

Tetrachoric Correlation Analysis

Variable X: higher
Variable Y: internet

Binary coding:

variable	positive_category_coded_1	negative_category_coded_0	valid_n
higher	yes	all other observed category	649
internet	yes	all other observed category	649

2 x 2 table:

X category	Y=1	Y=0	row_total
X=1	451	129	580
X=0	47	22	69
column_total	498	151	649

Tetrachoric result:

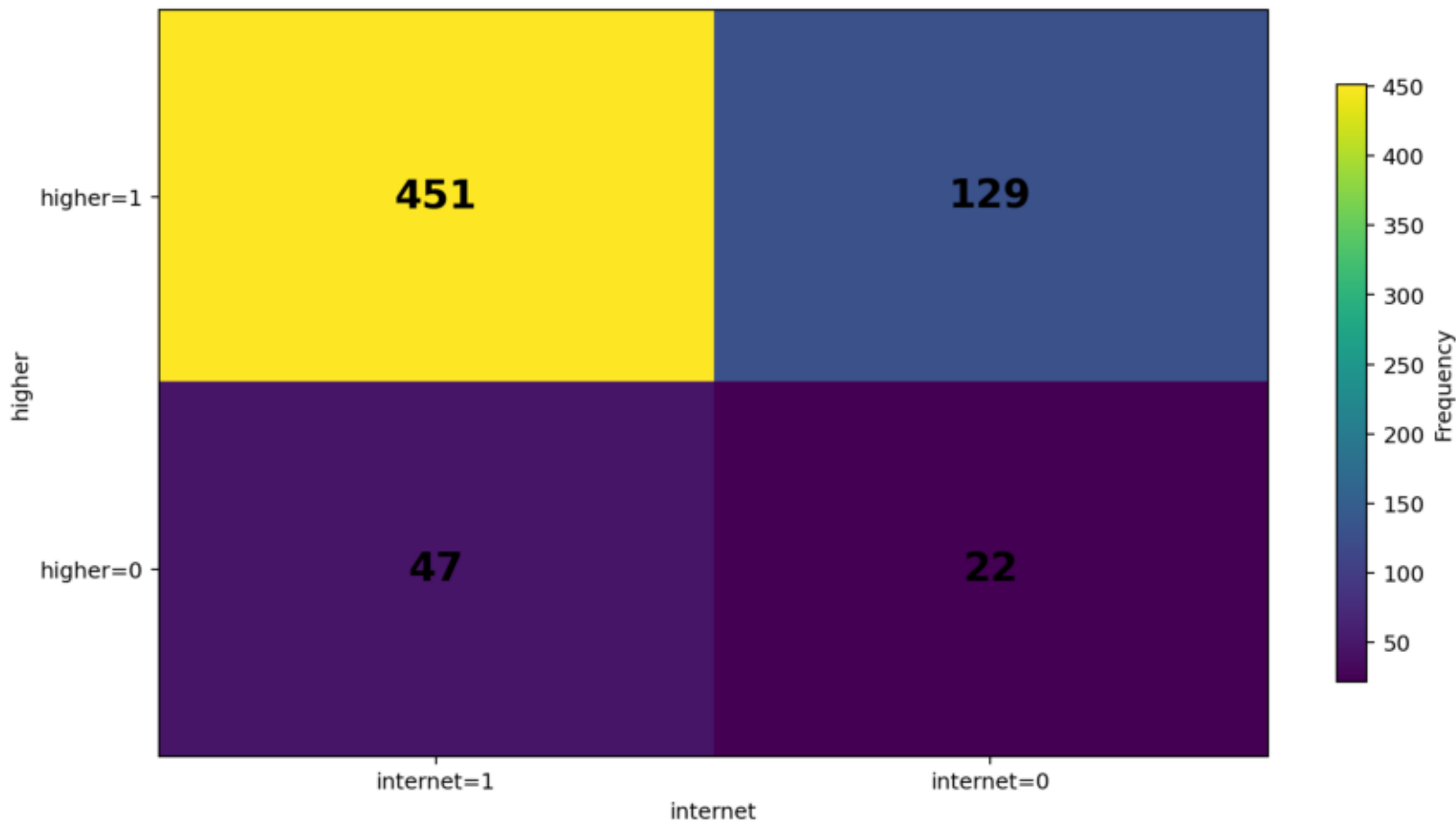
tetrachoric_correlation	standard_error	ci95_lower	ci95_upper	p_x1	p_y1	observed_p11	method
0.152843	0.087188	-0.018043	0.323728	0.893683	0.767334	0.694915	Maximum likelihood using bivariate normal CDF (SciPy)

Supporting association context:

phi_coefficient	odds_ratio_continuity_corrected	digby_approximation	chi_square	chi_square_df	chi_square_p_value	note
0.070345	1.651494	0.194731	3.211522	1	0.073121	Phi is the observed binary correlation; tetrachoric estimates latent correlation under a bivariate normal threshold model.

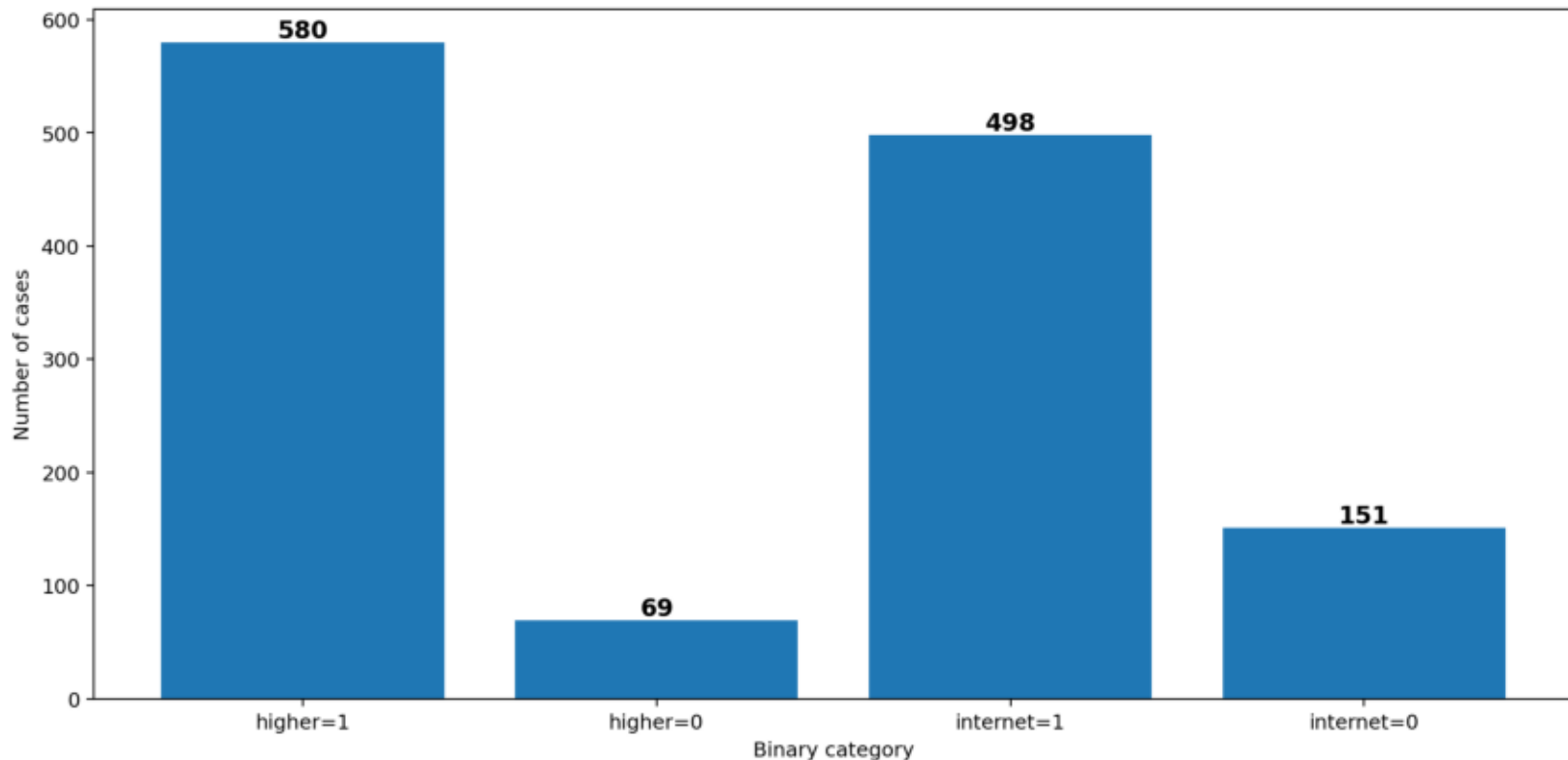
Tetrachoric Correlation: 2 x 2 Frequency Table

Counts are based on the two selected binary variables after listwise deletion.



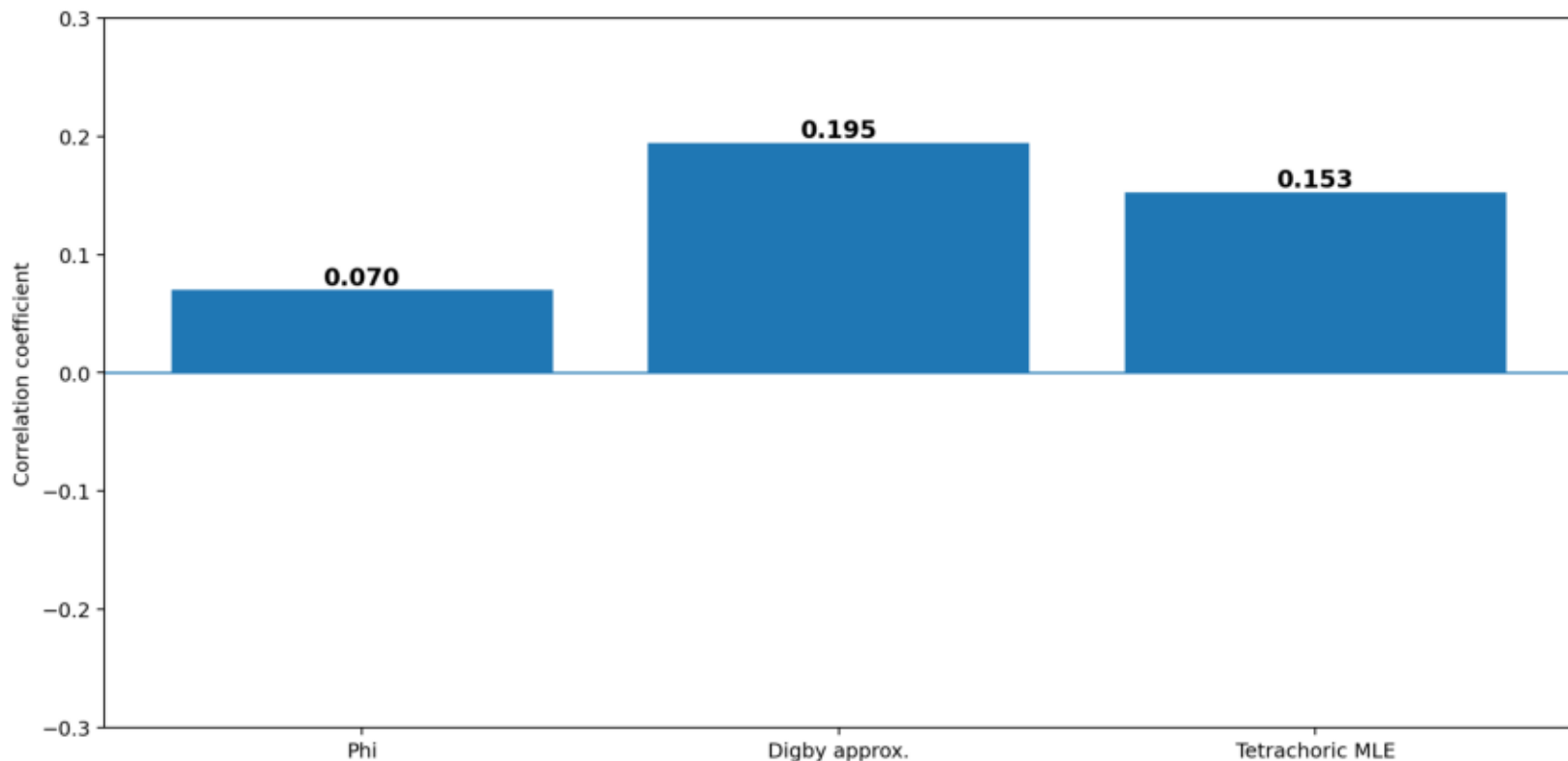
Tetrachoric Correlation: Marginal Binary Distributions

Uneven margins are common in tetrachoric analysis and affect the latent correlation estimate.



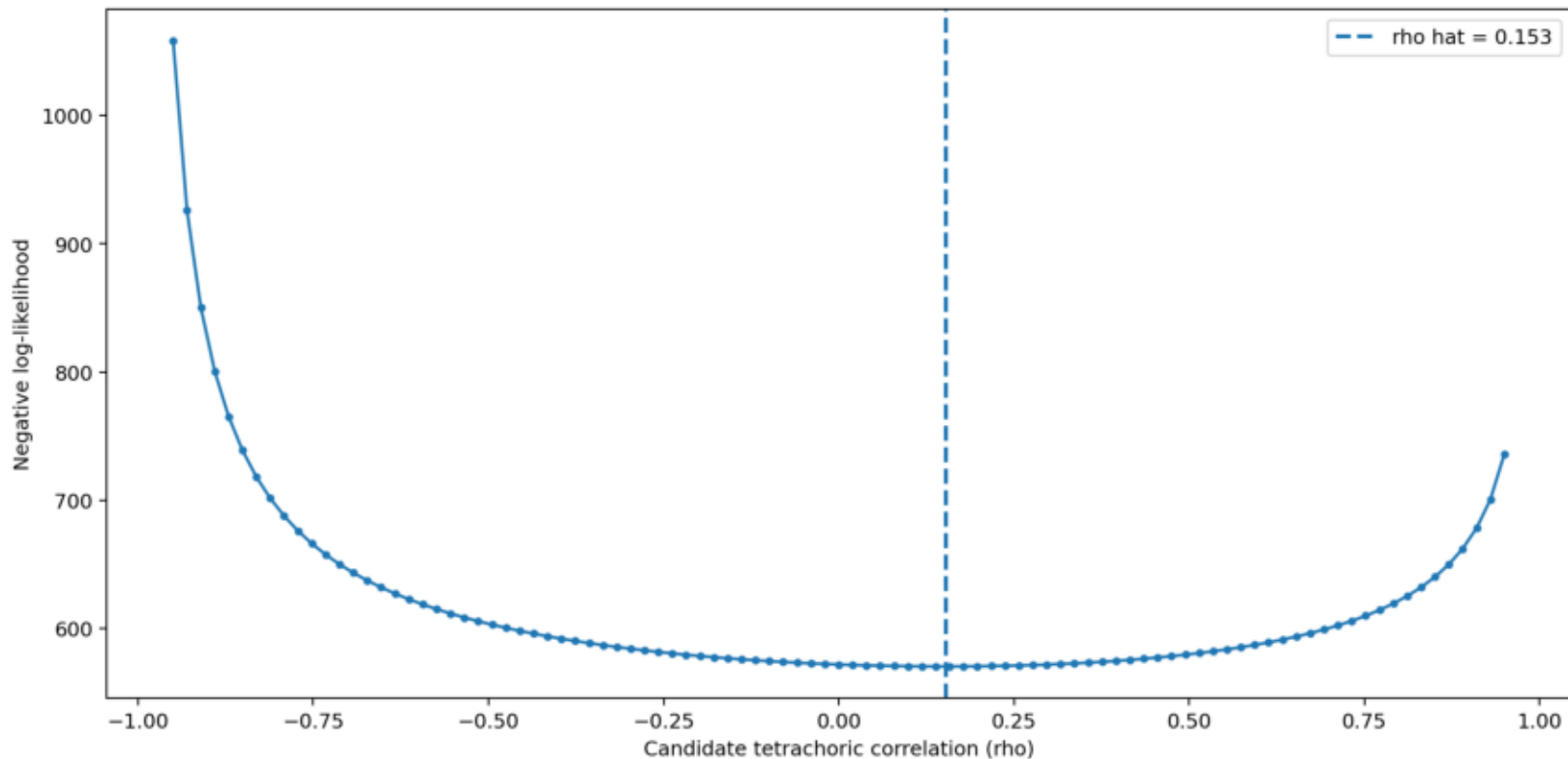
Tetrachoric Correlation Compared with Observed Binary Association

Phi is the observed 0/1 association; tetrachoric estimates latent continuous association.



Tetrachoric Correlation: Likelihood Profile

The minimum of this curve is the maximum-likelihood estimate.



Tetrachoric Correlation: Method Summary

Use this card to report the selected variables, table counts, estimate, and method note.

Tetrachoric Correlation Method Report Card

Selected variables: higher and internet

2 x 2 counts: n11=451, n10=129, n01=47, n00=22

Tetrachoric correlation: 0.1528

95% CI: [-0.0180, 0.3237]

Phi coefficient: 0.0703

Continuity-corrected odds ratio: 1.6515

Method: Maximum likelihood using bivariate normal CDF (SciPy)

Interpretation: tetrachoric correlation estimates the relationship between two unobserved continuous normal variables after both have been dichotomised into observed categories.