

Mood's K-Sample Median Test

Standalone verified Python analysis

Test: Mood's K-Sample Median Test

Design: Four-group final-grade median comparison across school-choice reasons.

Variables: G3, reason

Null hypothesis: All four reason groups share the same population median.

Formula: X^2 = Pearson chi-square for k groups by above/below the pooled median.

Source rows: 649

Calculated metrics:

statistic: 22.66824619653277

p_value: 4.735096147272555e-05

degrees_of_freedom: 3

pooled_median: 12.0

Independent reference values:

statistic: 22.66824619653277

p_value: 4.735096147272555e-05

df: 3

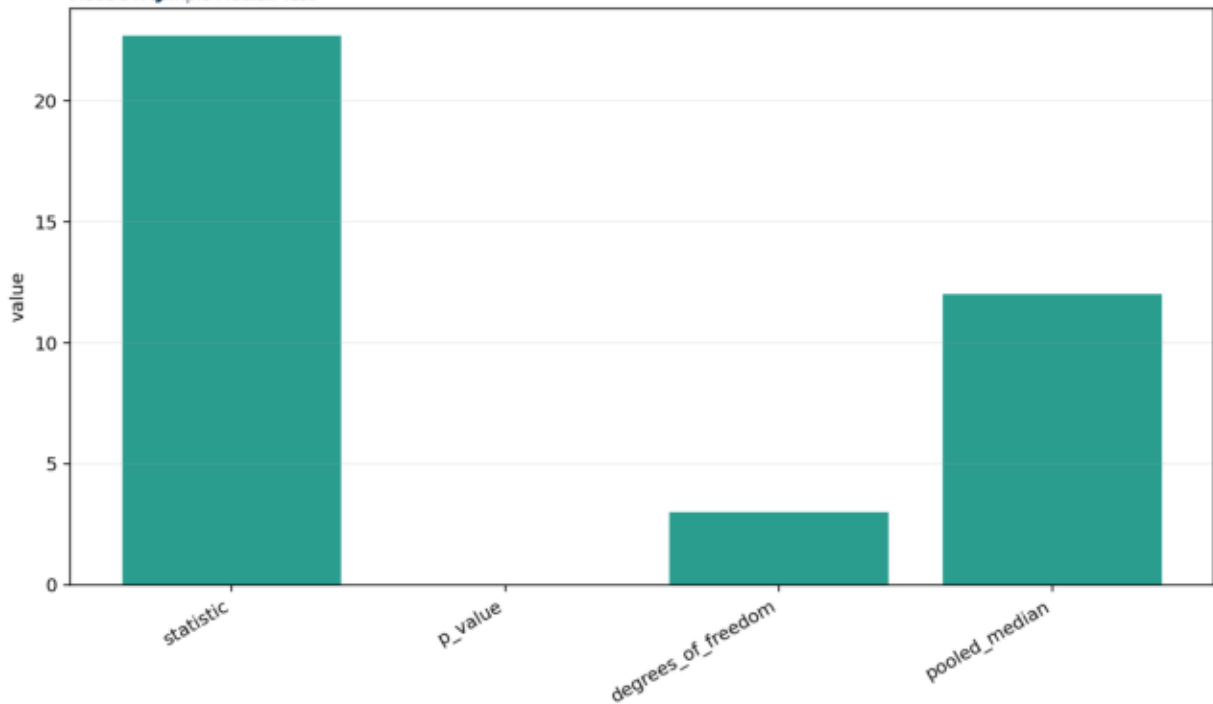
pooled_median: 12.0

Interpretation:

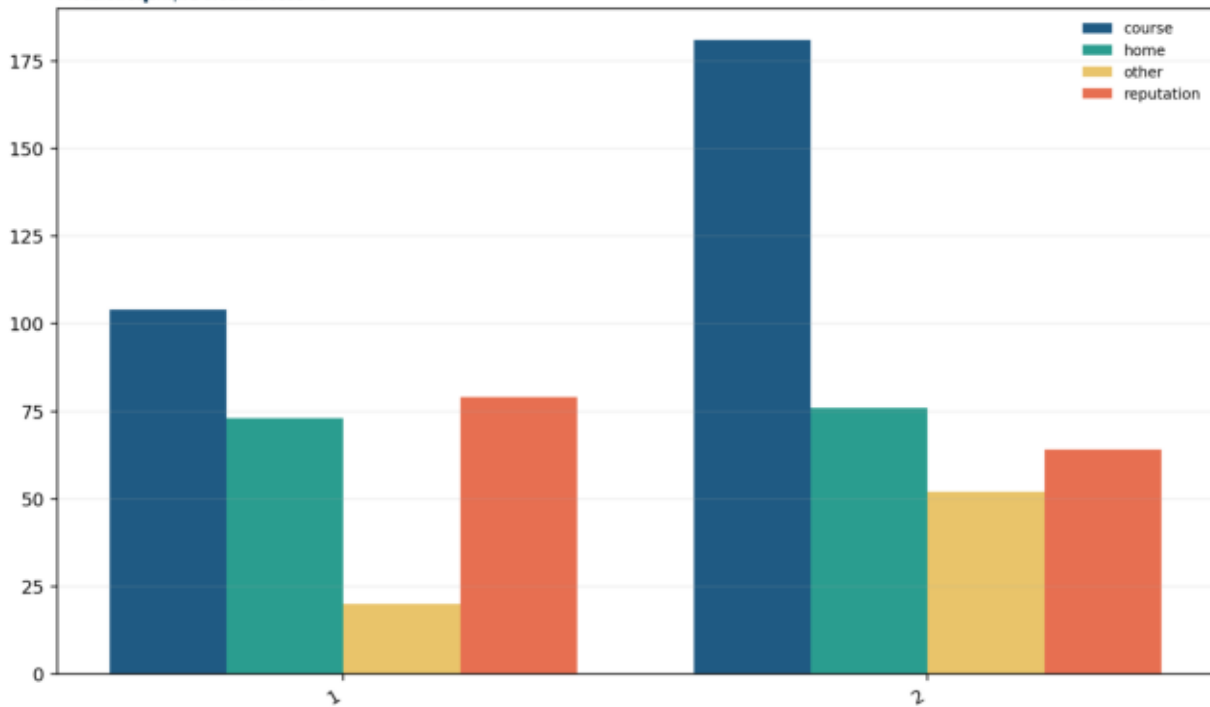
Mood's design compares four groups through one pooled-median contingency table.

Chi-square=22.668246, df=3, p=4.7351e-05.

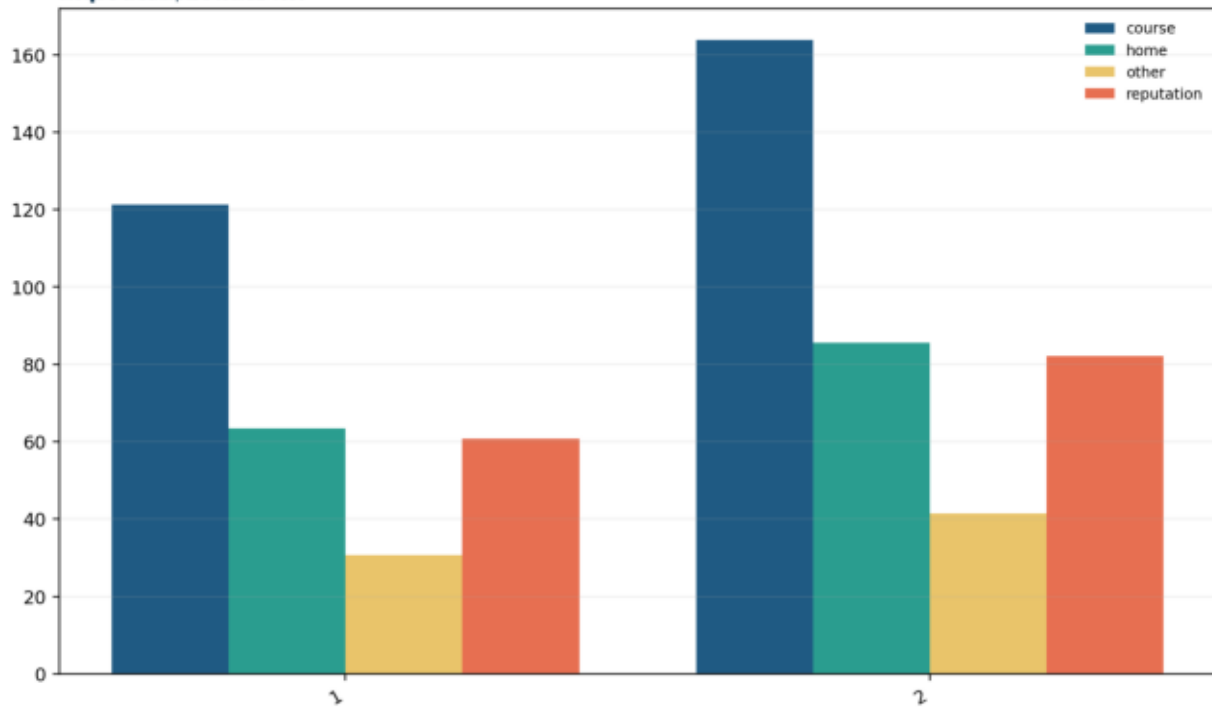
Primary Metrics



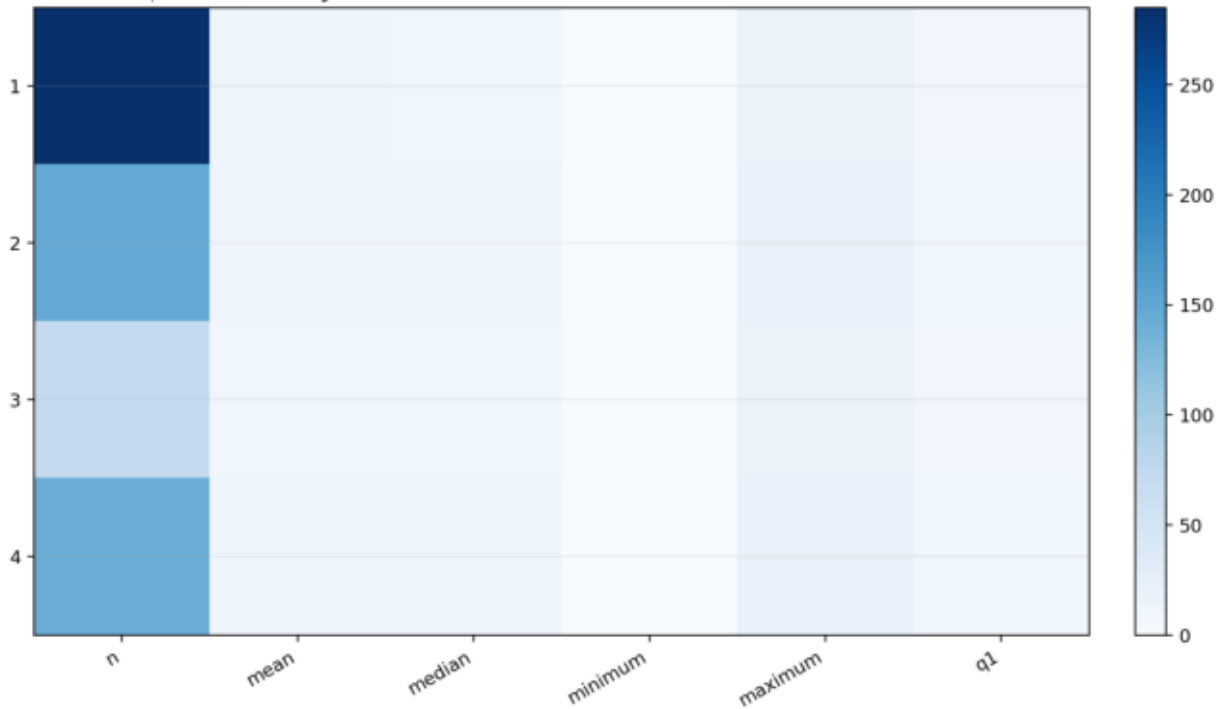
K-Group Median Table



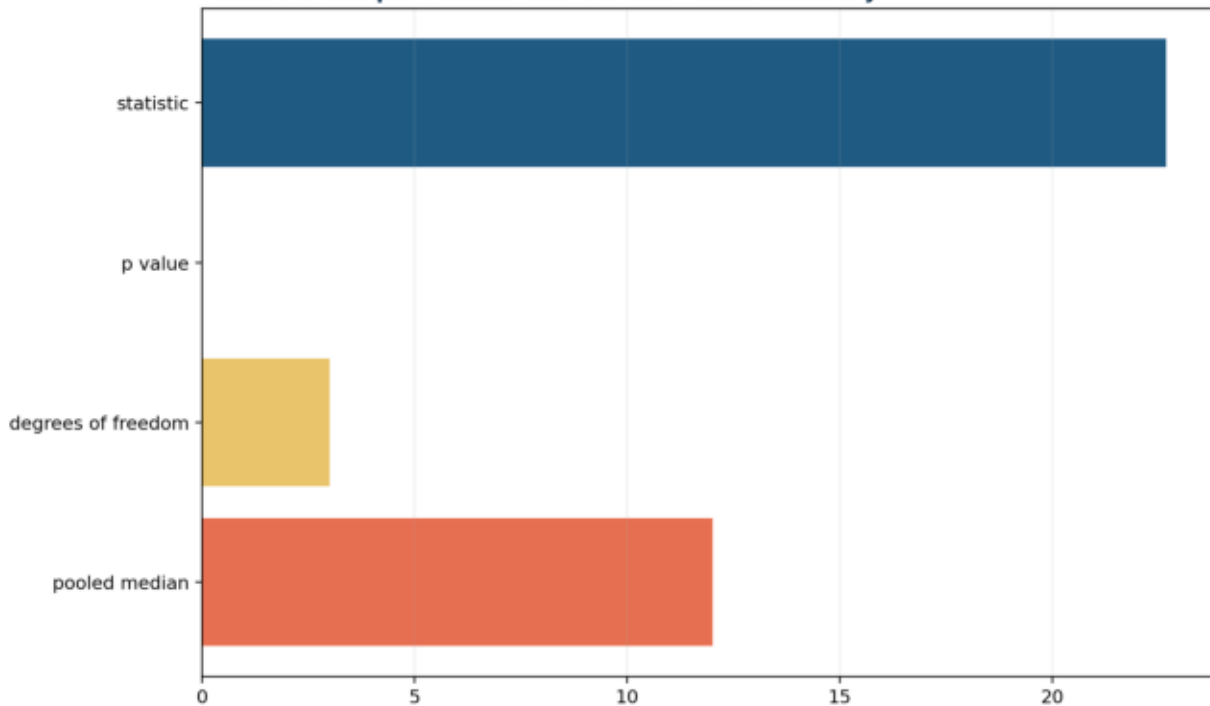
Expected Counts Test



Reason Grade Summary



Mood's K-Sample Median Test verified result summary



Primary Metrics

metric	value
statistic	22.6682
p_value	4.7351e-05
degrees_of_freedom	3
pooled_median	12

K Group Median Table

course	home	other	reputation
104	73	20	79
181	76	52	64

Expected Counts

course	home	other	reputation
121.202	63.3652	30.6194	60.8136
163.798	85.6348	41.3806	82.1864

Reason Grade Summary

reason	n	mean	median	minimum	maximum	q1	q3
course	285	11.5474	11	0	18	10	14
home	149	12.1812	12	0	19	11	14
other	72	10.6944	11	0	18	9.75	13
reputation	143	12.9441	13	0	19	11	15