**Assignment 7**

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**Part 1**

**Questions**

***1***

Chi-Square value: 719.99

CFI: 0.50

RMSEA: 0.32, 90% CIs [0.030,0.34]

SRMR: 0.20

Based on the model-fit indices, we can summarize and compare them to their respective benchmarks. For the chi-square statistic, 3 \* model df = 3 \* 27 = 81. The benchmark for chi-square is that it should be < 3 \* model df. However, the chi-square obtained for the one-factor model is above 81, 3 \* model df. The CFI is less than 0.84, indicating bad fit. The RMSEA is 0.32, indicating bad fit. The SRMR is greater than 0.10, indicating bad fit. Overall, the one-factor model does not fit the observed scores well.

***2***

Chi-Square value: 26.17

CFI: 0.998

RMSEA: 0.02, 90% CIs [0.00,0.06]

SRMR: 0.04

Based on the model-fit indices, we can summarize and compare them to their respective benchmarks. For the chi-square statistic, 3 \* model df = 3 \* 24 = 72. The benchmark for chi-square is that it should be < 3 \* model df. Indeed the chi-square obtained for the one-factor model is less than 72, 3 \* model df. 0.95 < CFI < 1.00, indicating excellent fit. 0.00 < RMSEA < 0.05, indicating excellent fit. The SRMR < .10, indicating good fit. Overall, the three-factor model fits the observed scores moderately well.

***3***

The resulting three-factor solution demonstrated a significant increase in model fit relative to that of the one-factor solution, evidenced specifically by a statistically-significant decrease in the three-factor model’s chi-square index *Δχ2*(3) = 693.83, *p* < .001. Moreover, the three-factor model fit the data more closely versus the one-factor model (see reported statistics from questions 1 and 2).

***4***

**Table 1**

*Standardized Factor Loadings for One-Factor and Three-Factor Models*

|  |  |  |
| --- | --- | --- |
| Item | One-Factor Model | Three-Factor Model |
| 1 | 0.417 | 0.737 |
| 2 | 0.511 | 0.969 |
| 3 | 0.509 | 0.806 |
| 4 | 0.864 | 0.876 |
| 5 | 0.844 | 0.855 |
| 6 | 0.877 | 0.895 |
| 7 | 0.344 | 0.853 |
| 8 | 0.309 | 0.853 |
| 9 | 0.336 | 0.842 |