

Comparative Fit Index

Standalone verified Python analysis

Test: Comparative Fit Index

Design: Incremental CFA fit relative to an independence baseline model.

Variables: G1, G2, G3, famrel, freetime, goout

Null hypothesis: The target model does not improve noncentral fit over the independence model.

Formula: $CFI=1-\max(\chi^2-df,0)/\max(\chi^2-df,\chi^2_b-df_b,0)$.

Source rows: 649

Calculated metrics:

cfi: 0.9973982062491278

target_chi_square: 13.76397207713822

target_df: 8

baseline_chi_square: 2230.3839347203802

baseline_df: 15

Independent reference values:

cfi: 0.9973982062491278

target_chi_square: 13.76397207713822

target_df: 8

baseline_chi_square: 2230.3839347203802

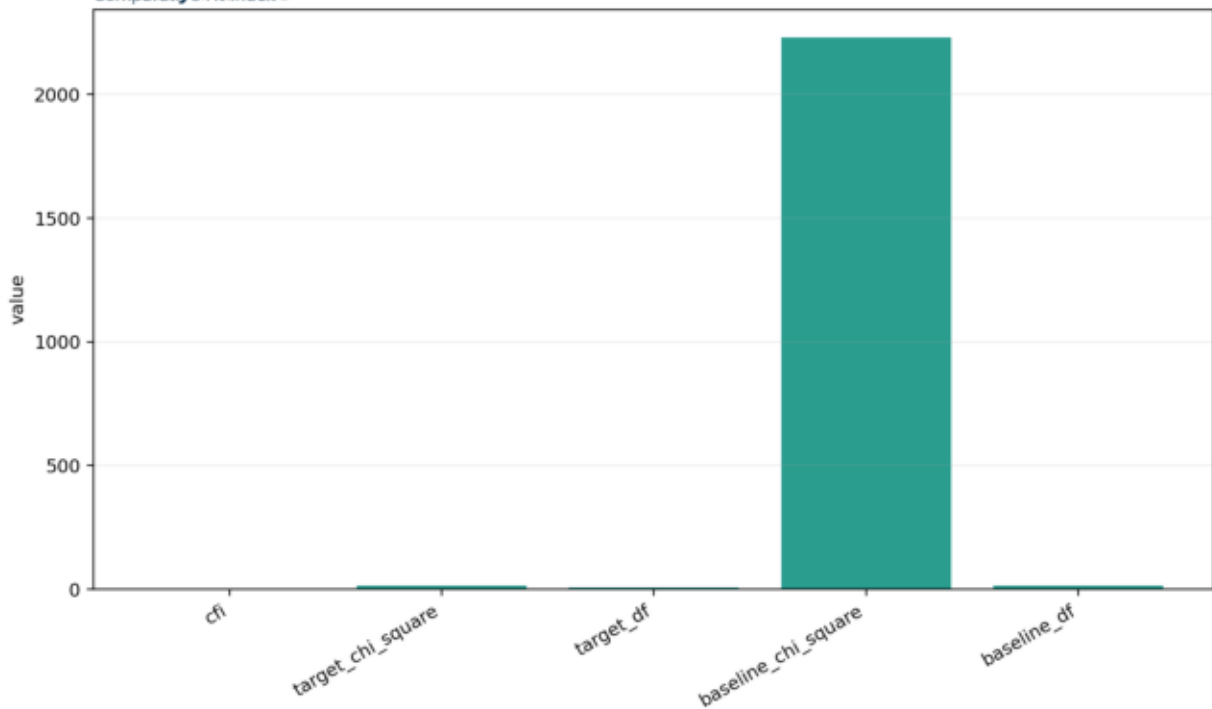
baseline_df: 15

Interpretation:

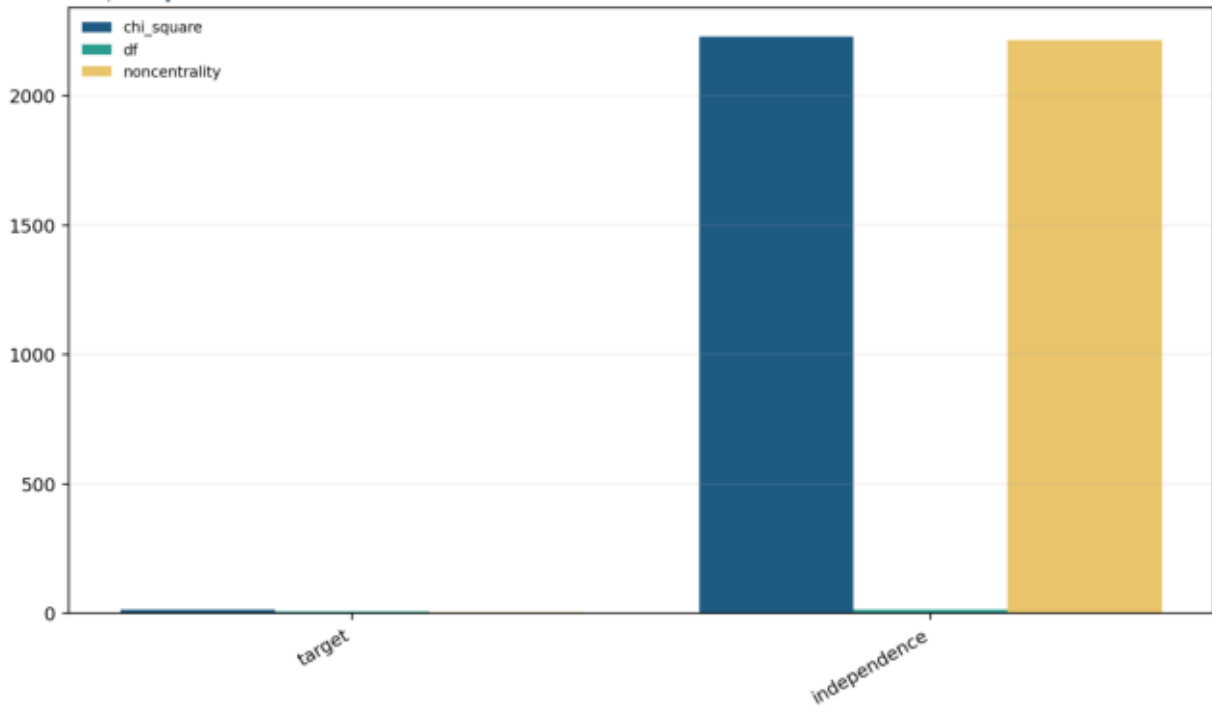
CFI compares target and independence-model noncentrality.

CFI=0.997398.

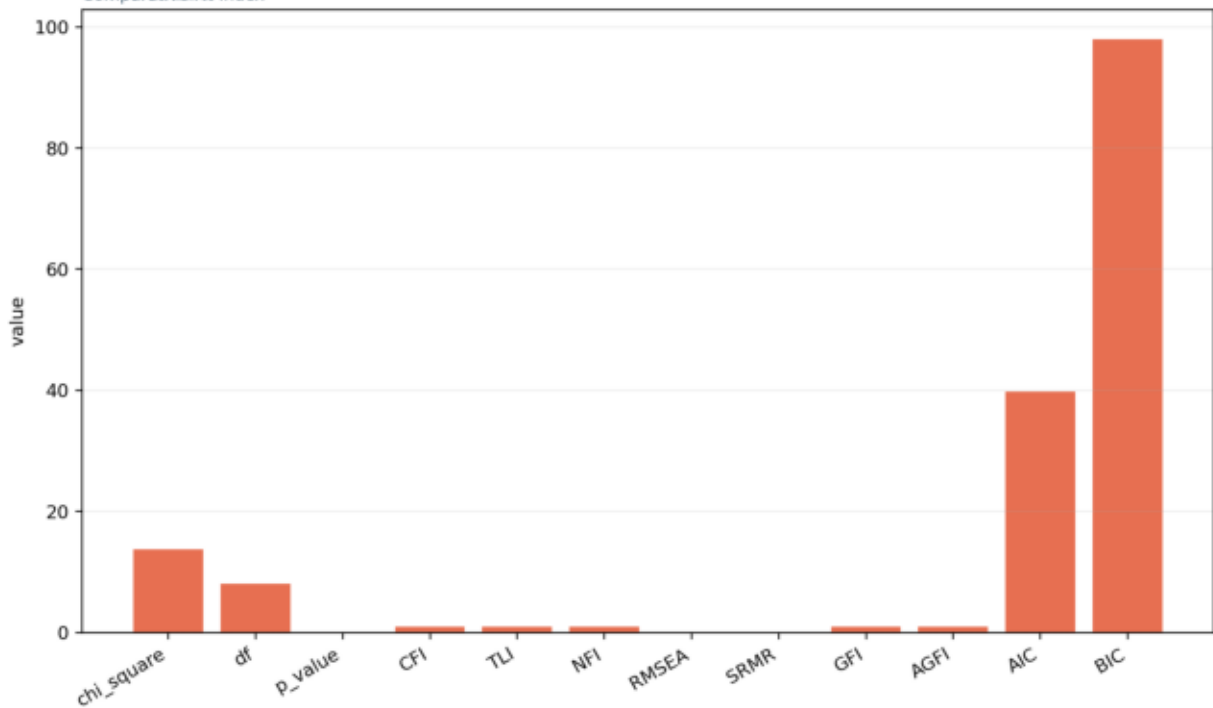
Primary Metrics



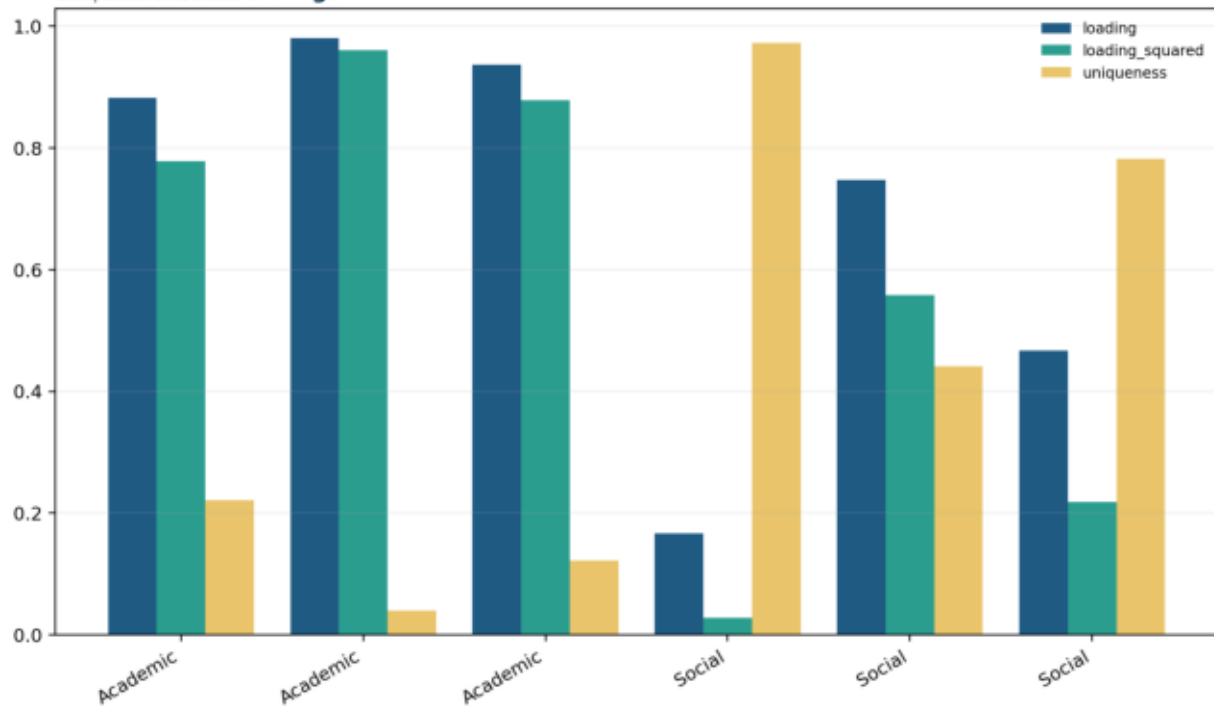
Cfi Components



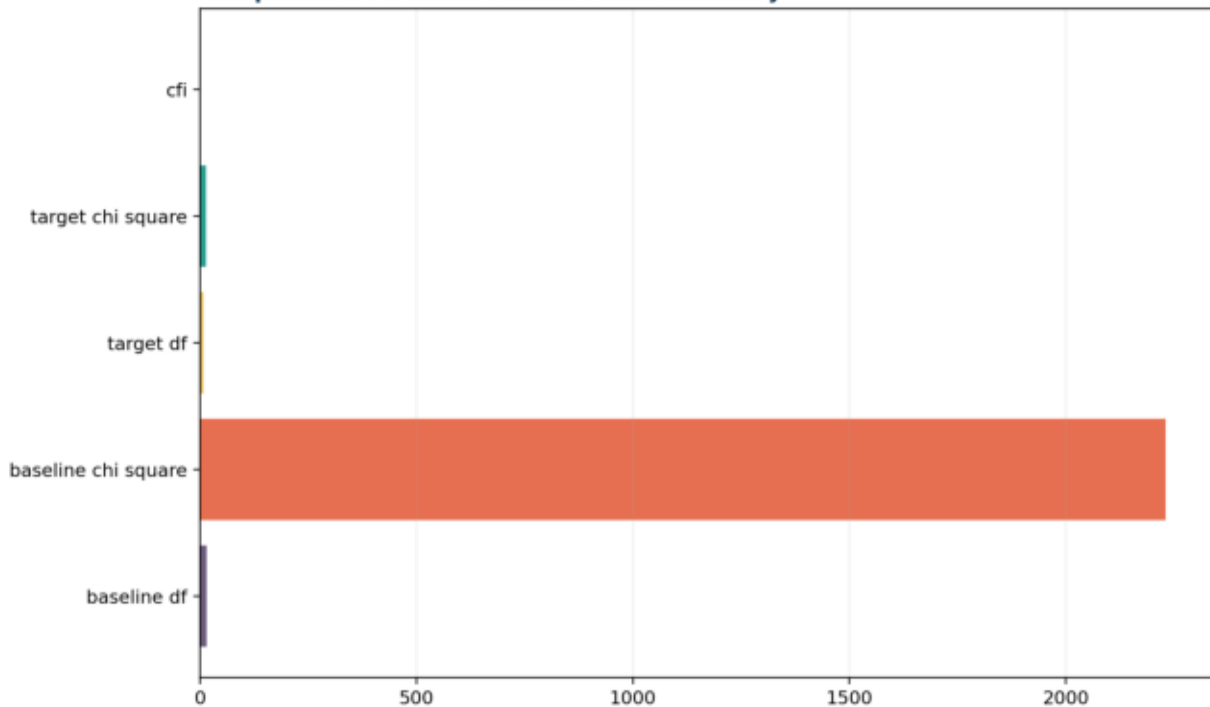
Fit Indices



Standardized Loadings



Comparative Fit Index verified result summary



Primary Metrics

metric	value
cfi	0.997398
target_chi_square	13.764
target_df	8
baseline_chi_square	2230.38
baseline_df	15

Cfi Components

model	chi_square	df	noncentrality
target	13.764	8	5.76397
independence	2230.38	15	2215.38

Fit Indices

index	value
chi_square	13.764
df	8
p_value	0.0881286
CFI	0.997398
TLI	0.995122
NFI	0.993829
RMSEA	0.0333448
SRMR	0.0356632
GFI	0.992635
AGFI	0.980667
AIC	39.764
BIC	97.9446

Standardized Loadings

construct	item	loading	loading_squared	uniqueness
Academic	G1	0.882325	0.778498	0.221502
Academic	G2	0.980163	0.96072	0.0392796
Academic	G3	0.937143	0.878238	0.121762
Social	famrel	0.16641	0.0276922	0.972308
Social	freetime	0.747409	0.55862	0.44138
Social	goout	0.466884	0.217981	0.782019