**Measurement Invariance Results**

Measurement invariance models were programmed in *R* using the *lavaan* package (Rosseel, 2012). First, the overall one-factor model for the PIL and LPQ were both examined for overall fit. Then each group was fit separately to examine factor structure for each group. Normally, if these models fit well, the models would be nested together to examine each level of measurement invariance, as suggested by Brown (2006). In this supplementary file, we have included these steps regardless of original overall fit because the goal was to examine invariance. Additionally, as discussed in the methods section of the full paper, the factor structure of these scales is contested, therefore, one-factor models may only partially fit the data. When models were nested together, equal form or configural invariance was examined to determine if each group contained a similar one-factor structure. Then constraints to the factor loadings were added to test metric invariance, which posits equivalent loadings of each item onto the latent variable. Nexts, scalar invariance model was conducted by forcing equal item intercepts, often interpreted as equality in item means. Last, strict invariance was examined by constraining item error variances to be equal. The order of steps and terminology is from Brown (2006), as the authors have found this version of invariance testing the most descriptive and interpretable of the different options present in the literature.

Fit indices for model fit included the root mean square error of approximation (RMSEA; Steiger, 1990), standardized root mean residual (SRMR; Chen, 2007), and the comparative fit index (CFI; Bentler, 1990). Small values are desirable for RMSEA and SRMR, while large values close to 1 are desired for the CFI (Hu & Bentler, 1999). When models were nested, a significant change in fit was considered decreasing ΔCFI > .01 from the previous step (i.e., metric compared to configural, Cheung & Rensvold, 2002).

***PIL****.* The overall and individual models of the PIL indicated adequate fit that was roughly similar, warranting further examination of the measurement invariance by nesting these models together. Configural invariance was found, in that the overall model statistics matched those of the individual and full sample model. The loadings were then constrained for metric invariance, followed by intercepts (scalar), and error variances (strict). None of these models resulted in changes, thus, suggesting measurement invariance for the PIL questionnaire.

*LPQ.* A similar sequential processes was conducted in order to examine measurement invariance on participants who completed the Life Purpose Questionnaire (LPQ). In adding restrictions to the model, the Scalar Invariance model caused the model CFI to be significantly lower than the Metric Invariance model. As such, this low CFI was further examined by looking at each question individually. After releasing Question 13 (“I am usually a reliable, responsible person”) for this model, all subsequent models were not significantly lower from the one above it.

Table 1

*Fit Statistics for PIL Measurement Invariance.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | *X2*(*df*) | RMSEA | SRMR | CFI | ∆CFI |
| All Groups (*n =* 1898) | (170) = 2232.95 | .080 | .047 | .887 | NA |
| Random (*n* = 1070) | (170) = 1365.83 | .081 | .049 | .884 | NA |
| Not random (*n* = 828) | (170) = 1185.43 | .085 | .051 | .875 | NA |
| Configural  Invariance | (340) = 2551.25 | .083 | .050 | .880 | NA |
| Metric Invariance | (359) = 2587.78 | .081 | .054 | .879 | .001 |
| Scalar Invariance | (378) = 2668.09 | .080 | .055 | .876 | .003 |
| Strict Invariance | (398) = 2743.39 | .079 | .057 | .873 | .003 |

Table 2.

*Fit Statistics for LPQ Measurement Invariance.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | *X2*(*df*) | RMSEA | SRMR | CFI | ∆CFI |
| All Groups (*n =* 1632) | (170) = 1629.45 | .073 | .059 | .781 | NA |
| Random (*n* = 883) | (170) = 902.00 | .070 | .057 | .785 | NA |
| Not random (*n* = 749) | (170) = 1002.98 | .081 | .067 | .754 | NA |
| Configural  Invariance | (340) = 1904.97 | .075 | .062 | .770 | NA |
| Metric Invariance | (359) = 1936.66 | .073 | .065 | .768 | .020 |
| Scalar Invariance | (378) = 2028.31 | .073 | .066 | .757 | .011\* |
| Scalar Q13 Free | (377) = 2007.65 | .073 | .066 | .760 | .008 |
| Strict Invariance | (396) = 2057.35 | .072 | .067 | .755 | .005 |