

SPSS-Style Principal Axis Factoring

Standalone verified Python analysis

Test: SPSS-Style Principal Axis Factoring

Design: Principal-axis extraction with Kaiser-normalized varimax rotation and diagnostic tables.

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

Null hypothesis: The retained factors have no salient rotated loadings.

Formula: PAF iterates communalities; varimax maximizes variance of squared normalized loadings.

Source rows: 649

Calculated metrics:

factors: 2

kmo: 0.7319770330640147

bartlett_chi_square: 2220.6317415901754

bartlett_p_value: 0.0

rotation_loading_maximum: 0.982458749894515

Independent reference values:

factors: 2

kmo: 0.7319770330640147

bartlett_chi_square: 2220.6317415901754

bartlett_p_value: 0.0

rotation_loading_maximum: 0.982458749894515

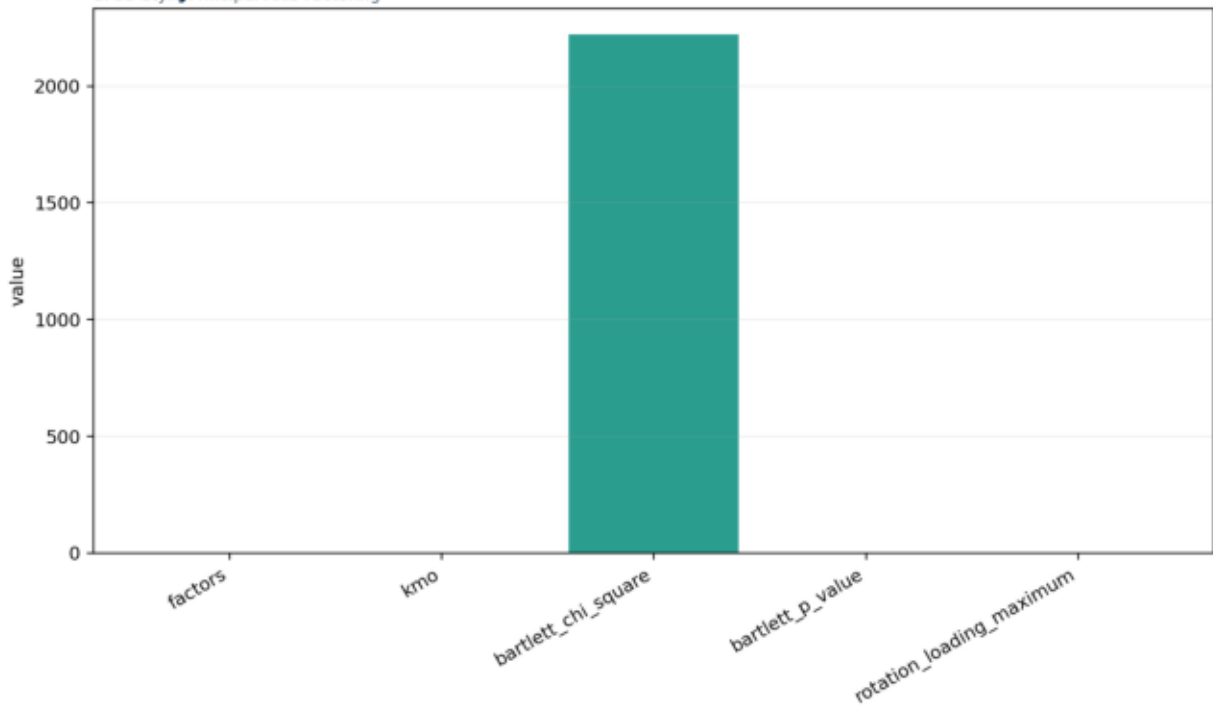
Interpretation:

This SPSS-style analysis uses principal-axis extraction and orthogonal varimax.

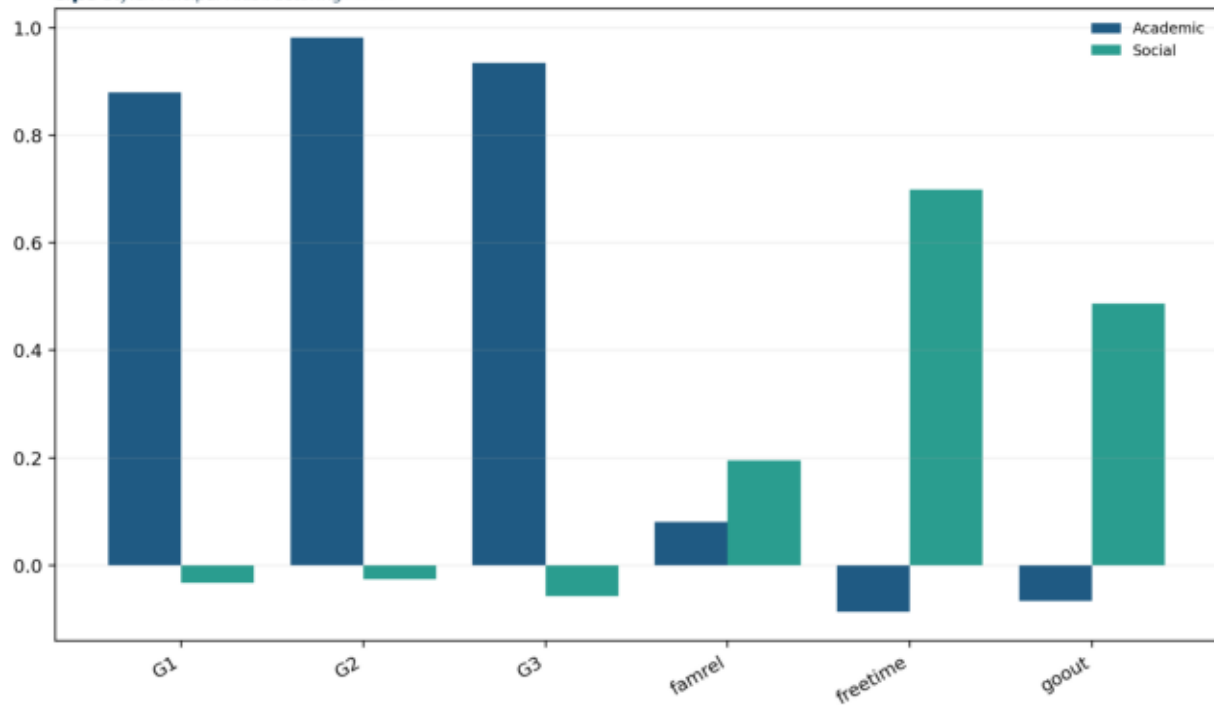
KMO=0.731977.

Primary Metrics

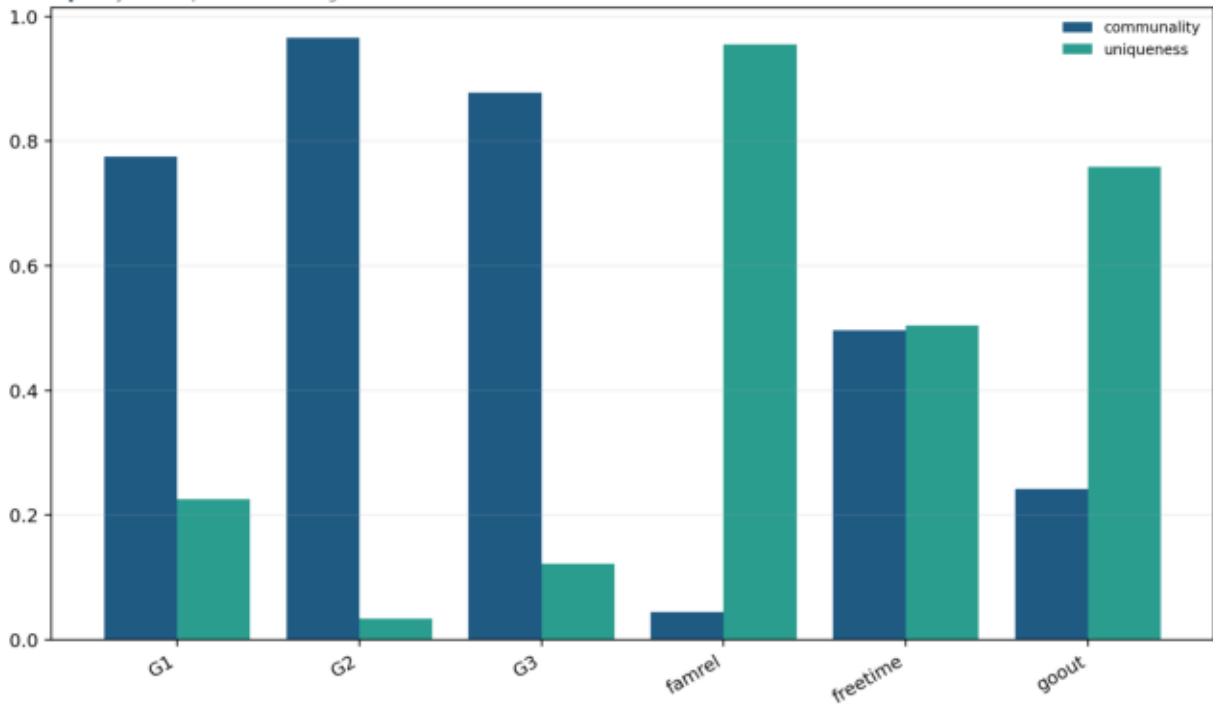
Principal Component Analysis Factoring



Spss Rotated Factor Matrix

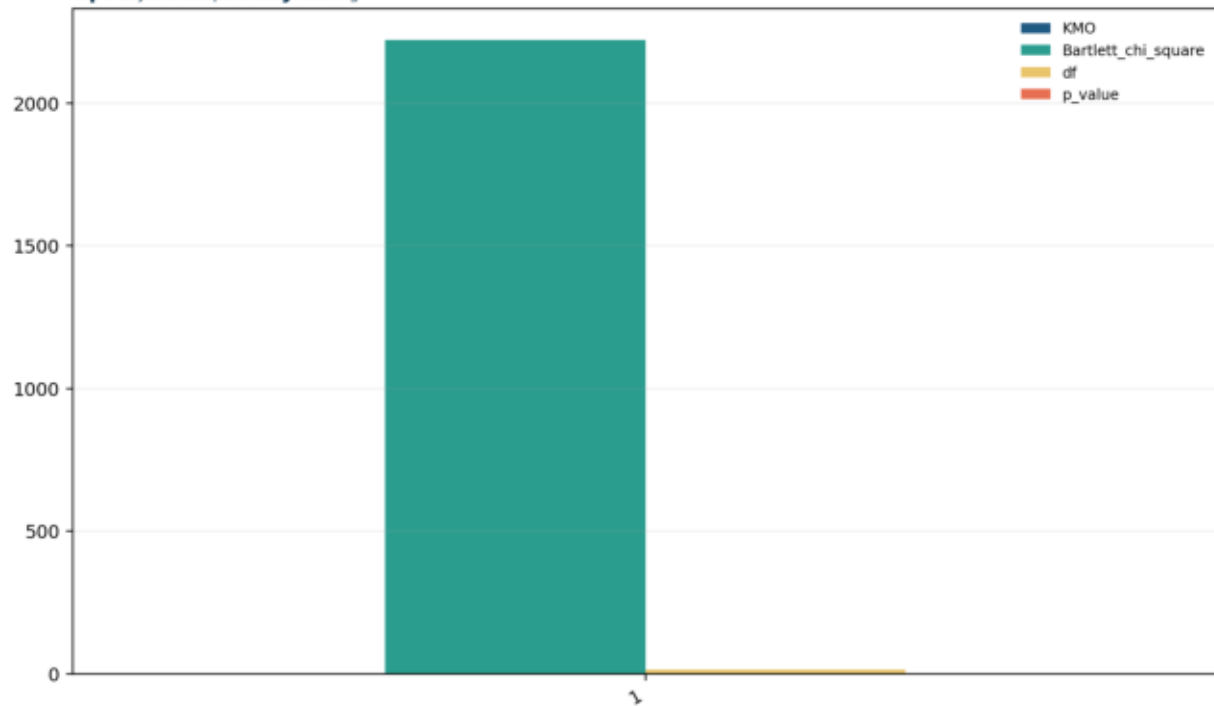


Spss: Communalities

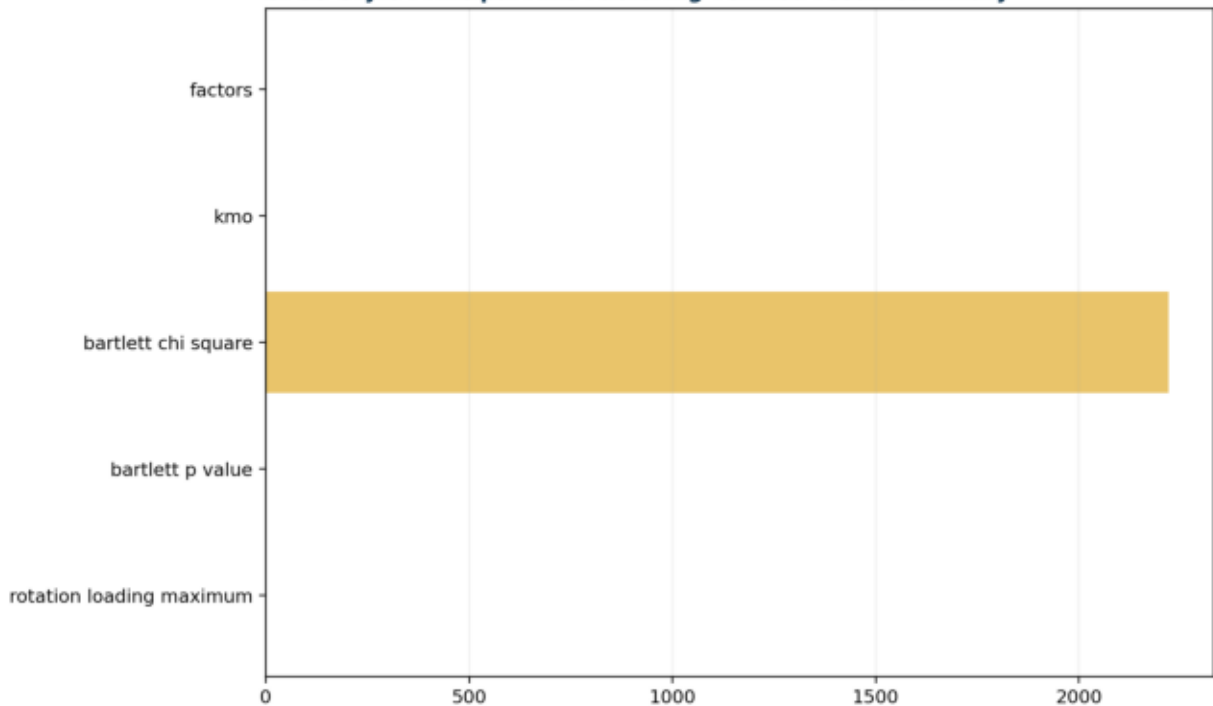


Spss Factorability

Factorability



SPSS-Style Principal Axis Factoring verified result summary



Primary Metrics

metric	value
factors	2
kmo	0.731977
bartlett_chi_square	2220.63
bartlett_p_value	0
rotation_loading_maximum	0.982459

Spss Rotated Factor Matrix

item	Academic	Social
G1	0.879691	-0.0325404
G2	0.982459	-0.0260739
G3	0.935067	-0.0575854
famrel	0.0808553	0.195209
freetime	-0.0869079	0.699155
goout	-0.0660198	0.487027

Spss Communalities

item	communality	uniqueness
G1	0.774915	0.225085
G2	0.965905	0.034095
G3	0.877666	0.122334
famrel	0.0446442	0.955356
freetime	0.496371	0.503629
goout	0.241554	0.758446

Spss Factorability

KMO	Bartlett_chi_square	df	p_value
0.731977	2220.63	15	0