

# Fligner-Killeen Test

Standalone verified Python analysis

Test: Fligner-Killeen Test

Design: Robust homogeneity-of-spread analysis for absences across four school-choice reasons.

Variables: absences, reason

Null hypothesis: All reason groups have equal population scale.

Formula:  $X^2_{FK}$  is a one-way ANOVA of normal scores assigned to ranked absolute median deviations.

Source rows: 649

Calculated metrics:

statistic: 7.0602008486971535

p\_value: 0.07000351971982395

degrees\_of\_freedom: 3

Independent reference values:

statistic: 7.0602008486971535

p\_value: 0.07000351971982395

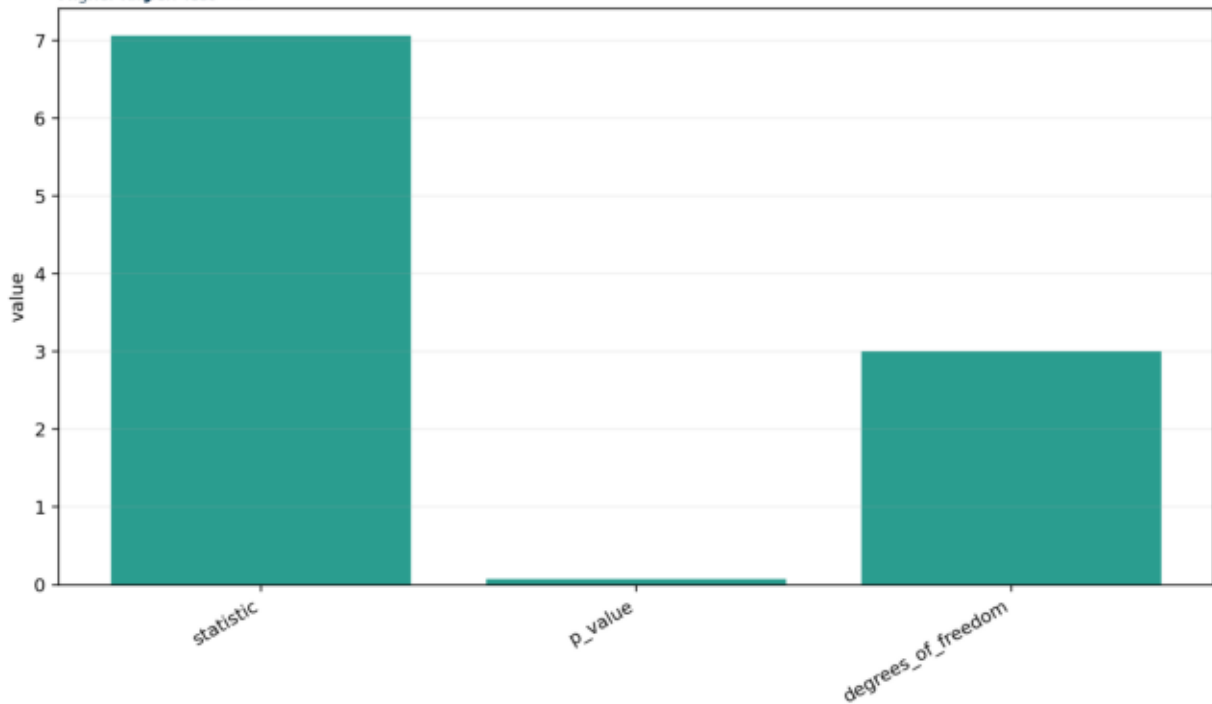
df: 3

Interpretation:

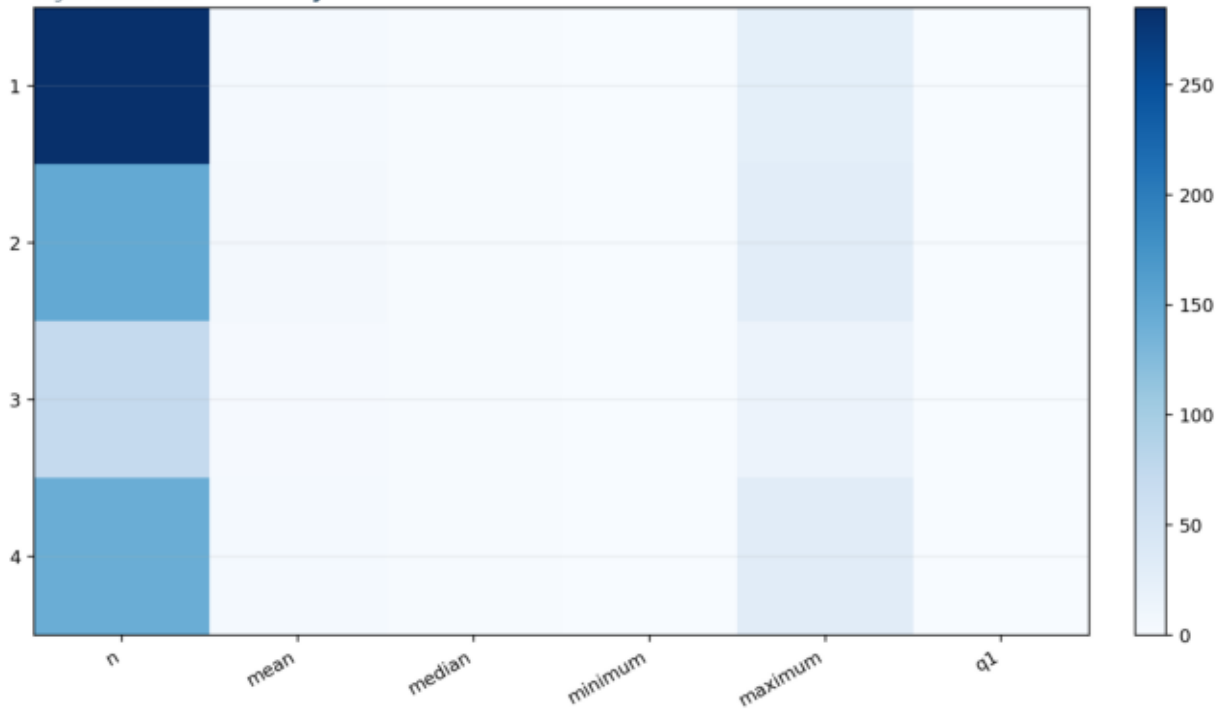
Fligner-Killeen tests scale equality using ranked absolute deviations from group medians.

The chi-square statistic is 7.060201 with  $p=0.0700035$ .

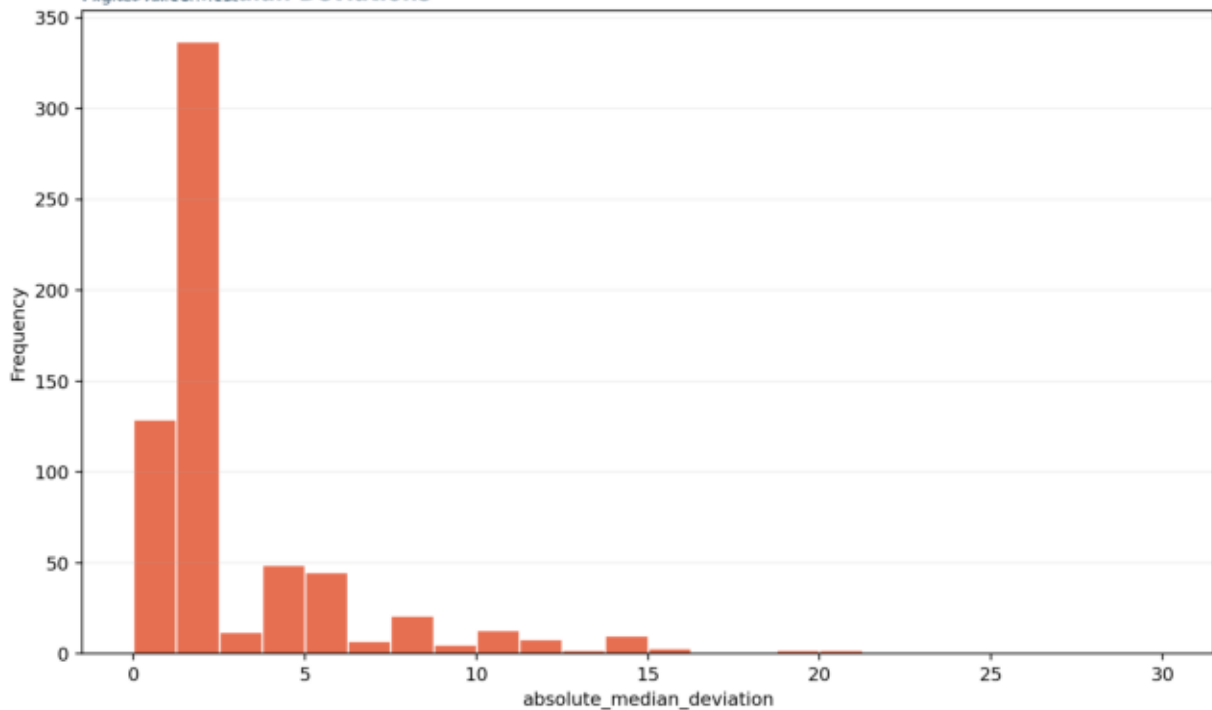
Primary Metrics



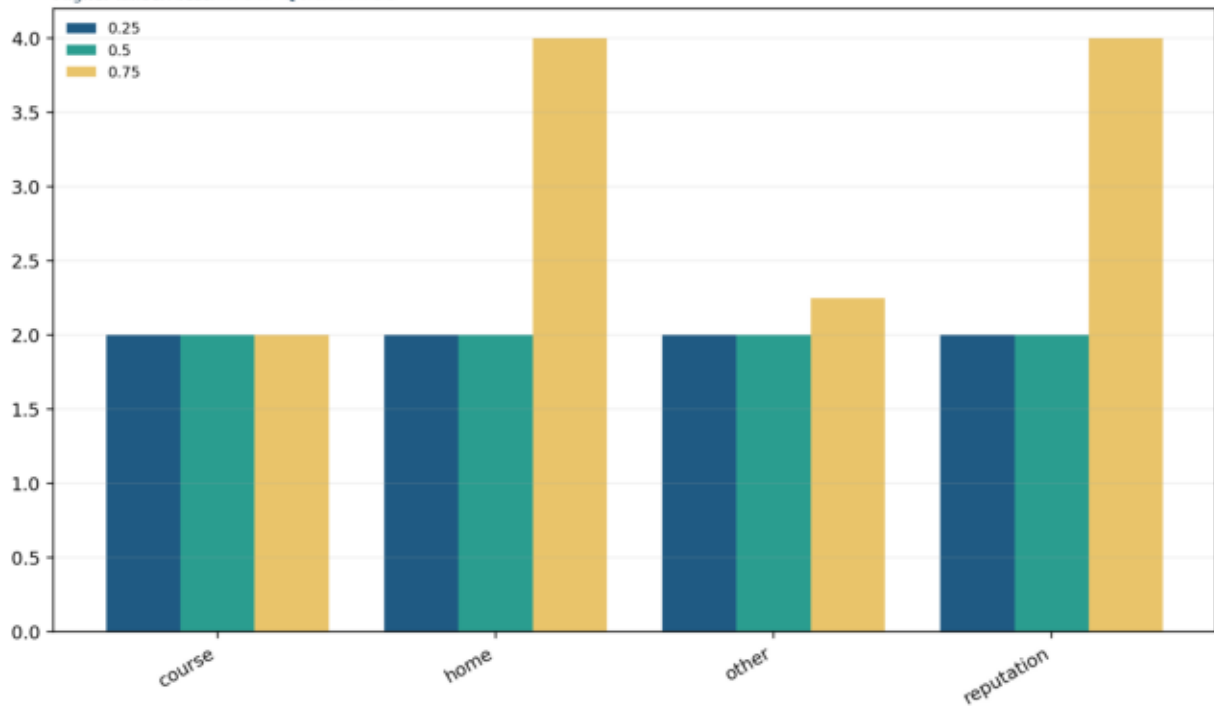
Reason Scale Summary



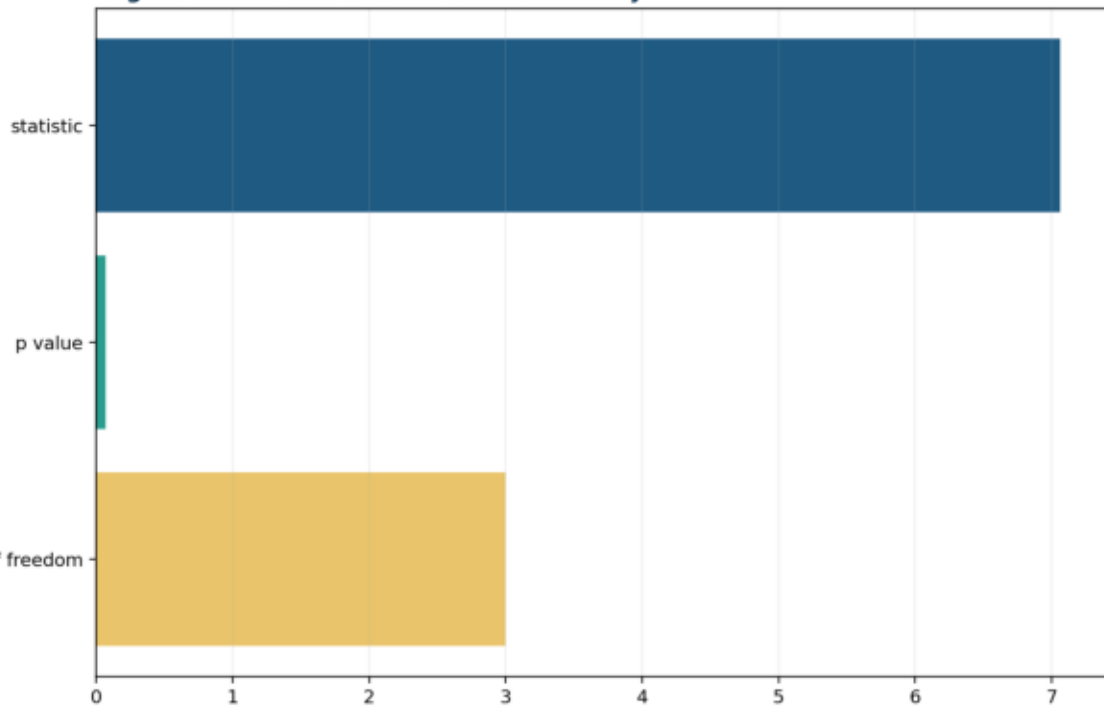
**Absolute Median Deviations**



Reason Deviation Quantiles



### Fligner-Killeen Test verified result summary



# Primary Metrics

| metric             | value     |
|--------------------|-----------|
| statistic          | 7.0602    |
| p_value            | 0.0700035 |
| degrees_of_freedom | 3         |

# Reason Scale Summary

| reason     | n   | mean    | median | minimum | maximum | q1 | q3   | mad |
|------------|-----|---------|--------|---------|---------|----|------|-----|
| course     | 285 | 3.38947 | 2      | 0       | 26      | 0  | 4    | 2   |
| home       | 149 | 4.45638 | 2      | 0       | 30      | 0  | 6    | 2   |
| other      | 72  | 2.77778 | 2      | 0       | 16      | 0  | 4.25 | 2   |
| reputation | 143 | 3.81119 | 2      | 0       | 32      | 0  | 6    | 2   |

# Absolute Median Deviations

| reason | absolute_median_deviation |
|--------|---------------------------|
| course | 2                         |
| course | 0                         |
| course | 2                         |
| course | 2                         |
| course | 0                         |
| course | 2                         |
| course | 0                         |
| course | 2                         |
| course | 2                         |
| course | 0                         |
| course | 2                         |
| course | 2                         |
| course | 12                        |
| course | 2                         |
| course | 2                         |
| course | 2                         |
| course | 0                         |
| course | 2                         |
| course | 0                         |
| course | 2                         |
| course | 2                         |
| course | 2                         |
| course | 12                        |
| course | 2                         |
| course | 4                         |
| course | 2                         |

# Reason Deviation Quantiles

| reason     | 0.25 | 0.5 | 0.75 |
|------------|------|-----|------|
| course     | 2    | 2   | 2    |
| home       | 2    | 2   | 4    |
| other      | 2    | 2   | 2.25 |
| reputation | 2    | 2   | 4    |