

Preliminary Confirmatory Factor Analysis (CFA) Results and Interpretation

1. Model Overview

You estimated a CFA model with three latent constructs:

- F1_SES (Socioeconomic Status): FATHEDUC, MOTHEDEC, INCOME, FirstGen_RC, UndrRepStud_RC, HSGPA
- F2_SAT (Satisfaction): SATIS01, SATIS07, SATIS15, SATIS25, CSSRAT07
- F3_SELFCHG (Self-Change / Self-Perception): SLFCHG01–04, CSSRAT01

Your dataset has 4,964 observations and 36 observed variables.

2. Model Fit Indices

CFI = 0.881 (moderate fit), TLI = 0.859 (below ideal), RMSEA = 0.068 (acceptable), SRMR = 0.057 (good).

Overall, the model fits reasonably well; RMSEA and SRMR are acceptable, while CFI/TLI suggest mild misfit.

3. Latent Factor Relationships

- $F2_SAT \leftarrow F1_SES$: 0.027 ($p < .001$) → SES has a small but significant positive effect on satisfaction.
 - $F3_SELFCHG \leftarrow F1_SES$: 0.001 ($p = .687$) → SES does not predict self-change.
 - $F3_SELFCHG \leftarrow F2_SAT$: 0.506 ($p < .001$) → Satisfaction strongly predicts self-change.
- Satisfaction mediates SES → Self-Change.

4. Factor Loadings

F1_SES: FATHEDUC (0.86), MOTHEDEC (0.70), INCOME (0.46), FirstGen_RC (-0.78), UndrRepStud_RC (-0.24), HSGPA (0.11).
F2_SAT: SATIS01 (0.55), SATIS07 (0.70), SATIS15 (0.50), SATIS25 (0.54), CSSRAT07 (0.21).
F3_SELFCHG: SLFCHG01 (0.68), SLFCHG02 (0.79), SLFCHG03 (0.61), SLFCHG04 (0.79), CSSRAT01 (0.22).

Interpretation:

- SES is driven mainly by parent education and first-gen status.
- Satisfaction is reliable but CSSRAT07 is weak.
- Self-Change indicators are strong; CSSRAT01 adds little.

5. Modification Indices (MI)

Top MI suggestions:

- HSGPA $\sim\sim$ CSSRAT01 (530.9)
- CSSRAT07 $\sim\sim$ CSSRAT01 (461.1)
- F3_SELFCHG $\sim\sim$ CSSRAT07 (114.9)

Adding these (if theoretically justified) could improve CFI/TLI.

6. Variance Inflation Factor (VIF)

All predictors $< 2 \rightarrow$ no multicollinearity.

7. Overall Interpretation

- Model fit: Acceptable but improvable (CFI/TLI $< .9$).
- Factors: Reliable for SES, Satisfaction, and Self-Change.
- Paths: Satisfaction mediates SES \rightarrow Self-Change.
- Improvements: Drop weak items or allow correlated residuals.