

Nemenyi Post-Hoc Test

Standalone verified Python analysis

Test: Nemenyi Post-Hoc Test

Design: All-pairs comparison of G1, G2, and G3 mean ranks after Friedman.

Variables: within-student ranks of G1, G2, G3

Null hypothesis: Every pair of repeated grade occasions has equal mean rank.

Formula: $q_{ij} = |\bar{R}_i - \bar{R}_j| / \sqrt{[k(k+1)/(6n)]}$

Source rows: 649

Calculated metrics:

standard_error: 0.055512738165336896

q_critical_alpha_05: 2.3437005863784077

critical_difference: 0.1301052369895711

minimum_p_value: 0.0

Independent reference values:

standard_error: 0.055512738165336896

q_critical_alpha_05: 2.3437005863784077

critical_difference: 0.1301052369895711

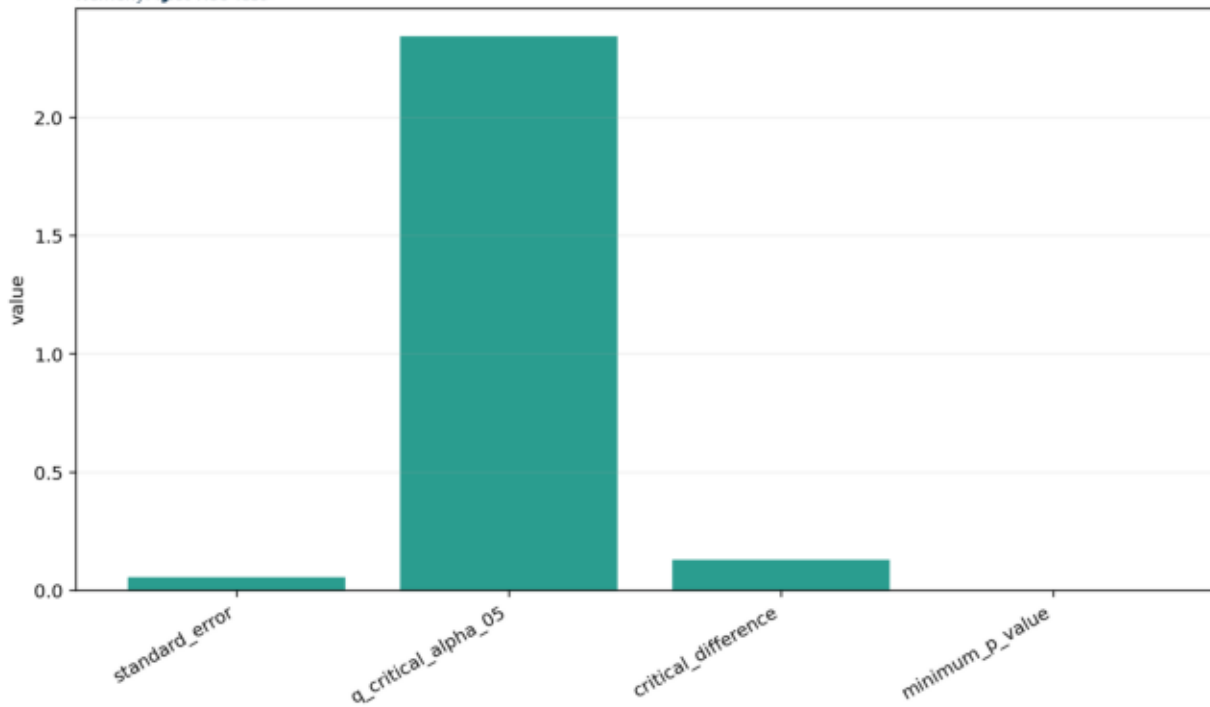
minimum_p_value: 0.0

Interpretation:

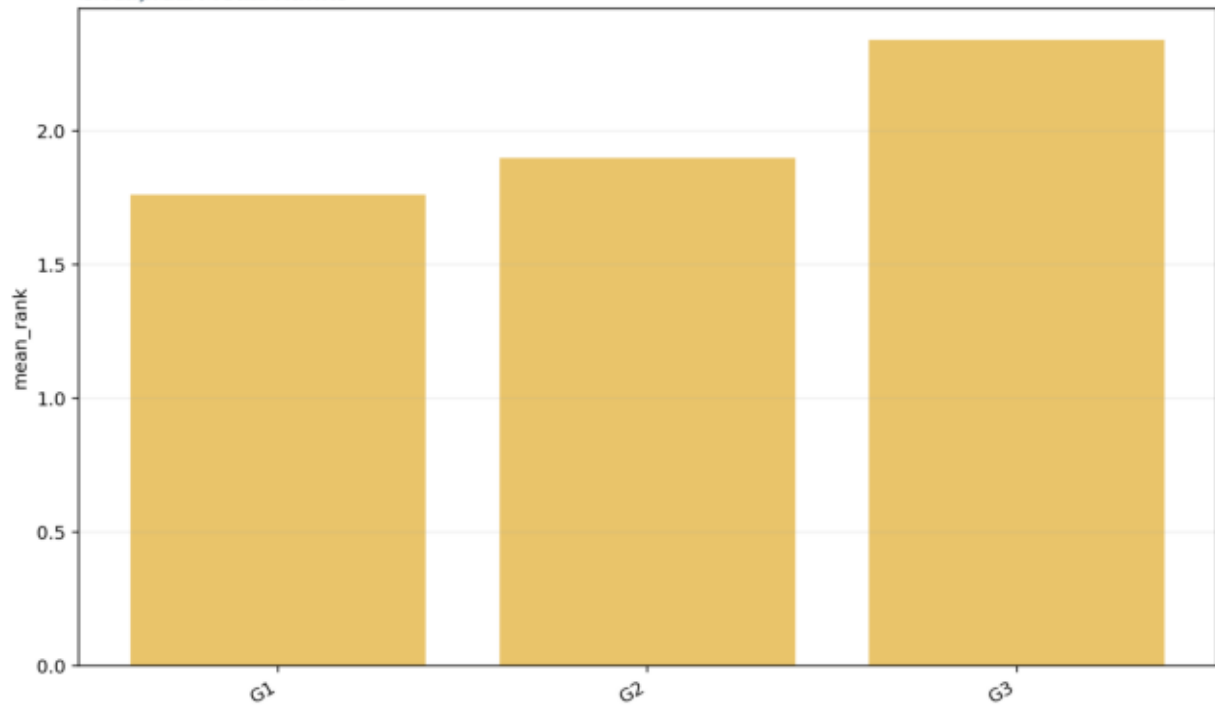
Nemenyi evaluates every repeated-measures pair with the studentized-range distribution.

The $\alpha=.05$ critical difference is 0.130105.

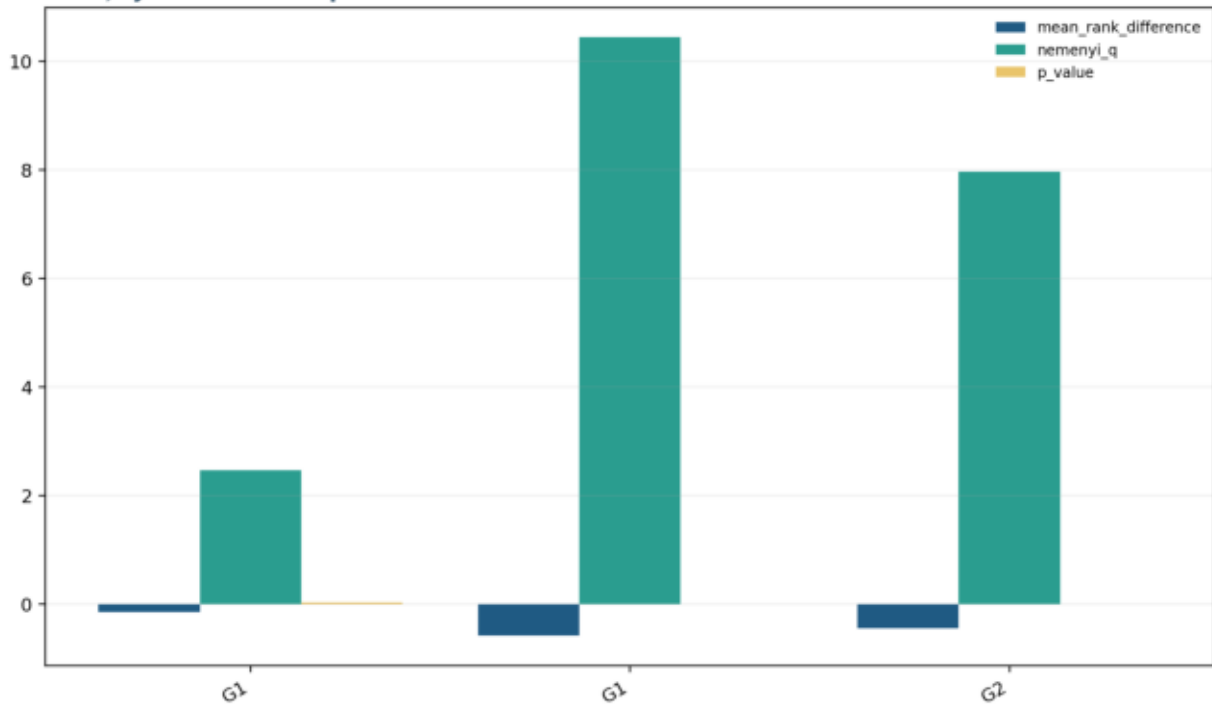
Primary Metrics



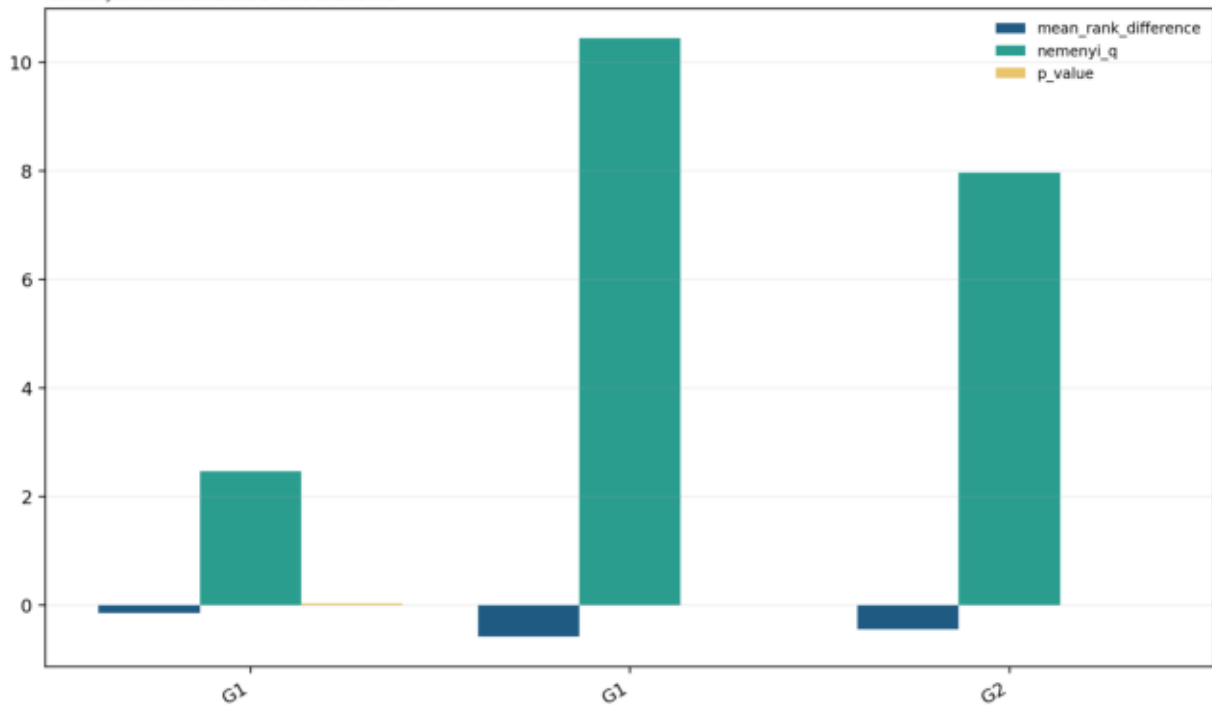
Occasion Mean Ranks



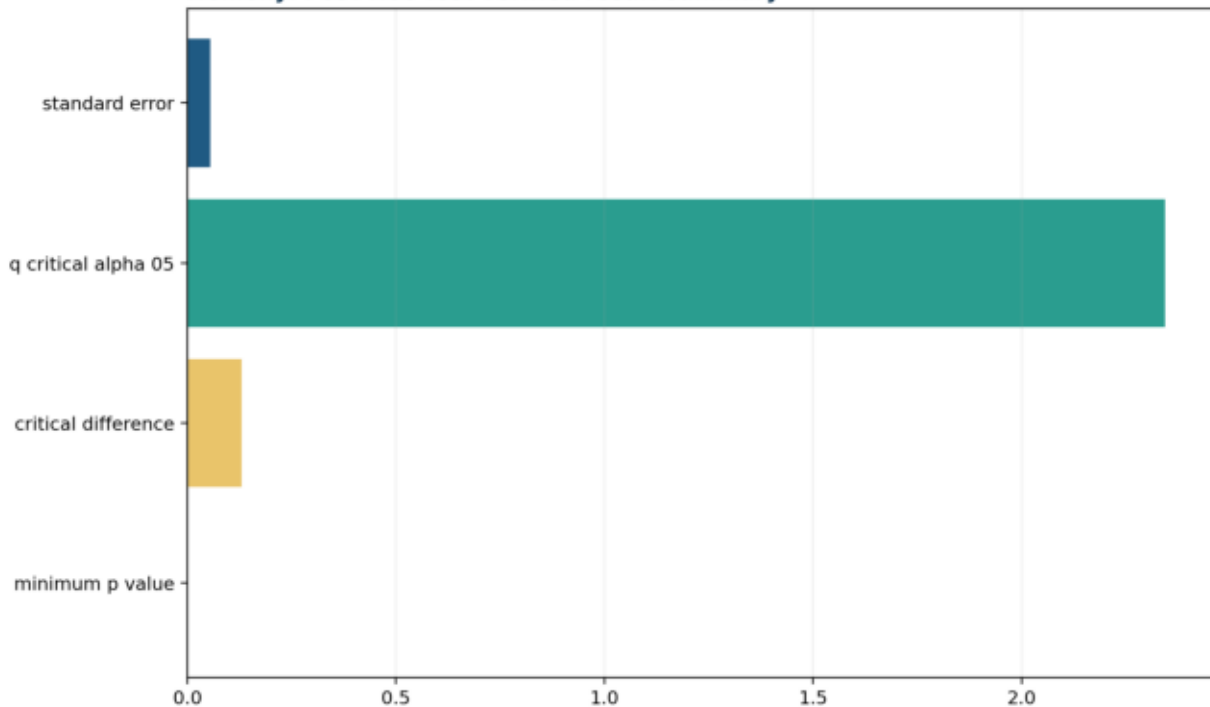
Nemenyi Pairwise Comparisons



Critical-Difference Decisions



Nemenyi Post-Hoc Test verified result summary



Primary Metrics

metric	value
standard_error	0.0555127
q_critical_alpha_05	2.3437
critical_difference	0.130105
minimum_p_value	0

Occasion Mean Ranks

occasion	mean_rank
G1	1.76117
G2	1.89831
G3	2.34052

Nemenyi Pairwise Comparisons

occasion_1	occasion_2	mean_rank_difference	nemenyi_q	p_value
G1	G2	-0.137134	2.47032	0.0359914
G1	G3	-0.579353	10.4364	0
G2	G3	-0.442219	7.96608	4.88498e-15

Critical Difference Decisions

occasion_1	occasion_2	mean_rank_difference	nemenyi_q	p_value	exceeds_critical_difference
G1	G2	-0.137134	2.47032	0.0359914	True
G1	G3	-0.579353	10.4364	0	True
G2	G3	-0.442219	7.96608	4.88498e-15	True