

Wald–Wolfowitz Two–Sample Runs Test

Test: Wald–Wolfowitz Two–Sample Runs Test

Design: Two–sample distribution comparison based on the school–label run sequence after pooling and sorting G3.

Variables: G3, school labels

Null hypothesis: The two samples come from the same continuous distribution.

Formula: $E(R)=1+2n_1n_2/N$ and $Var(R)=2n_1n_2(2n_1n_2-N)/[N^2(N-1)]$

Source rows: 649

Calculated metrics:

runs: 30

expected_runs: 295.60092449923

variance: 133.480098443367

z_statistic: -22.9890657954557

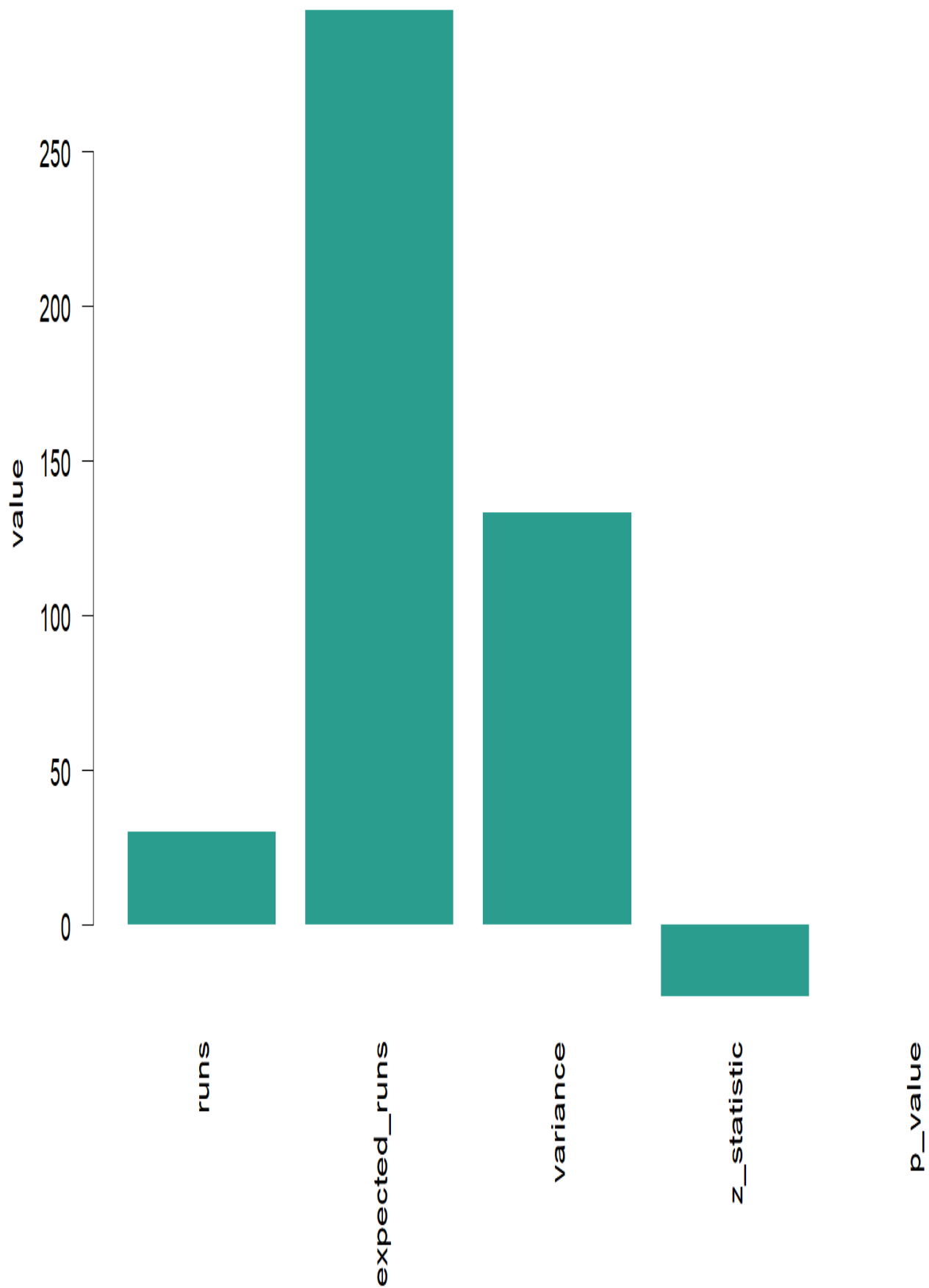
p_value: 5.9965809280448e-117

Interpretation:

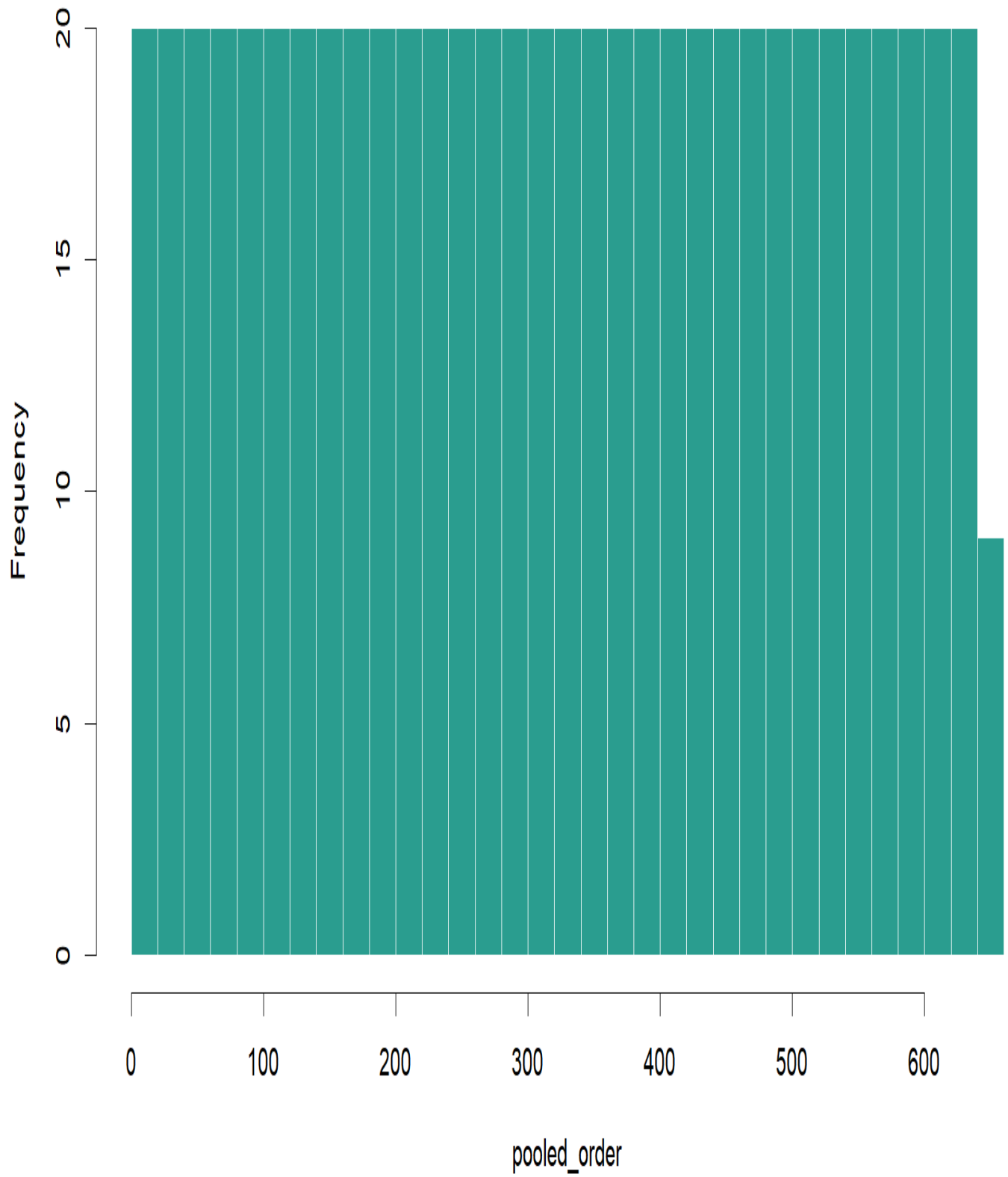
School–label runs are counted after pooling and sorting G3.

Stable source order resolves tied grades.

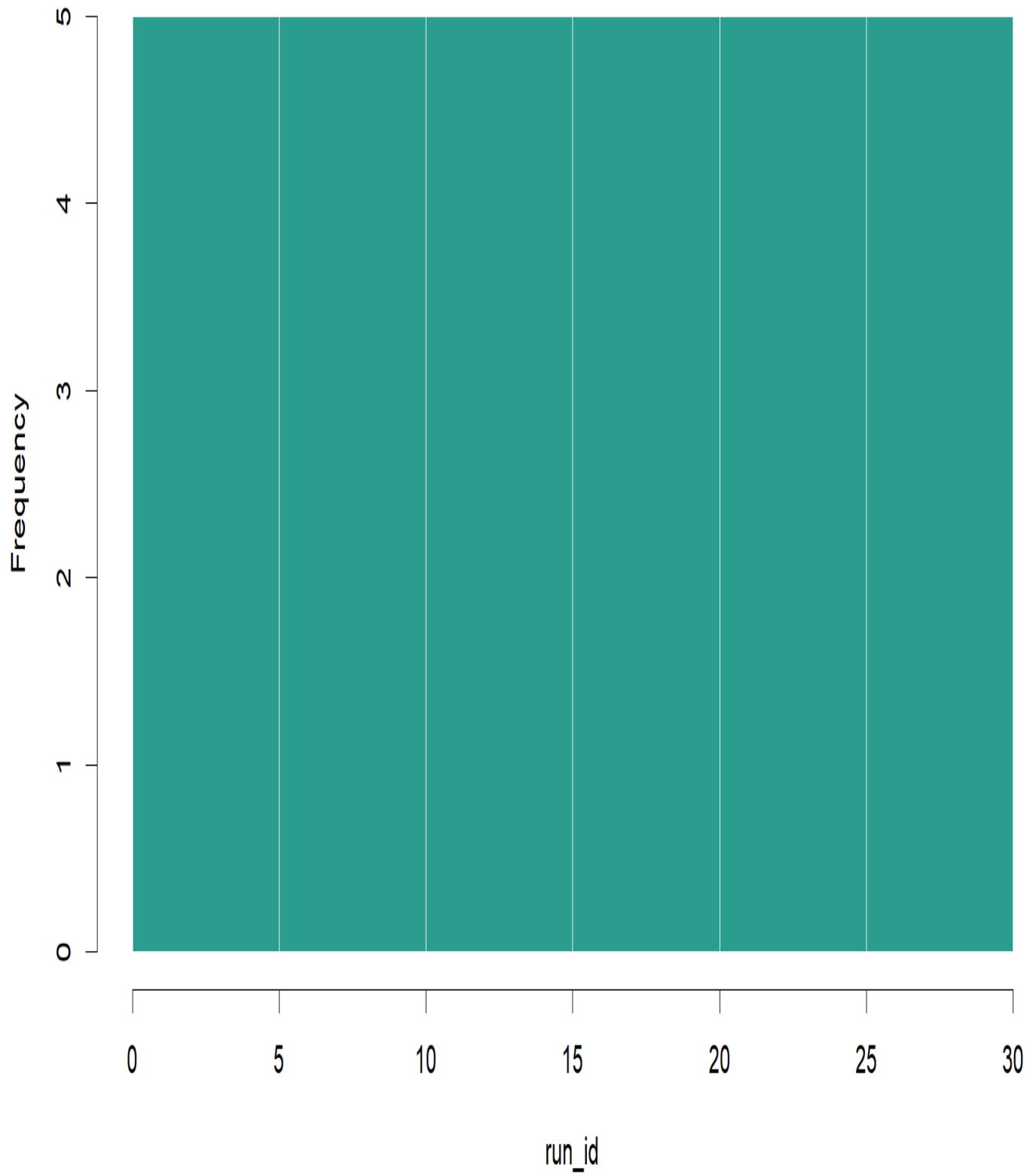
Wald-Wolfowitz Two-Sample Runs Test - primary metrics



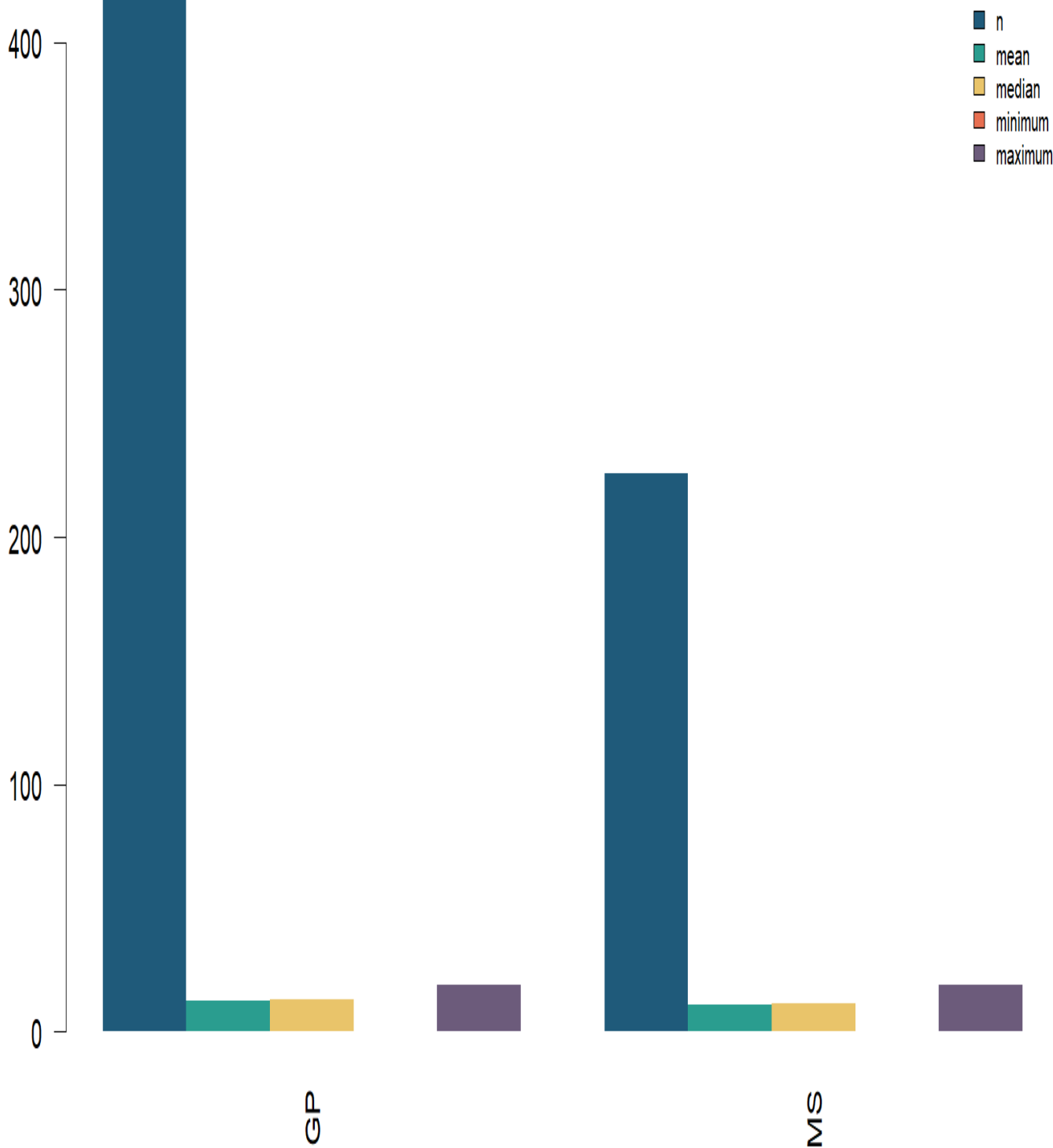
Wald-Wolfowitz Two-Sample Runs Test - pooled school sequence



Wald-Wolfowitz Two-Sample Runs Test - two sample run lengths



Wald-Wolfowitz Two-Sample Runs Test - school grade summary



Wald-Wolfowitz Two-Sample Runs Test verified results

