

Boschloo's Test

Test name: Boschloo's Test

Dataset: D:/DATA ANALYSIS/I Chi Square and Categorical Data Tests/Boschloos Test/dataset.csv

Rows in original dataset: 649

Columns in original dataset: 33

Rows used in the 2 x 2 analysis: 649

Independent grouping variable: sex

Group 0: F

Group 1: M

Binary outcome source: G3

Positive outcome: G3 $\geq$ 10

Negative outcome: G3 < 10

Observed 2 x 2 table: 333, 216, 50, 50

Primary method: Boschloo's unconditional exact test.

Boschloo's ordering statistic is a one-sided Fisher exact p-value.

Two-sided convention: twice the smaller one-sided Boschloo p-value, clipped at 1.

Boschloo statistic: 0.03049279

Boschloo exact p-value: 0.05138724517

Decision at alpha = 0.05: Fail to reject H0

Chosen one-sided direction: greater

Chosen nuisance probability: 0.590522

Group 0 outcome proportion: 0.86945

Group 1 outcome proportion: 0.81203

Risk difference: -0.05742

Risk ratio: 0.93396

Odds ratio: 0.64865

Cramer's V: 0.07822

Fisher's exact, Barnard's exact, and chi-square results are included only for comparison.

Assumption note: observations should be independent and the table must be 2 x 2.

Observed contingency table

group	G3 >= 10	G3 < 10	total	positive_proportion
F	333	50	383	0.8694517
M	216	50	266	0.8120301

Boschloo and comparison tests

test	statistic	df	p_value	role	decision_alpha_0_05
Boschloo exact test	0.03049279	NA	0.05138725	Primary exact test	Fail to reject H0
Boschloo exact test - less	0.98178692	NA	0.97786556	One-sided component	Fail to reject H0
Boschloo exact test - greater	0.03049279	NA	0.02569362	One-sided component	Reject H0
Fisher exact test		NA	0.05979708	Comparison only	Fail to reject H0
Barnard exact test	1.99274550	NA	0.04653351	Comparison only	Reject H0
Pearson chi-square	3.97103463	1	0.04628932	Asymptotic comparison	Reject H0
Yates corrected chi-square	3.54270596	1	0.05980782	Asymptotic comparison	Fail to reject H0

Effect measures

measure	estimate	ci95_lower	ci95_upper	null_value
Outcome proportion - F	0.86945170	0.8320101	0.8995557695	NA
Outcome proportion - M	0.81203008	0.7607620	0.8544140076	NA
Risk difference (M - F)	-0.05742162	-0.1152383	0.0003950912	0
Risk ratio (M / F)	0.93395651	0.8711337	1.0013098637	1
Odds ratio (M / F)	0.64864865	0.4228980	0.9949091298	1
Cramer's V	0.07822210	NA	NA	0

Cell diagnostics

group	outcome	observed	expected	pearson_residual	adjusted_standardized_residual	chi_square_contribution
F	G3 >= 10	333	323.98613	0.5007811	1.992745	0.2507817
F	G3 < 10	50	59.01387	-1.1733677	-1.992745	1.3767918
M	G3 >= 10	216	225.01387	-0.6009060	-1.992745	0.3610880
M	G3 < 10	50	40.98613	1.4079677	1.992745	1.9823731













