

Average Variance Extracted

Standalone verified Python analysis

Test: Average Variance Extracted

Design: Construct-specific convergent variance captured by standardized CFA loadings.

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

Null hypothesis: AVE is at or below .50 for a construct.

Formula: $AVE = \frac{\sum(\lambda_i^2)}{[\sum(\lambda_i^2) + \sum(\theta_i)]}$.

Source rows: 649

Calculated metrics:

academic_ave: 0.8724853483046293

social_ave: 0.26809760378634656

minimum_ave: 0.26809760378634656

constructs: 2

Independent reference values:

academic_ave: 0.8724853483046293

social_ave: 0.26809760378634656

minimum_ave: 0.26809760378634656

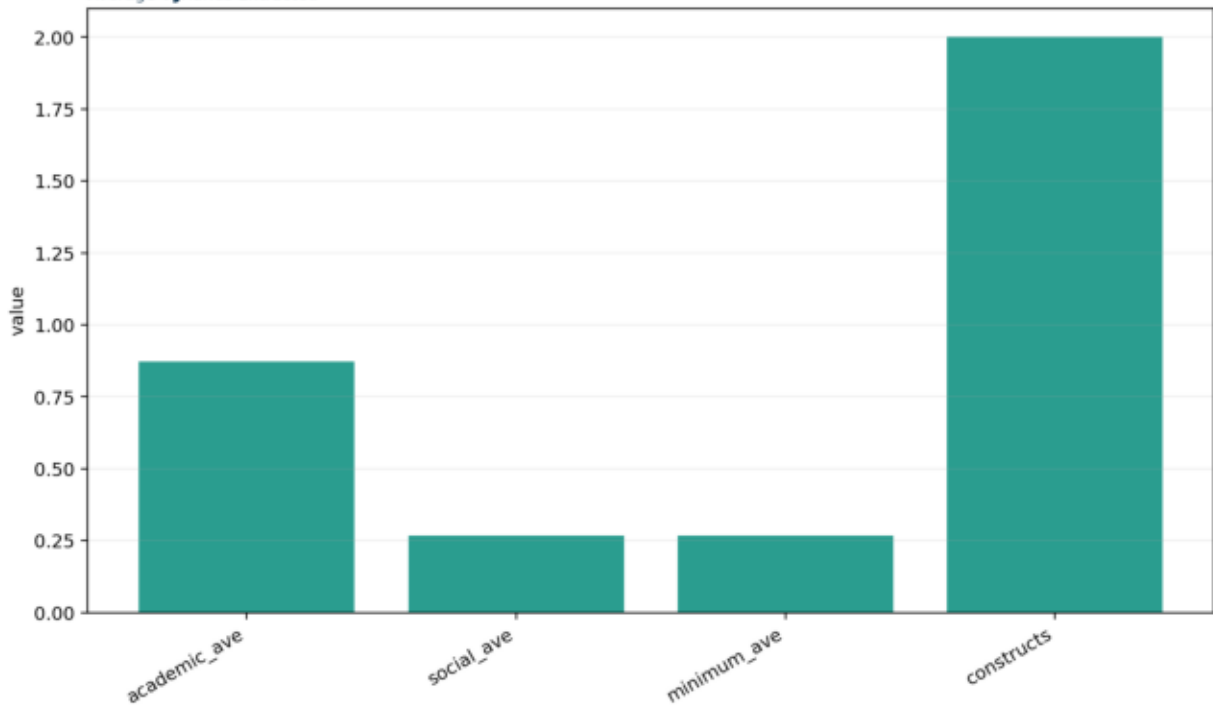
constructs: 2

Interpretation:

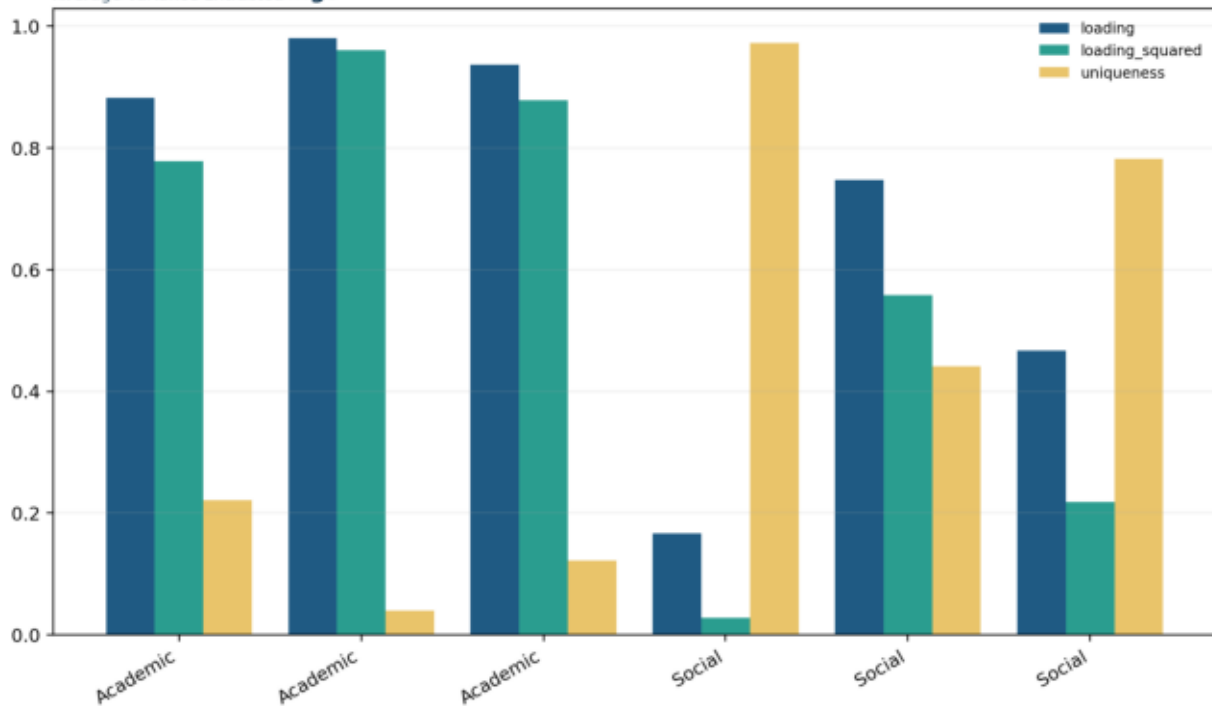
AVE is calculated separately from squared CFA loadings and uniquenesses.

Minimum construct AVE=0.268098.

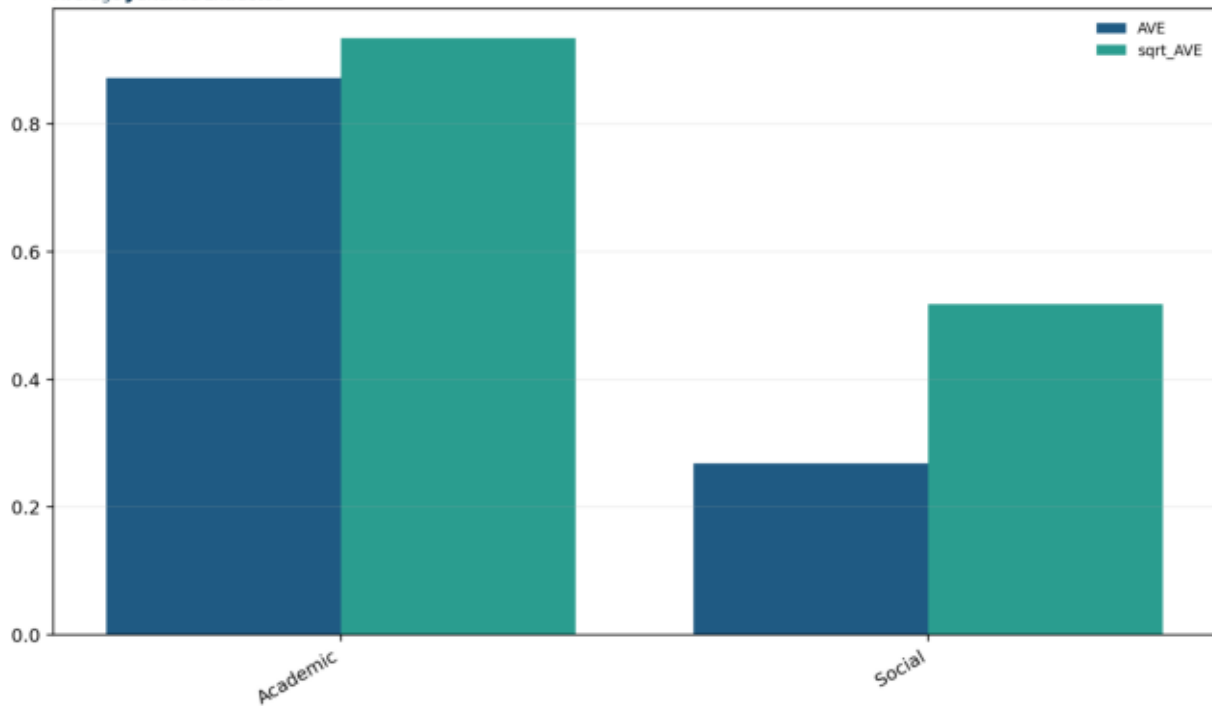
Primary Metrics



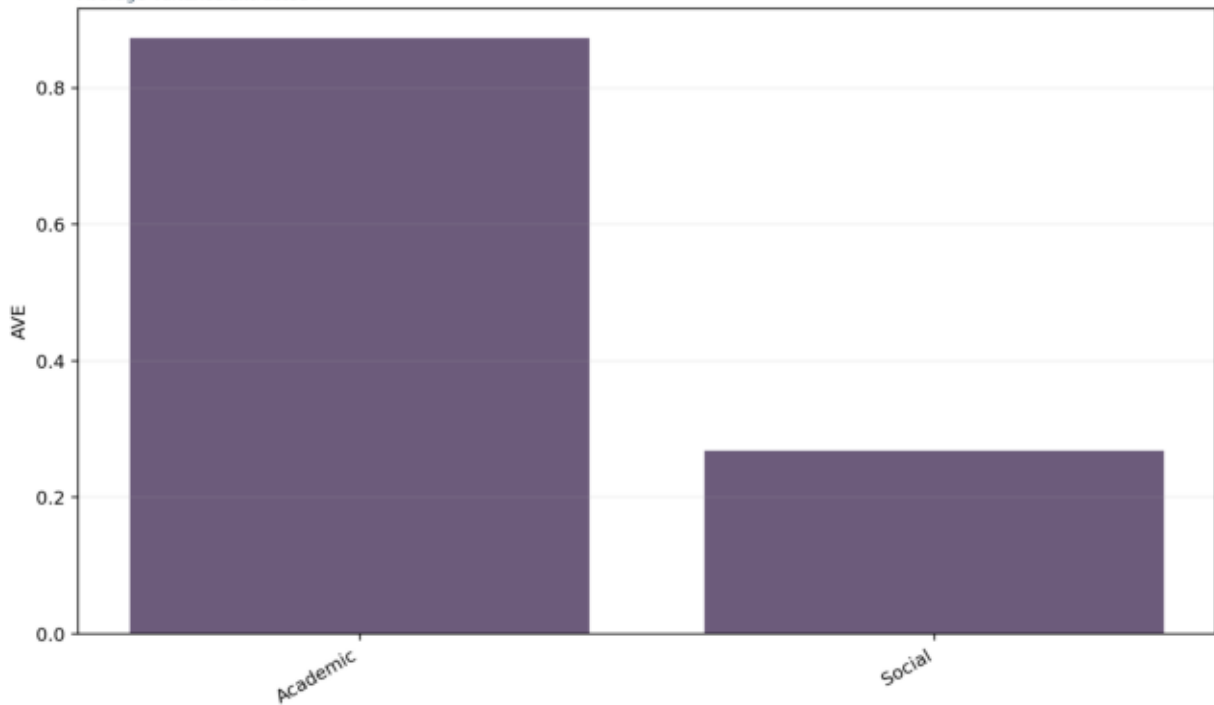
Standardized Loadings



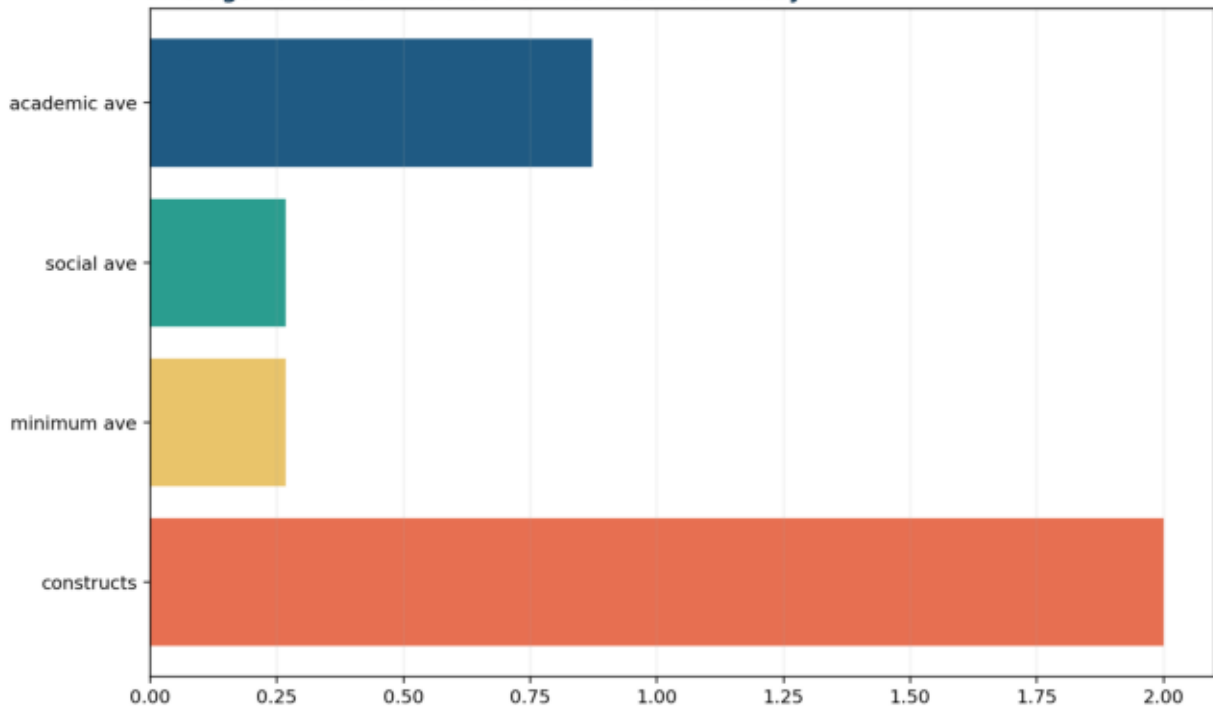
Ave By Construct



Ave Threshold Check



Average Variance Extracted verified result summary



Primary Metrics

metric	value
academic_ave	0.872485
social_ave	0.268098
minimum_ave	0.268098
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

Ave By Construct

construct	AVE	sqrt_AVE
Academic	0.872485	0.934069
Social	0.268098	0.517781

Ave Threshold Check

construct	AVE	meets_0_50
Academic	0.872485	True
Social	0.268098	False