

Despite the controversy about the number of factors, only a few studies have analyzed this topic in the French language. Recently, Gana, Alaphilippe, and Bailly (2005) supported
existence of a single, global, self-esteem factor underlying responses to the scale in a sample of 864 French elderly.

In regard to personality, several studies have shown that the RSES was very strongly related to Neuroticism (N) and Extraversion (E) and moderately to Conscientiousness (C; Jackson & Gerard, 1996; Keller, 1999) on the Revised NEO-Personality Inventory (NEO-PI-R; Costa, McCrae, & Rolland, 1998). Pullmann and Allik (2000) found that the RSES correlated with all Neuroticism facets, especially with N3 (depression), N4 (self-consciousness), and N6 (vulnerability). With regard to Extraversion, main significant correlations were found with E3 (assertiveness), E1 (warmth), and E6 (positive emotions). The RSES also correlated with all Conscientiousness facets, especially with C1 (competence), and C5 (self-discipline). Correlations mentioned here were in the range of .30 to .59 in the expected direction. Francis and James (1996) found the RSES correlated .32 and −.32 with Neuroticism and Extraversion, respectively, from the Eysenck Personality Inventory (AUTHORS, YEAR). Furthermore, Cheng and Furnham (2003) indicated that the relationship between Extraversion and Neuroticism on the Eysenck Scale and measures of happiness and depression was mediated by self-esteem.

The aims of this study were (a) to explore the dimensionality of the French version of the RSES and the impact of the positively and negatively worded items on the RSES structure in French language, (b) to replicate the relationships of self-esteem with the Five-factor model of personality (FFM) and Eysenck’s personality model in French, and (c) to examine the relationship with NEO-PI-R facets to give a more fine-grained view of the relationships between the RSES and the FFM.

METHOD

Participants and Measures

The sample was composed of 447 French university students (67 men and 380 women) with a mean age of 20.9 years (SD = 3.2). The instruments we used in this study were the French adaptations of the RSES (Vallières & Vallerand, 1990), the NEO–PI–R, and the Eysenck Personality Questionnaire (EPQ; Eysenck et al., 1980).

RESULTS

The fit indexes of the tested models (Figure 1) are shown in Table 1. The simple structure model (1) demonstrated unsatisfactory fit indexes (Tucker-Lewis Index <.90 and root mean square error of approximation >.08), and produced high modification indexes (MIs) for three highly correlated item pairs: Positive [POS]1–POS2 (MI = 42.61, r = .44), POS1–POS3 (MI = 55.64, r = .49), and Negative [NEG]4–NEG5 (MI = 38.99, r = .53). We then correlated these error terms (Model 2). Fit indexes increased notably. As Byrne (1993) suggested, including highly correlated items increased the fit indexes. Also, following the Dunbar et al. (2000) analyses, we correlated error terms of the negative (Model 3A), and positive (Model 3B) items. Finally, we tested a two-factor model in both orthogonal (4A) and oblique (4B) versions. Both models had a poor fit. Note that Model 2 demonstrated the best fit, even better than that of Models 3A and 3B.

We conducted three separate series of multiple regression analyzes (stepwise method). In each case, the RSES served as the criterion variable. When the 30 NEO–PI–R facets were entered as predictors, N3 (depression) accounted for the largest proportion of the variance (R² = .47). C1 (competence), A6 (modesty), E6 (positive emotions), N4 (self-consciousness), O2 (aesthetics), and O4 (actions) also were associated with significant betas (final R² = .60). When we used the five main domains instead, four dimensions entered into the equation: Neuroticism (R² = .38) followed by Extraversion, Conscientiousness, and Agreeableness (final R² = .48). Note that the facets explained 12% more variance than the domains. For the EPQ, Neuroticism (R² = .27) was again the strongest predictor, but the other two dimensions (Extraversion and Psychoticism) both significantly enhanced prediction (final R² = .33).

### TABLE 1
Comparison of Several Fit Indices for the Estimated Models of the RSES

<table>
<thead>
<tr>
<th>Model</th>
<th>χ²</th>
<th>df</th>
<th>χ²/df</th>
<th>GFI</th>
<th>NFI</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>RMSEA (LO to HI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>229.81</td>
<td>35</td>
<td>6.56</td>
<td>0.90</td>
<td>0.84</td>
<td>0.82</td>
<td>0.86</td>
<td>0.11</td>
<td>0.10 to 0.13</td>
</tr>
<tr>
<td>2</td>
<td>94.16</td>
<td>32</td>
<td>2.94</td>
<td>0.96</td>
<td>0.94</td>
<td>0.94</td>
<td>0.96</td>
<td>0.06</td>
<td>0.05 to 0.08</td>
</tr>
<tr>
<td>3A</td>
<td>169.27</td>
<td>27</td>
<td>6.29</td>
<td>0.92</td>
<td>0.88</td>
<td>0.83</td>
<td>0.90</td>
<td>0.11</td>
<td>0.09 to 0.12</td>
</tr>
<tr>
<td>3B</td>
<td>98.69</td>
<td>25</td>
<td>3.95</td>
<td>0.96</td>
<td>0.93</td>
<td>0.91</td>
<td>0.95</td>
<td>0.08</td>
<td>0.06 to 0.10</td>
</tr>
<tr>
<td>4A</td>
<td>518.12</td>
<td>35</td>
<td>14.80</td>
<td>0.83</td>
<td>0.64</td>
<td>0.56</td>
<td>0.66</td>
<td>0.18</td>
<td>0.16 to 0.19</td>
</tr>
<tr>
<td>4B</td>
<td>212.48</td>
<td>34</td>
<td>6.24</td>
<td>0.90</td>
<td>0.85</td>
<td>0.83</td>
<td>0.87</td>
<td>0.11</td>
<td>0.09 to 0.12</td>
</tr>
</tbody>
</table>

Note. RSES = Rosenberg Self-Esteem Scale; GFI, goodness-of-fit index; NFI = normed fit index; TLI = tucker Lewis index (non-normed fit index); CFI = comparative fit index; RMSEA = root mean square error of approximation; RMSEA (Lo to Hi) = Low and high limits of the confidence interval for RMSEA. In all cases, p < .001.
FIGURE 1. Model 1: One-factor model with uncorrelated errors. Model 2: One-factor model with correlated error terms for selected items pairs. Model 3A: One-factor model with correlated negative-item error terms. Model 3B: One-factor model with correlated positive-item error terms. Model 4A: Orthogonal two-factor model of positive and negative items. Model 4B: Oblique two-factor model of positive and negative items. RSES = Rosenberg Self-Esteem Scale; POS = positive; NEG = negative.
DISCUSSION

The simple structure model and the oblique two-factor model demonstrated similarly unsatisfactory fit. Consistent with Dunbar et al.’s (2000) findings, the correlated positive uniqueness model (3B) also obtained a better fit than the correlated negative model (3A) and the two-factors models. The results support previous findings (Gana et al., 2005) and suggest a one-factor structure for the French RSES. However, we go further in this study and suggest that the better fit of the correlated positive uniqueness model was due to correlation between two specific pairs of items.

This study tends to confirm the previous observed relationship between self-esteem and personality in other countries (Pullmann, & Allik, 2000). Thus, the RSES was very strongly related to N, moderately to E and C, and weakly to O and A. Self-esteem was especially related with N3 (depression; Watson, Suls, & Haig, 2002). It is well known that depressive individuals tend to perceive the environment as difficult to control. Conscientiousness was also moderately related with self-esteem. Analyses at the facet level emphasized the importance of C1 (competence; see also Pullmann & Allik, 2000). Finally, the correlations with Openness and Agreeableness were low. However, the regression analyses pointed out that some facets of these factors could play a role in the self-esteem construct.

Summing up, French data supported the existence of single-factor interpretation for the French RSES. The relationships observed in other countries between self-esteem and Eysenck’s three-factor and the Five-factor models were also supported. Variation in self-esteem was particularly related to Neuroticism, especially to the depression component of this broad domain. Future research should incorporate facet-level data for a better understanding of the relationships between self-esteem and personality traits.

REFERENCES


