

Heterotrait-Monotrait Ratio

Standalone verified Python analysis

Test: Heterotrait-Monotrait Ratio

Design: Observed-correlation HTMT for academic and social indicator blocks.

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

Null hypothesis: HTMT is at or above the declared discriminant-validity limit.

Formula: $HTMT = \frac{\text{mean}|r_{AS}|}{\sqrt{(\text{mean}|r_{AA}| \text{ mean}|r_{SS}|)}}$.

Source rows: 649

Calculated metrics:

htmt: 0.21043104090296003

heterotrait_mean: 0.08519839136285395

academic_monotrait_mean: 0.8699722528859932

social_monotrait_mean: 0.18842467791168493

construct_pairs: 1

Independent reference values:

htmt: 0.21043104090296003

heterotrait_mean: 0.08519839136285395

academic_monotrait_mean: 0.8699722528859932

social_monotrait_mean: 0.18842467791168493

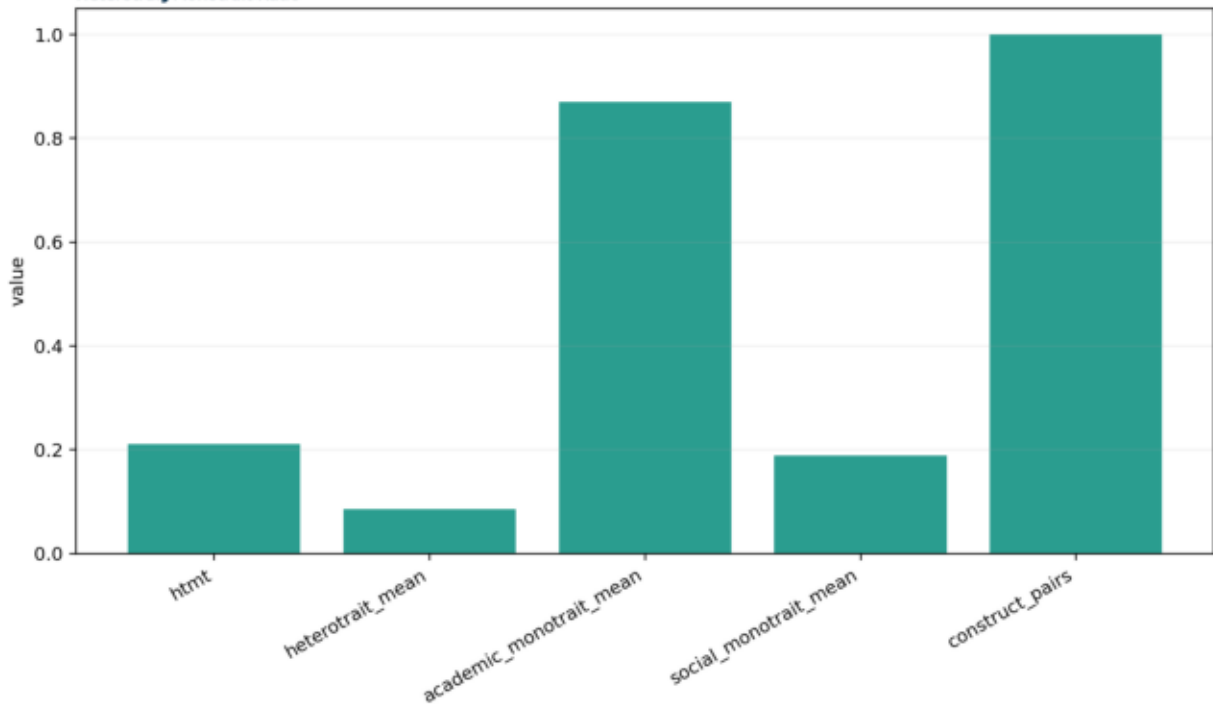
construct_pairs: 1

Interpretation:

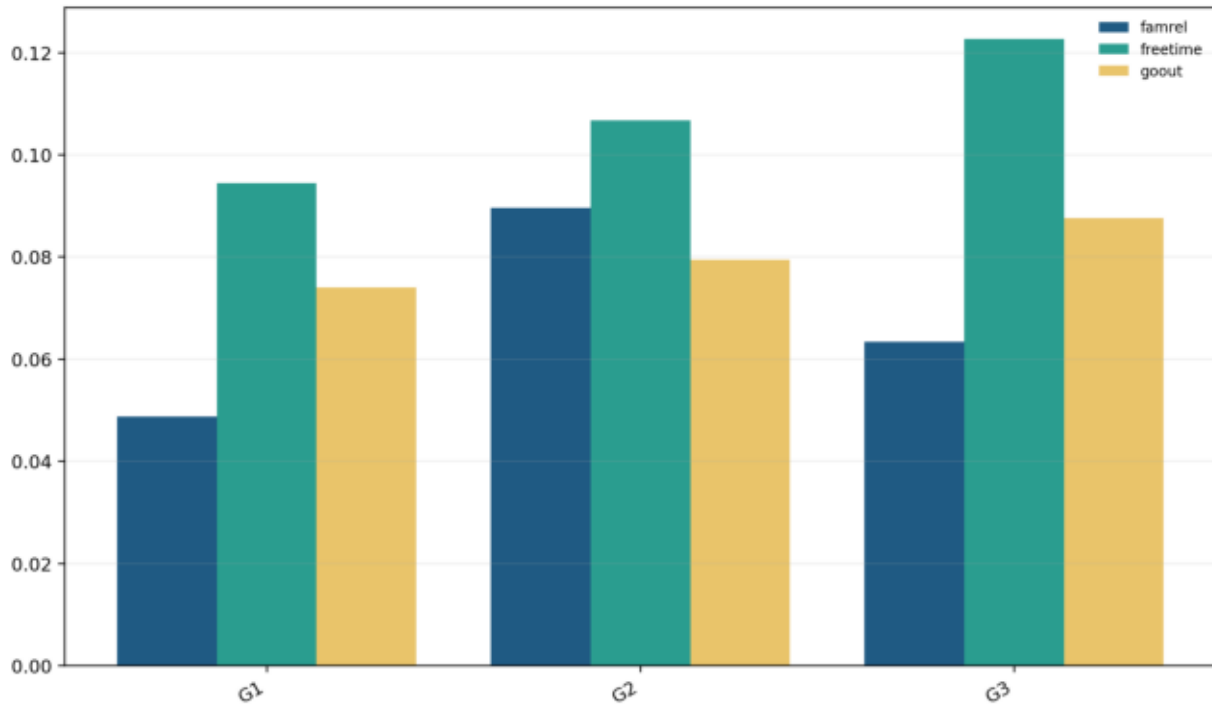
HTMT divides mean heterotrait association by the geometric mean of monotrait associations.

HTMT=0.210431.

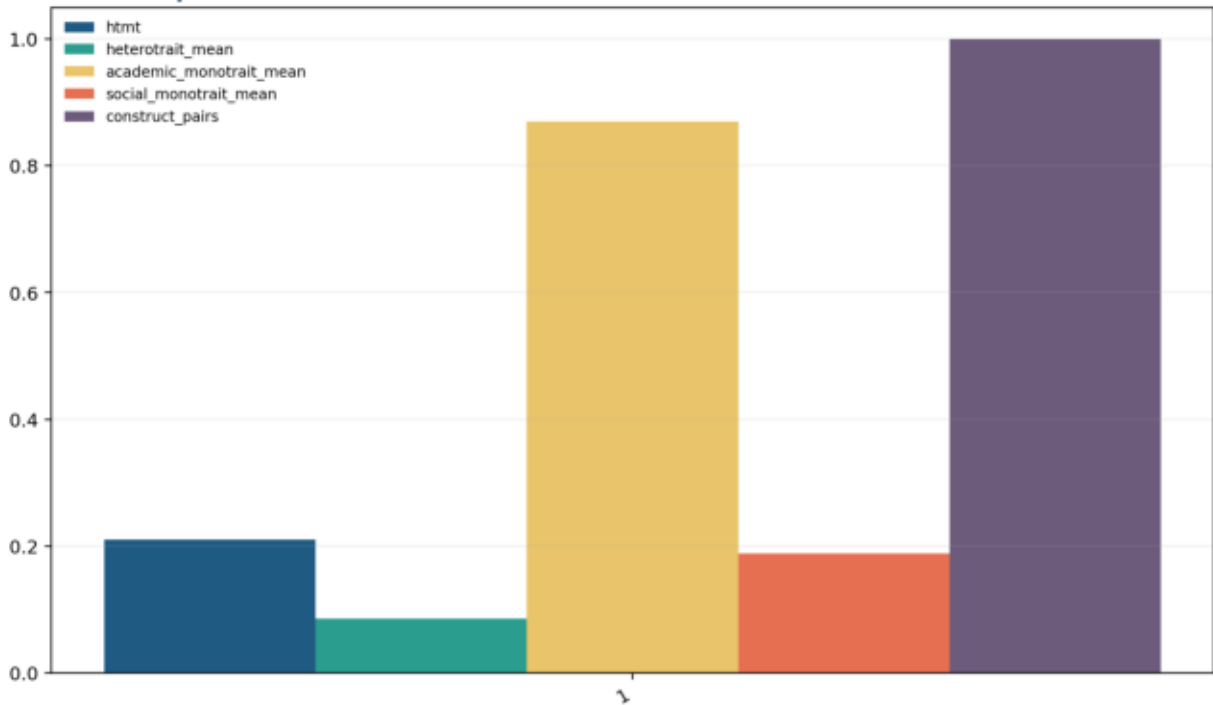
Primary Metrics



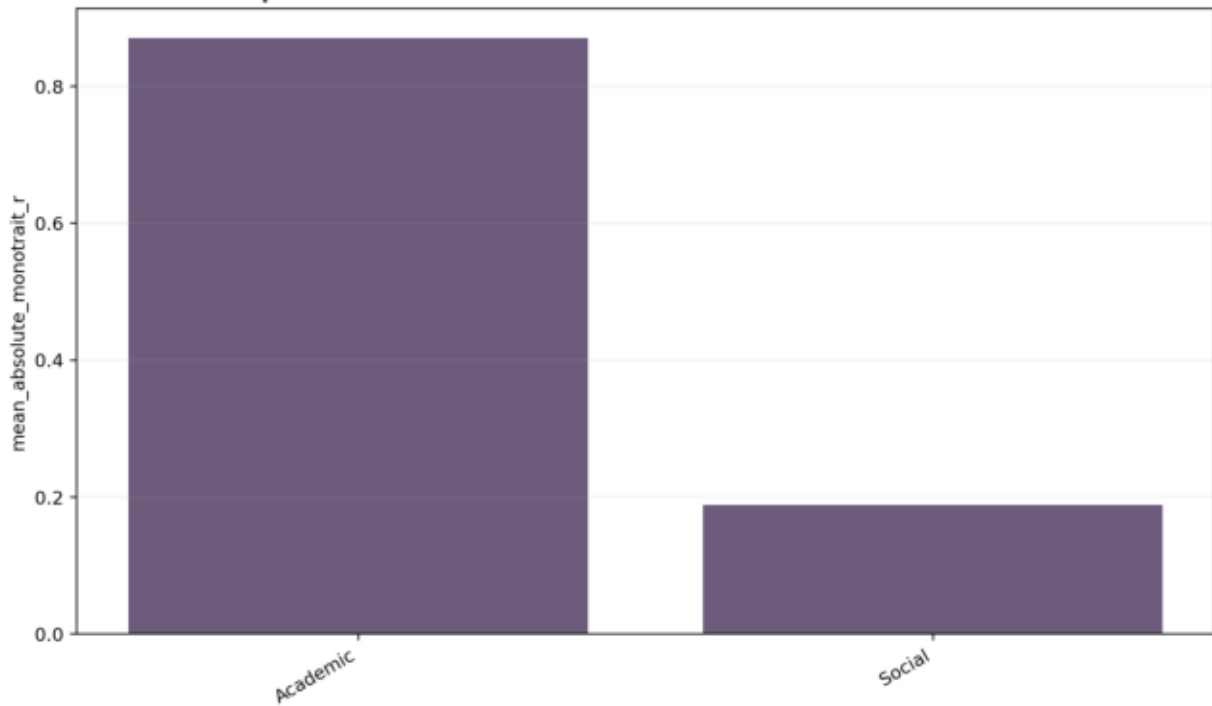
Absolute Heterotrait Correlations



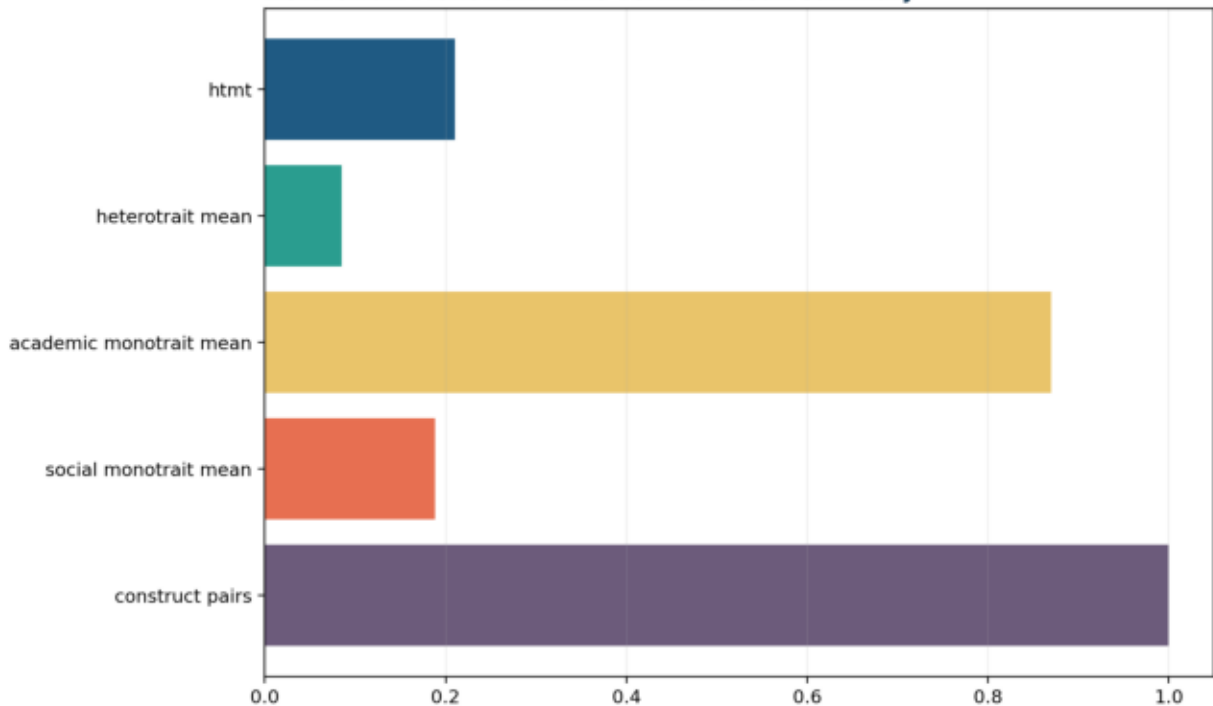
Htmt Components



Monotrait Components



Heterotrait-Monotrait Ratio verified result summary



Primary Metrics

metric	value
htmt	0.210431
heterotrait_mean	0.0851984
academic_monotrait_mean	0.869972
social_monotrait_mean	0.188425
construct_pairs	1

Absolute Heterotrait Correlations

academic_item	famrel	freetime	goout
G1	0.0487946	0.0944966	0.0740526
G2	0.0895878	0.106678	0.0794692
G3	0.0633611	0.122705	0.0876407

Htmt Components

htmt	heterotrait_mean	academic_monotrait_mear	social_monotrait_mean	construct_pairs
0.210431	0.0851984	0.869972	0.188425	1

Monotrait Components

construct	mean_absolute_monotrait_r
Academic	0.869972
Social	0.188425