

# Moses Test of Extreme Reactions

Standalone verified Python analysis

Test: Moses Test of Extreme Reactions

Design: Control-span scale comparison using MS as control and GP as comparison for absence counts.

Variables: absences, school control/comparison

Null hypothesis: The control and comparison groups have the same range/dispersion.

Formula:  $P(S \leq s) = \sum_{r=n_c}^s (N-r+1) C(r-2, n_c-2) / C(N, n_c)$

Source rows: 649

Calculated metrics:

control\_n: 226

comparison\_n: 423

full\_span: 471

one\_sided\_span\_p: 2.6780627967202148e-39

trim\_each\_tail: 11

trimmed\_span: 419

Independent reference values:

control\_group: MS

comparison\_group: GP

control\_n: 226

comparison\_n: 423

full\_span: 471

one\_sided\_span\_p: 2.6780627967202148e-39

trim\_each\_tail: 11

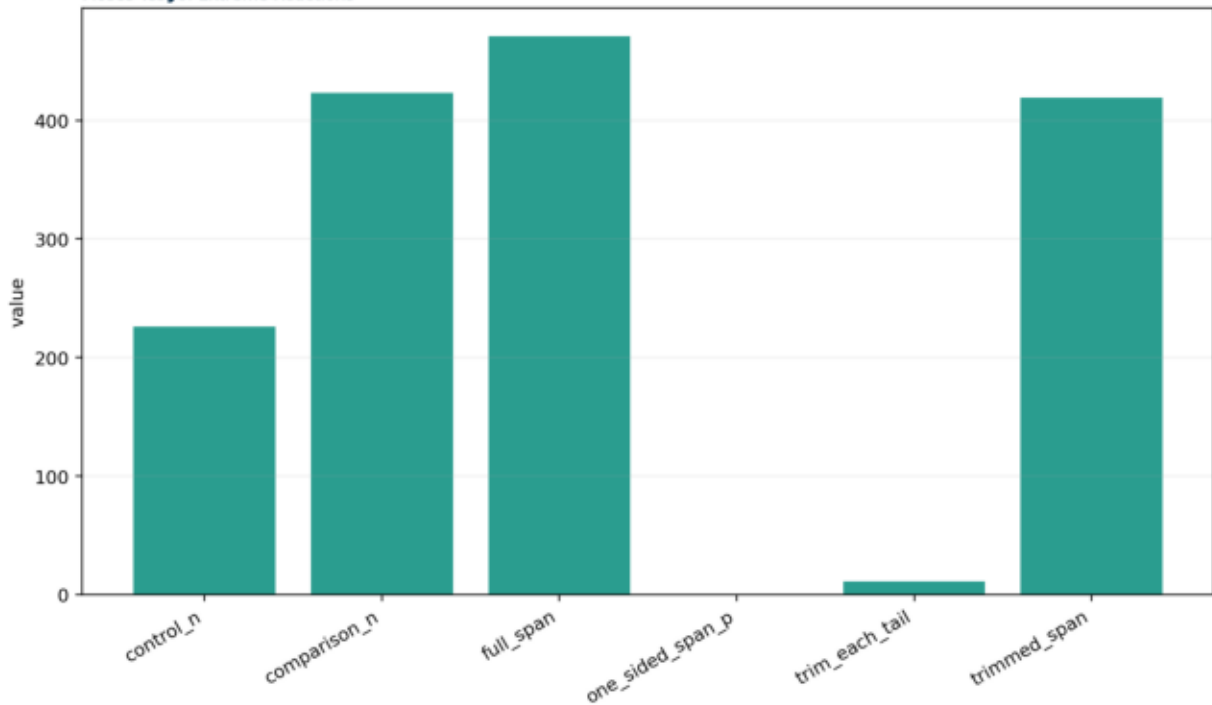
trimmed\_span: 419

Interpretation:

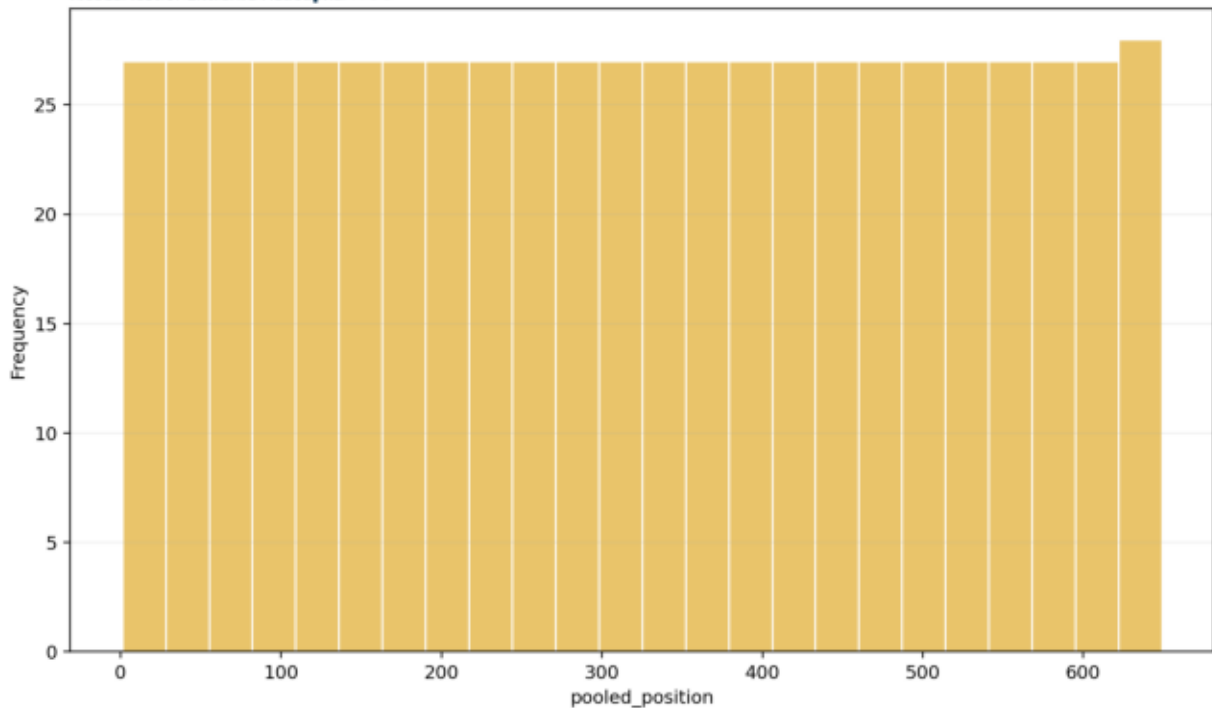
MS is the designated control group and its pooled-order span is the test statistic.

Ties remain unadjusted and the default five-percent trimming is reported as a sensitivity span.

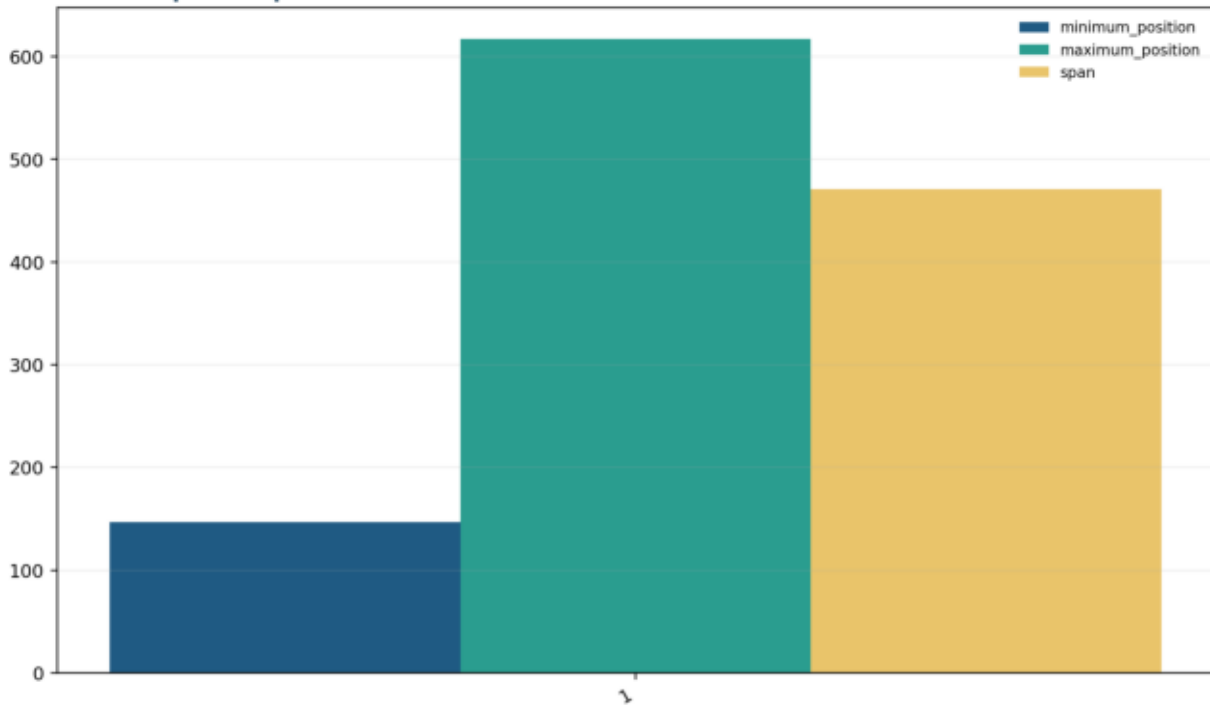
Primary Metrics



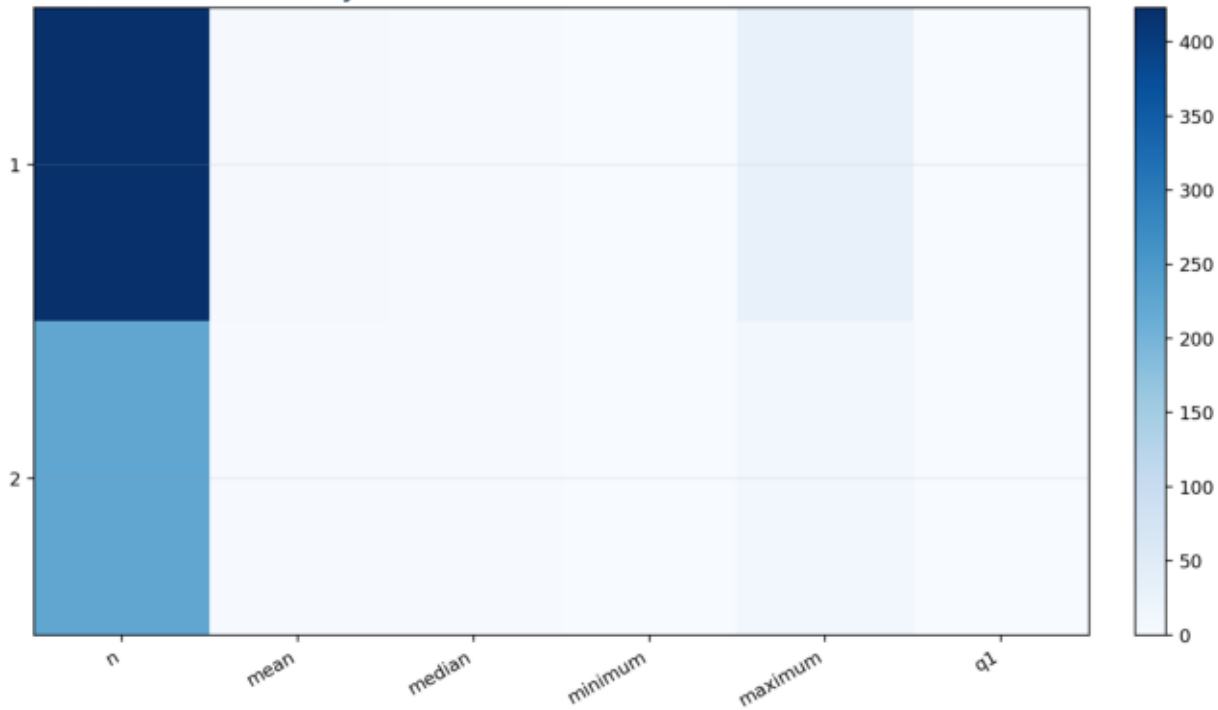
Ordered Pooled Sequence



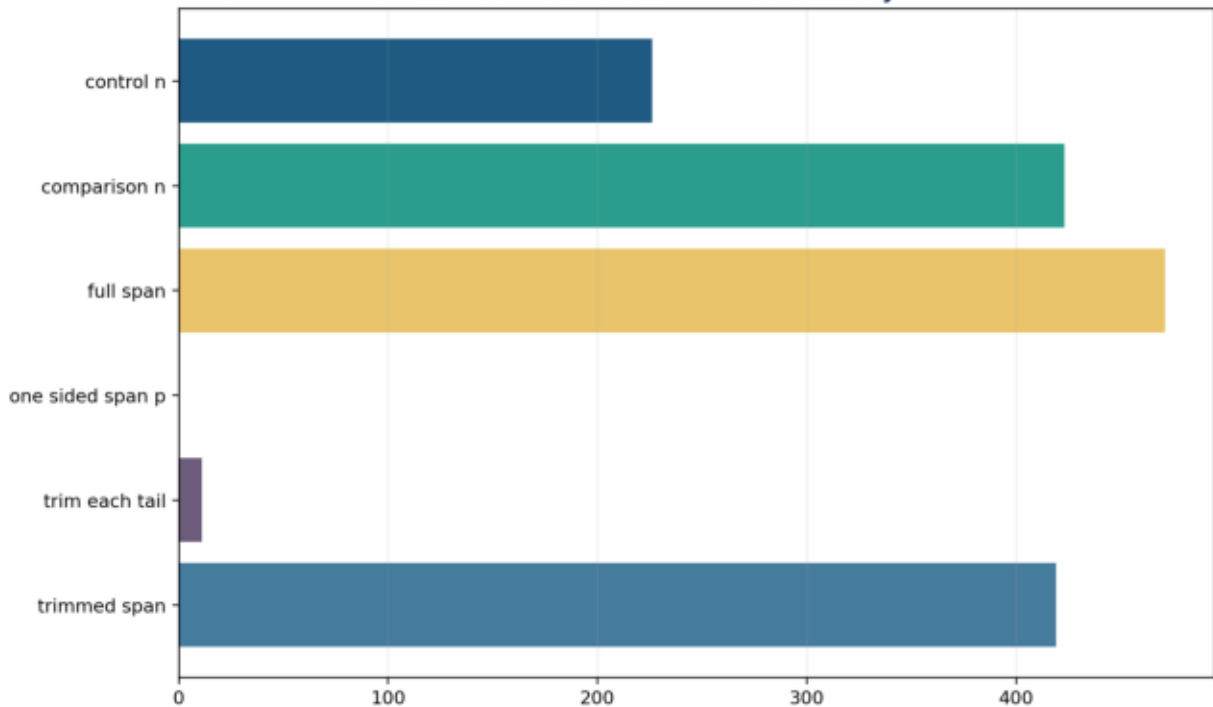
**Control Span Endpoints**



## School Absence Summary



**Moses Test of Extreme Reactions verified result summary**



# Primary Metrics

| metric           | value       |
|------------------|-------------|
| control_n        | 226         |
| comparison_n     | 423         |
| full_span        | 471         |
| one_sided_span_p | 2.67806e-39 |
| trim_each_tail   | 11          |
| trimmed_span     | 419         |

# Ordered Pooled Sequence

| pooled_position | school | absences |
|-----------------|--------|----------|
| 1               | GP     | 0        |
| 2               | GP     | 0        |
| 3               | GP     | 0        |
| 4               | GP     | 0        |
| 5               | GP     | 0        |
| 6               | GP     | 0        |
| 7               | GP     | 0        |
| 8               | GP     | 0        |
| 9               | GP     | 0        |
| 10              | GP     | 0        |
| 11              | GP     | 0        |
| 12              | GP     | 0        |
| 13              | GP     | 0        |
| 14              | GP     | 0        |
| 15              | GP     | 0        |
| 16              | GP     | 0        |
| 17              | GP     | 0        |
| 18              | GP     | 0        |
| 19              | GP     | 0        |
| 20              | GP     | 0        |
| 21              | GP     | 0        |
| 22              | GP     | 0        |
| 23              | GP     | 0        |
| 24              | GP     | 0        |
| 25              | GP     | 0        |
| 26              | GP     | 0        |

# Control Span Endpoints

| minimum_position | maximum_position | span |
|------------------|------------------|------|
| 147              | 617              | 471  |

# School Absence Summary

| school | n   | mean    | median | minimum | maximum | q1 | q3 |
|--------|-----|---------|--------|---------|---------|----|----|
| GP     | 423 | 4.21513 | 2      | 0       | 32      | 0  | 6  |
| MS     | 226 | 2.61947 | 2      | 0       | 12      | 0  | 4  |