

Jonckheere–Terpstra Ordered Trend Test

Test: Jonckheere–Terpstra Ordered Trend Test

Design: Ordered final–grade trend across study–time levels 1 through 4.

Variables: G3, ordered studytime

Null hypothesis: There is no monotone increase in final grade as study time increases.

Formula: $JT = \sum_{i < j} [\text{number}(Y_j > Y_i) + 0.5 \text{ number}(Y_j = Y_i)]$; p uses fixed–size permutation.

Source rows: 649

Calculated metrics:

jt_statistic: 85922

permutation_null_mean: 68113.925

permutation_null_sd: 2503.04966444662

z_from_permutation: 7.11455120245768

one_sided_monte_carlo_p: 0.000499750124937531

permutations: 2000

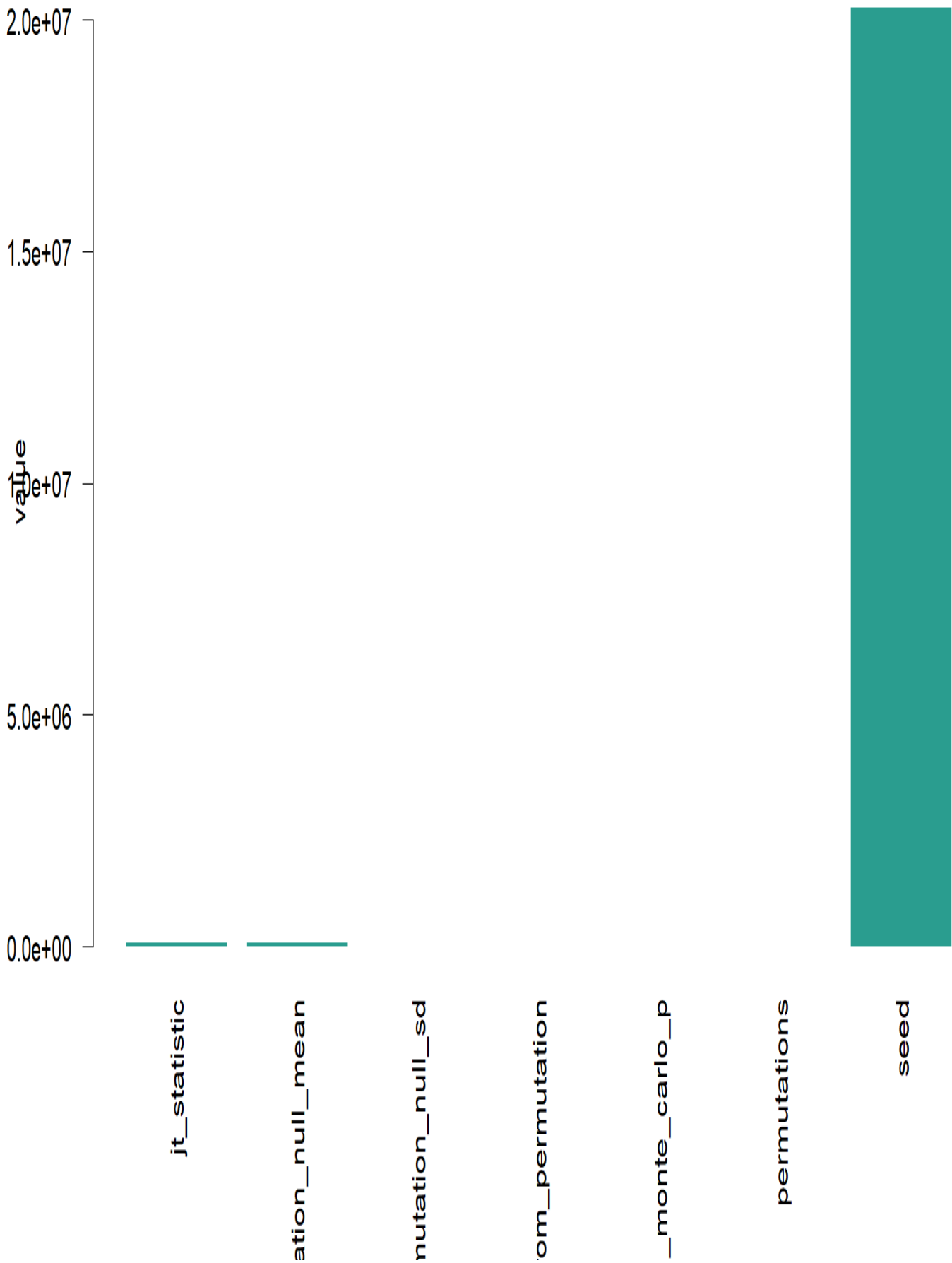
seed: 20260716

Interpretation:

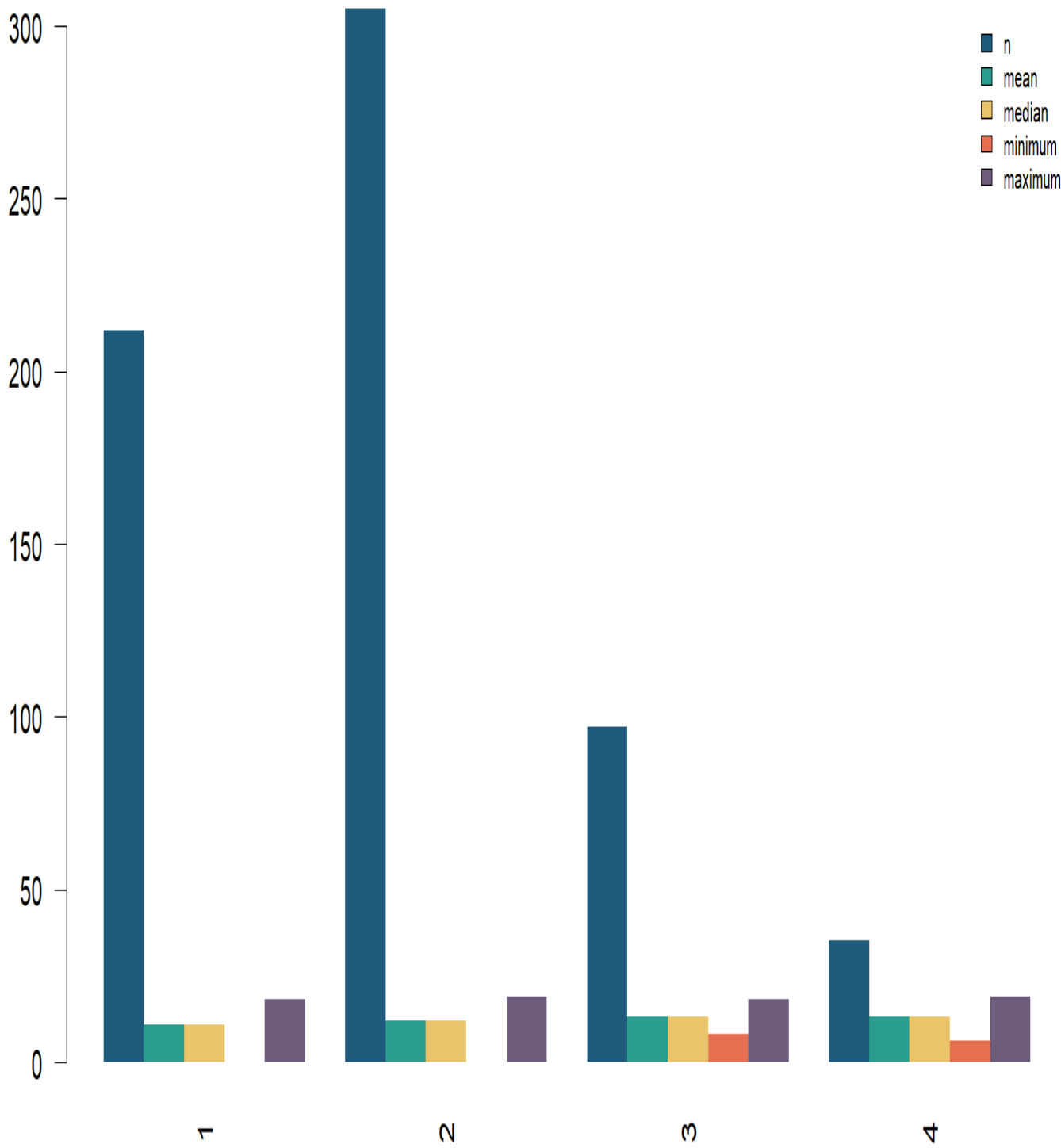
Only favorable pairs in the prespecified study–time order enter JT.

R Monte Carlo p = 0.000499750124937531

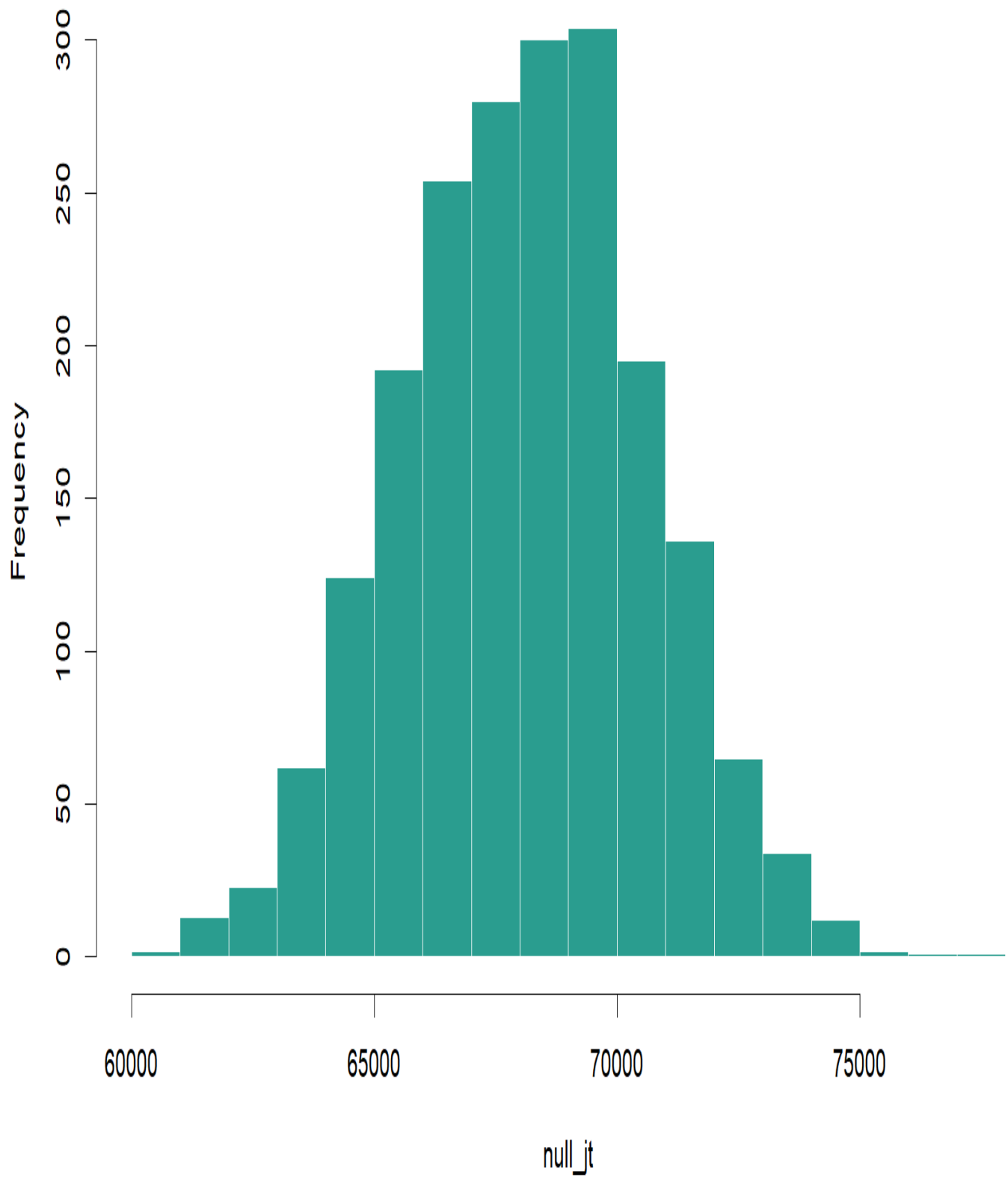
Jonckheere-Terpstra Ordered Trend Test - primary metrics



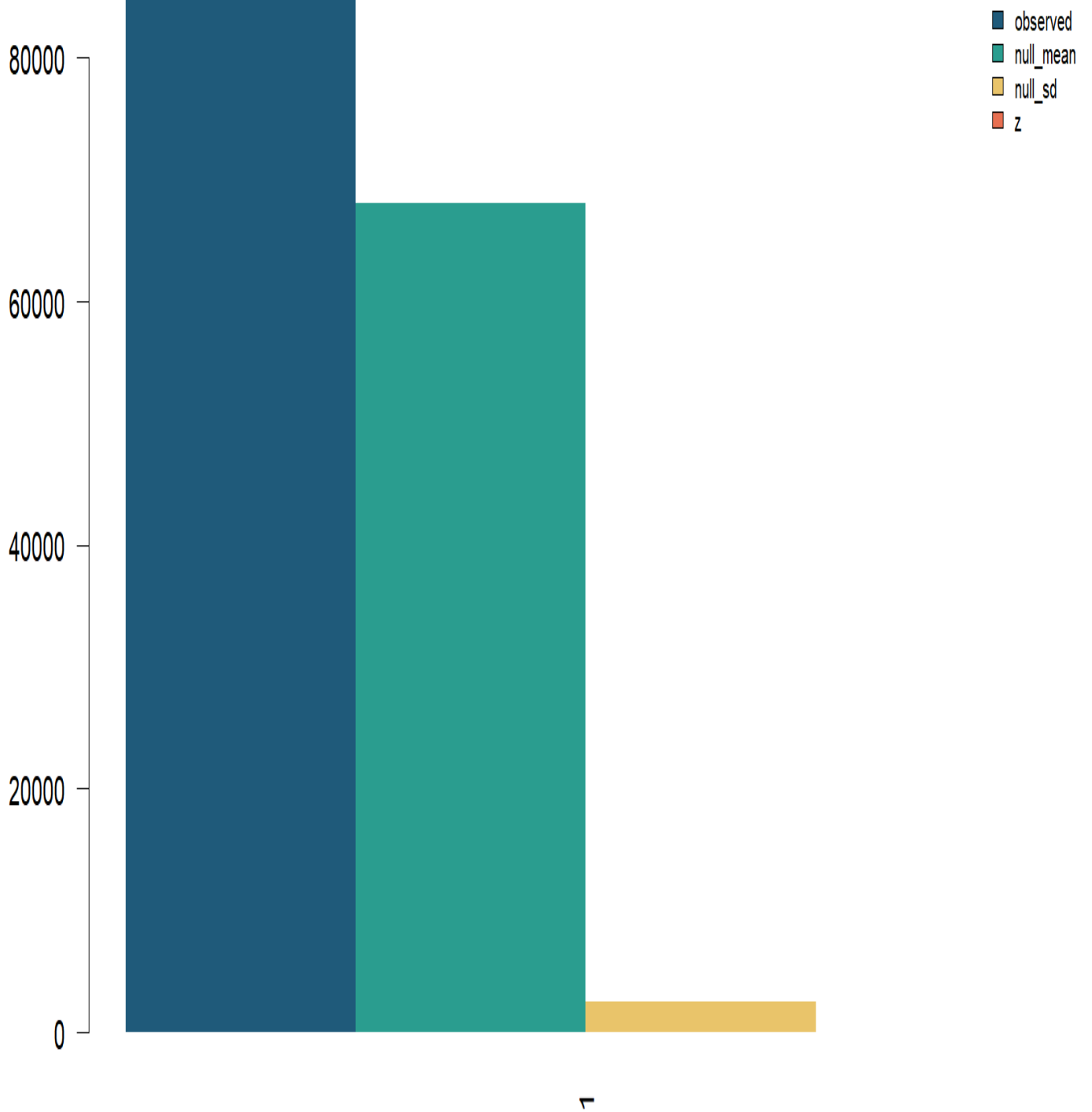
Jonckheere-Terpstra Ordered Trend Test - ordered group summary



Jonckheere-Terpstra Ordered Trend Test - permutation null



Jonckheere-Terpstra Ordered Trend Test - ordered result



Jonckheere-Terpstra Ordered Trend Test verified results

