

Tucker-Lewis Index

Standalone verified Python analysis

Test: Tucker-Lewis Index

Design: Parsimony-sensitive incremental fit using target and baseline chi-square per degree of freedom.

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

Null hypothesis: The target model does not improve chi-square per df relative to independence.

Formula: $TLI = (\chi^2_b/df_b - \chi^2_t/df_t) / (\chi^2_b/df_b - 1)$.

Source rows: 649

Calculated metrics:

tli: 0.9951216367171145

target_chi_square_per_df: 1.7204965096422775

baseline_chi_square_per_df: 148.69226231469202

target_df: 8

baseline_df: 15

Independent reference values:

tli: 0.9951216367171145

target_chi_square_per_df: 1.7204965096422775

baseline_chi_square_per_df: 148.69226231469202

target_df: 8

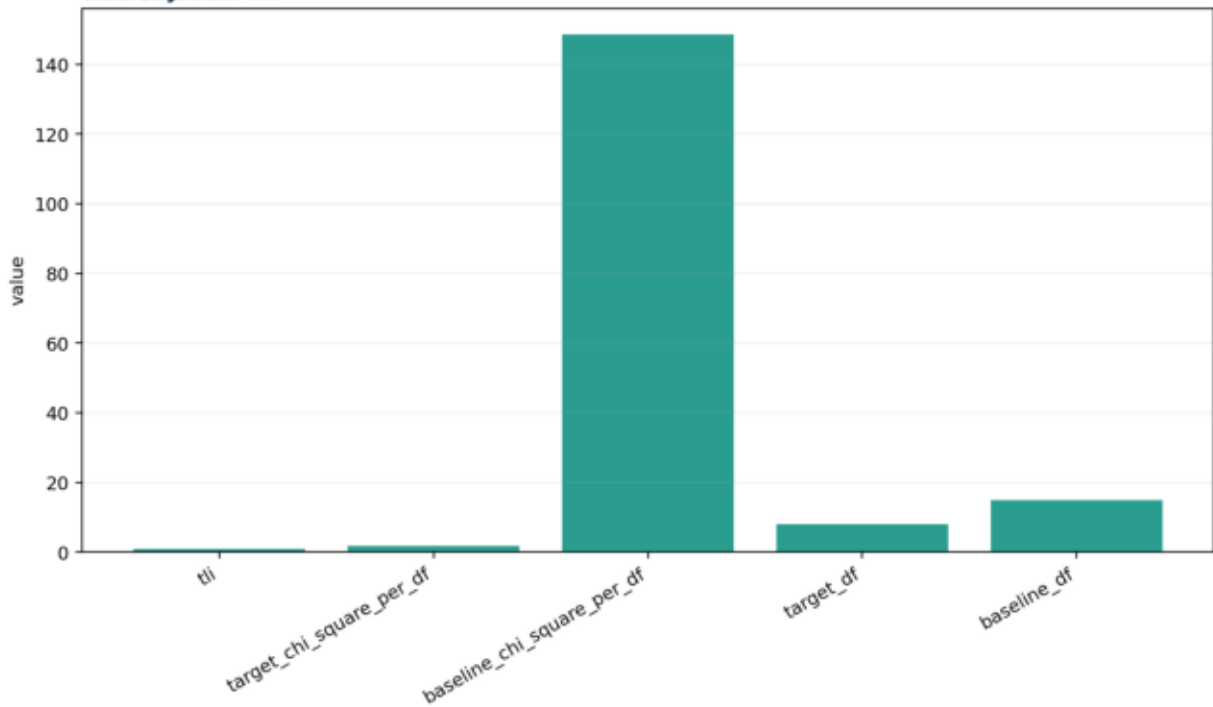
baseline_df: 15

Interpretation:

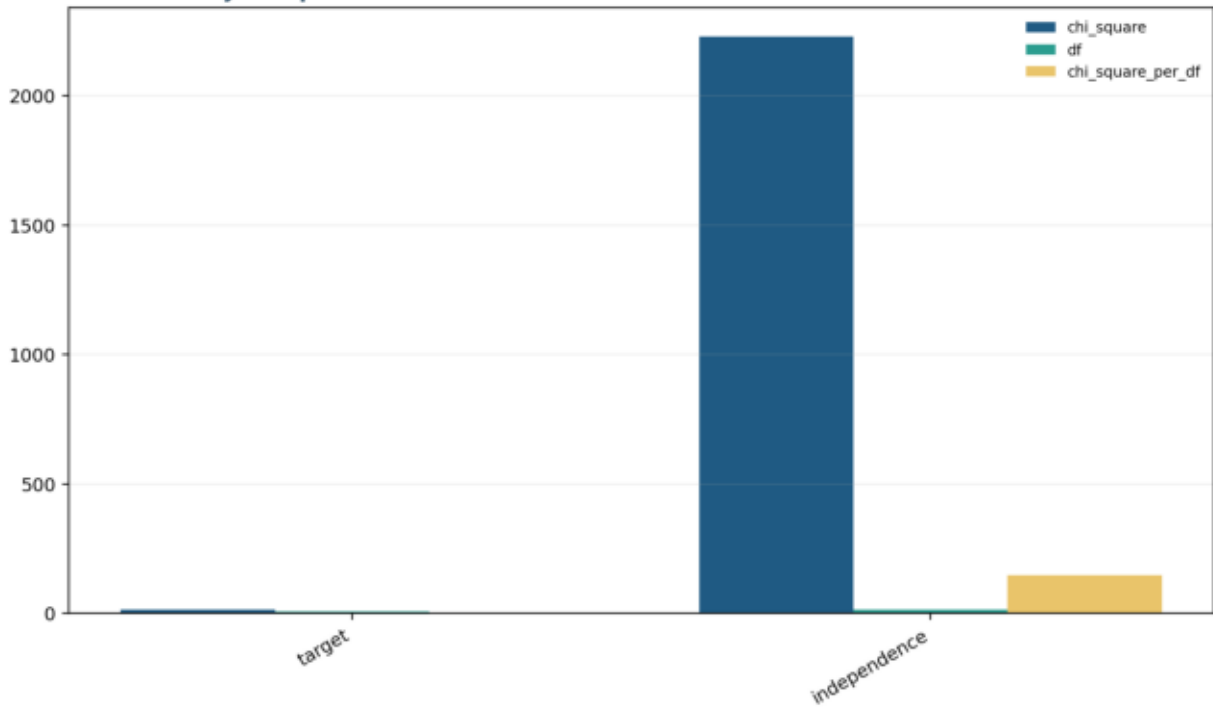
TLI compares chi-square per degree of freedom and therefore penalizes complexity.

TLI=0.995122.

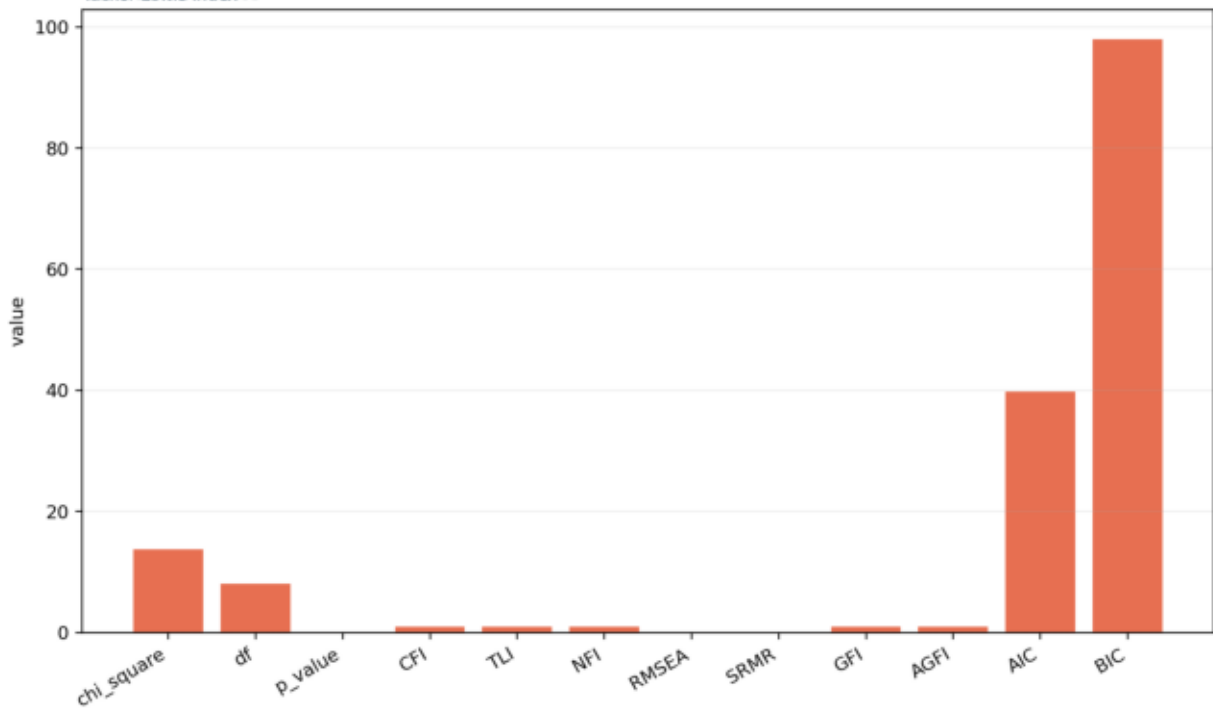
Primary Metrics



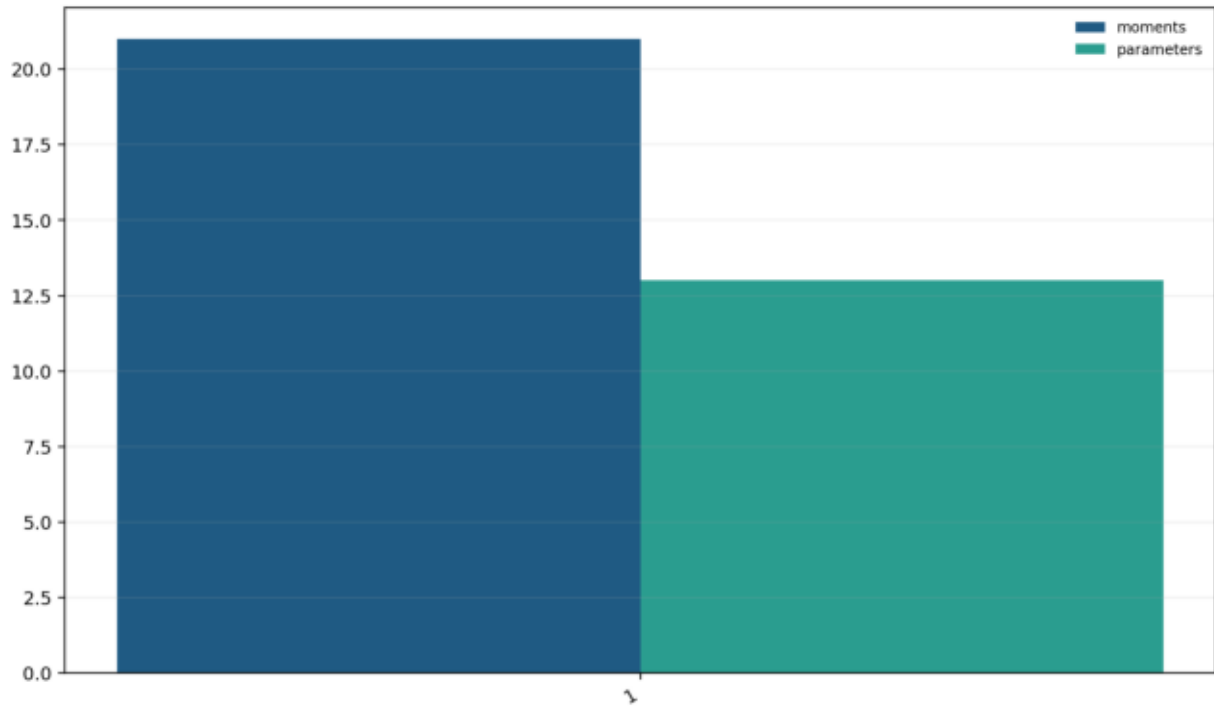
TikZ Parsimony Components



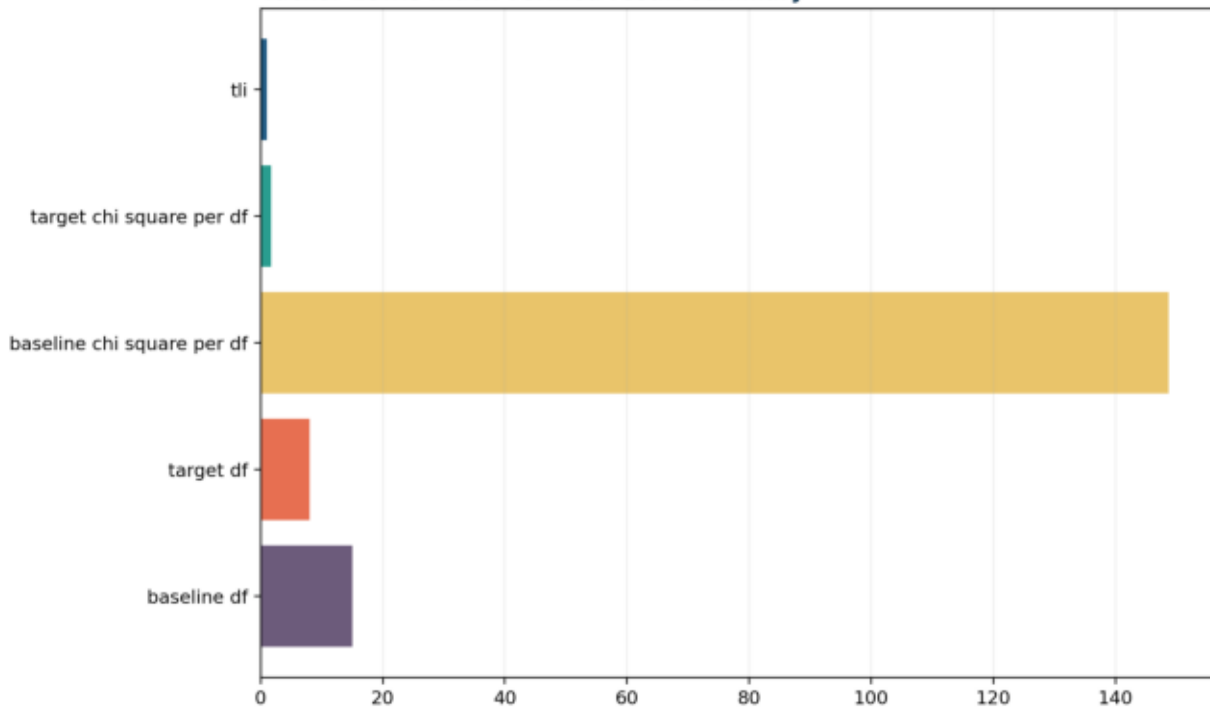
Tli Fit Context



Tik Model Dimensions



Tucker-Lewis Index verified result summary



Primary Metrics

metric	value
tli	0.995122
target_chi_square_per_df	1.7205
baseline_chi_square_per_df	148.692
target_df	8
baseline_df	15

Tli Parsimony Components

model	chi_square	df	chi_square_per_df
target	13.764	8	1.7205
independence	2230.38	15	148.692

Tli Fit Context

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

Tli Model Dimensions

moments	parameters
21	13