

Contingency Coefficient Analysis

Row variable: school  
 Column variable: sex

Hypotheses:  
 H0: the two categorical variables are independent.  
 H1: the two categorical variables are associated.

Main result:

row_variable	column_variable	n	chi_square	df	p_value	contingency_coefficient_c	maximum_possible_c	normalized_c	cramers_v	phi	decision_alpha_0_05	effect_interpretation	method_note
school	sex	649	4.476302	1	0.034368	0.082765	0.707107	0.117047	0.08305	0.08305	Reject independence / variables are associated	Weak association	Pearson chi-square association test with Pearson contingency coefficient C = sqrt(chi-square / (chi-square + n)).

Observed contingency table:

row_category	column_category	F	M
GP		237	186
MS		146	80

Expected counts:

row_category	column_category	expected count
GP	F	249.628659
MS	F	133.371341
GP	M	173.371341
MS	M	92.628659

Standardized residuals:

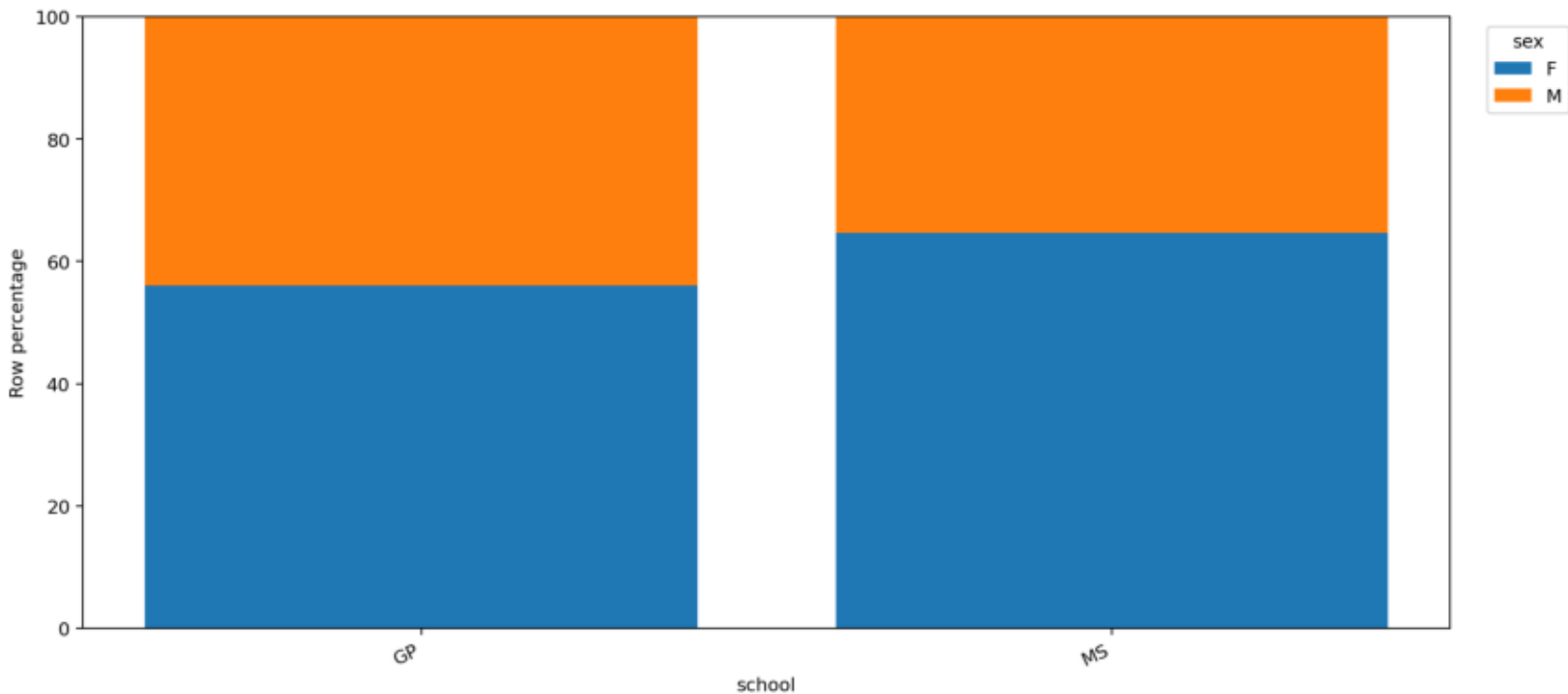
row_category	column_category	standardized_residual
GP	F	-0.799300
MS	F	1.093518
GP	M	0.959110
MS	M	-1.312153

Chi-square contributions:

row_category	column_category	chi_square_contribution
GP	F	0.638881
MS	F	1.195782
GP	M	0.919893
MS	M	1.721746

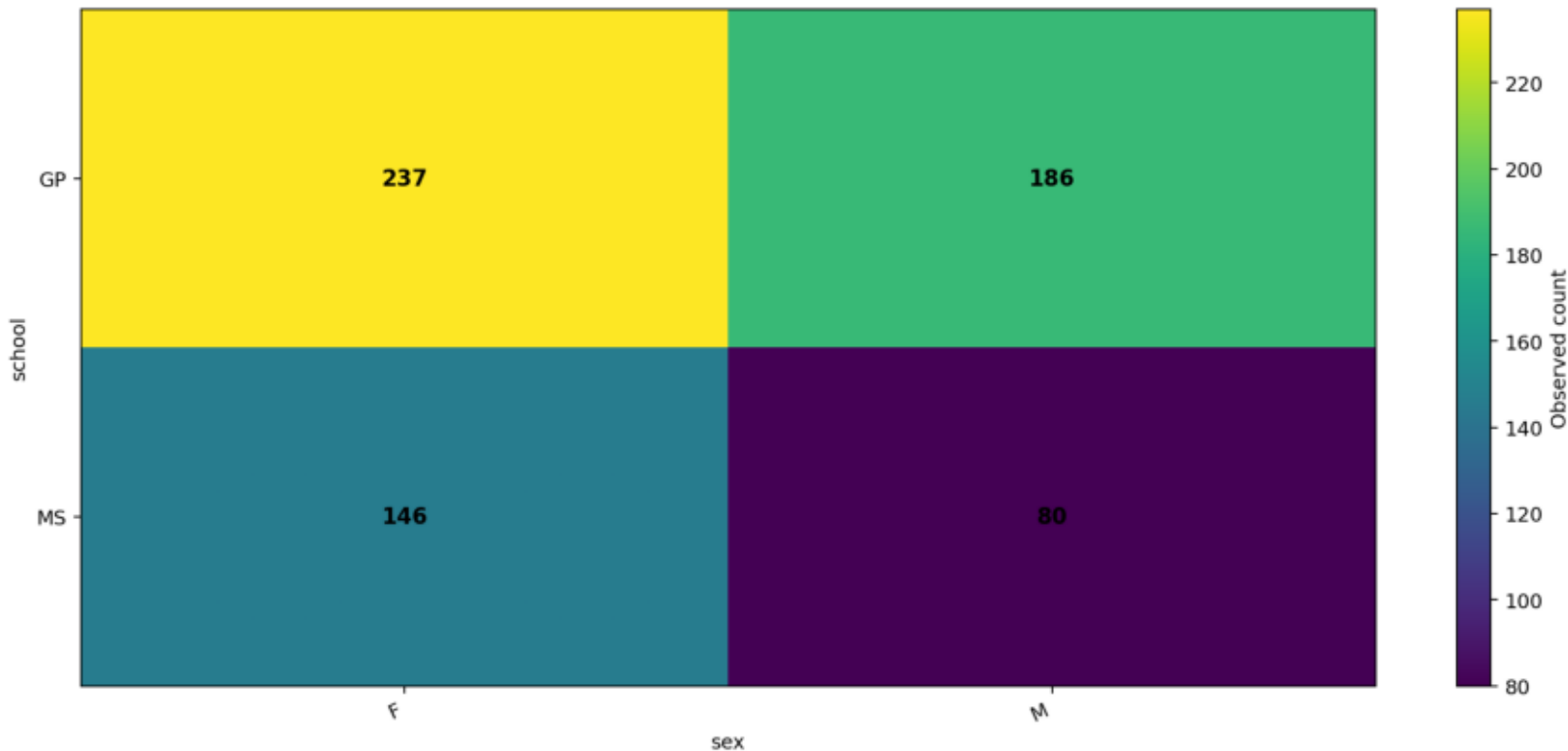
# Contingency Coefficient: Row Percentage Profile

Distribution of sex categories inside each school category.



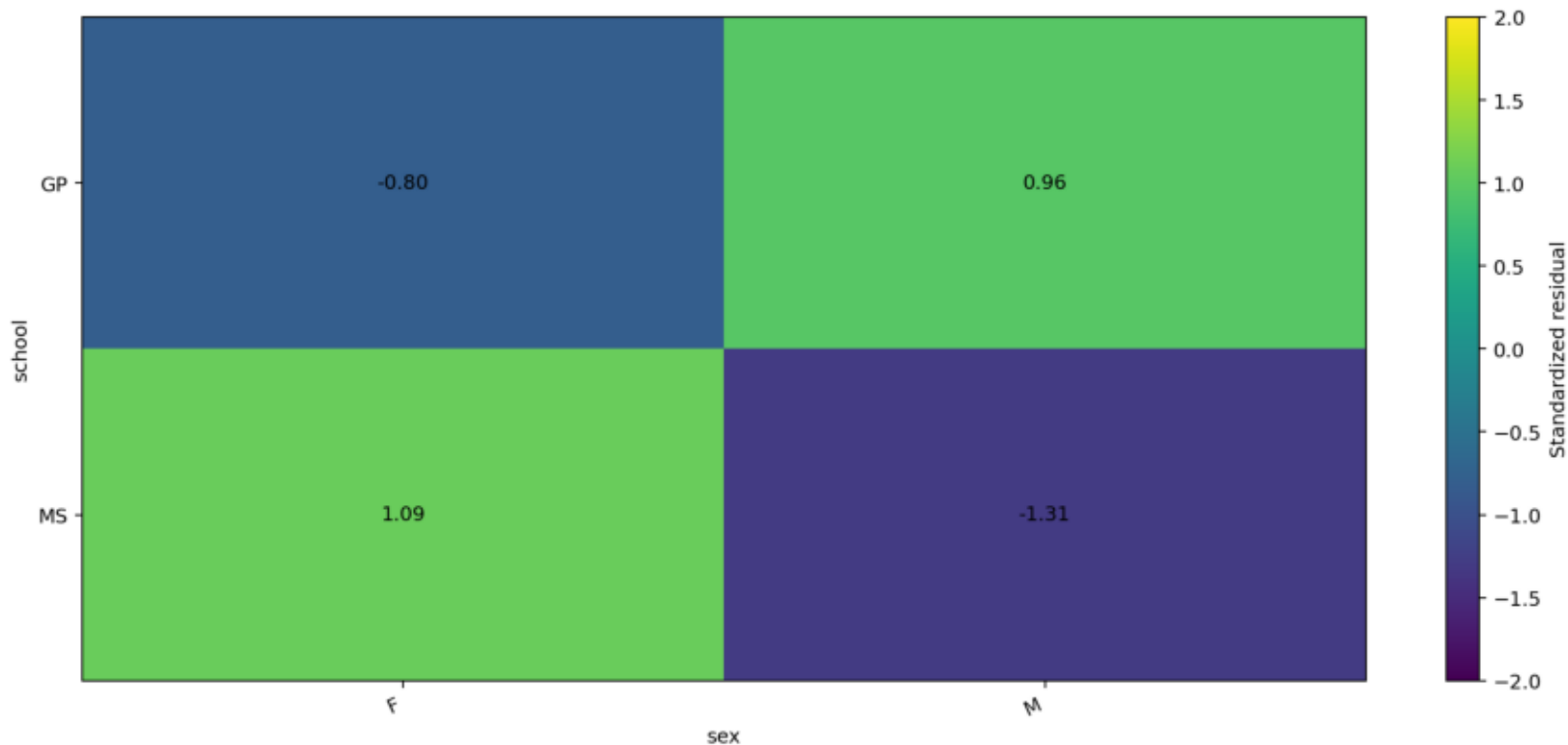
# Contingency Coefficient: Observed Count Heatmap

Darker or larger cells show where the cross-tabulation has more observations.



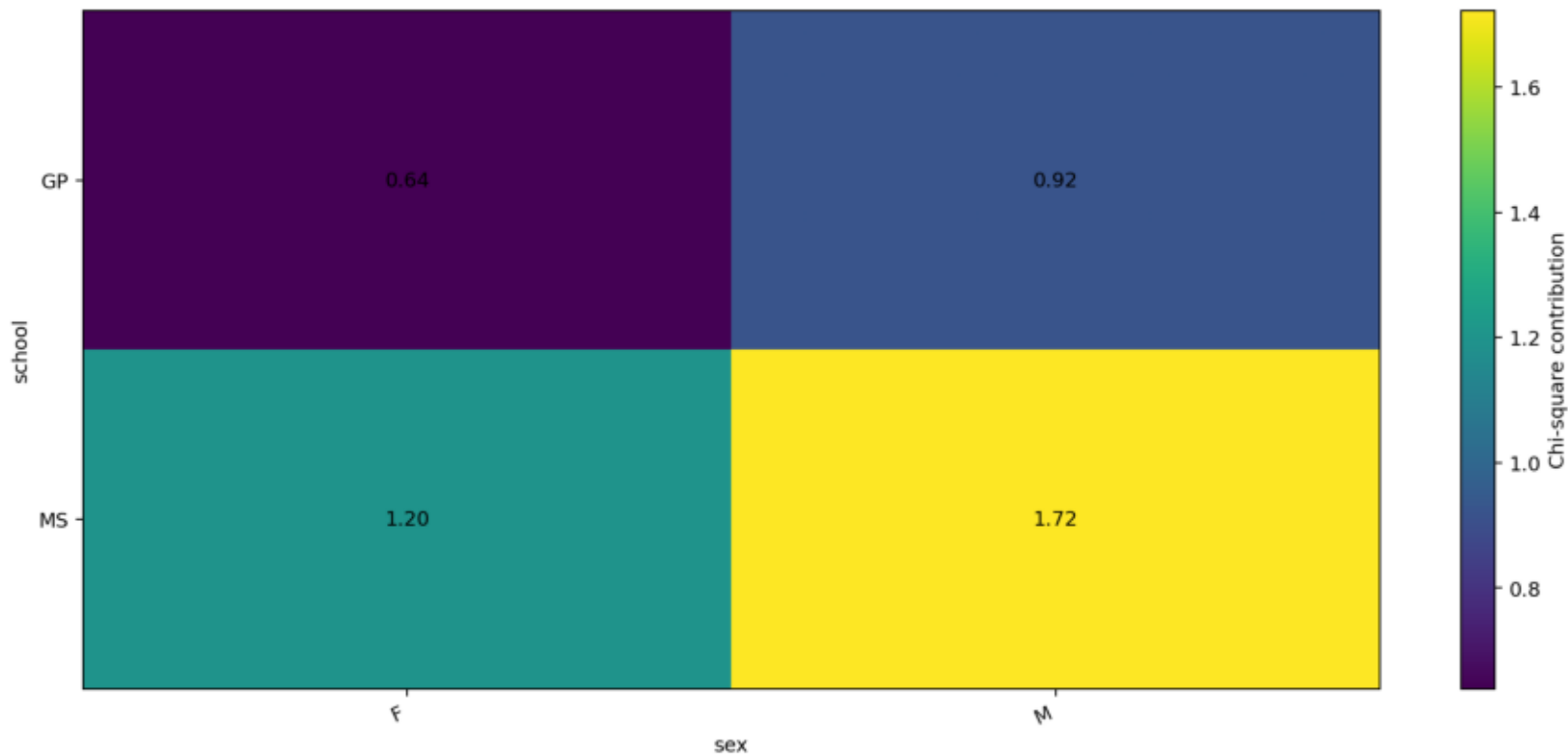
# Contingency Coefficient: Standardized Residual Map

Positive cells are higher than expected; negative cells are lower than expected under independence.



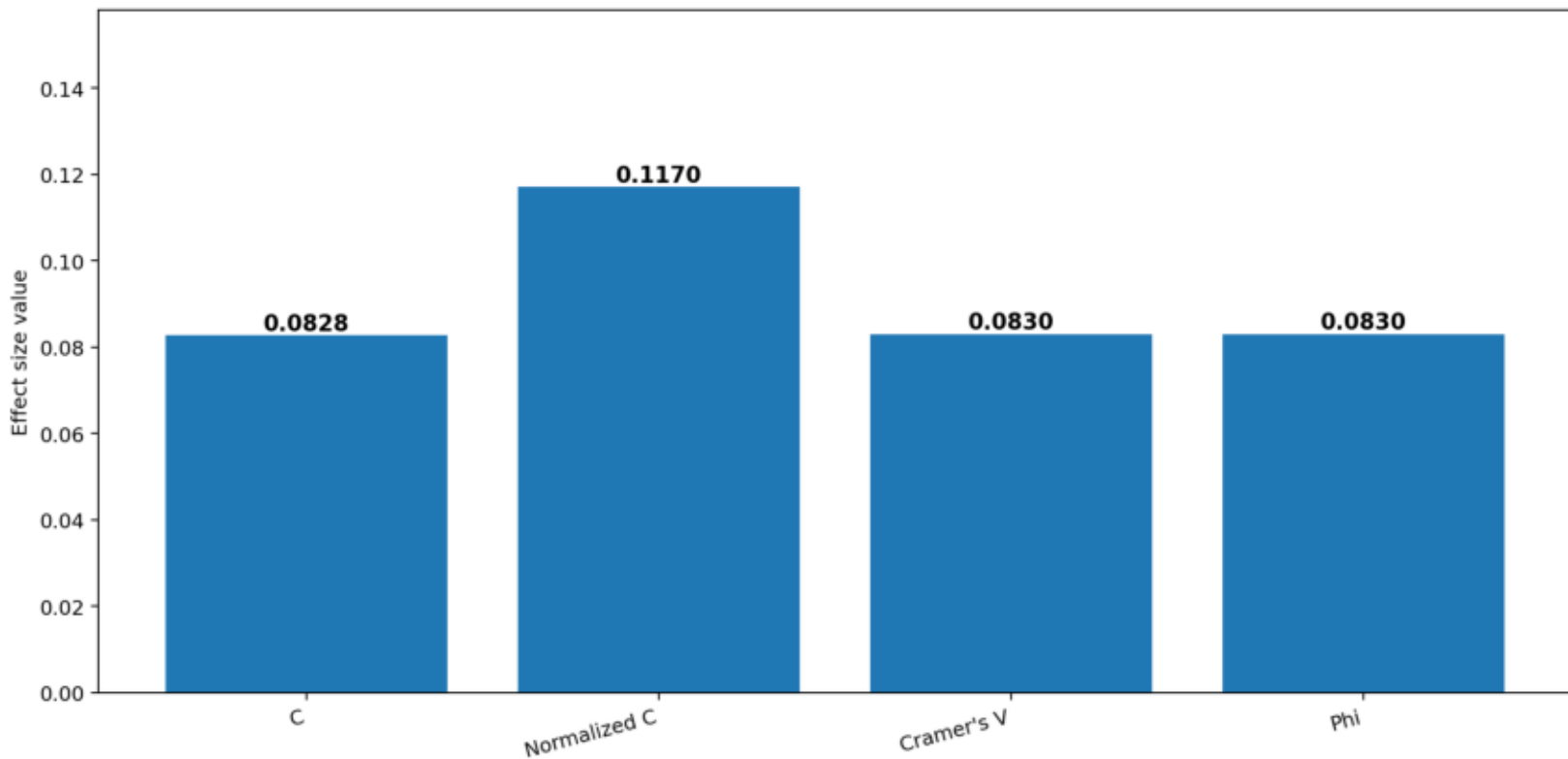
# Contingency Coefficient: Chi-square Cell Contributions

Cells with larger values contribute more to the association test statistic.



# Contingency Coefficient: Association Strength Summary

C is the main statistic; normalized C and Cramer's V help compare strength on a 0 to 1 scale.



# Contingency Coefficient: Observed vs Expected Counts

Points far from the diagonal indicate cells that depart more from independence.

