Composite Reliability

Standalone verified Python analysis

Test: Composite Reliability

Design: Congeneric reliability computed from CFA loadings and uniquenesses for each construct.

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

Null hypothesis: Composite reliability is at or below the declared adequacy threshold.

Formula: CR=(sum lambda)^2/[(sum lambda)^2+sum theta].

Source rows: 649

Calculated metrics:

academic_cr: 0.9534645459795349

social_cr: 0.46472892919002623

minimum_cr: 0.46472892919002623

constructs: 2

Independent reference values:

academic_cr: 0.9534645459795349

social_cr: 0.46472892919002623

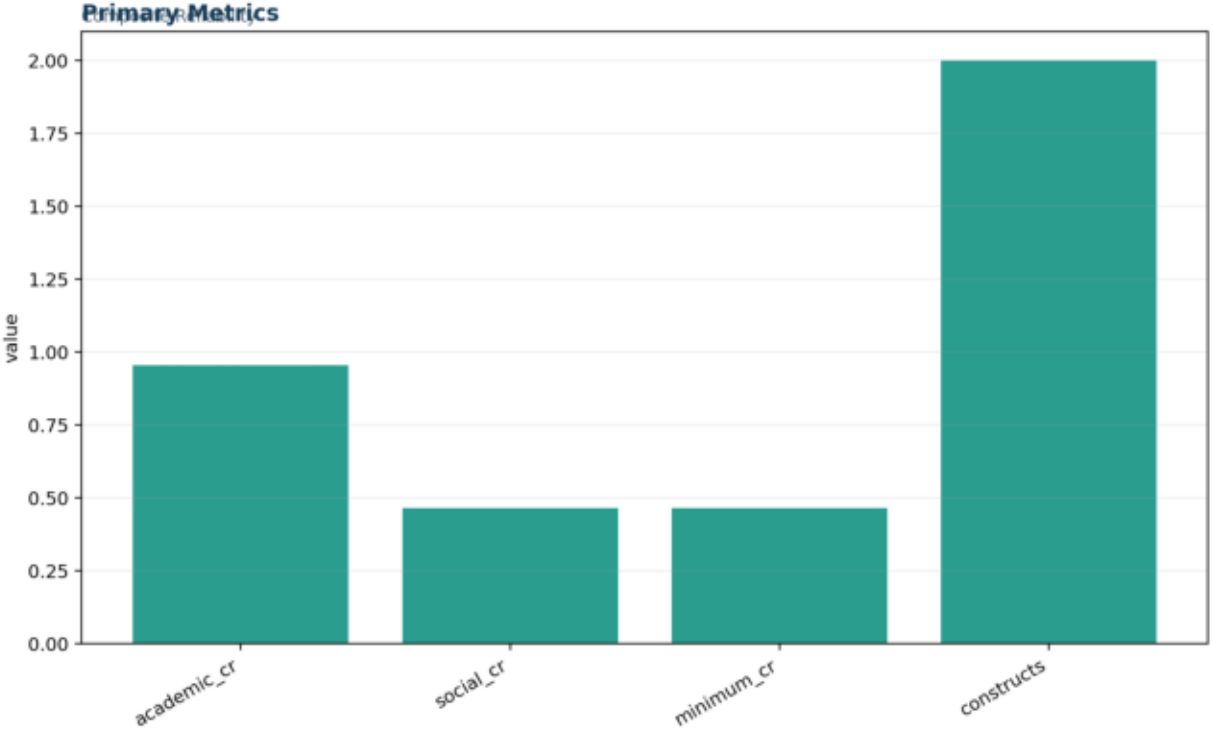
minimum_cr: 0.46472892919002623

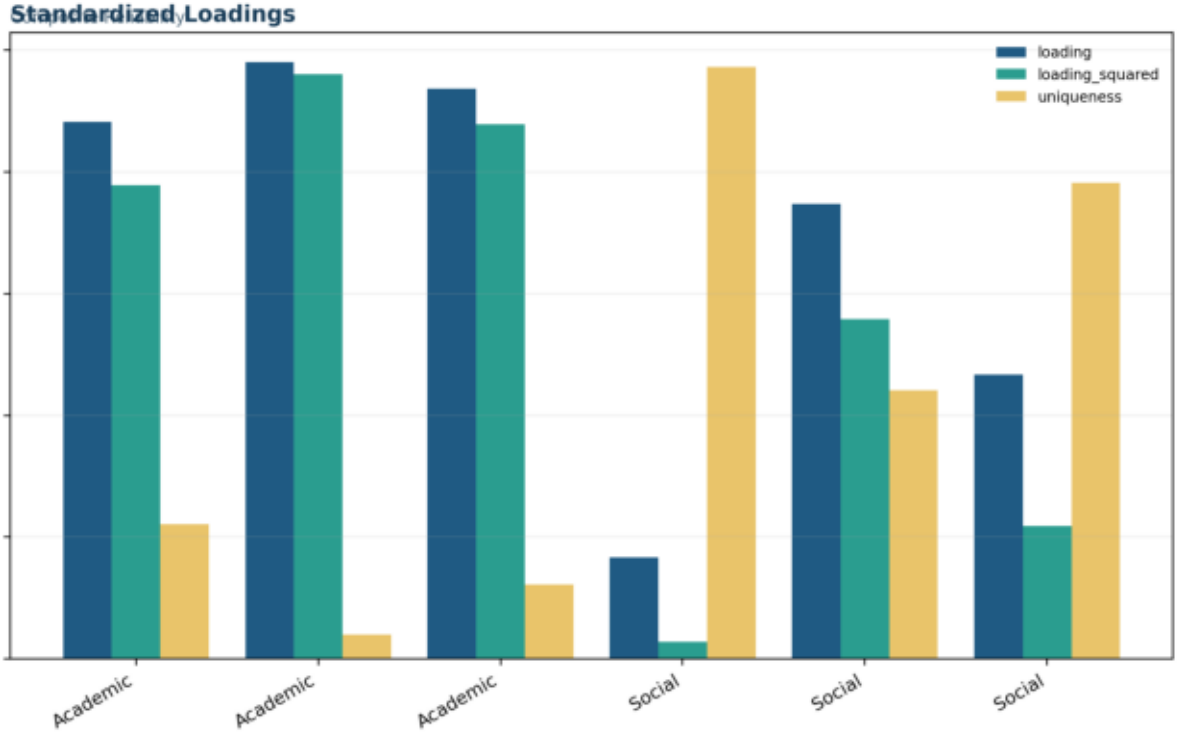
constructs: 2

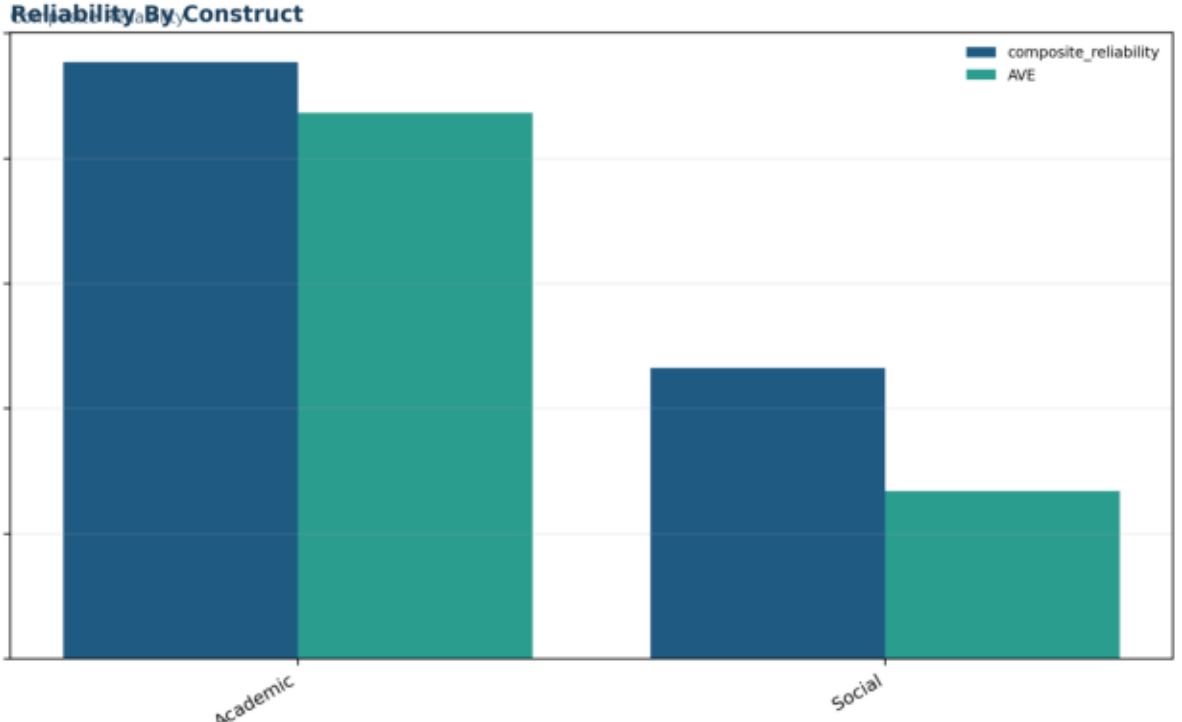
Interpretation:

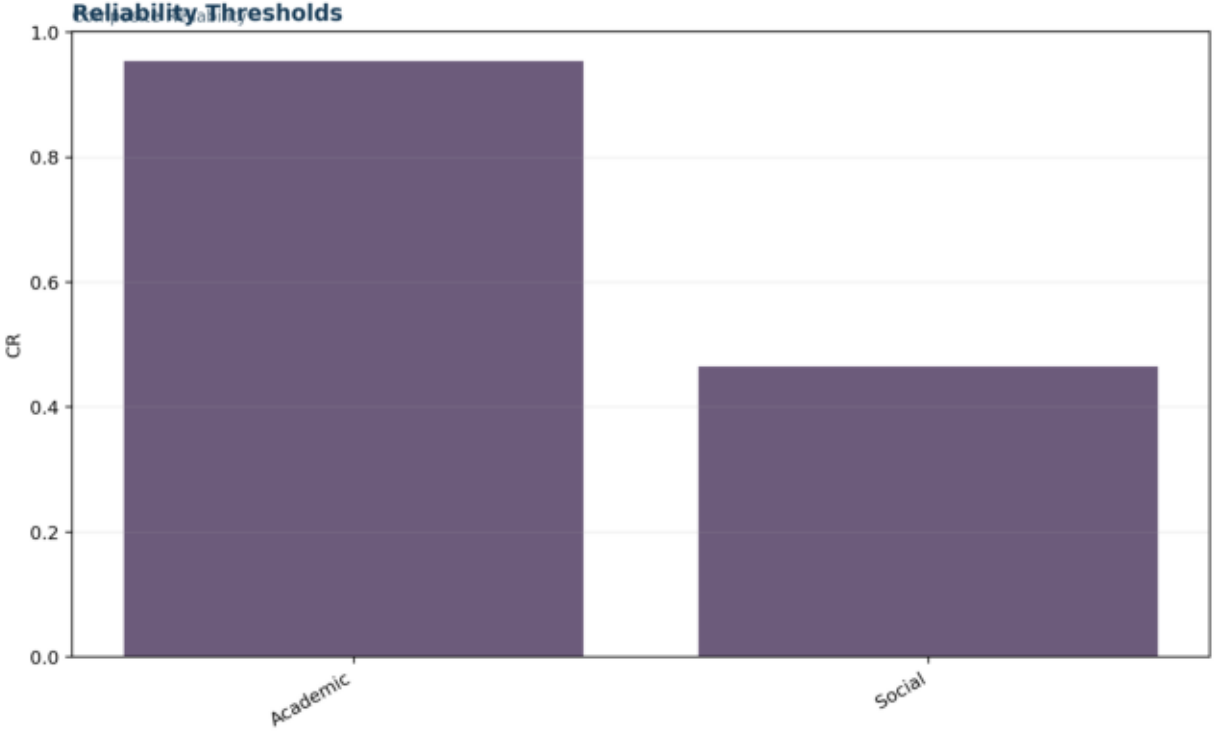
Composite reliability uses congeneric CFA loadings instead of tau-equivalence.

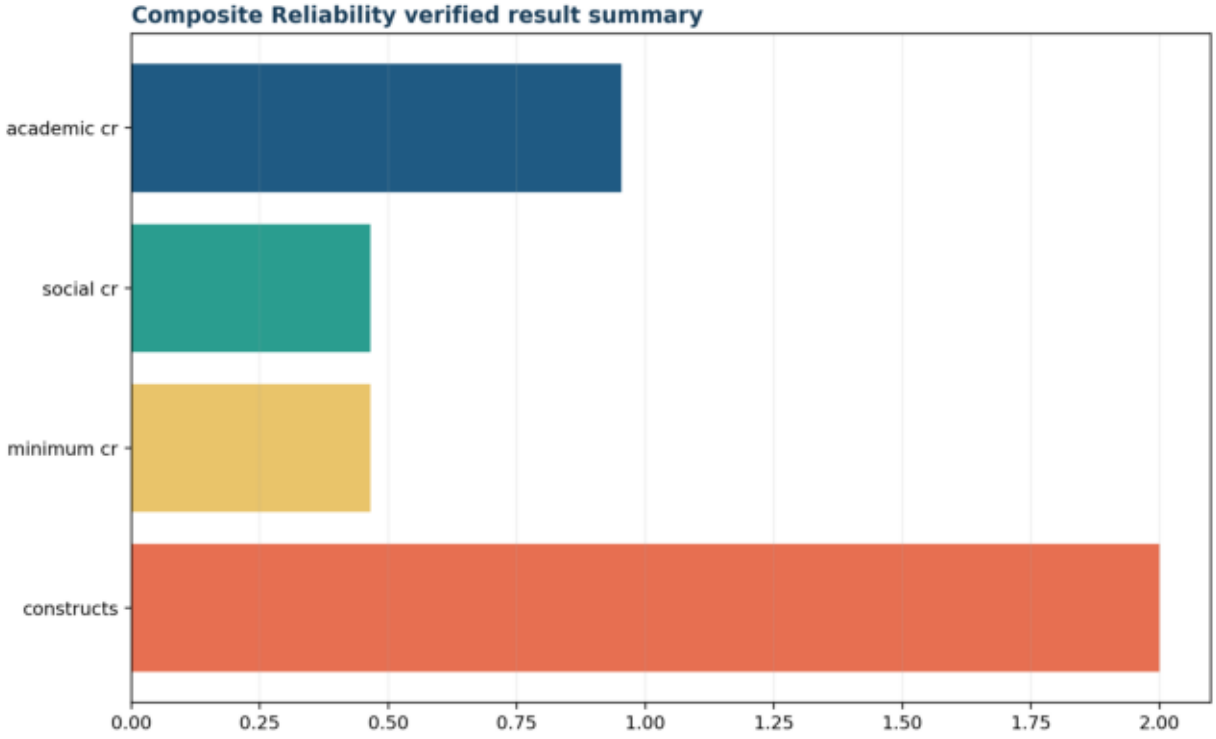
Minimum CR=0.464729.


Primary Metrics
value
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
academic_cr
social_cr
minimum_cr
constructs


Standardized Loadings
loading
loading_squared
uniqueness
1.0
0.8
0.6
0.4
0.2
0.0
Academic
Academic
Academic
Social
Social
Social


Reliability By Construct
composite_reliability
AVE
1.0
0.8
0.6
0.4
0.2
0.0
Academic
Social


Reliability Thresholds
1.0
0.8
0.6
0.4
0.2
0.0
CR
Academic
Social


Composite Reliability verified result summary
academic cr
social cr
minimum cr
constructs
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00

Primary Metrics

metric	value
academic_cr	0.953465
social_cr	0.464729
minimum_cr	0.464729
constructs	2

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

Reliability By Construct

construct	composite_reliability	AVE
Academic	0.953465	0.872485
Social	0.464729	0.268098

Reliability Thresholds

construct	CR	meets_0_70
Academic	0.953465	True
Social	0.464729	False