Contingency Coefficient Analysis

Row variable: school
Column variable: sex

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	0.03436801	0.08276463	0.7071068	0.1170469	0.08304956	0.08304956	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:

	F	M
GP	237	186
MS	146	80

Expected counts:

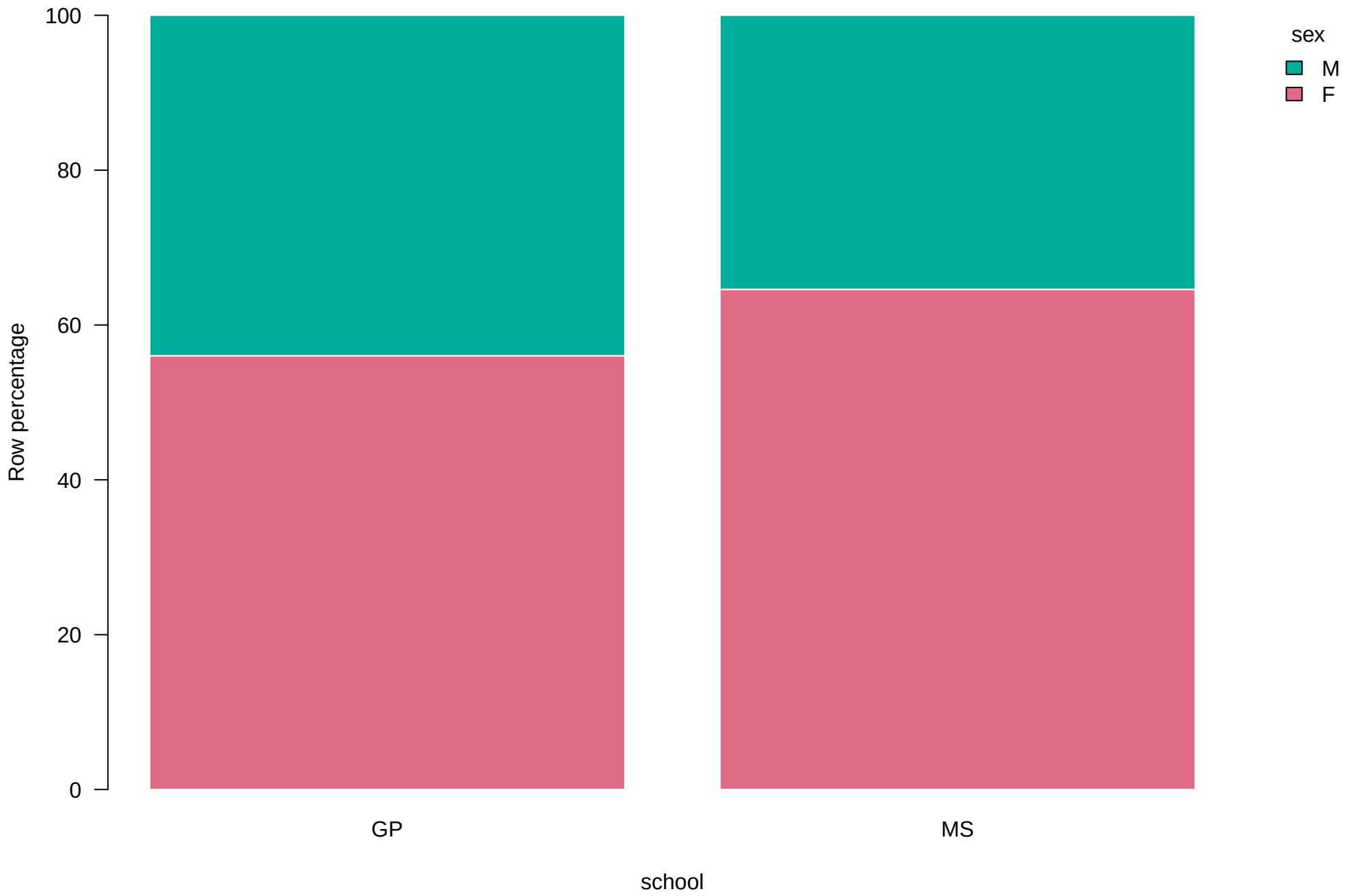
row_category	column_category	expected_count
GP	F	249.62866
MS	F	133.37134
GP	M	173.37134
MS	M	92.62866

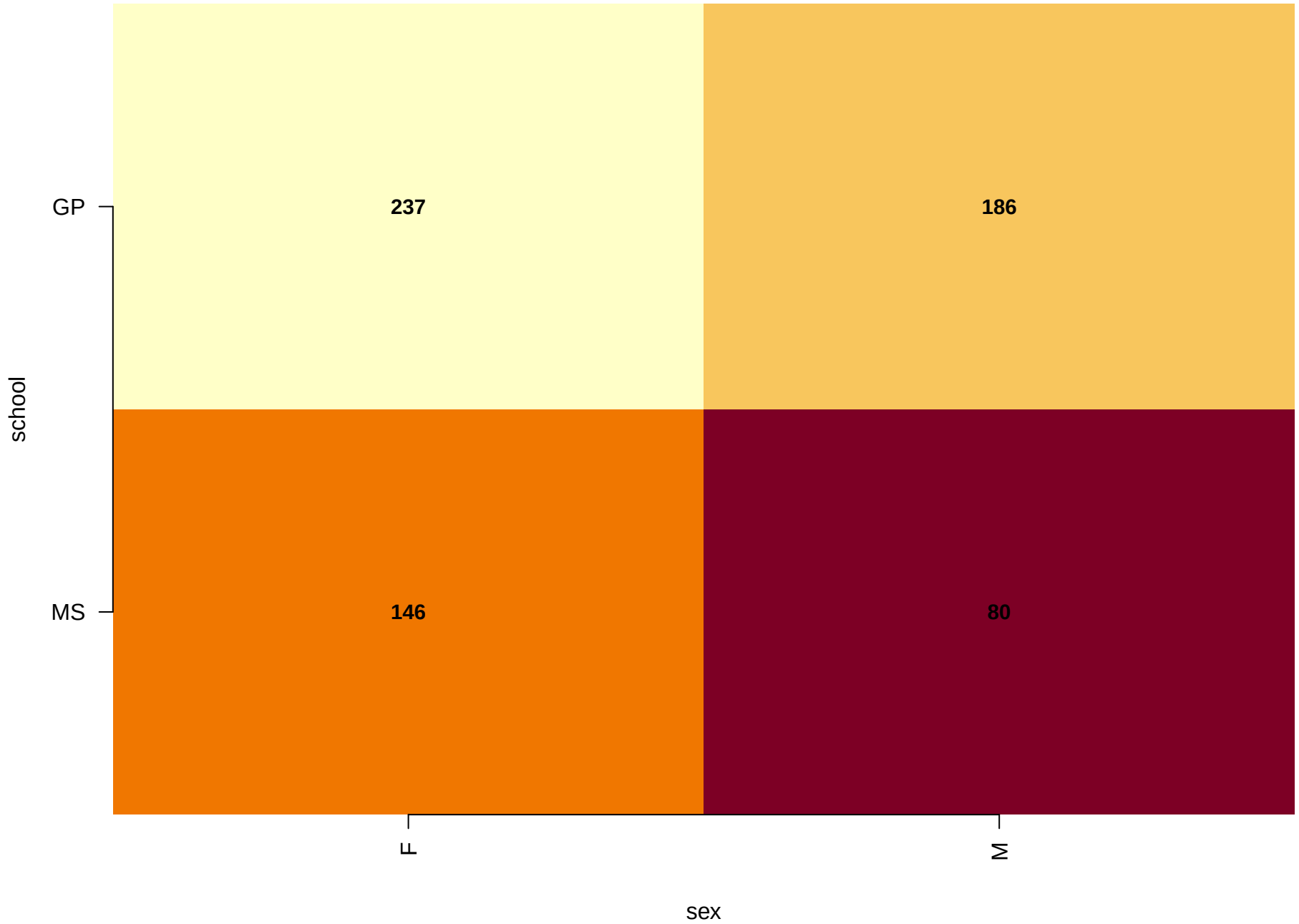
Standardized residuals:

row_category	column_category	standardized_residual
GP	F	−2.115727
MS	F	2.115727
GP	M	2.115727
MS	M	−2.115727

Chi−square contributions:

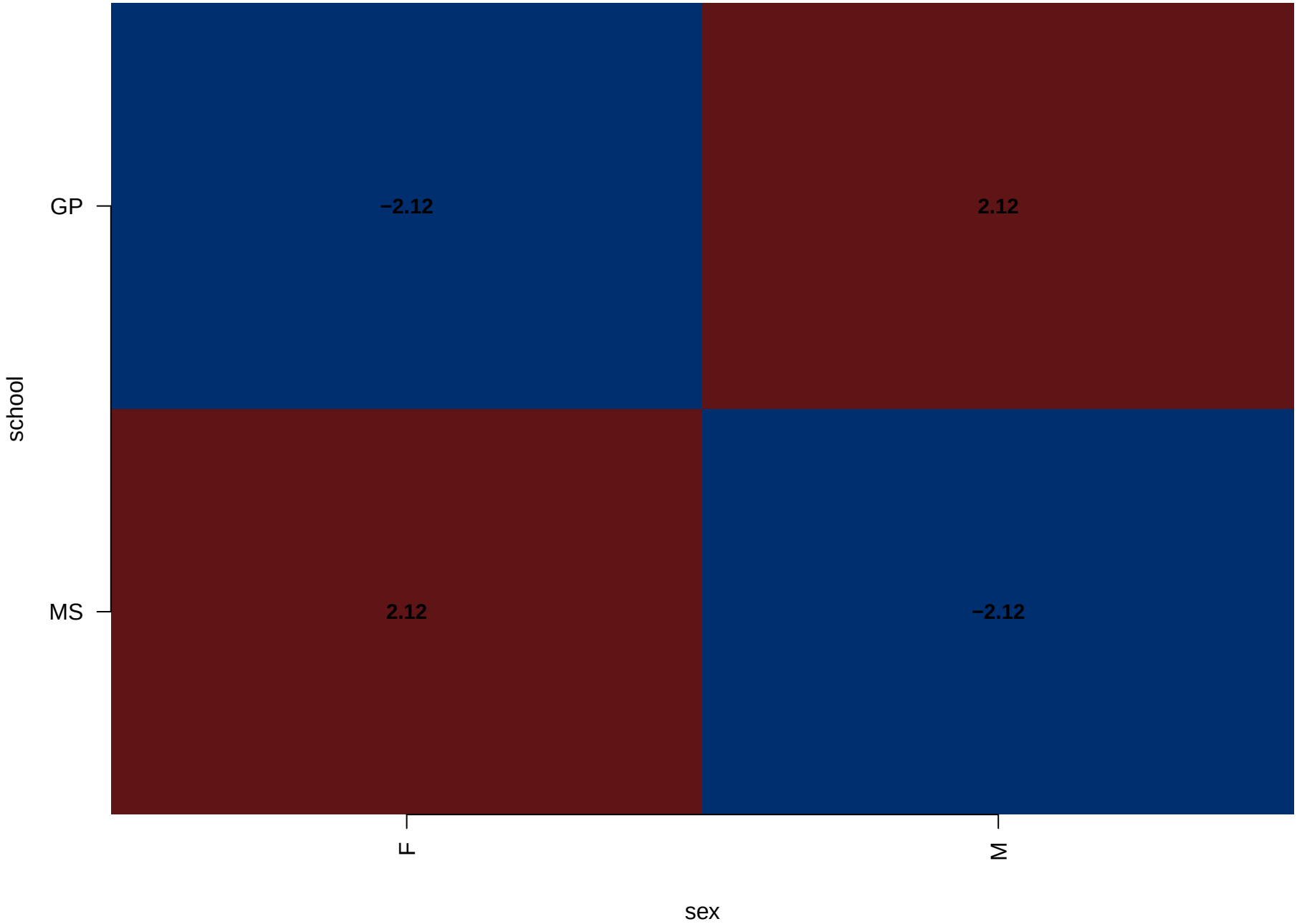
row_category	column_category	chi_square_contribution
GP	F	0.6388811
MS	F	1.1957819
GP	M	0.9198928
MS	M	1.7217462

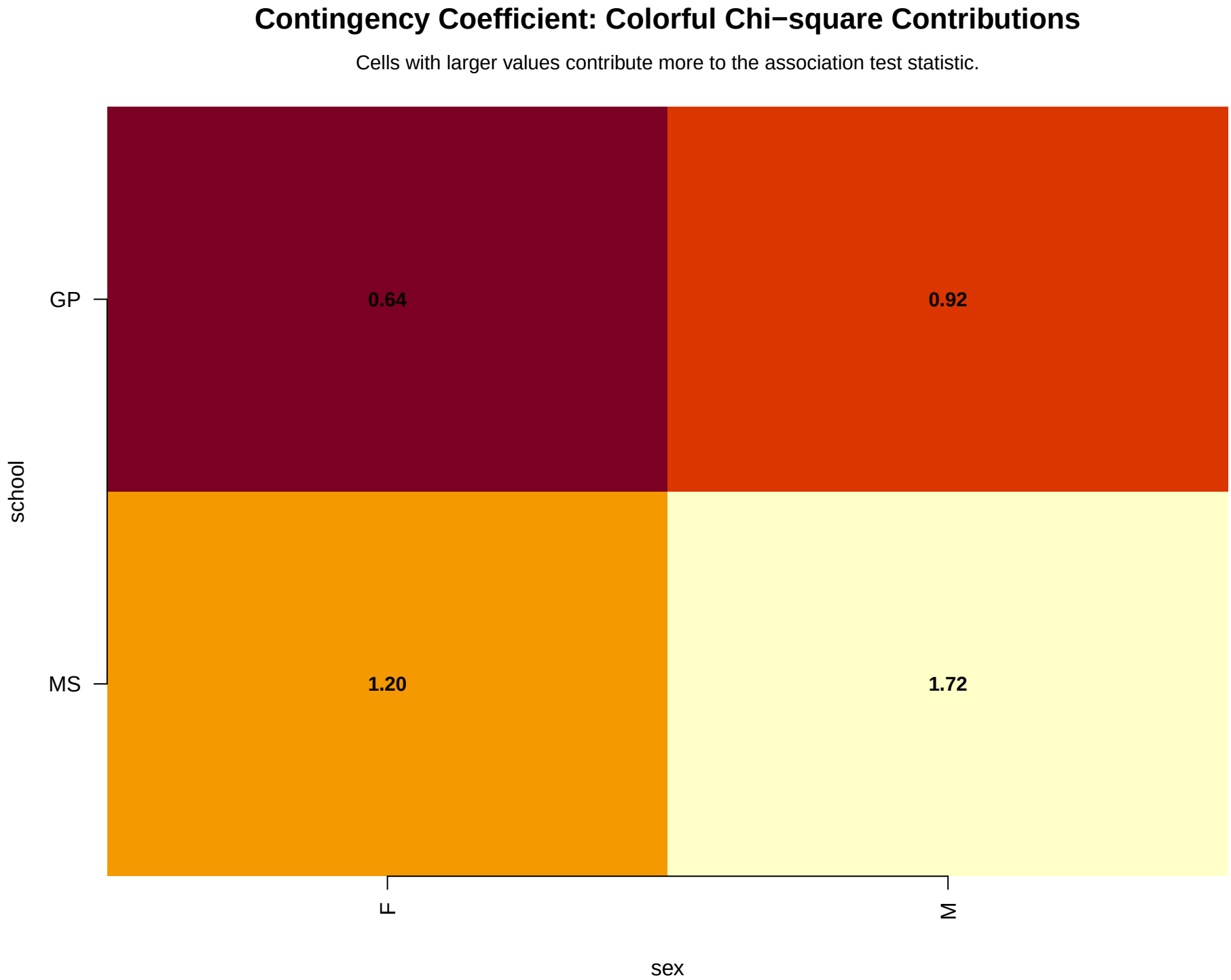

Contingency Coefficient: Colorful Row Percentage Profile
Distribution of sex categories inside each school category.
Row percentage
100
80
60
40
20
0
GP
MS
school
sex
M
F

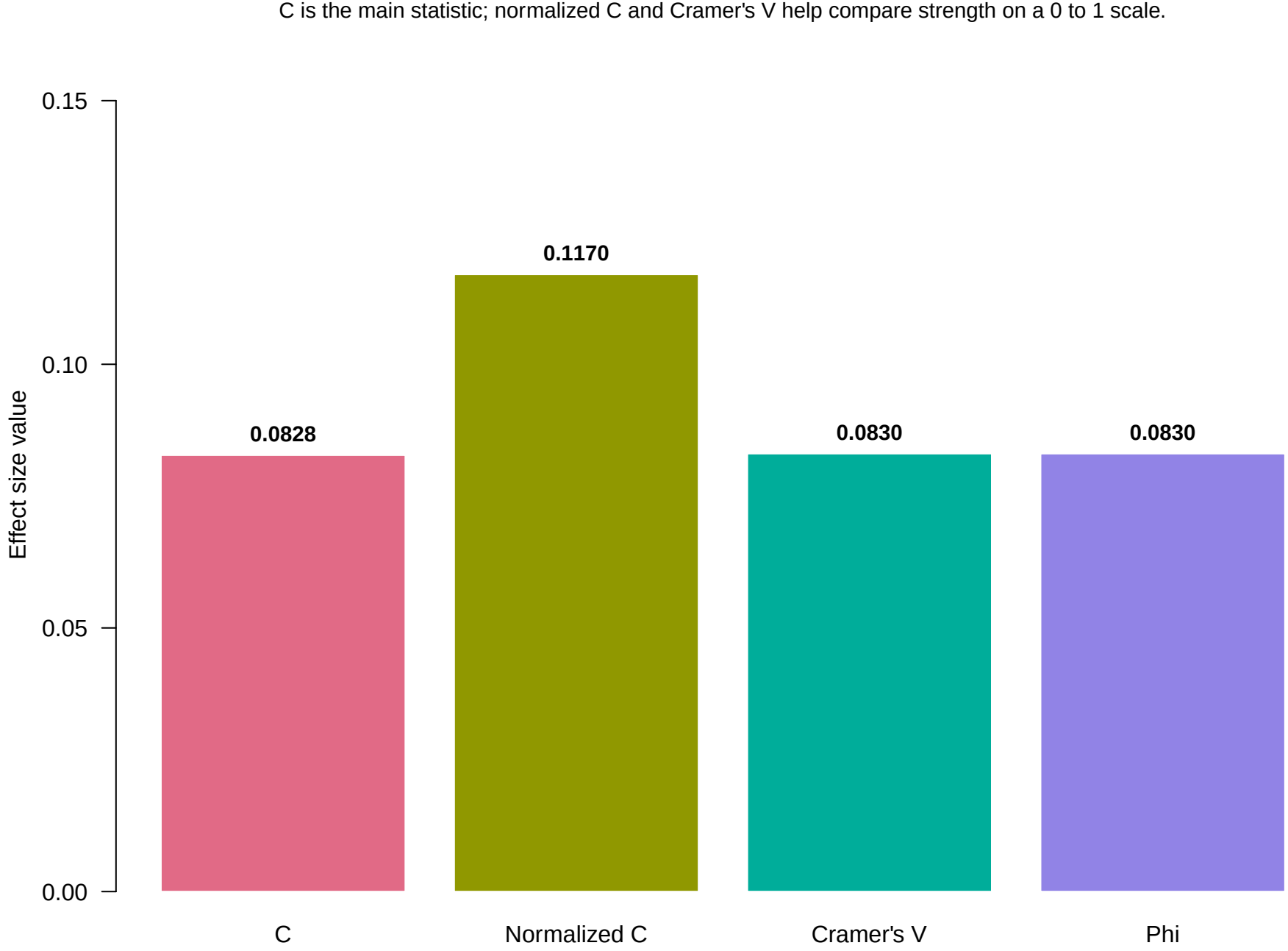

Contingency Coefficient: Colorful Observed Count Heatmap
Cells show observed frequencies in the cross−tabulation.
GP
MS
school
237
186
146
80
F
M
sex

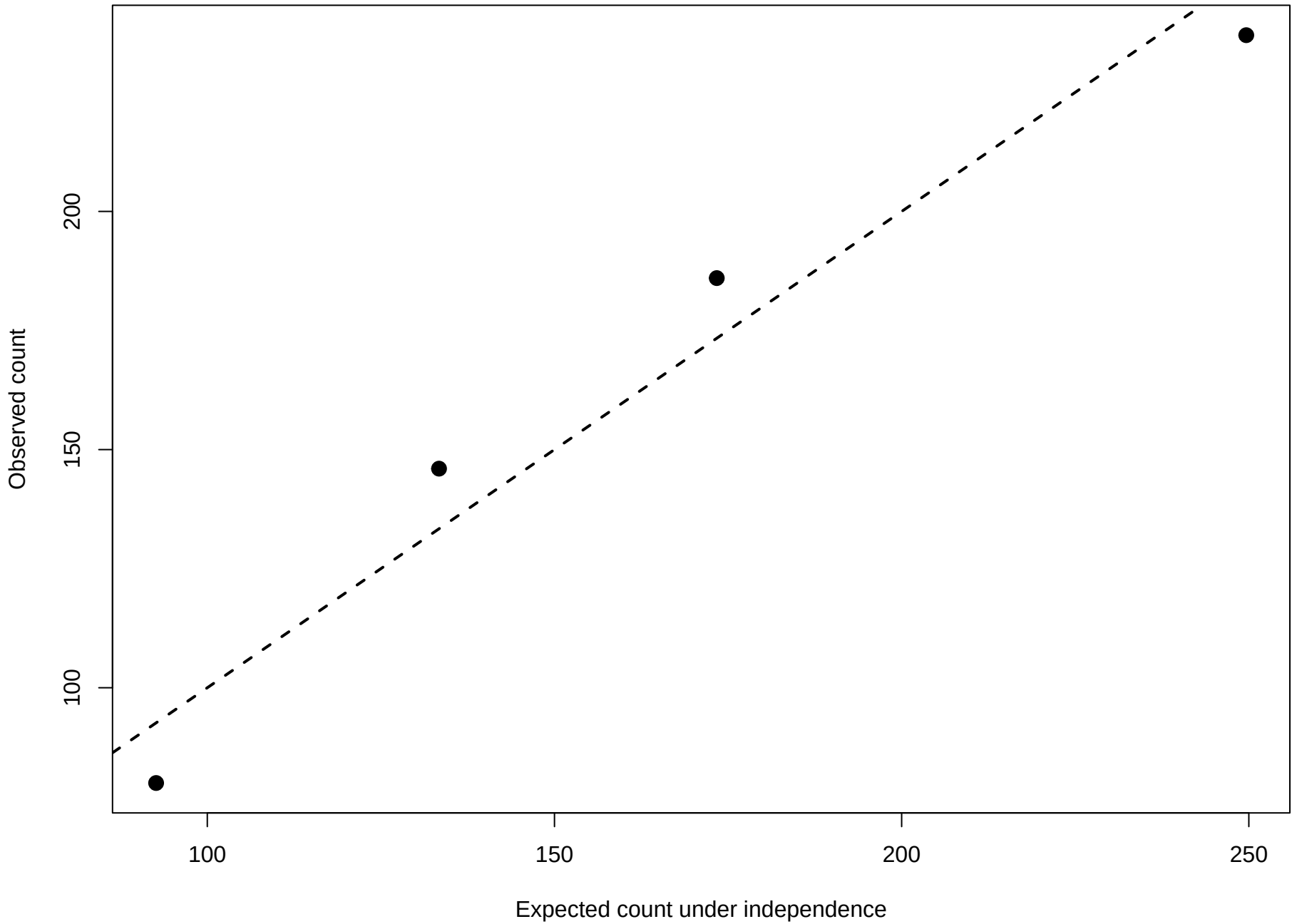
Contingency Coefficient: Colorful Standardized Residual Map

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




Contingency Coefficient: Colorful Chi−square Contributions
Cells with larger values contribute more to the association test statistic.
GP
MS
school
0.64
0.92
1.20
1.72
F
M
sex


Contingency Coefficient: Colorful Association Strength Summary
C is the main statistic; normalized C and Cramer's V help compare strength on a 0 to 1 scale.
Effect size value
0.15
0.10
0.05
0.00
0.0828
0.1170
0.0830
0.0830
C
Normalized C
Cramer's V
Phi


Contingency Coefficient: Observed vs Expected Counts
Points far from the diagonal indicate cells that depart more from independence.
Observed count
100
150
200
100
150
200
250
Expected count under independence