

Cattell Scree Plot Analysis

Test: Cattell Scree Plot Analysis

Design: Ordered correlation eigenvalues with first and second differences for elbow identification.

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

Null hypothesis: The eigenvalue sequence has no interpretable elbow above the scree.

Formula: Plot λ_j versus j ; inspect $\Delta \lambda$ and $\Delta^2 \lambda$ for the break in slope.

Source rows: 649

Calculated metrics:

largest_eigenvalue: 2.782869896154

elbow_component: 2

eigenvalues_above_one: 2

first_two_variance: 0.694612262636963

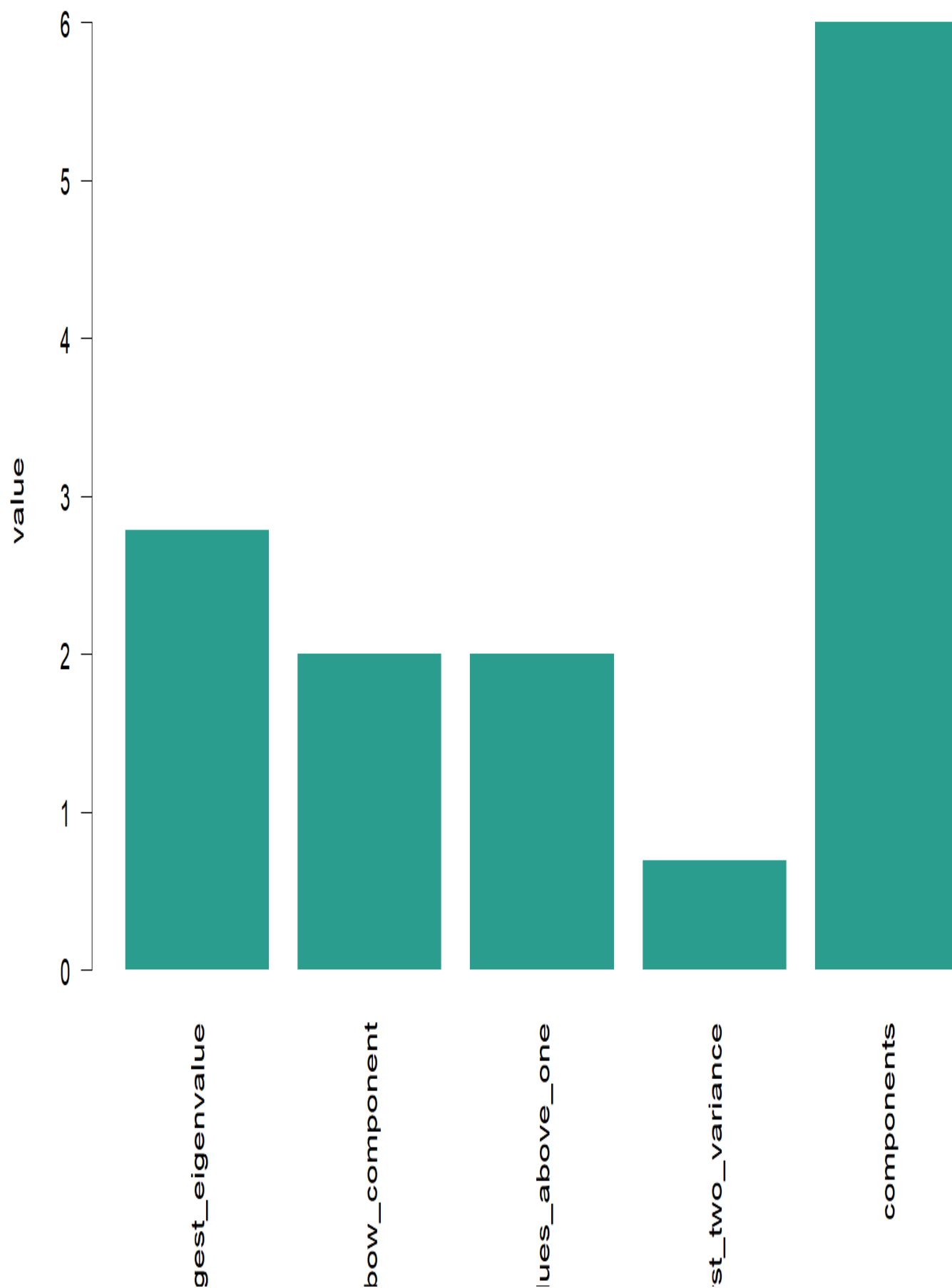
components: 6

Interpretation:

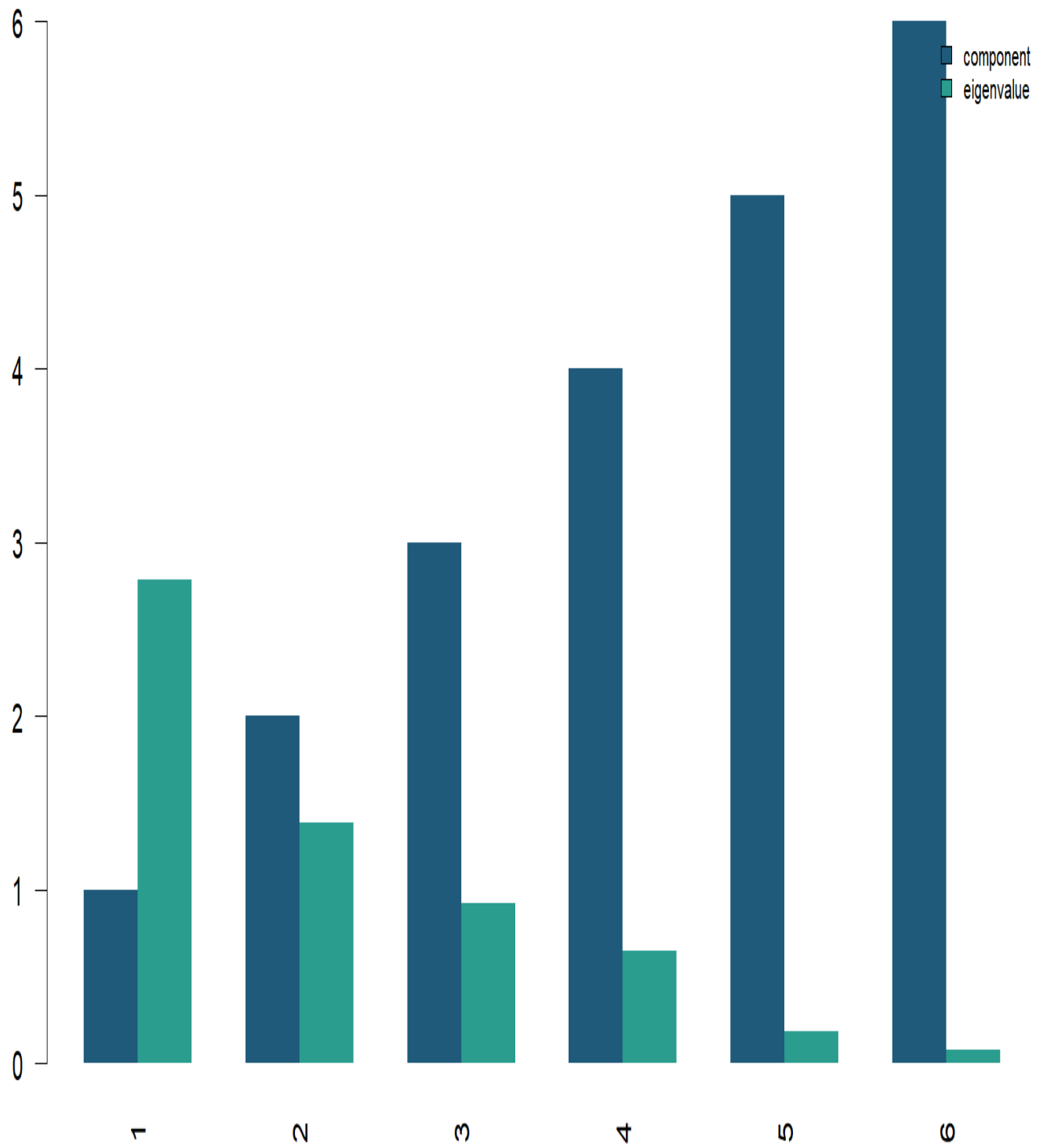
Scree curvature is separate from retention rules.

Elbow 2

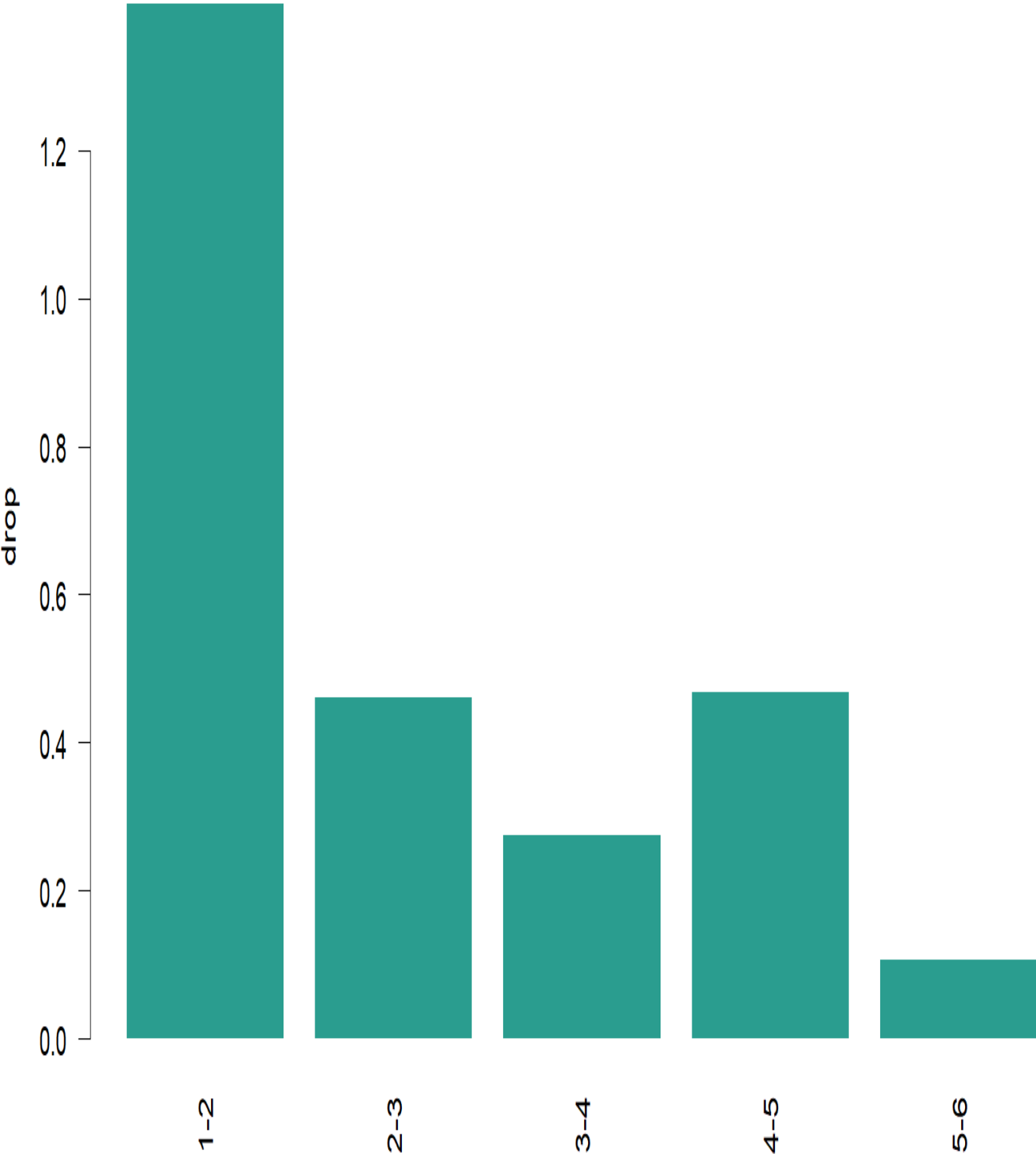
Cattell Scree Plot Analysis - primary metrics



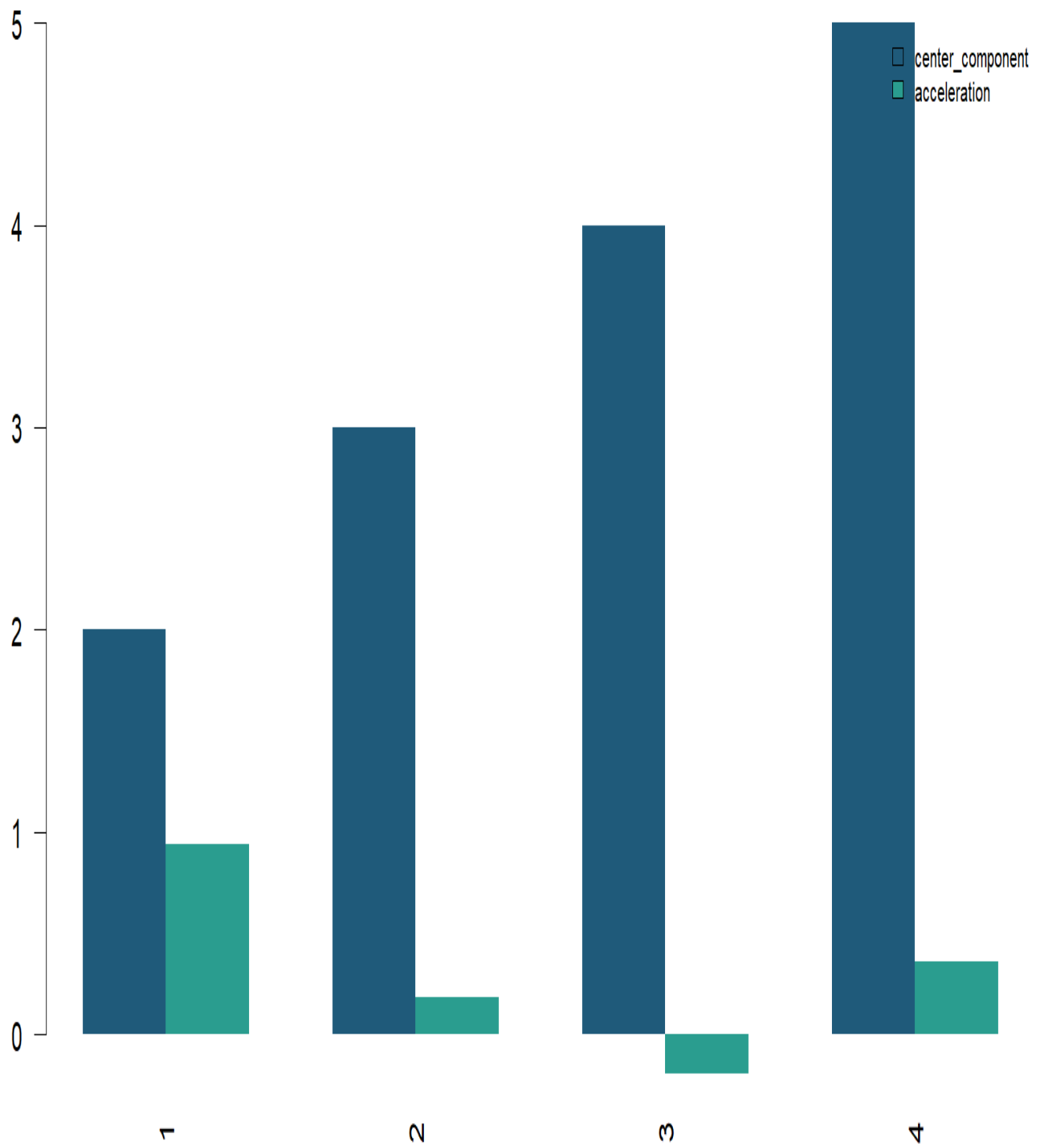
Cattell Scree Plot Analysis - scree coordinates



Cattell Scree Plot Analysis - scree first differences



Cattell Scree Plot Analysis - scree second differences



Cattell Scree Plot Analysis verified results

