

A confirmatory factor analyses (CFA) was performed to assess the factor structure of the SPSRQ. One of the assumptions of CFA is that variables are measured at the continuous level (Kline, 1998). As the SPSRQ uses a dichotomous response scales, item parcels were created to approximate continuous level data (Floyd & Widaman, 1995). Four parcels of six randomly assigned items were created for each SPSRQ scale, and entered into the analysis. All item parcels loaded significantly onto their respective factors (loadings ranging from .63 to .72 on the SR scale and between .65 and .86 on the SP scale). Although the two factors are hypothesised as independent, they were allowed to correlate. The subsequent correlation ($r = .05$) between the two factors though was non-significant, supporting the independence of the two scales. Chi-square value for the overall model fit was significant, $\chi^2(19) = 50.26, p < .001$ suggesting a lack of fit between the hypothesised model and the data. However, due to the sensitivity of χ^2 in large samples, other fit indices were assessed (Kline, 1998). Examination of these indices showed acceptable model fit with AGFI = .95, CFI = .98, RMSEA = .06, SRMR = .04. However, modification indices suggested freeing the covariance between two error terms (a parcel on the SR scale and a parcel on the SP scale). A subsequent model freeing this path was found to have better fit to the constrained model, $\chi^2(18) = 35.25, p = .01$, AGFI = .96, CFI = .99, RMSEA = .05, SRMR = .03. Change in chi-square between the constrained and the non-constrained model was significant ($\Delta\chi^2(1) = 15.1, p < .05$). Given the significant improvement in overall fit the model allowing the two error covariances was considered the better model.

Note. Ideally you would check the items where error covariances were freed and see why they might be related (generally correlated error terms suggest another unmeasured variable). For more information on issues using CFA/SEM see special issue of *Personality and Individual Differences*, 2007. Vol 42, issue 5

