

Risk Difference

Verified Python analysis transcript

Test: Risk Difference

Design: Paid-class exposure and the absolute G3 pass-probability difference.

Variables: paid, G3 >= 10

Null hypothesis: The absolute pass-risk difference is zero.

Primary formula: $RD = p_1 - p_0$; $SE = \sqrt{p_1(1-p_1)/n_1 + p_0(1-p_0)/n_0}$

Valid source rows: 649

Verified results:

risk_difference: -0.08158890290037824

wald_se: 0.06899084026927285

wald_ci_low: -0.21681094982815302

wald_ci_high: 0.05363314402739655

newcombe_ci_low: -0.23639378095654875

newcombe_ci_high: 0.027079852006960003

paid_risk: 0.7692307692307693

unpaid_risk: 0.8508196721311475

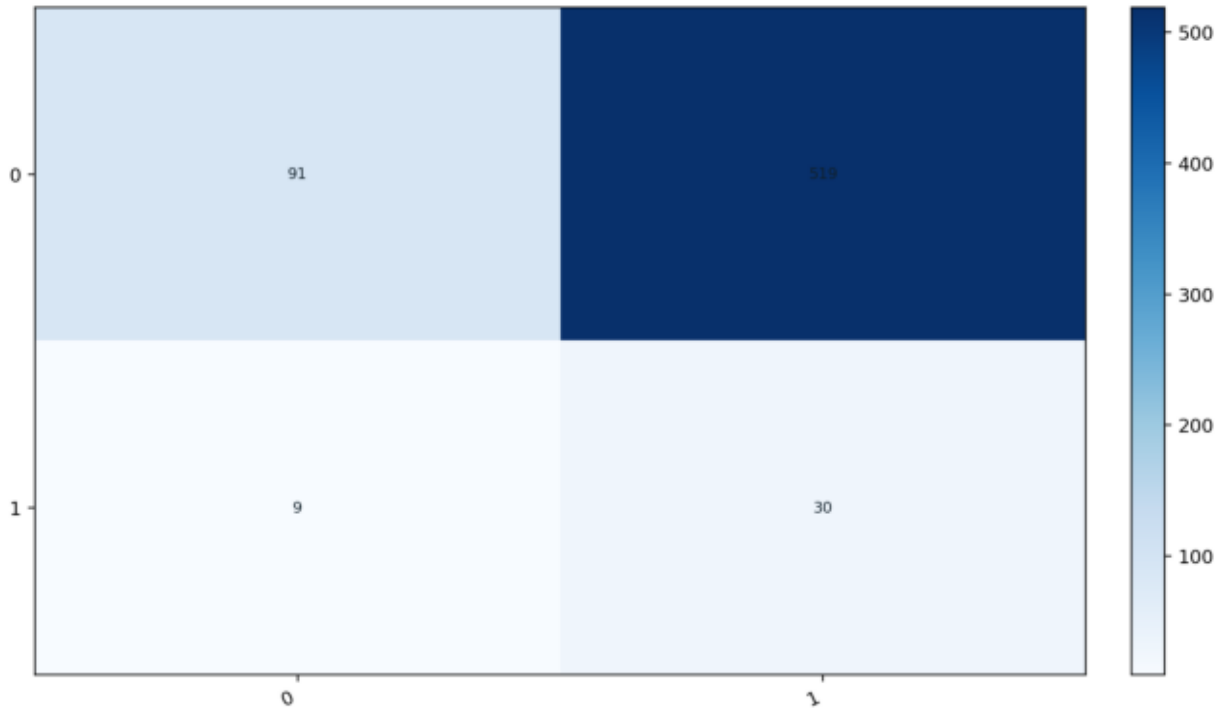
Interpretation:

Risk difference = -0.081589; Newcombe 95% CI [-0.236394, 0.027080].

The result is an absolute probability difference, not a relative risk or odds ratio.

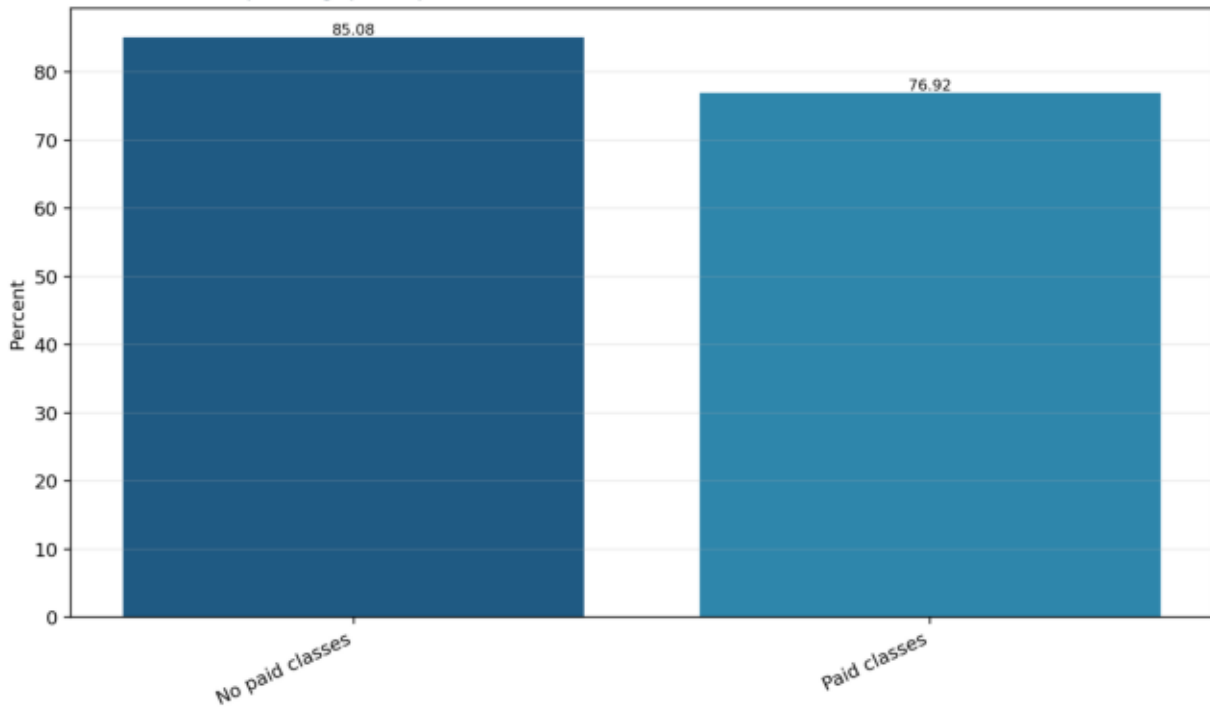
Paid classes and pass outcome

Observed 2 x 2 table



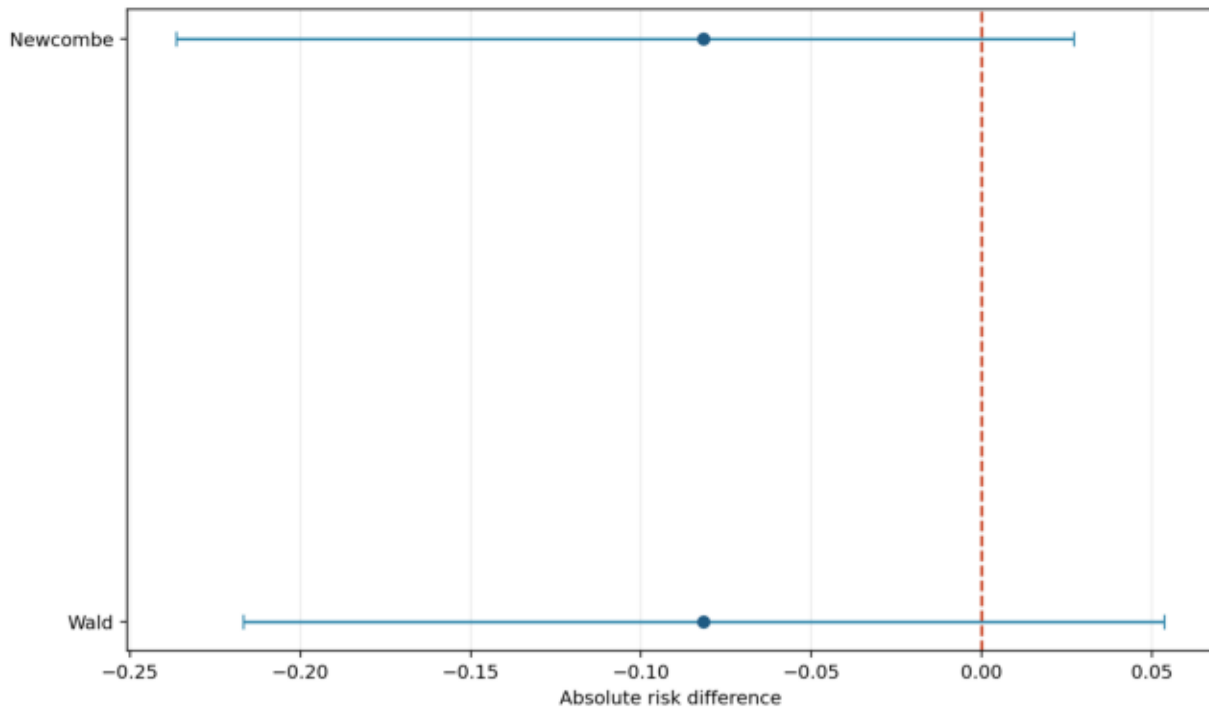
Absolute pass risks

Risk difference uses percentage-point separation



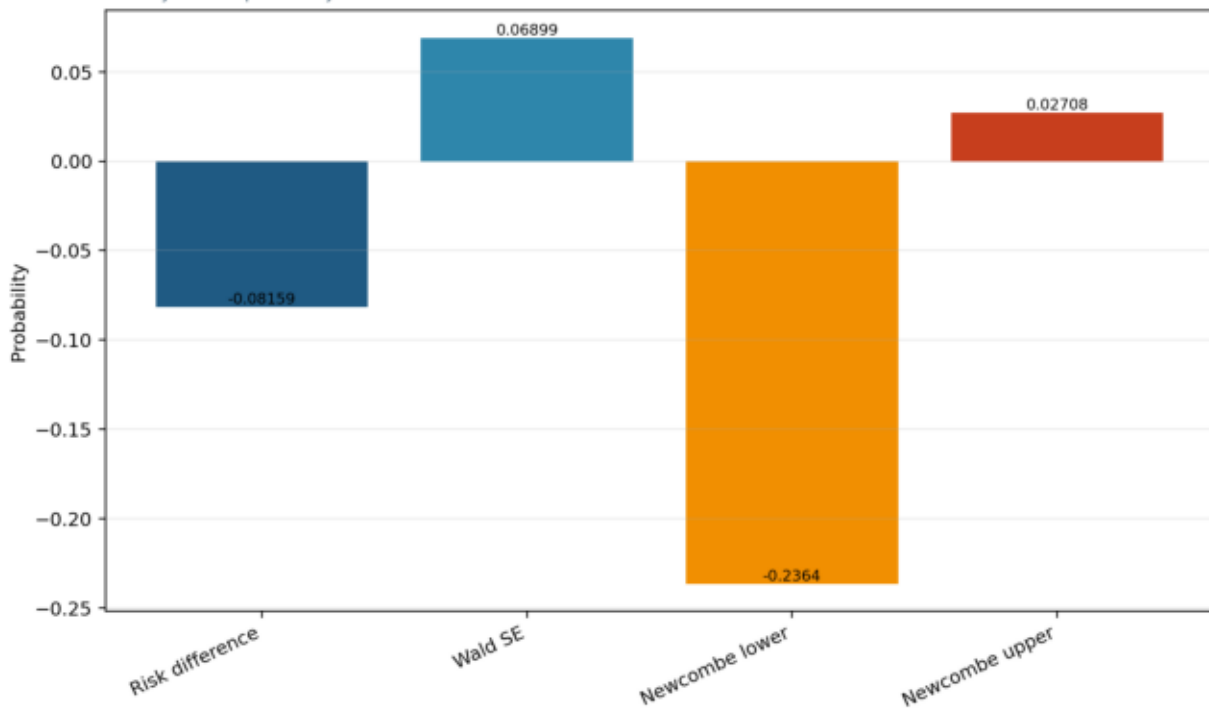
Risk-difference confidence intervals

Wald and Newcombe methods



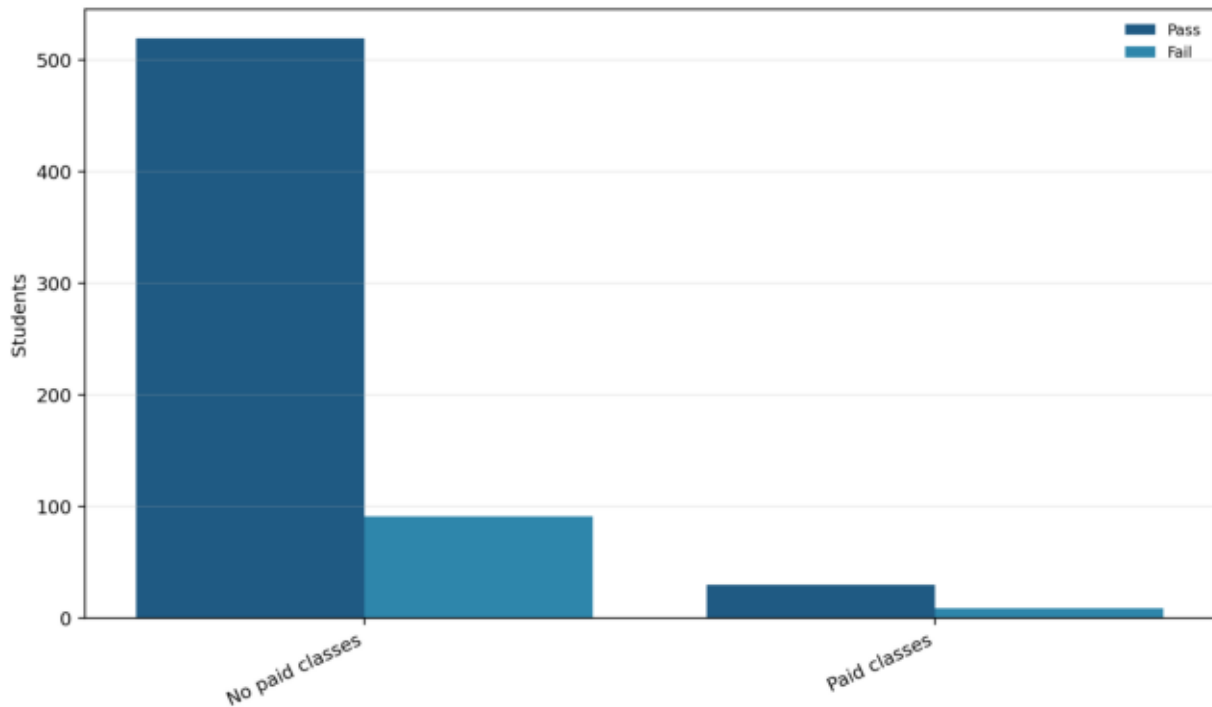
Absolute-effect components

Primary scale is probability difference



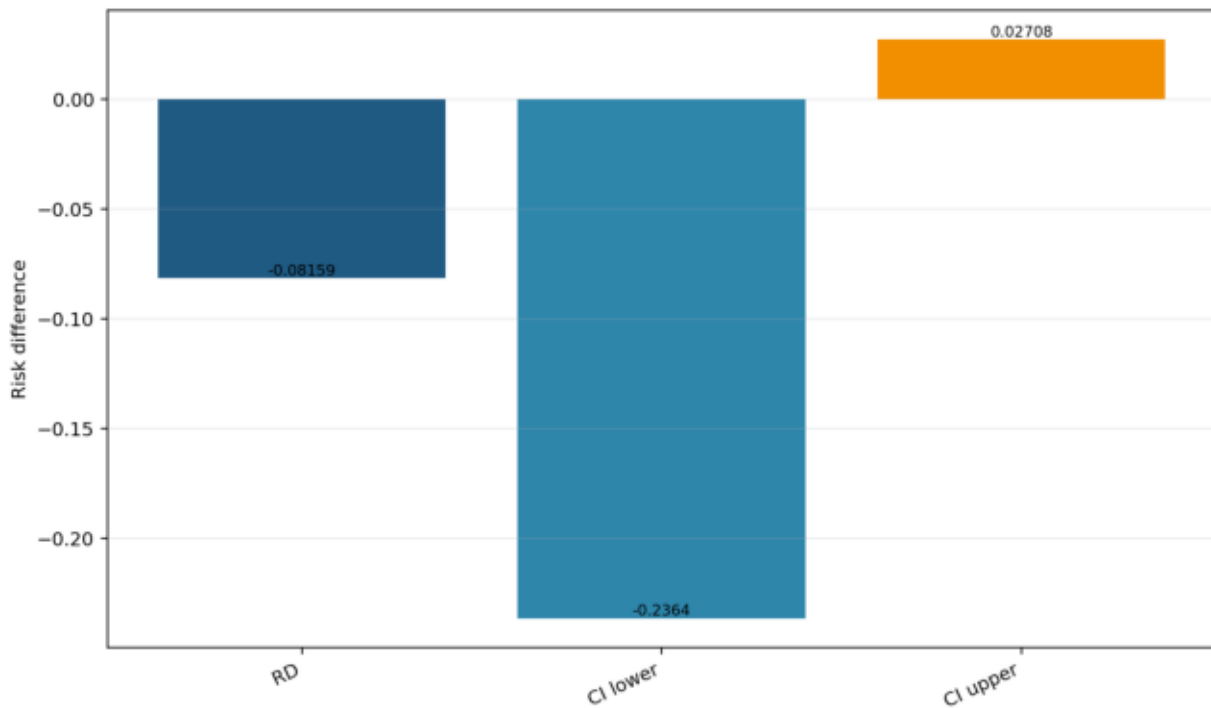
Outcome counts behind the risks

Denominators remain visible



Risk-difference result summary

Null value is zero



Observed 2X2

0	1
91	519
9	30

Risk Components

passes	total	risk
519	610	0.85082
30	39	0.769231

Interval Comparison

lower	upper
-0.216811	0.0536331
-0.236394	0.0270799