

Survey Analysis in Python

Standalone verified Python analysis

Method: Survey Analysis in Python

Method type: software_workflow

Design: Reproducible pandas/SciPy survey workflow with aligned scale scoring and a fixed-seed nonparametric bootstrap confidence interval.

Variables: famrel, freetime, goout, Dalc, Walc, health

Inference scope: The bootstrap interval estimates uncertainty in the population mean scale score; no unrelated omnibus test is added.

Formula: Park-Miller state=(48271*state) mod 2147483647; resample rows with replacement;

CI=[Q_.025(mean_b),Q_.975(mean_b)].

Source rows: 649

Calculated metrics:

scale_mean: 3.674884437596302

bootstrap_standard_error: 0.019269480602695815

bootstrap_ci_low: 3.6381612737544944

bootstrap_ci_high: 3.7126348228043144

bootstrap_replications: 2000

complete_cases: 649

Independent reference values:

scale_mean: 3.674884437596302

bootstrap_standard_error: 0.019269480602695815

bootstrap_ci_low: 3.6381612737544944

bootstrap_ci_high: 3.7126348228043144

bootstrap_replications: 2000

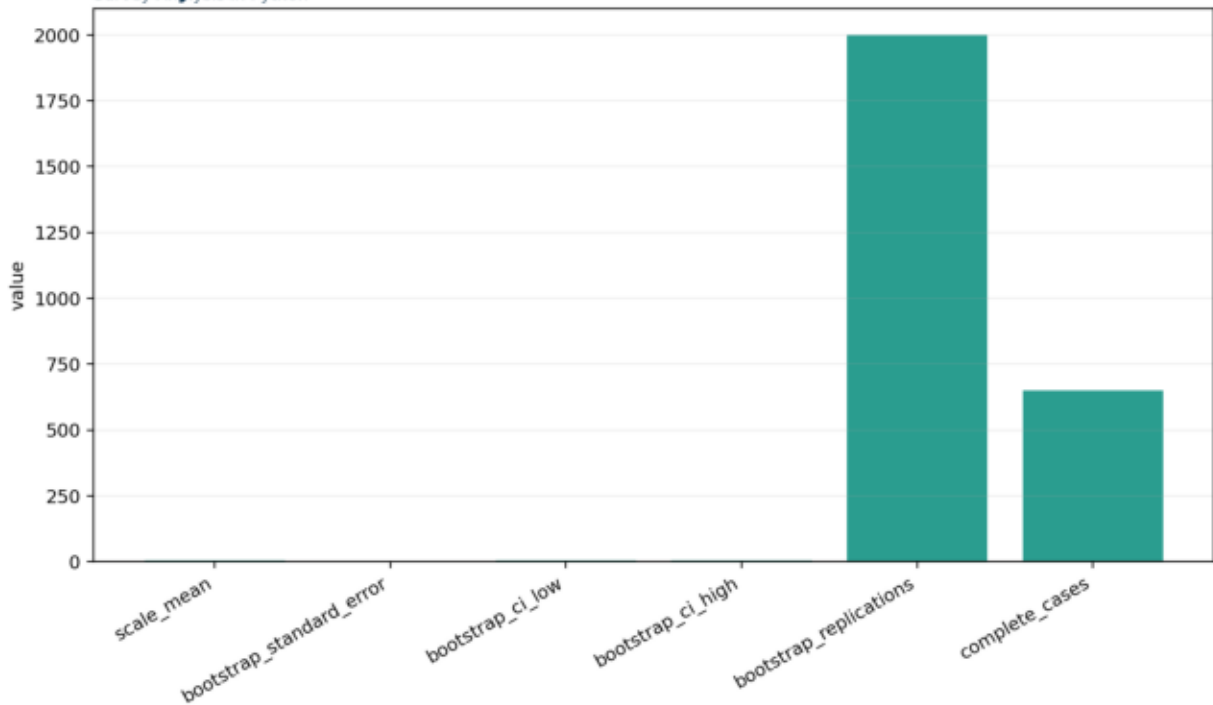
complete_cases: 649

Interpretation:

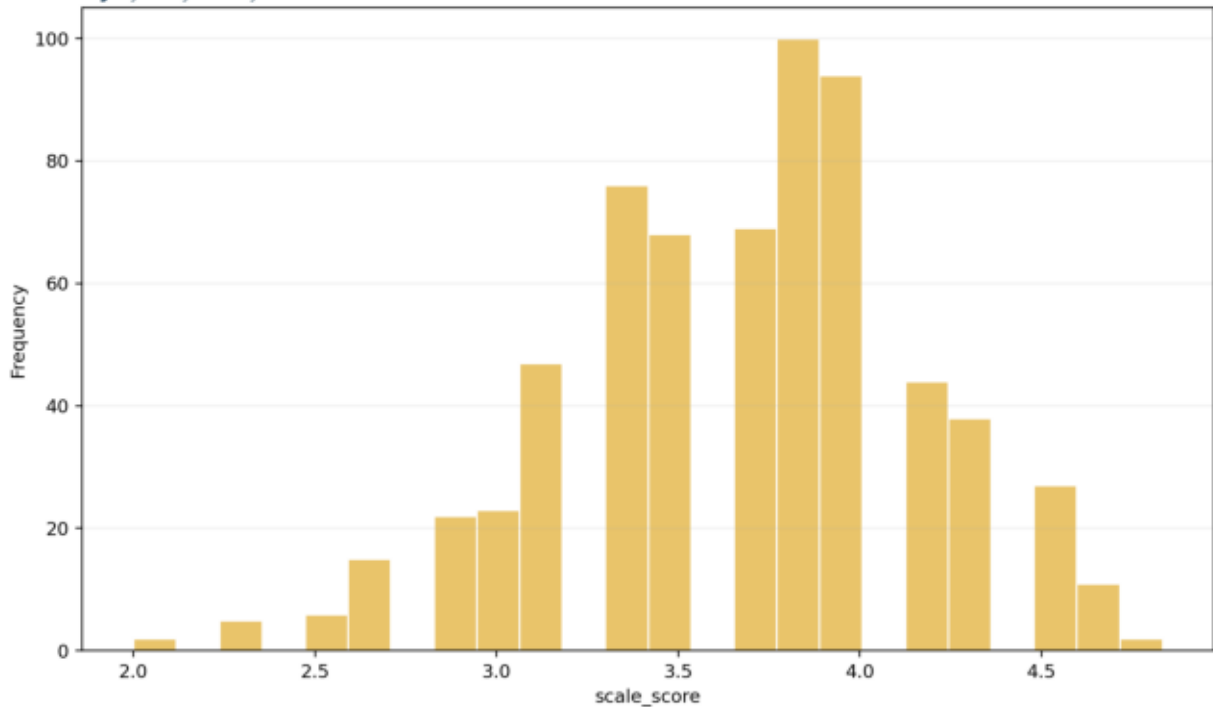
A fixed-seed row bootstrap quantifies uncertainty in the mean aligned scale score.

The 95% percentile interval is [3.638161, 3.712635].

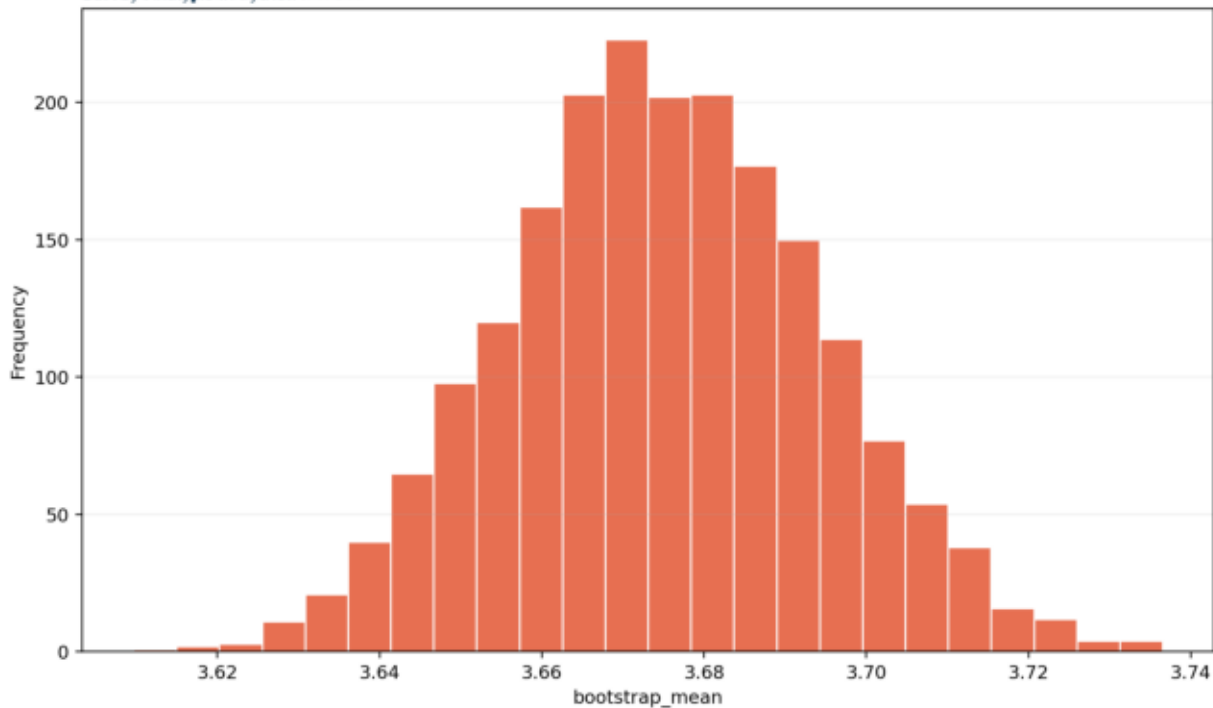
Primary Metrics



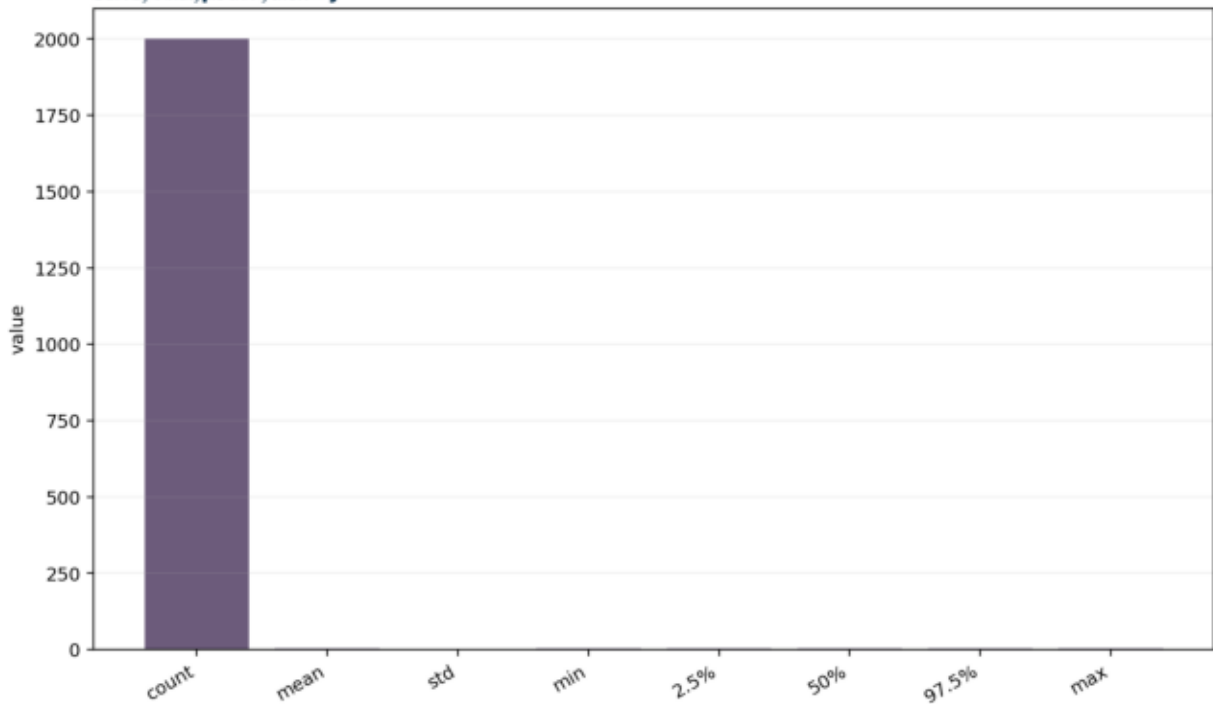
Python Scale Scores



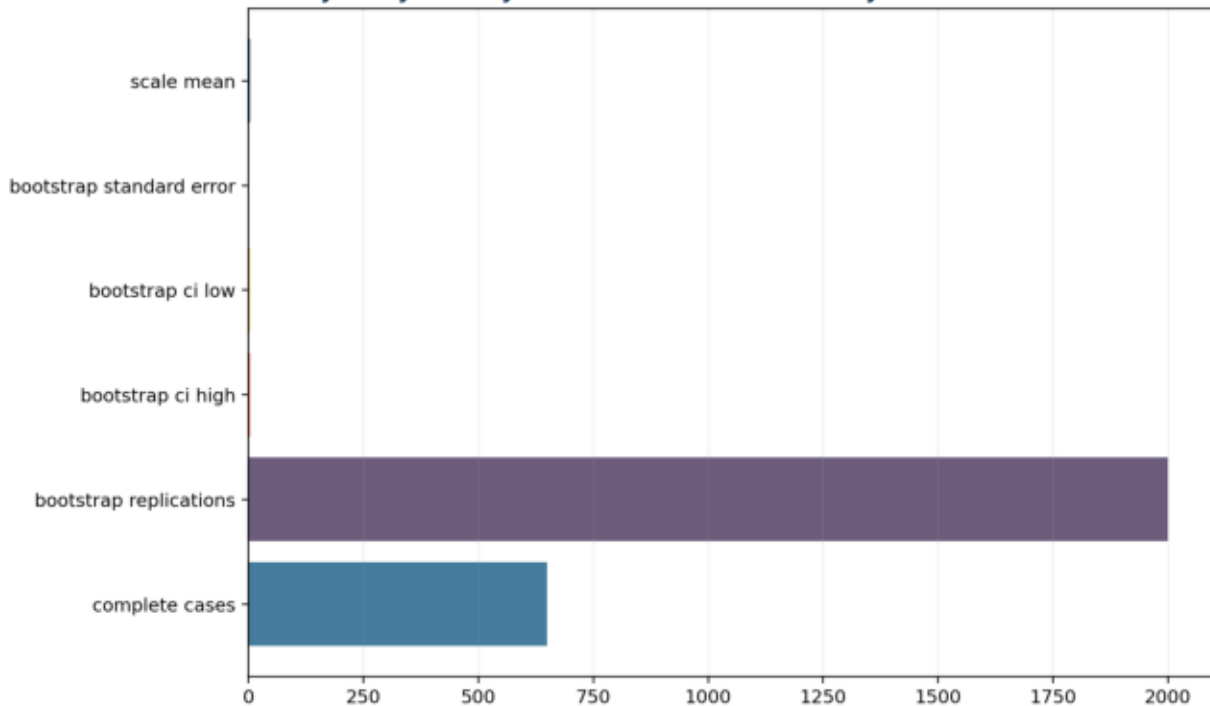
Bootstrap Distribution



Bootstrap Summary



Survey Analysis in Python verified result summary



Primary Metrics

metric	value
scale_mean	3.67488
bootstrap_standard_error	0.0192695
bootstrap_ci_low	3.63816
bootstrap_ci_high	3.71263
bootstrap_replications	2000
complete_cases	649

Python Scale Scores

scale_score
4
4
3.16667
3.66667
3.83333
4.16667
4.16667
3.33333
3.16667
4.33333
3.33333
3.83333
3.83333
4
4
3.83333
3.16667
4
4.33333
3.33333
3.33333
4.33333
3.83333
4
4
3

Bootstrap Distribution

bootstrap_mean
3.6528
3.70339
3.69132
3.66923
3.65716
3.6605
3.66127
3.67206
3.67257
3.64715
3.68593
3.61967
3.70416
3.64278
3.67822
3.66615
3.64458
3.67925
3.70519
3.63123
3.67052
3.69389
3.6528
3.67463
3.64818
3.69466

Bootstrap Summary

statistic	value
count	2000
mean	3.6749
std	0.0192695
min	3.60966
2.5%	3.63816
50%	3.67411
97.5%	3.71263
max	3.73652