

# Dataset: Iris Flower dataset

(a) setosa

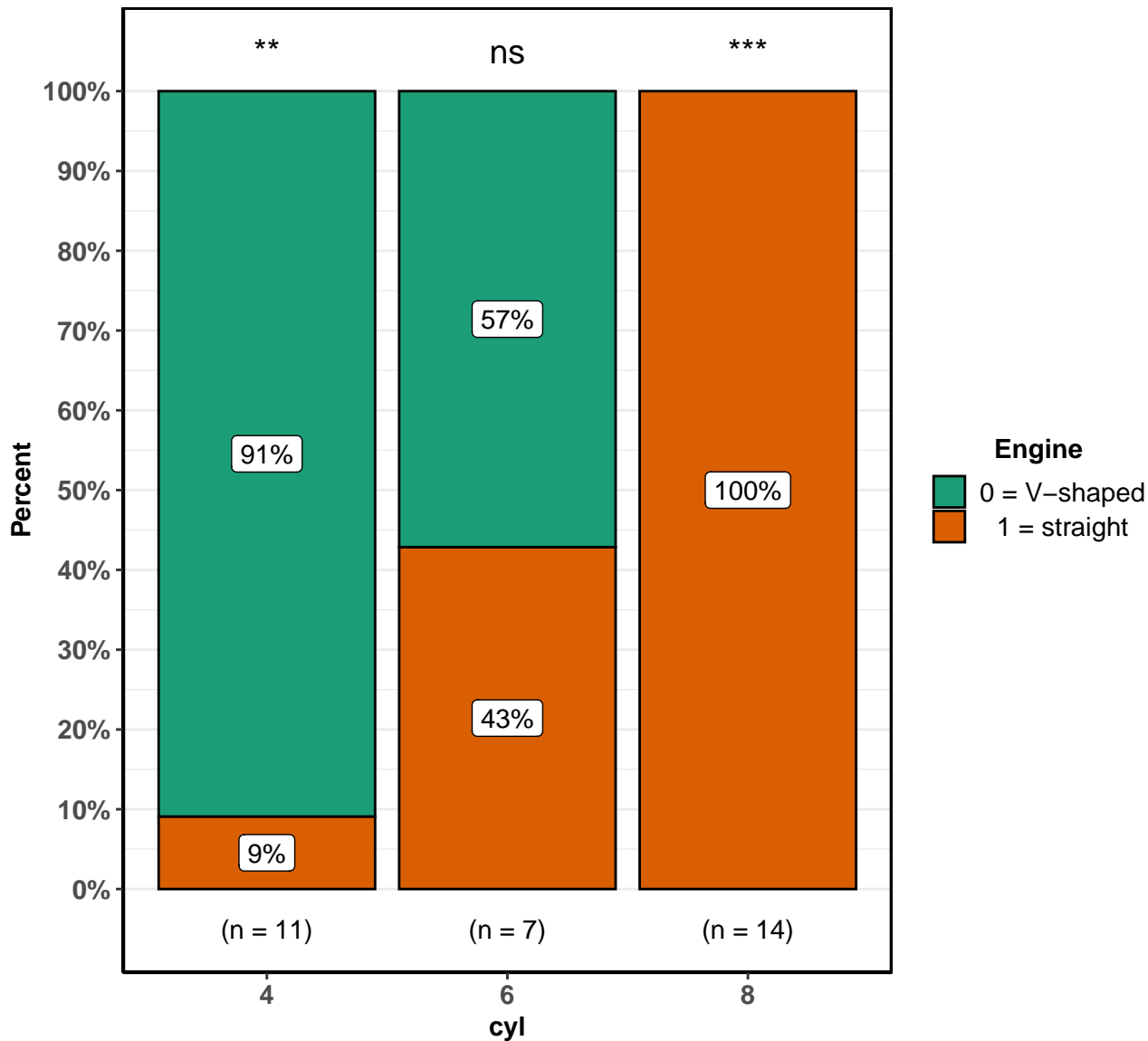


(b) versicolor



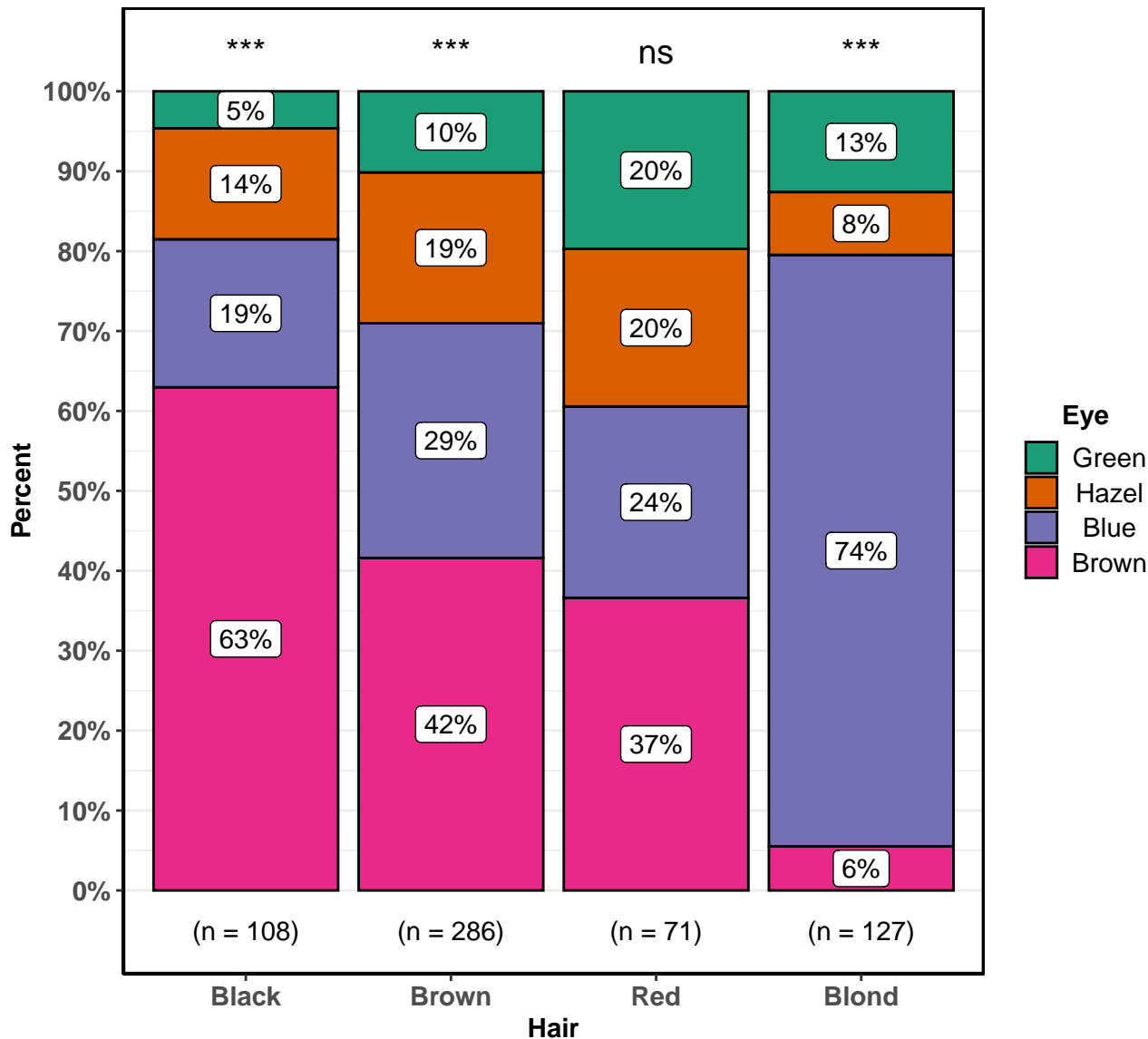
Note: Only two species of flower are displayed

$\chi^2_{\text{Pearson}}(2) = 21.34, p = < 0.001, V_{\text{Cramer}} = 0.82, \text{CI}_{95\%} [0.67, 0.87], n_{\text{obs}} = 32$



In favor of null:  $\log_e(\text{BF}_{01}) = -10.31$ , sampling = independent multinomial,  $a = 1.00$

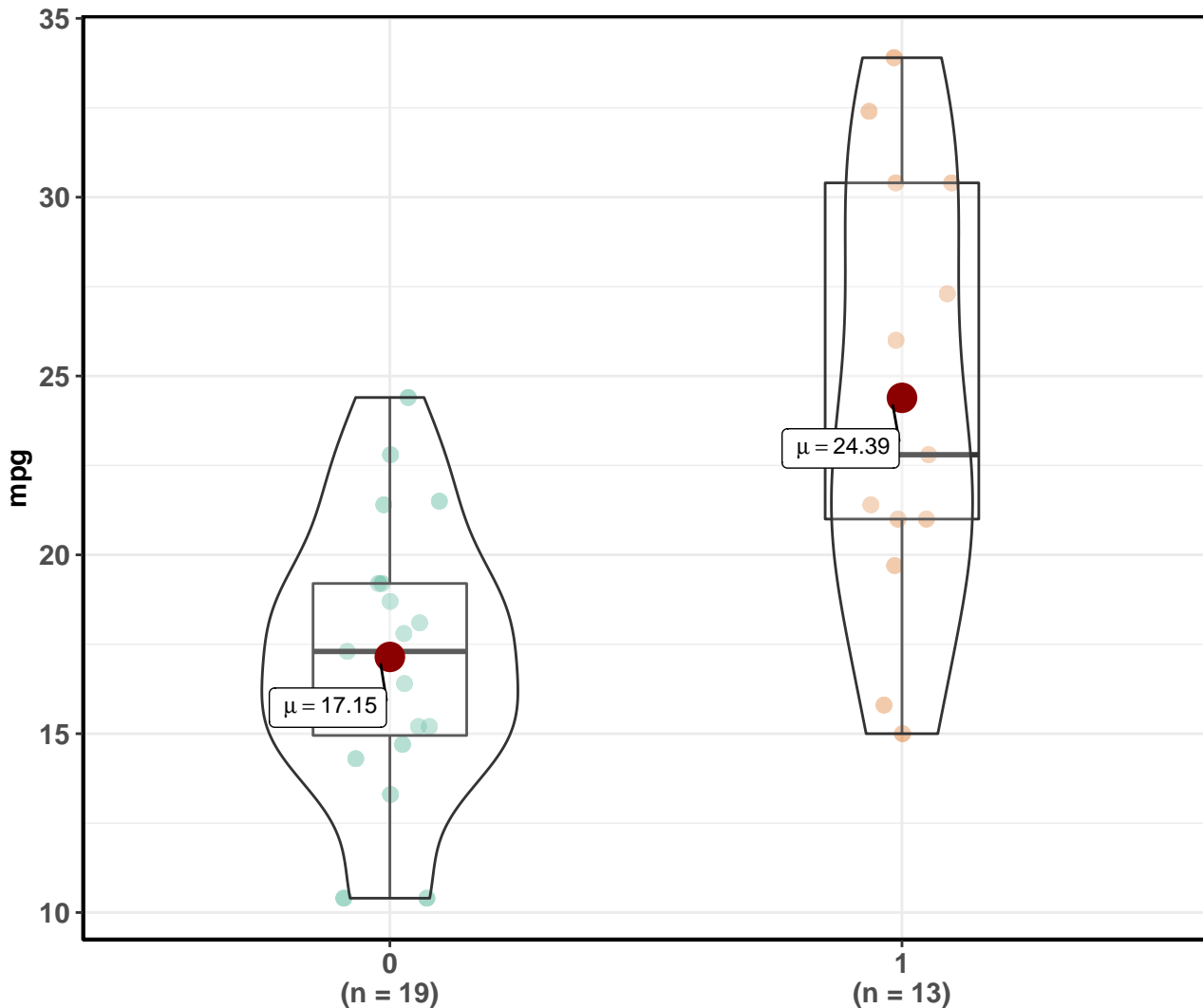
$\chi^2_{\text{Pearson}}(9) = 138.29, p = < 0.001, V_{\text{Cramer}} = 0.28, \text{CI}_{95\%} [0.23, 0.31], n_{\text{obs}} = 592$



In favor of null:  $\log_e(\text{BF}_{01}) = -56.78$ , sampling = independent multinomial,  $a = 1.00$

# Fuel efficiency by type of car transmission

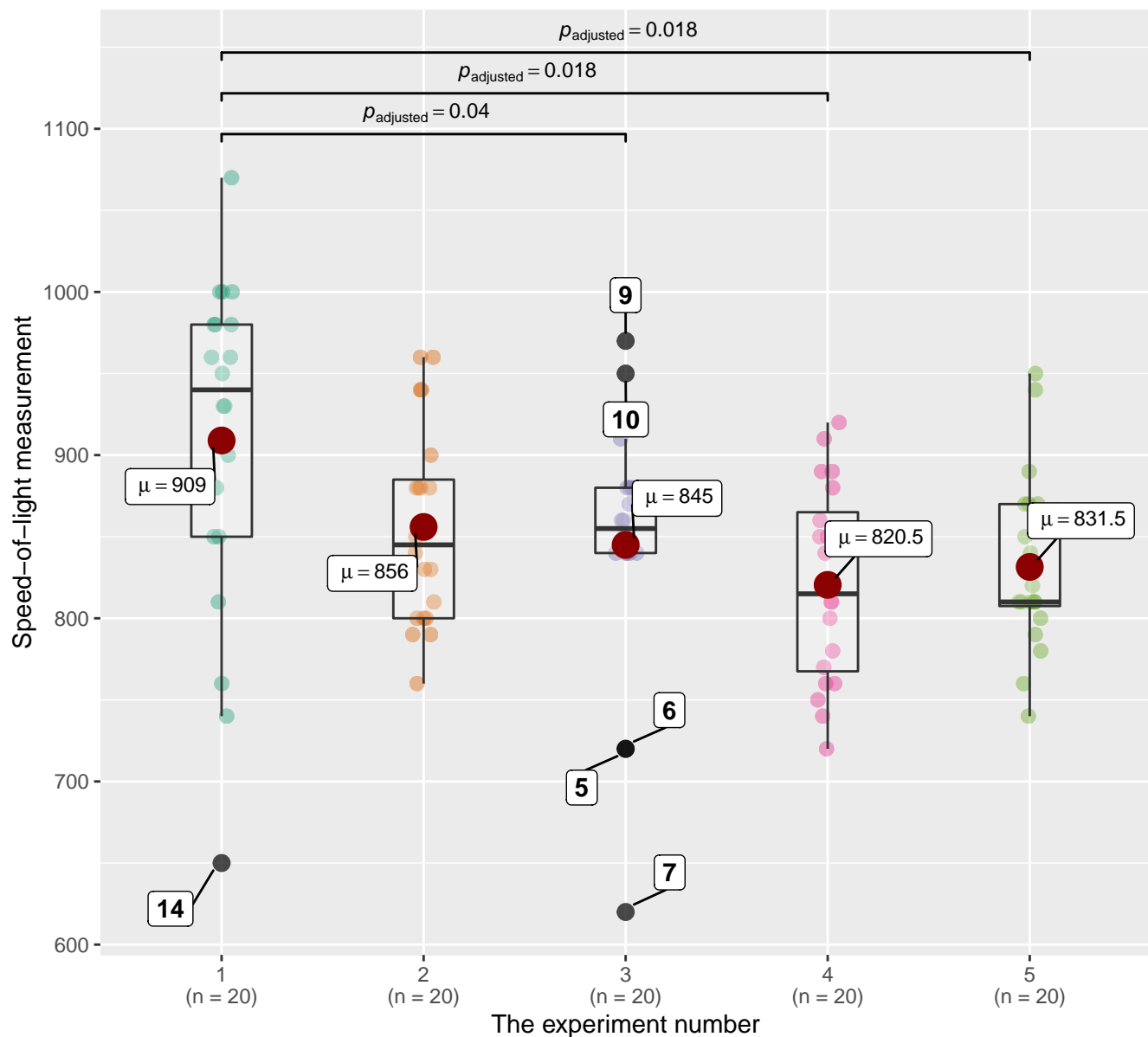
$t(18.33) = -3.77, p = 0.001, g = -1.38, CI_{95\%} [-2.17, -0.51], n_{obs} = 32$

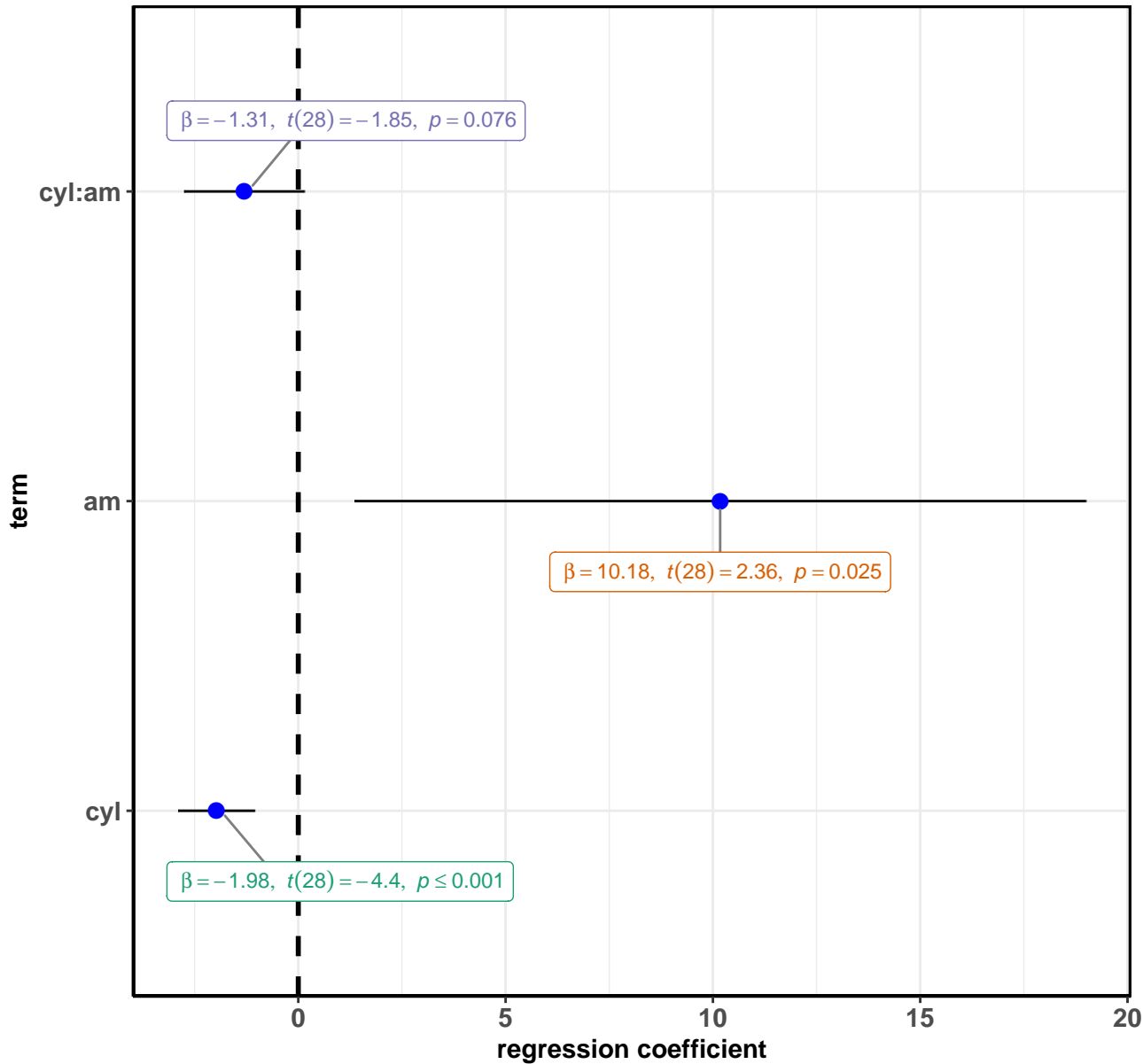


Transmission (0 = automatic, 1 = manual)

In favor of null:  $\log_e(BF_{01}) = -4.46, r_{Cauchy}^{JZS} = 0.71$

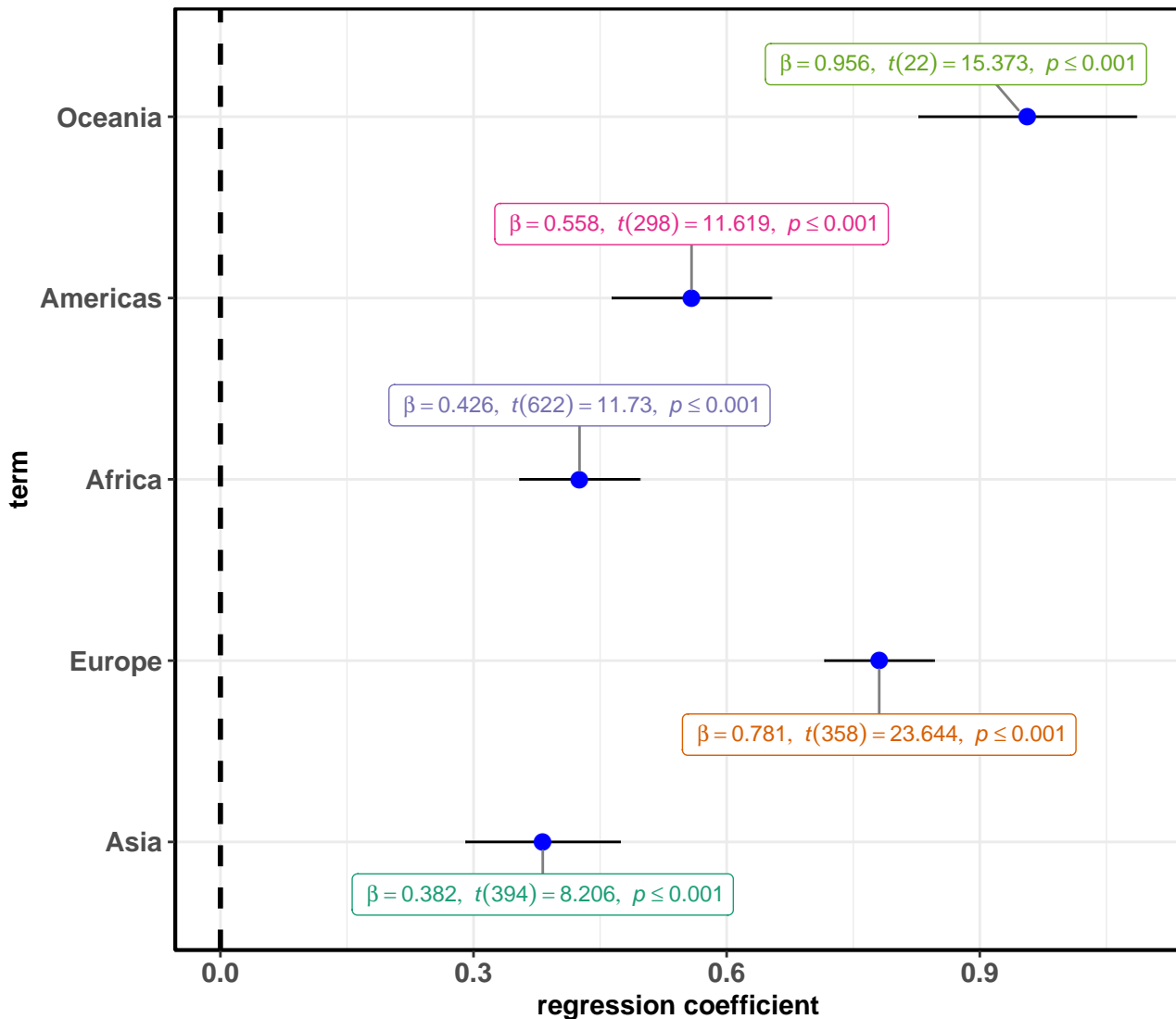
$\chi^2(4) = 15.02$ ,  $p = 0.005$ ,  $\varepsilon^2 = 0.15$ ,  $CI_{99\%} [0.07, 0.28]$ ,  $n_{\text{obs}} = 100$





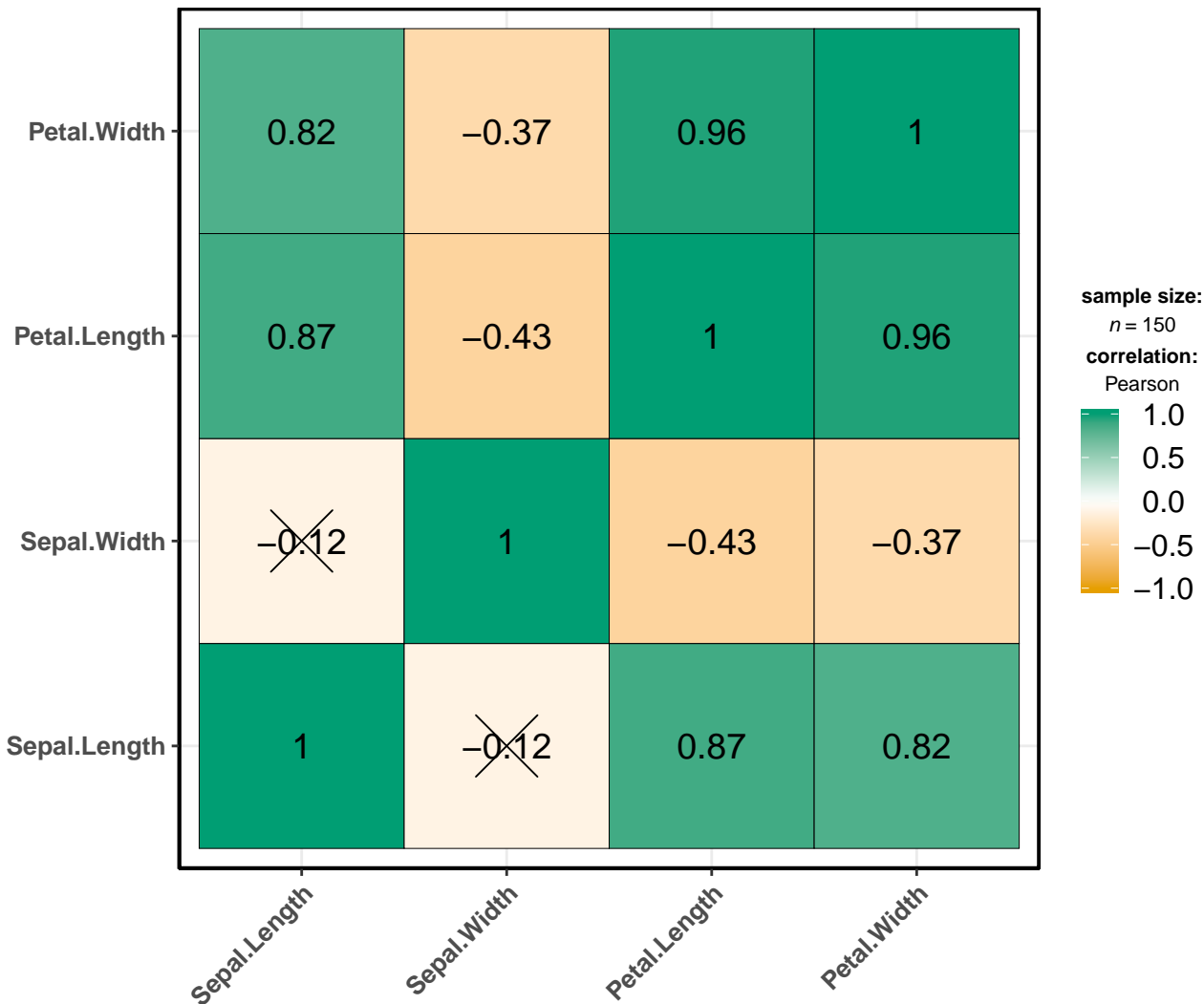
AIC = 166, BIC = 173, log-likelihood = -78

Summary effect:  $\beta = 0.619$ ,  $CI_{95\%} [0.407, 0.830]$ ,  $z = 5.736$ ,  $se = 0.108$ ,  $p = < 0.001$



In favor of null:  $\log_e(BF_{01}) = -2.680$ ,  $d_{\text{mean}}^{\text{posterior}} = 0.494$ ,  $CI_{95\%} [0.158, 0.778]$

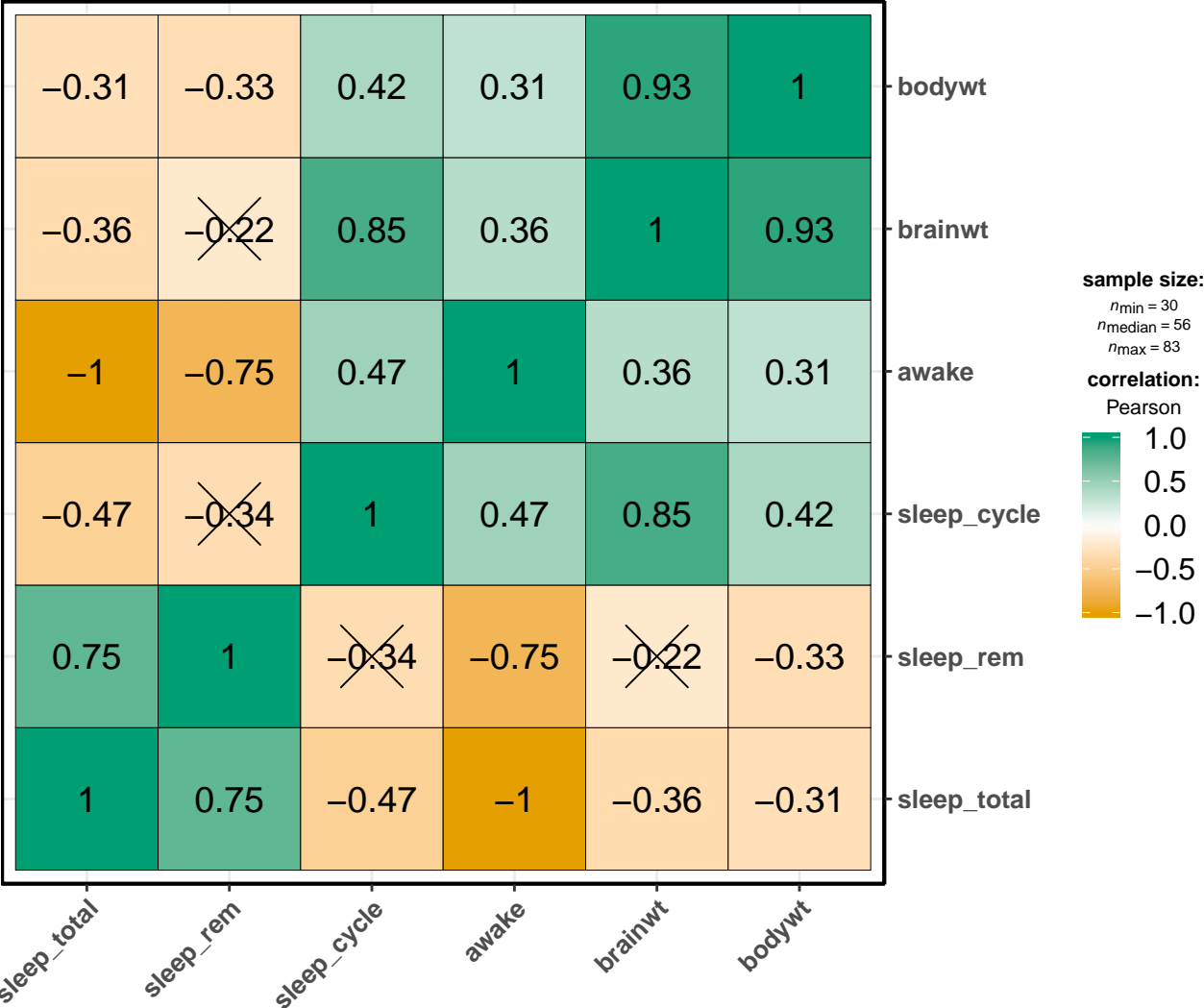
Heterogeneity:  $Q(4) = 109$ ,  $p = < 0.001$ ,  $\tau_{\text{REML}}^2 = 0.056$ ,  $I^2 = 96.81\%$



X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None

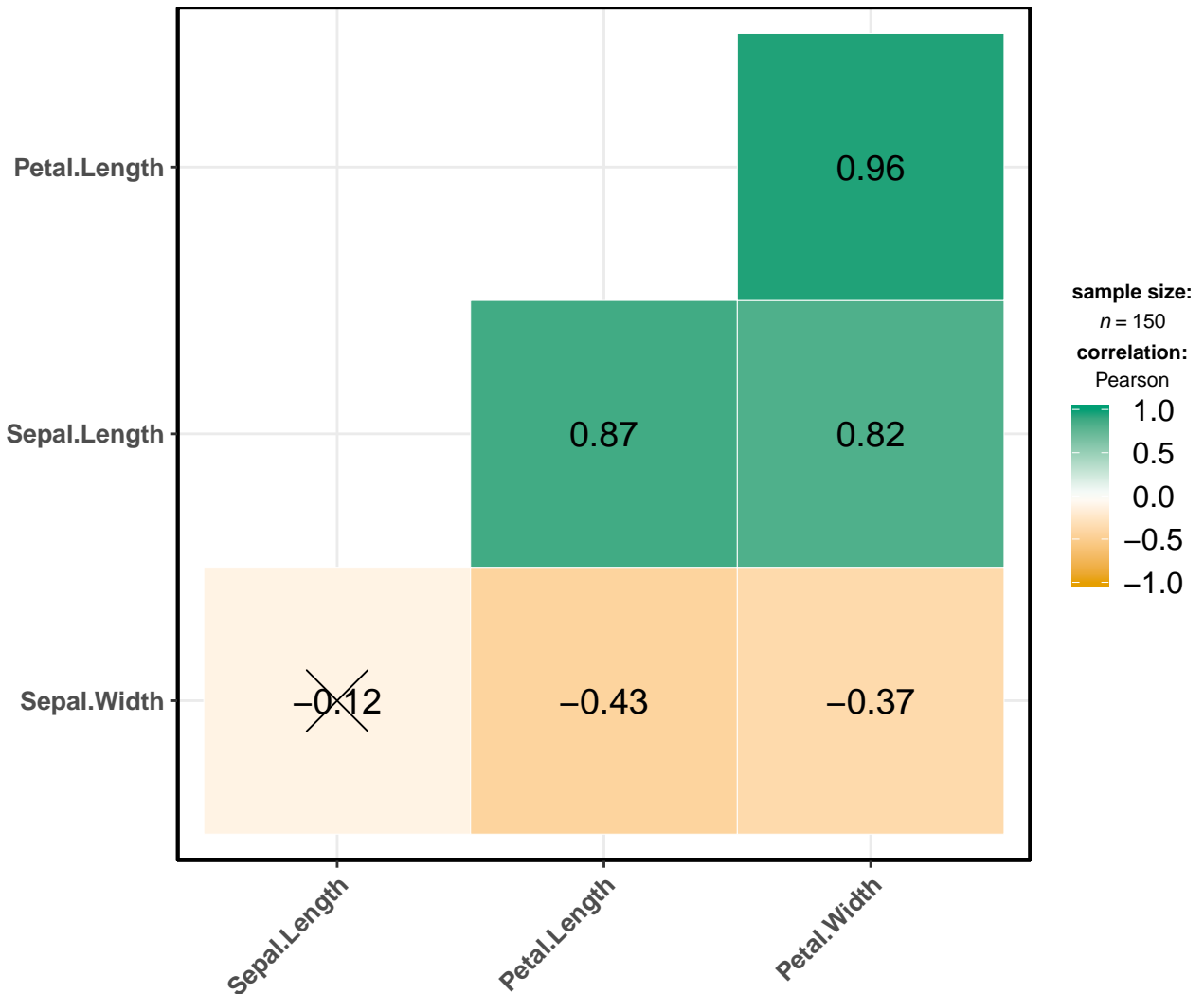




X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None

Dataset: Iris

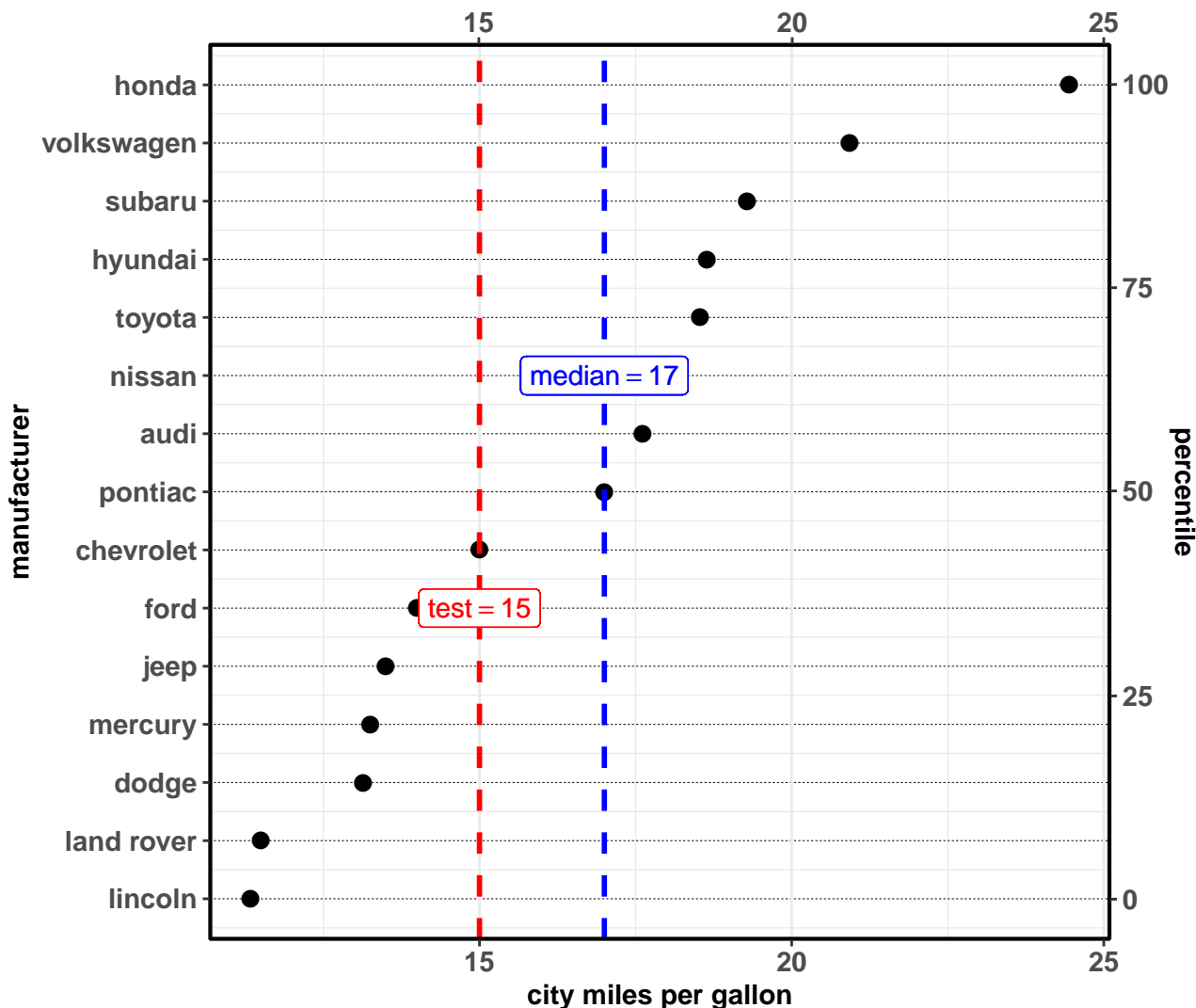


X = correlation non-significant at  $p < 0.01$

Adjustment (p-value): None

# Fuel economy data

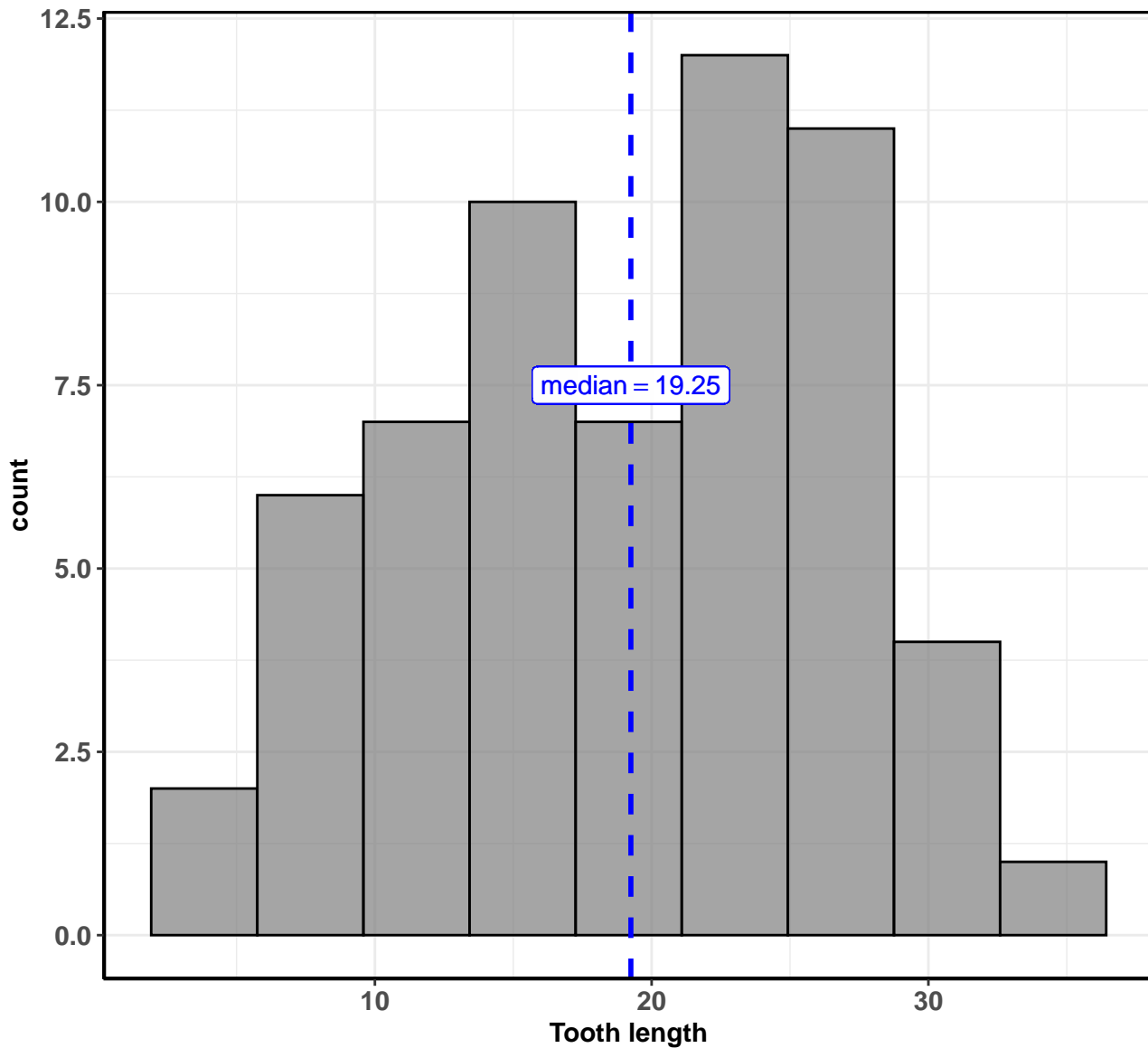
$t(14) = 1.47$ ,  $p = 0.163$ ,  $g = 0.36$ ,  $CI_{99\%} [-0.33, 1.10]$ ,  $n_{obs} = 15$



Source: EPA dataset on <http://fueleconomy.gov>

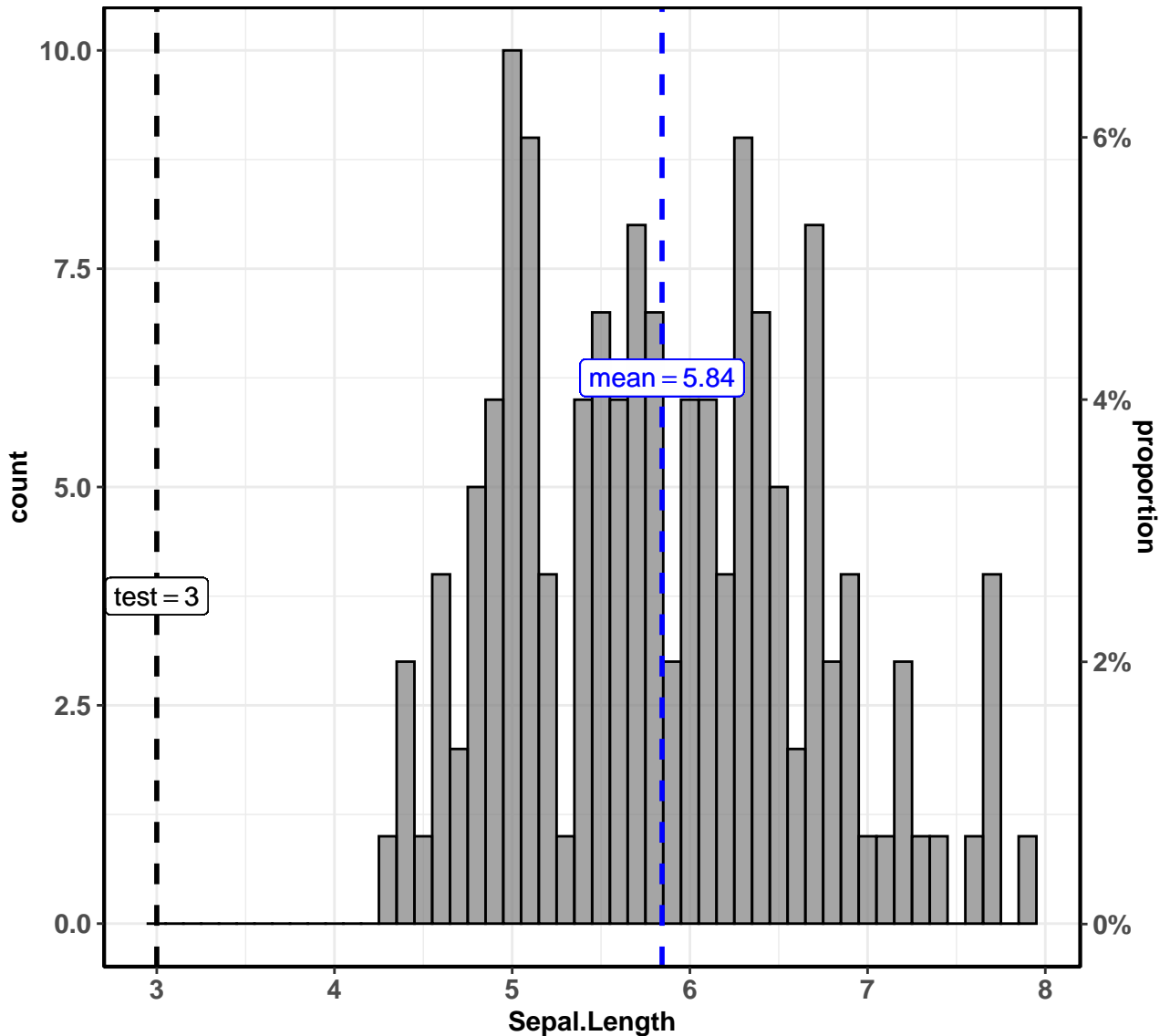
In favor of null:  $\log_e(BF_{01}) = 0.44$ ,  $r_{Cauchy}^{JZS} = 0.71$

$t(59) = 19.05$ ,  $p = < 0.001$ ,  $g = 2.43$ ,  $CI_{95\%} [1.96, 2.99]$ ,  $n_{obs} = 60$



In favor of null:  $\log_e(BF_{01}) = -54.54$ ,  $r_{Cauchy}^{JZS} = 0.71$

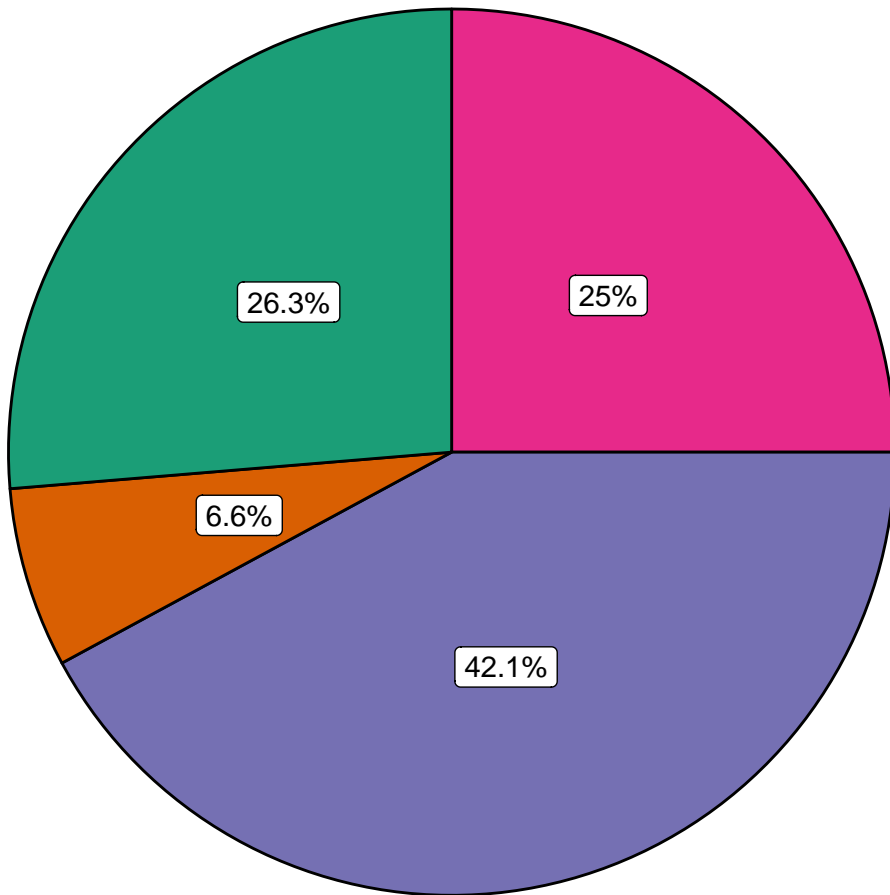
$t(149) = 42.05, p = < 0.001, g = 3.42, CI_{95\%} [3.02, 3.86], n_{\text{obs}} = 150$







Note: Iris dataset by Fisher.

In favor of null:  $\log_e(BF_{01}) = -186.14, r_{\text{Cauchy}}^{\text{JZS}} = 0.80$

$\chi^2_{\text{gof}}(3) = 19.263$ ,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.291$ ,  $\text{CI}_{95\%} [0.181, 0.366]$ ,  $n_{\text{obs}} = 76$

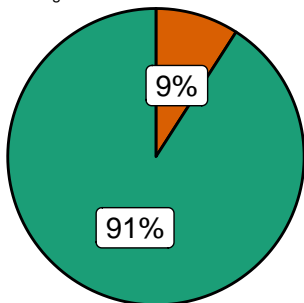


**vore**  **omni**  **insecti**  **herbi**  **carni**

$\chi^2_{\text{Pearson}}(2) = 21.34, p = < 0.001, V_{\text{Cramer}} = 0.82, \text{CI}_{95\%} [0.57, 0.94], n_{\text{obs}} = 32$

**4**

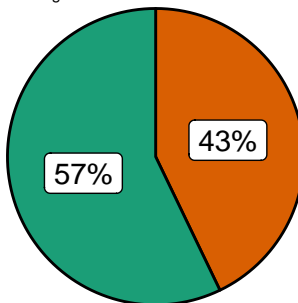
$\chi^2_{\text{gof}}(1) = 7.36, p = 0.007$



(n = 11)

**6**

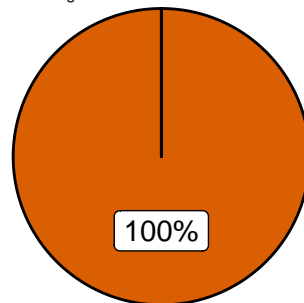
$\chi^2_{\text{gof}}(1) = 0.14, p = 0.705$



(n = 7)

**8**

$\chi^2_{\text{gof}}(1) = 14, p \leq 0.001$

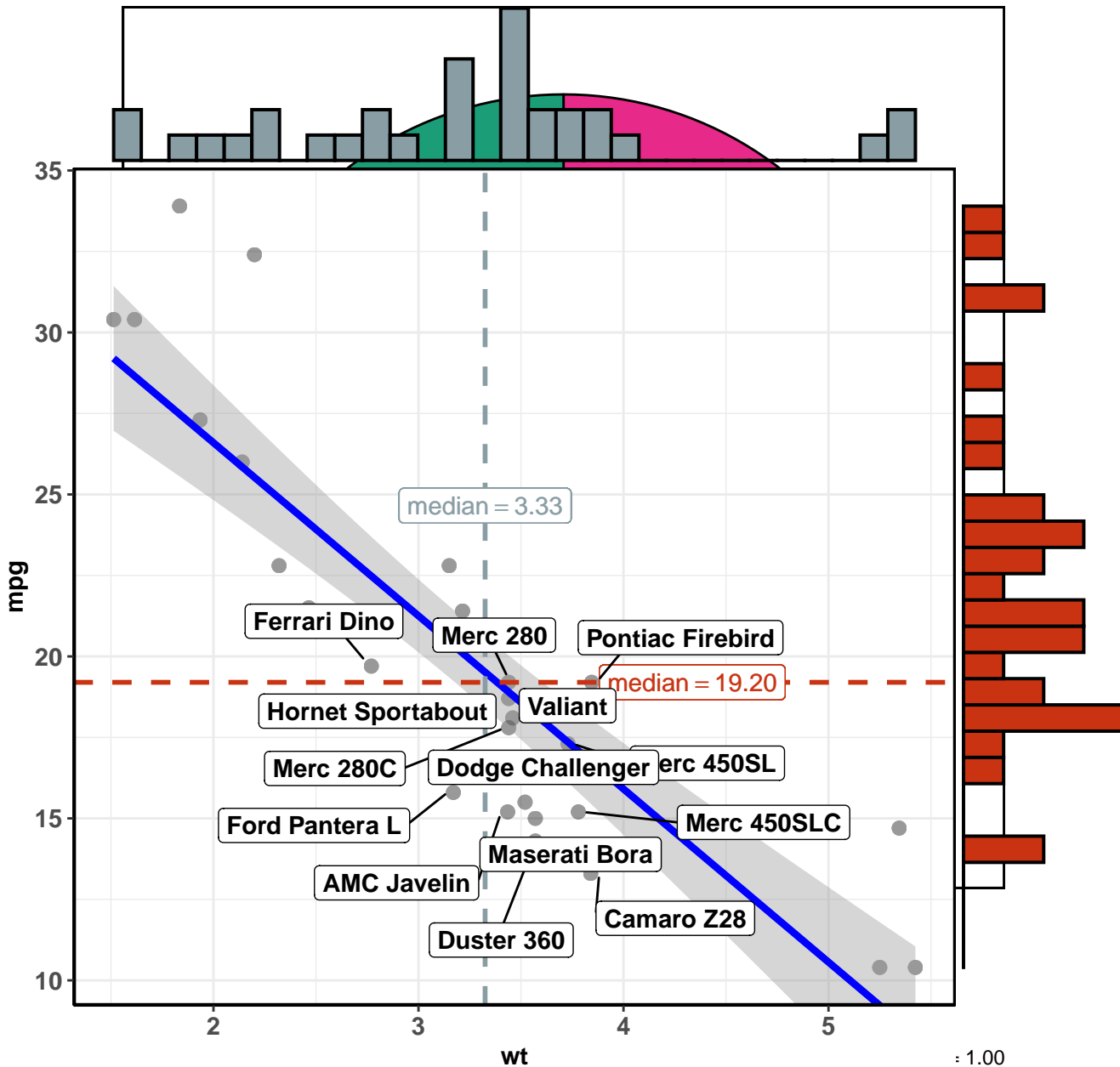


(n = 14)

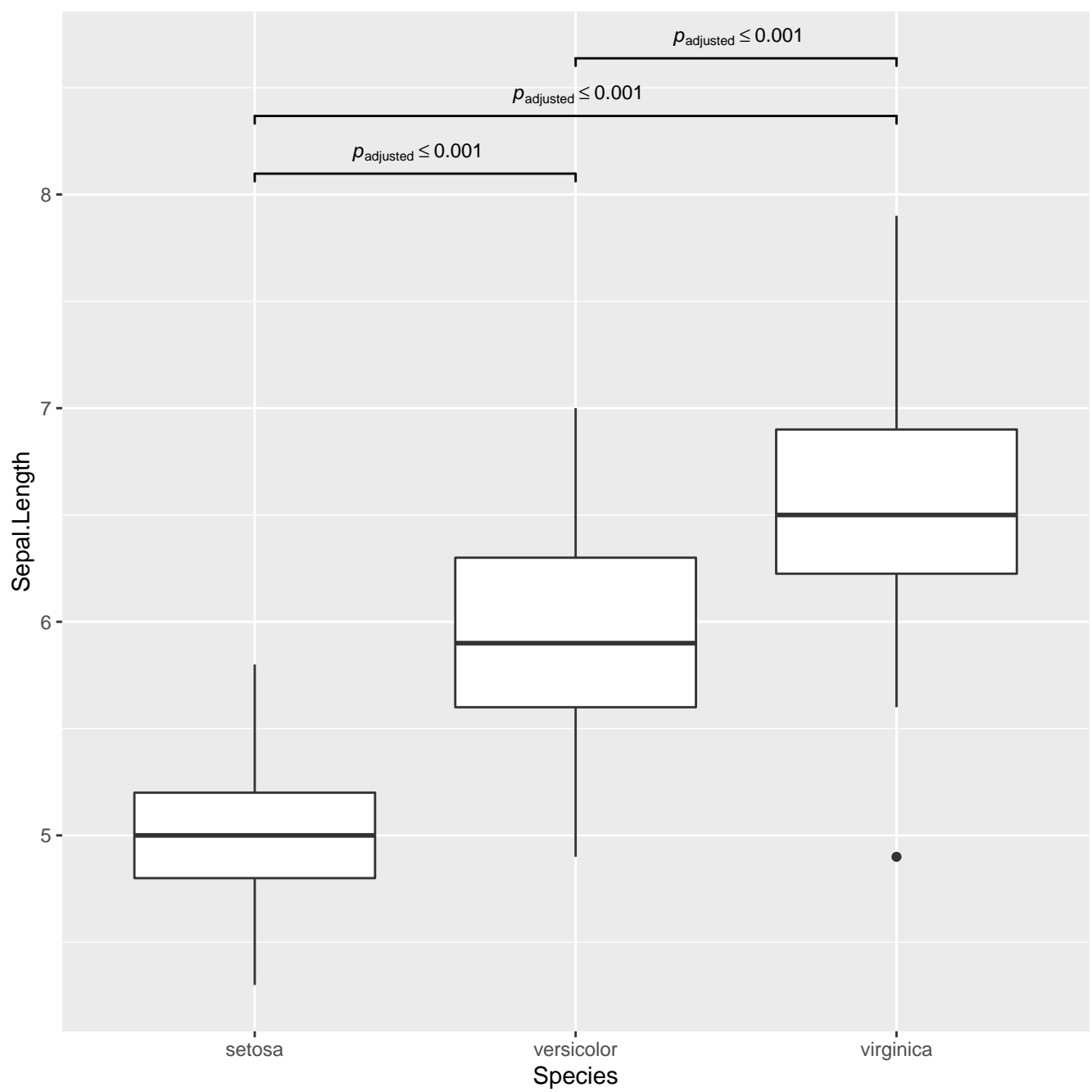
**Engine**  0 = V-shaped  1 = straight

In favor of null:  $\log_e(\text{BF}_{01}) = -10.31$ , sampling = independent multinomial,  $a = 1.00$

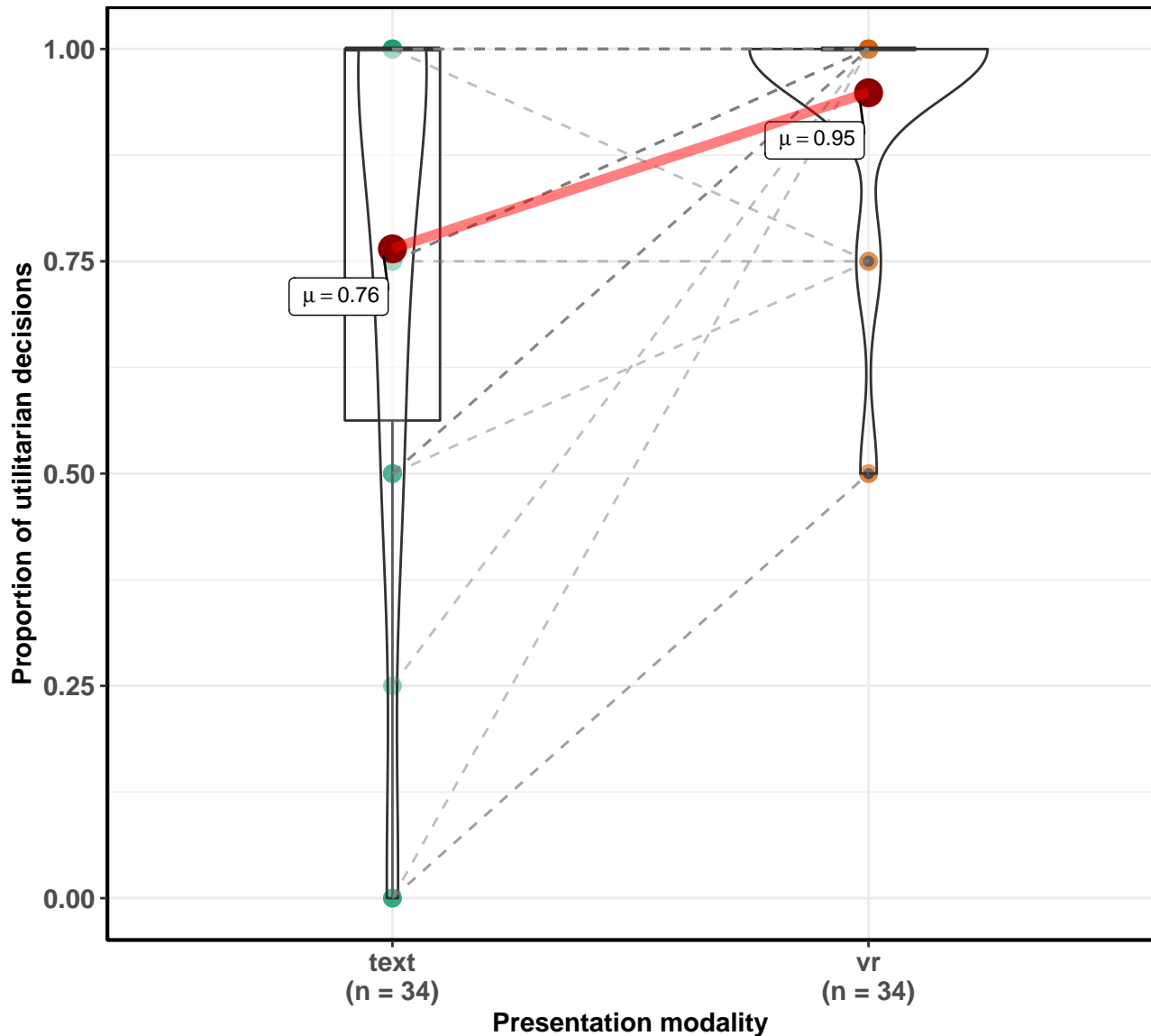
$\log_e(S) = 9.24$ ,  $p = < 0.001$ ,  $\rho_{\text{Spearman}} = -0.89$ ,  $Cl_{95\%} [-1.03, -0.79]$ ,  $n_{\text{pairs}} = 32$   
 $\chi^2_{\text{gof}}(3) = 133.47$ ,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.27$ ,  $Cl_{95\%} [0.23, 0.31]$ ,  $n_{\text{obs}} = 592$





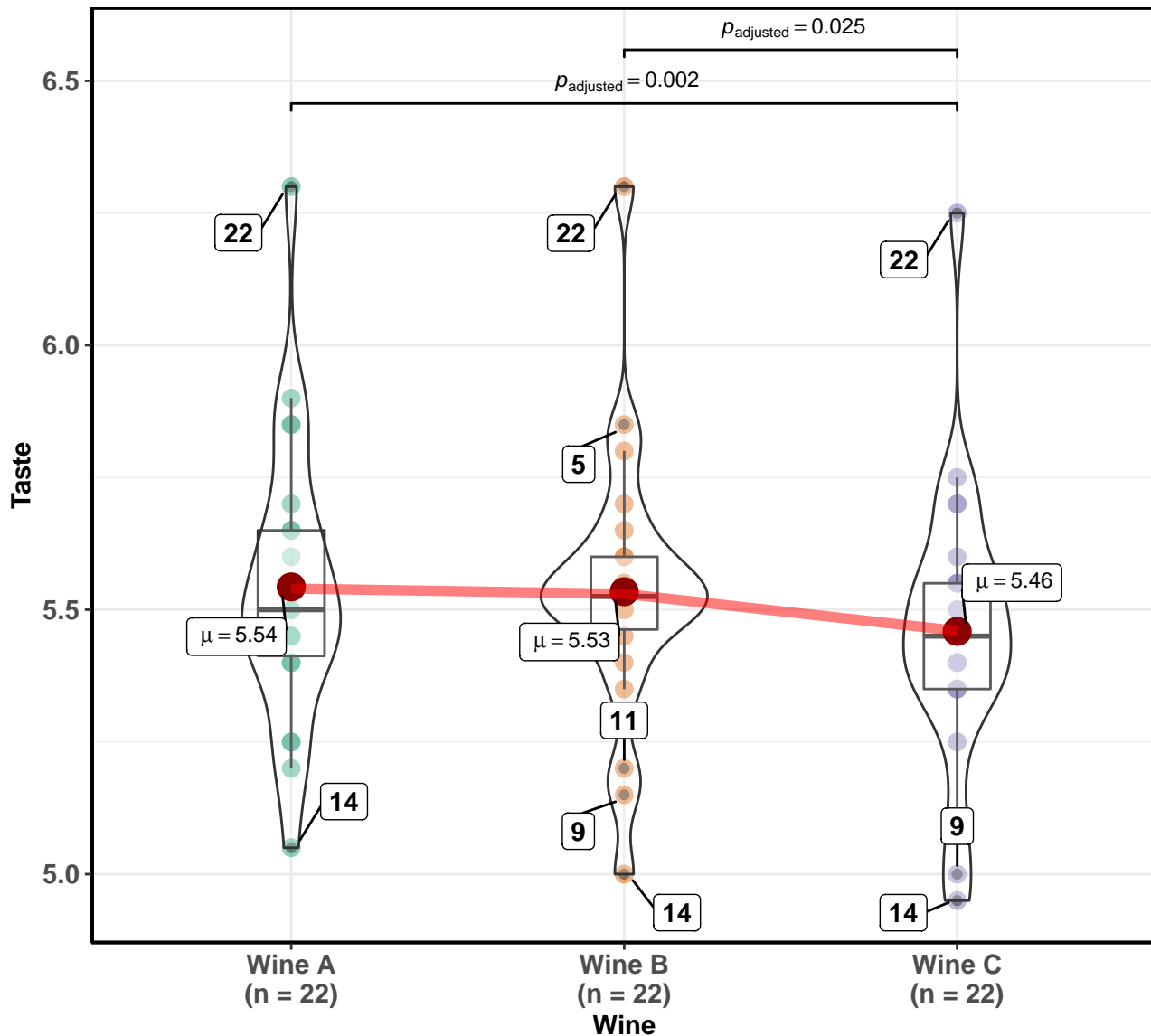


$t(33) = -3.96, p = < 0.001, g = -0.66, CI_{95\%} [-1.07, -0.31], n_{\text{pairs}} = 34$



In favor of null:  $\log_e(BF_{01}) = -4.34, r_{\text{Cauchy}}^{\text{JZS}} = 0.71$

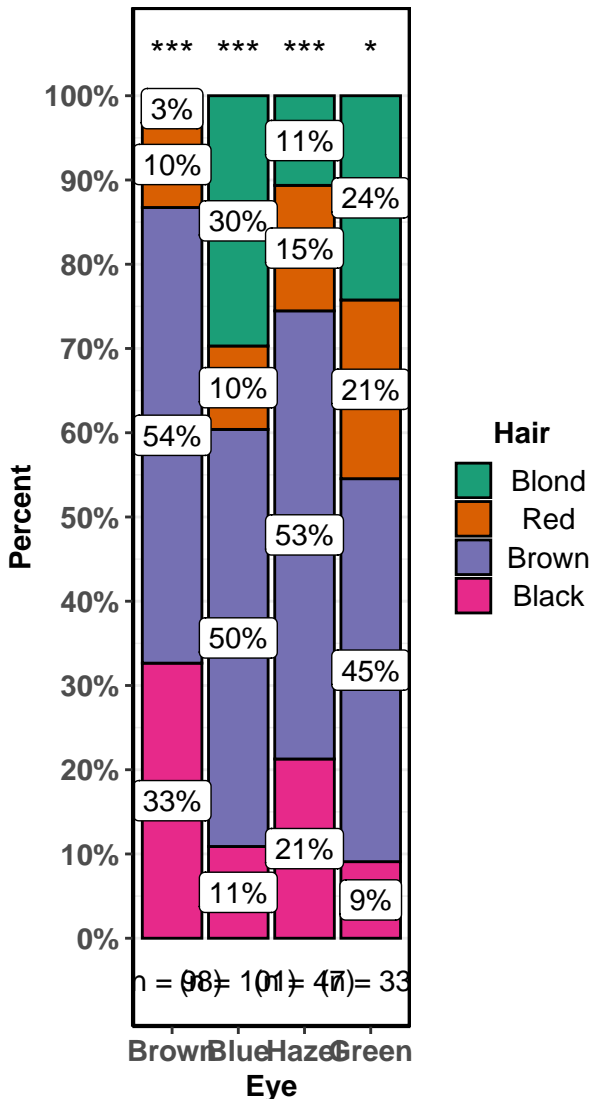
$\chi^2(2) = 11.14, p = 0.004, W_{\text{Kendall}} = 0.82, \text{CI}_{99\%} [0.82, 1.00], n_{\text{pairs}} = 22$



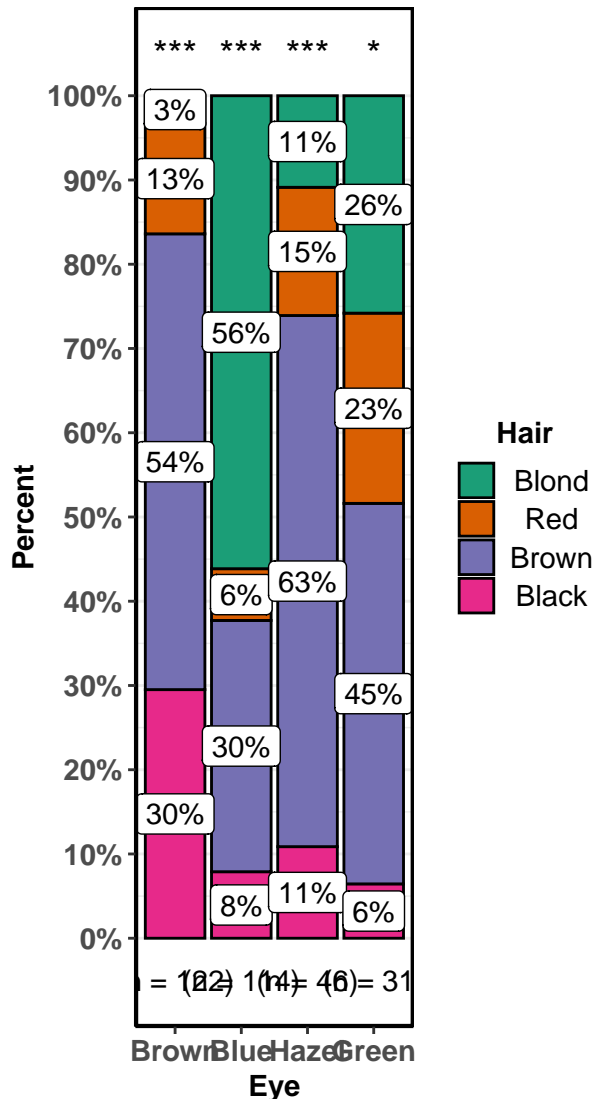
Pairwise comparisons: **Durbin-Conover test**; Adjustment (p-value): **Holm**

**Sex: Male**

$-41.28, p = < 0.001, V_{\text{Cramer}} = 0.22, \text{CI}_{95\%} [0.12, 0.26], n = 106.66, p = < 0.001, V_{\text{Cramer}} = 0.34, \text{CI}_{95\%} [0.28, 0.38], n_{\text{obs}} = 106$



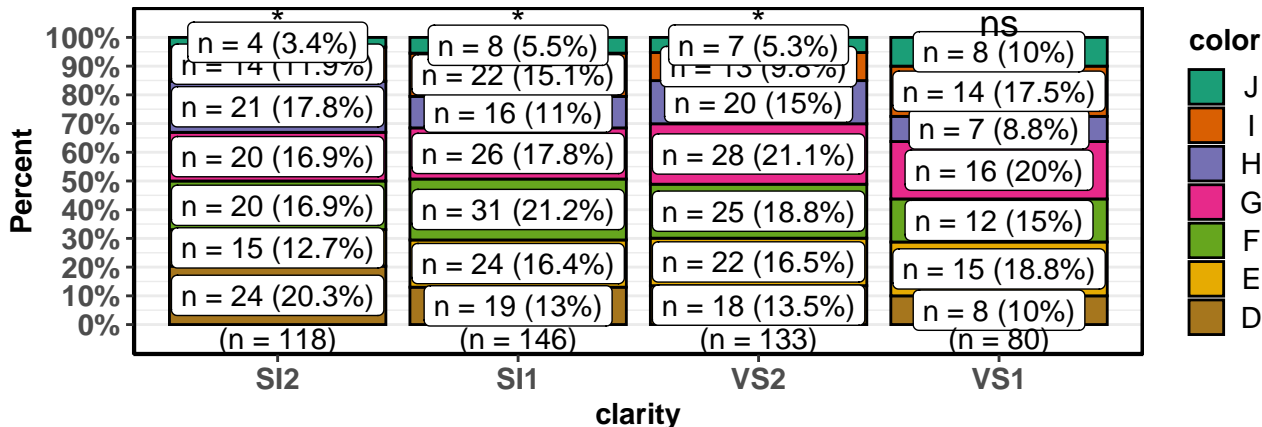
**Sex: Female**



sampling = independent multinomial,  $a = 1.00$

## Quality: Very Good

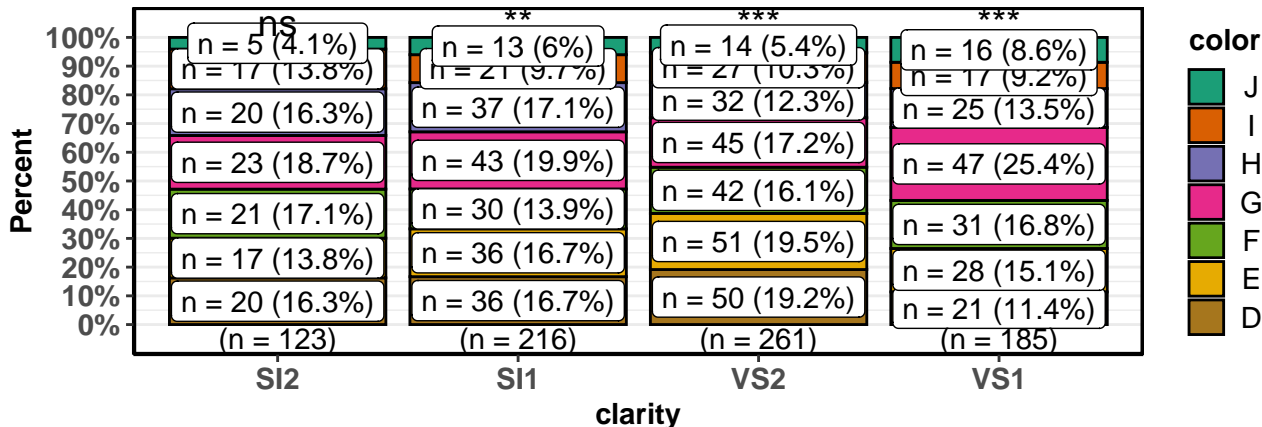
$\chi^2_{\text{Pearson}}(18) = 17.95$ ,  $p = 0.459$ ,  $V_{\text{Cramer}} = 0.11$ ,  $\text{CI}_{95\%} [0.02, 0.11]$ ,  $n_{\text{obs}} = 477$



In favor of null:  $\log_e(\text{BF}_{01}) = 4.95$ , sampling = poisson,  $a = 1.00$

## Quality: Ideal

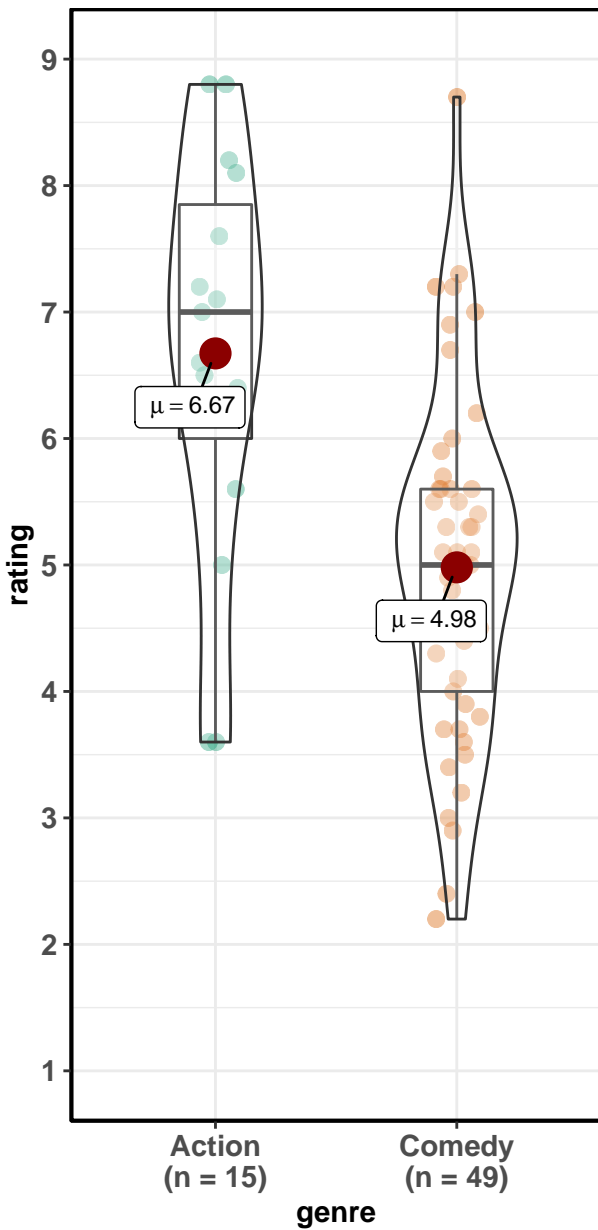
$\chi^2_{\text{Pearson}}(18) = 17.85$ ,  $p = 0.466$ ,  $V_{\text{Cramer}} = 0.09$ ,  $\text{CI}_{95\%} [0.02, 0.08]$ ,  $n_{\text{obs}} = 785$



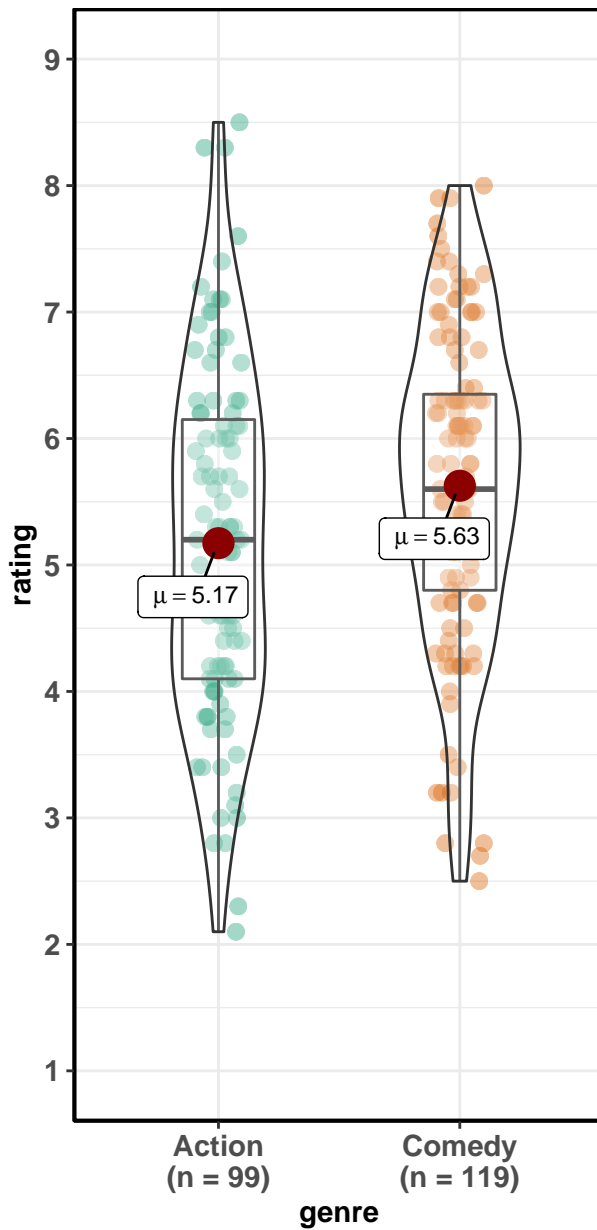
In favor of null:  $\log_e(\text{BF}_{01}) = 9.05$ , sampling = poisson,  $a = 1.00$



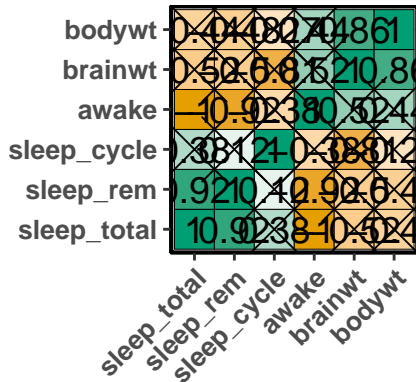
mpaa: PG



mpaa: R



### vore: carni

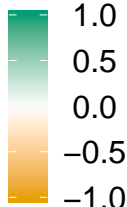


sample size:

$n_{\min} = 4$   
 $n_{\text{median}} = 9$   
 $n_{\max} = 19$

correlation:

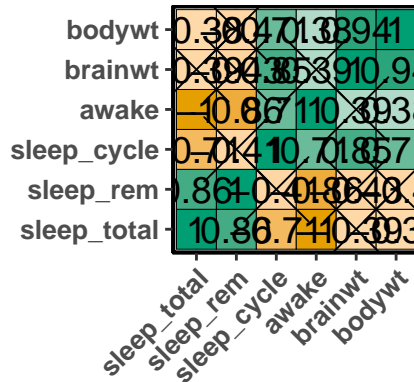
Pearson



X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None

### vore: herbi

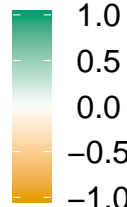


sample size:

$n_{\min} = 11$   
 $n_{\text{median}} = 20$   
 $n_{\max} = 32$

correlation:

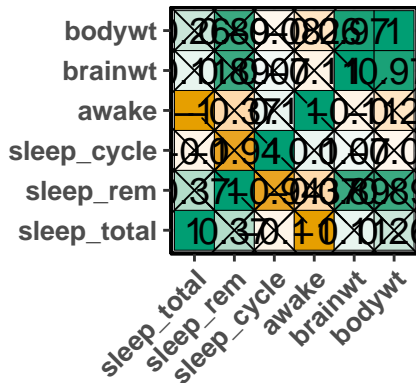
Pearson



X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None

### vore: insecti

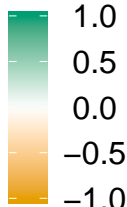


sample size:

$n_{\min} = 3$   
 $n_{\text{median}} = 4$   
 $n_{\max} = 5$

correlation:

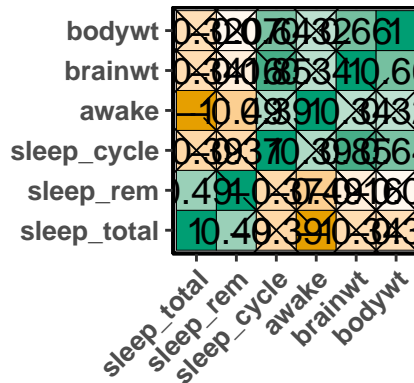
Pearson



X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None

### vore: omni



sample size:

$n_{\min} = 11$   
 $n_{\text{median}} = 17$   
 $n_{\max} = 20$

correlation:

Pearson

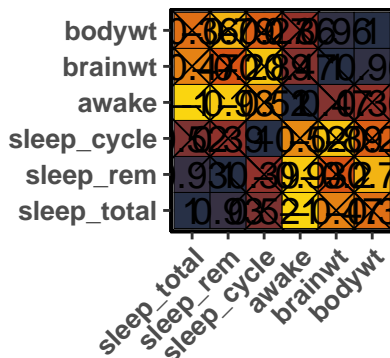


X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None



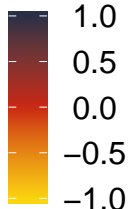
### vore: carni



sample size:

$n_{\min} = 4$   
 $n_{\text{median}} = 9$   
 $n_{\max} = 19$

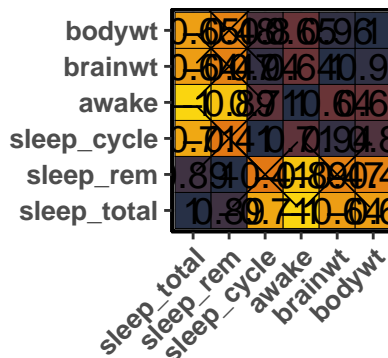
correlation:  
 robust (% bend)



= correlation non-significant at  $p < 0.05$

Adjustment (p-value): Holm

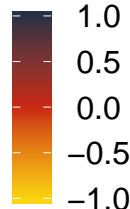
### vore: herbi



sample size:

$n_{\min} = 11$   
 $n_{\text{median}} = 20$   
 $n_{\max} = 32$

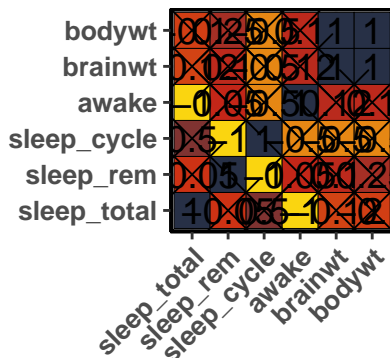
correlation:  
 robust (% bend)



X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): Holm

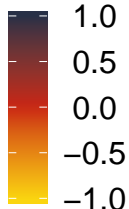
### vore: insecti



sample size:

$n_{\min} = 3$   
 $n_{\text{median}} = 4$   
 $n_{\max} = 5$

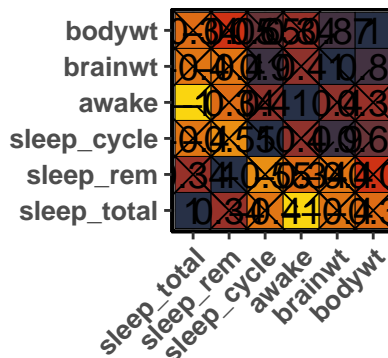
correlation:  
 robust (% bend)



= correlation non-significant at  $p < 0.05$

Adjustment (p-value): Holm

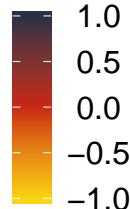
### vore: omni



sample size:

$n_{\min} = 11$   
 $n_{\text{median}} = 17$   
 $n_{\max} = 20$

correlation:  
 robust (% bend)

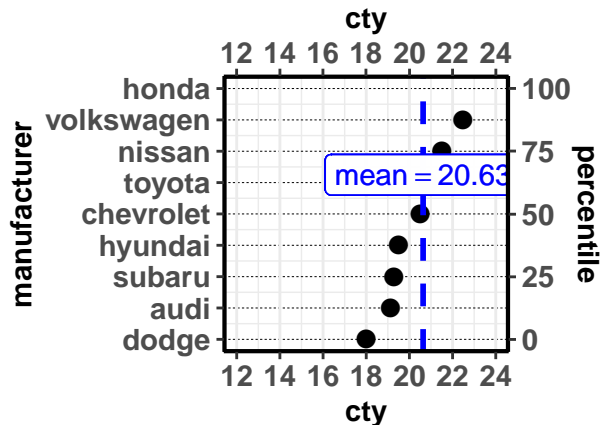


X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): Holm

### cylinder count: 4

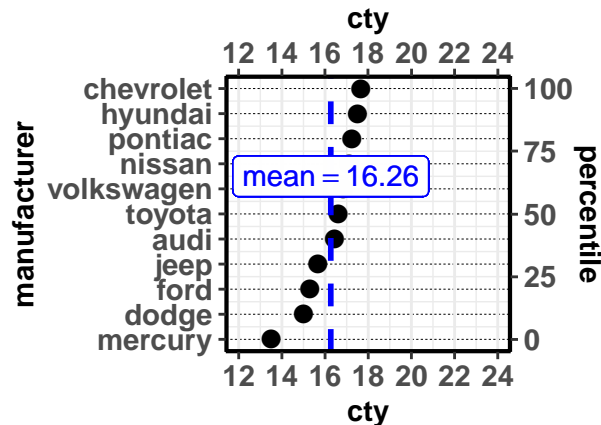
$t(8) = 7.82, p = < 0.001, g = 2.32, CI_{95\%} [1.25, 4.25], r = 0.89$



In favor of null:  $\log_e(BF_{01}) = -6.20, r_{Cauchy}^{JZS} = 0.71$

### cylinder count: 6

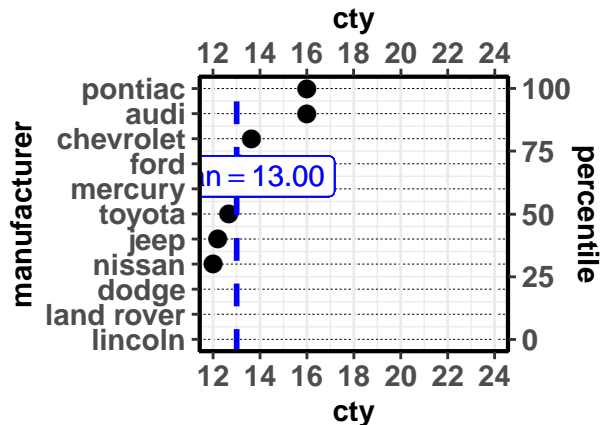
$t(10) = 1.99, p = 0.075, g = 0.55, CI_{95\%} [-0.06, 1.29], n = 11$



In favor of null:  $\log_e(BF_{01}) = -0.23, r_{Cauchy}^{JZS} = 0.71$

### cylinder count: 8

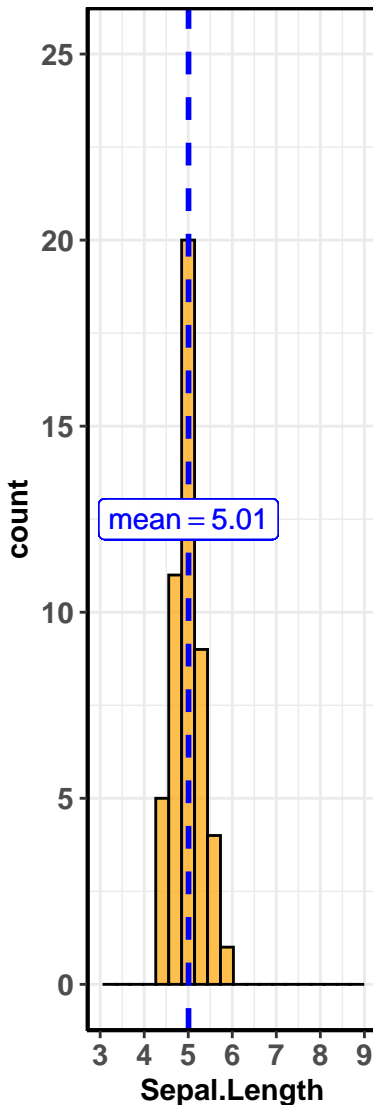
$t(10) = -5.01, p = 0.001, g = -1.38, CI_{95\%} [-2.49, -0.64], n_{obs} = 11$



In favor of null:  $\log_e(BF_{01}) = -4.24, r_{Cauchy}^{JZS} = 0.71$

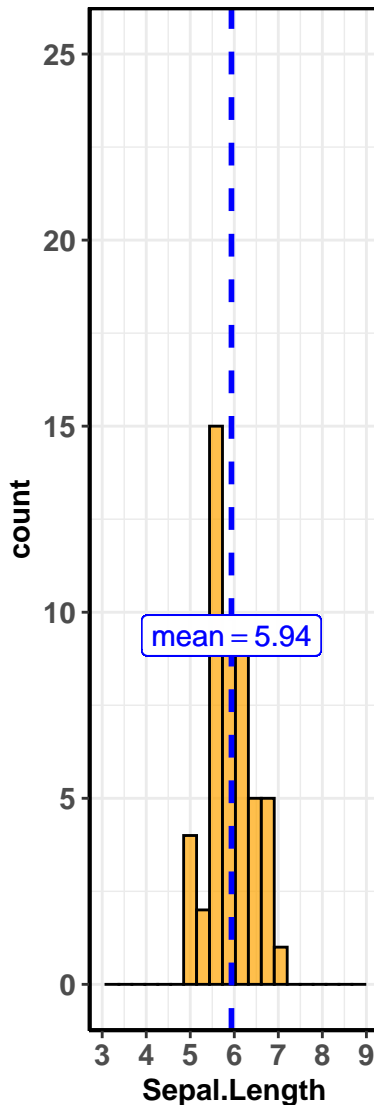
### Species: setosa

$t(49) = 26.82, p = < 0.001, g = 1.78, CI_{95\%} [4.37, 6.66], p = < 0.001, g = 2.46, CI_{95\%} [1.95, 2.97]$



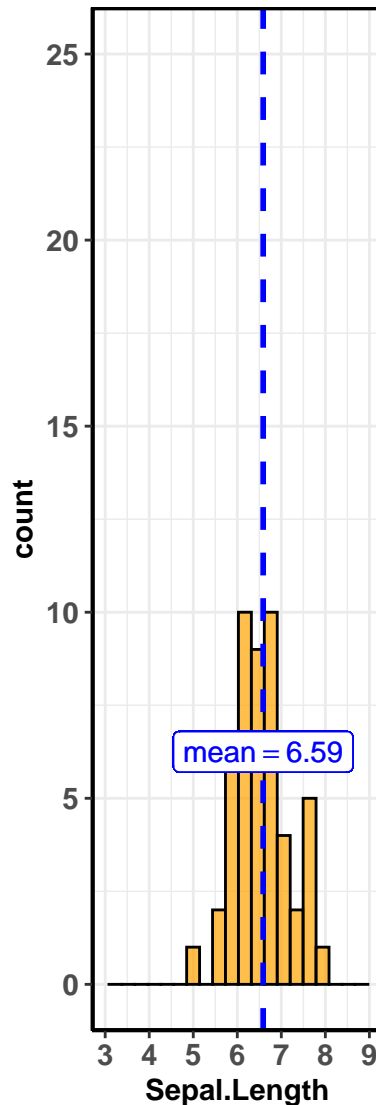
### Species: versicolor

$t(49) = 26.82, p = < 0.001, g = 1.78, CI_{95\%} [4.37, 6.66], p = < 0.001, g = 2.46, CI_{95\%} [1.95, 2.97]$



### Species: virginica

$t(49) = 26.82, p = < 0.001, g = 1.78, CI_{95\%} [4.37, 6.66], p = < 0.001, g = 2.46, CI_{95\%} [1.95, 2.97]$

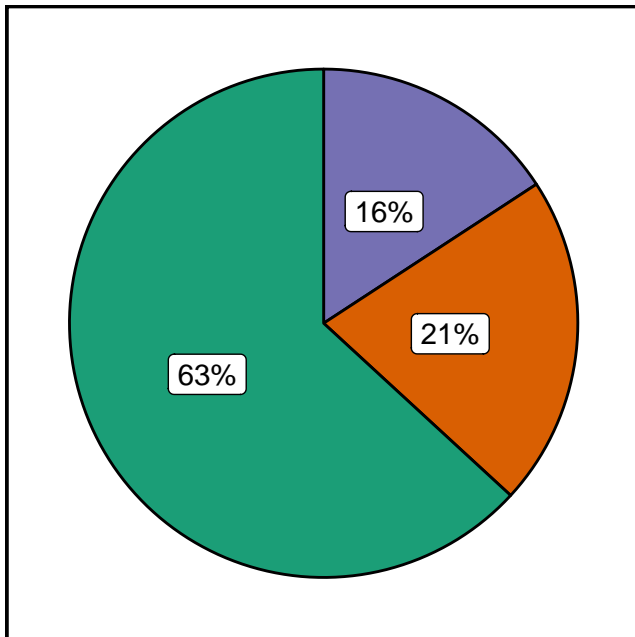


of null:  $\log_e(BF_{01}) = 1.86, r_{Cauchy}^{JZS} = 0.71$  of null:  $\log_e(BF_{01}) = -32.95, r_{Cauchy}^{JZS} = 0.71$  of null:  $\log_e(BF_{01}) = -45.50, r_{Cauchy}^{JZS} = 0.71$

am: 0

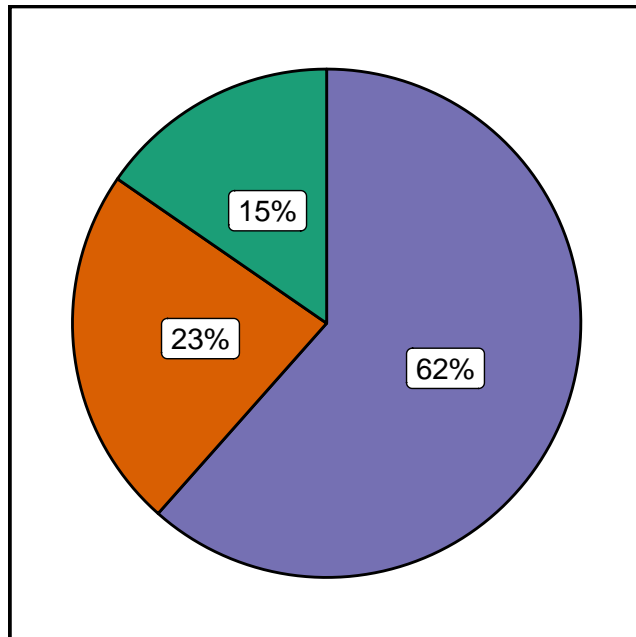
am: 1

$\chi^2(2) = 7.68, p = 0.021, V_{\text{Cramer}} = 0.45, \text{CI}_{95\%} [0.05, 0.77], n_{\text{obs}} = 46$   $\chi^2(2) = 4.77, p = 0.092, V_{\text{Cramer}} = 0.43, \text{CI}_{95\%} [0.07, 0.71], n_{\text{obs}} = 46$



cyl 8 6 4

In favor of null:  $\log_e(\text{BF}_{01}) = -0.16, a = 1.00$

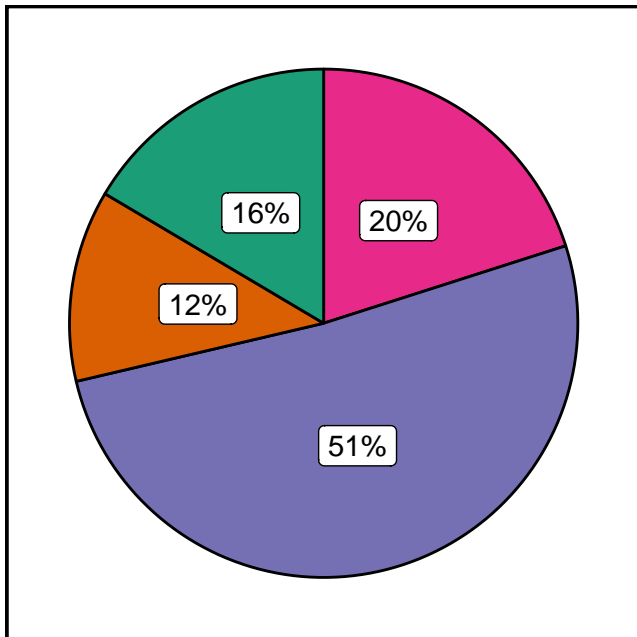


cyl 8 6 4

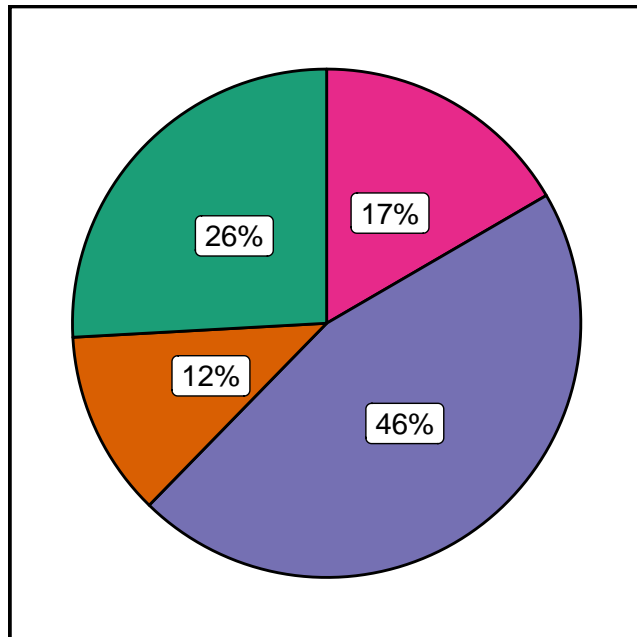
In favor of null:  $\log_e(\text{BF}_{01}) = 0.85, a = 1.00$

**Sex: Male**

106.05,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.36$ ,  $\text{CI}_{95\%} [0.27, 0.43]$ ,  $n = 84.23$ ,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.30$ ,  $\text{CI}_{95\%} [0.23, 0.37]$ ,  $n_{\text{obs}} = 84$



**Sex: Female**



**Hair**  Blond  Red  Brown  Black

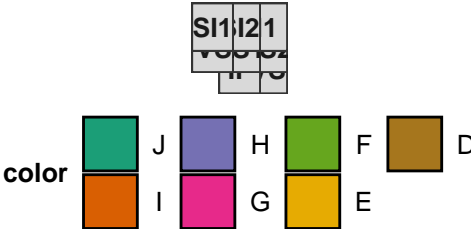
In favor of null:  $\log_e(\text{BF}_{01}) = -37.65$ ,  $a = 1.00$

**Hair**  Blond  Red  Brown  Black

In favor of null:  $\log_e(\text{BF}_{01}) = -30.42$ ,  $a = 1.00$

Quality: Fair

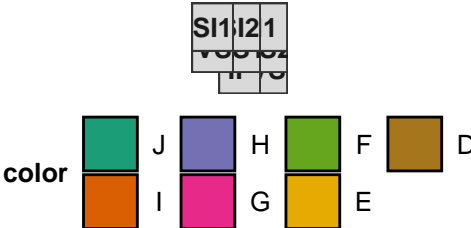
$\chi^2_{\text{Pearson}}(42) = 55.71, p = 0.076, V_{\text{Cramer}} = 0.23, \text{CI}_{95\%} [0.14, 0.22], n_{\text{obs}} = 172$



avor of null:  $\log_e(\text{BF}_{01}) = -7.86$ , sampling = poisson,  $a = 1.00$

Quality: Very Good

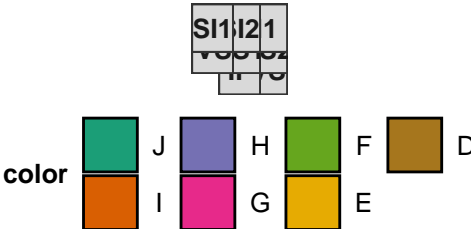
$\chi^2_{\text{Pearson}}(42) = 64.05, p = 0.016, V_{\text{Cramer}} = 0.09, \text{CI}_{95\%} [0.05, 0.09], n_{\text{obs}} = 1187$



avor of null:  $\log_e(\text{BF}_{01}) = 14.79$ , sampling = poisson,  $a = 1.00$

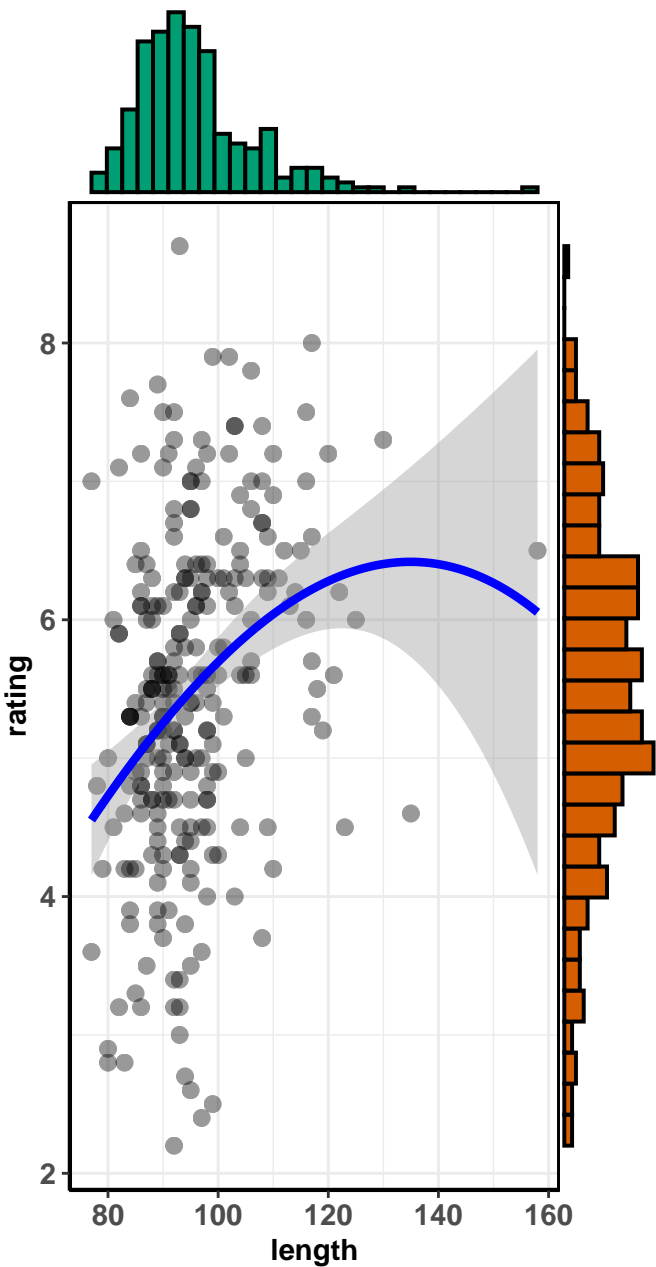
Quality: Ideal

$\chi^2_{\text{Pearson}}(42) = 153.32, p = < 0.001, V_{\text{Cramer}} = 0.11, \text{CI}_{95\%} [0.08, 0.11], n_{\text{obs}} = 2165$

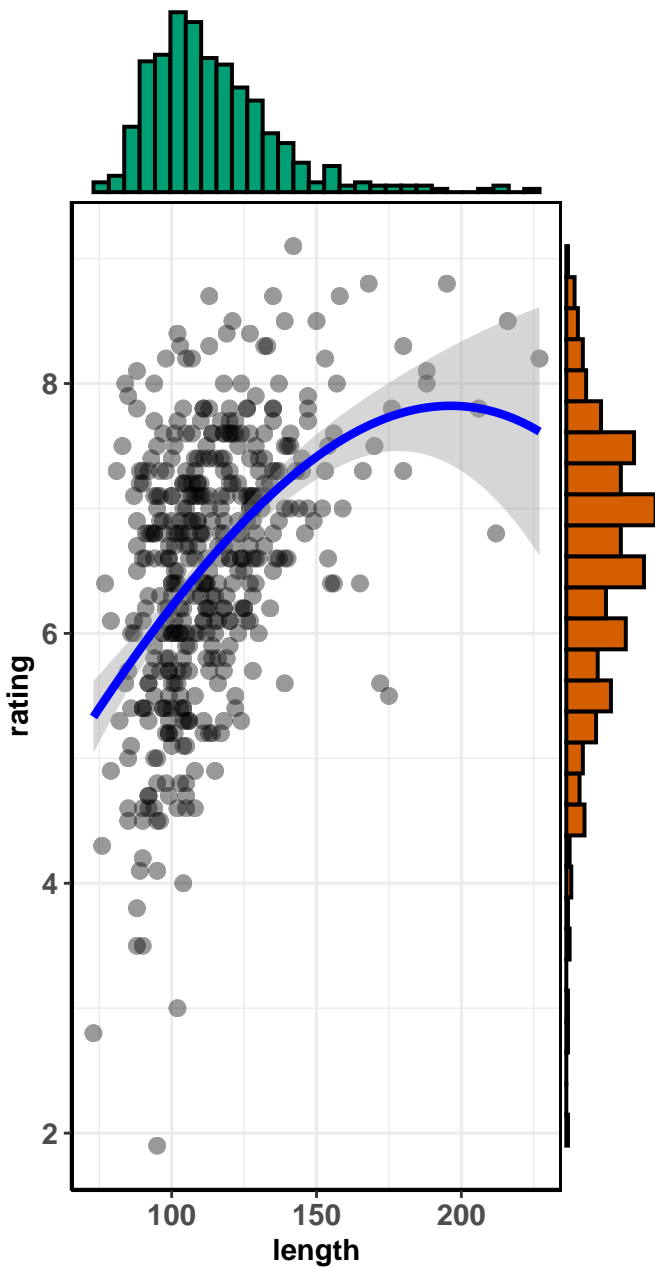


avor of null:  $\log_e(\text{BF}_{01}) = -25.04$ , sampling = poisson,  $a = 1.00$

genre: Comedy

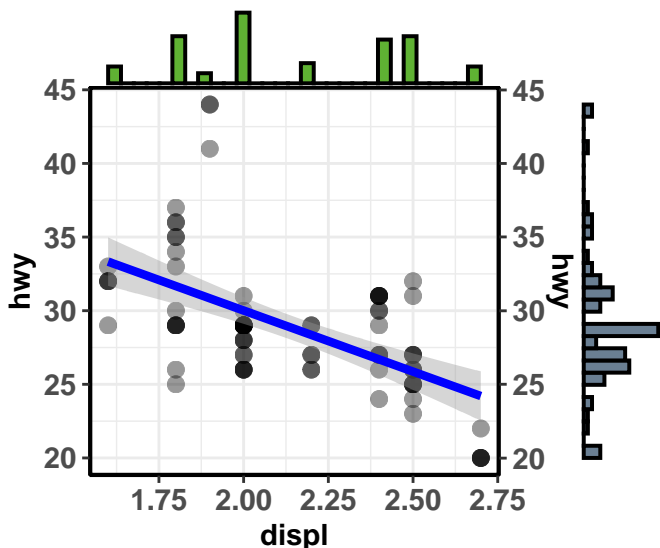


genre: Drama



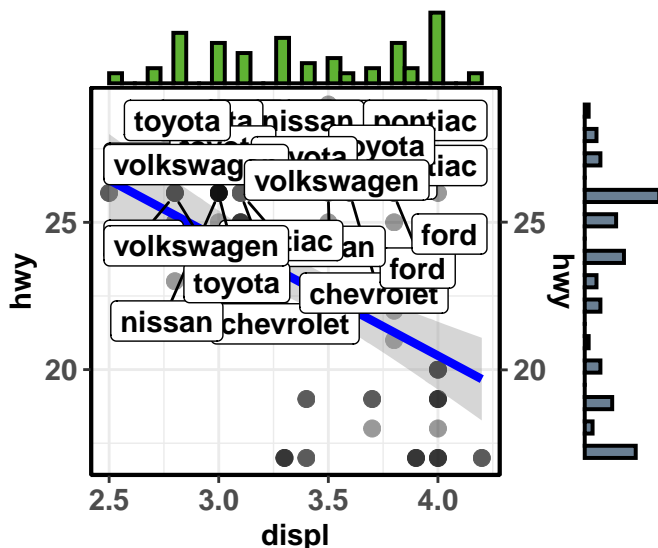
### Cylinder count: 4

< 0.001,  $\rho_{pb} = -0.61$ ,  $CI_{95\%} [-0.76,$



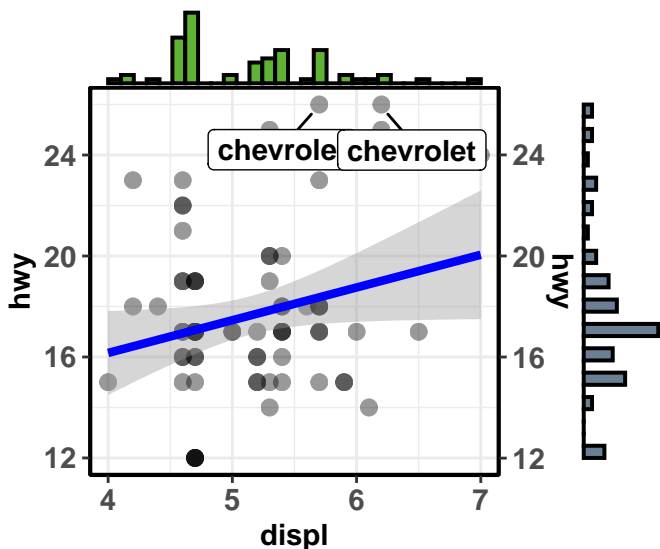
### Cylinder count: 6

< 0.001,  $\rho_{pb} = -0.50$ ,  $CI_{95\%} [-0.63,$



### Cylinder count: 8

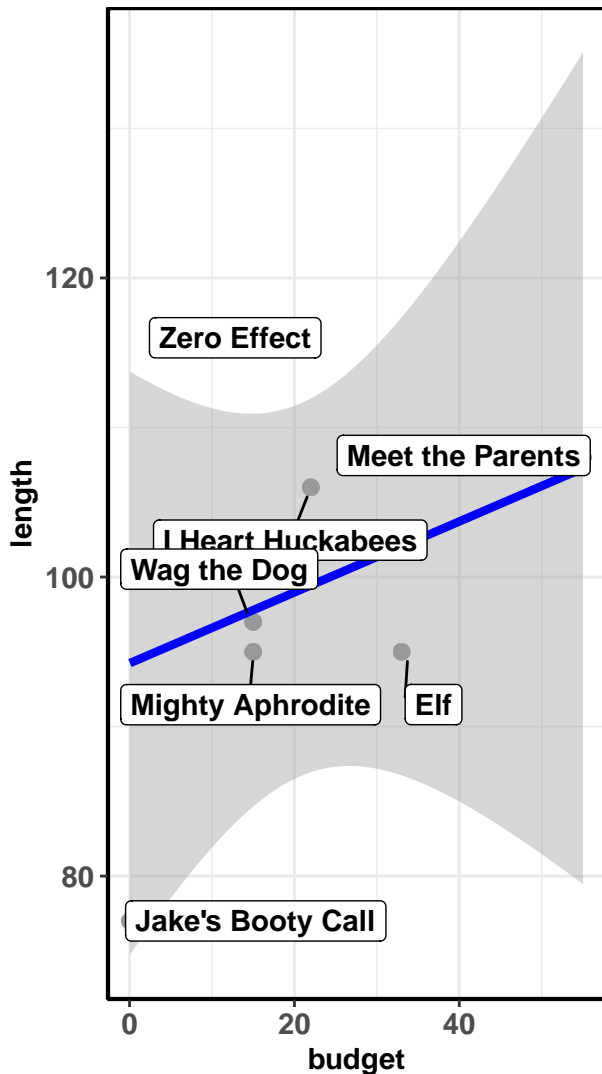
= 0.216,  $\rho_{pb} = 0.15$ ,  $CI_{95\%} [-0.17, 0$



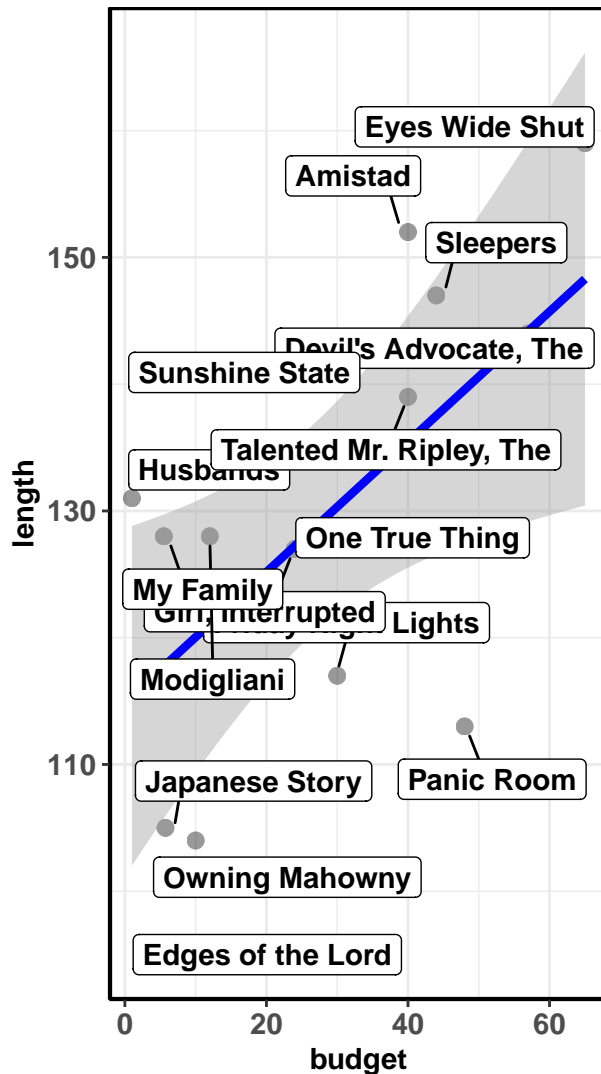


## Genre: Comedy

$r(5) = 0.84, p = 0.439, r_{\text{Pearson}} = 0.35, \text{CI}_{95\%} [-0.55, 0.87]$   $t(14) = 2.67, p = 0.018, r_{\text{Pearson}} = 0.58, \text{CI}_{95\%} [0.12, 0.84], r$



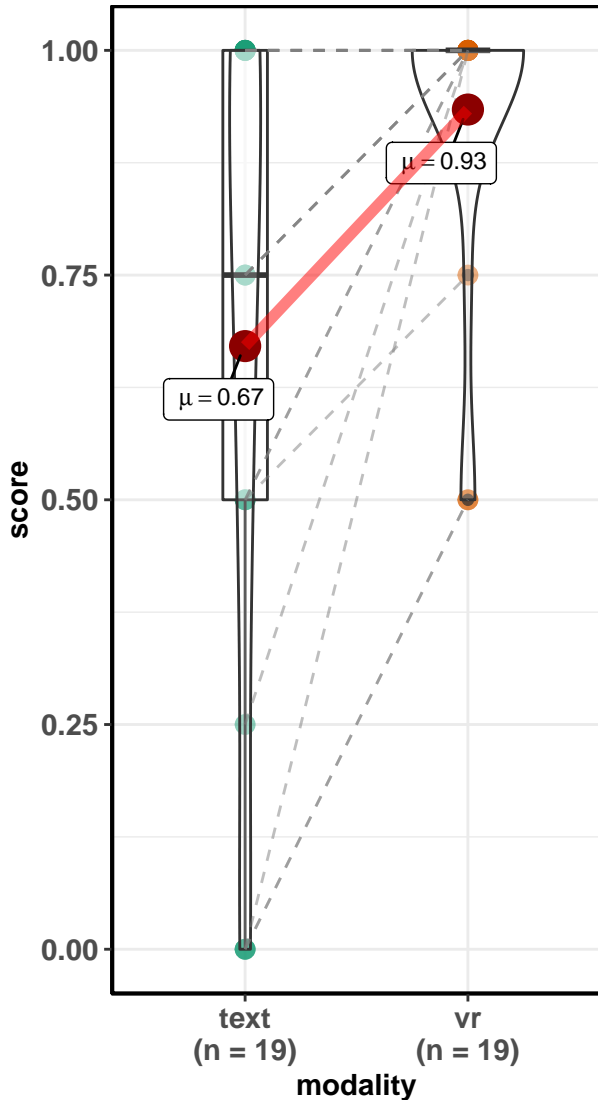
## Genre: Drama



All movies have IMDB rating equal to 7.

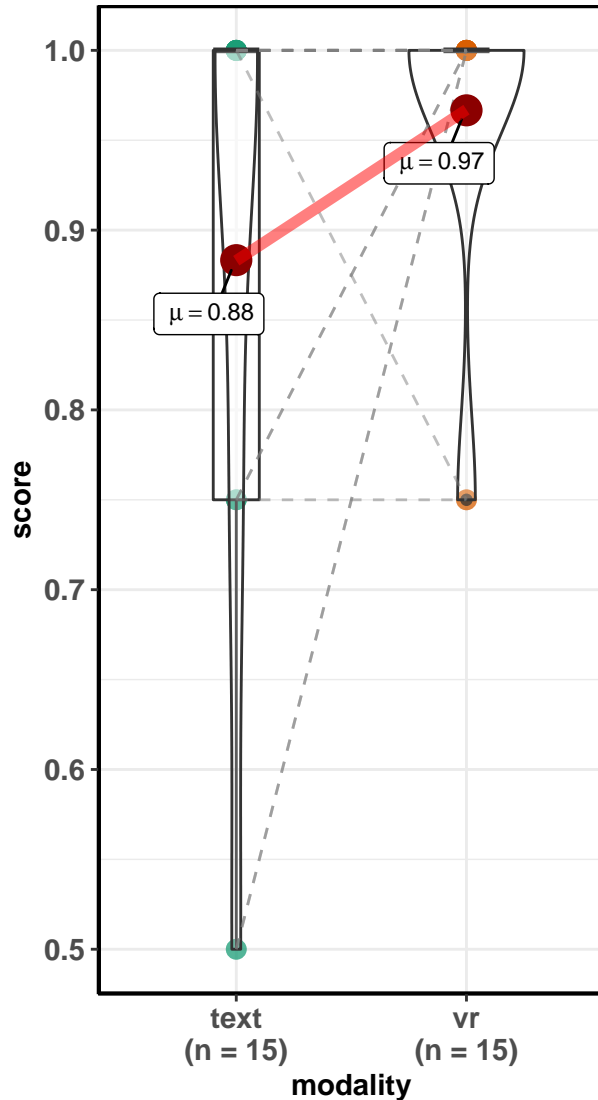
**order: 0**

$(18) = -3.90, p = 0.001, g = -0.85, \text{CI}_{95\%} [-1.46, -0.36], t(14) = -1.58, p = 0.136, g = -0.38, \text{CI}_{95\%} [-0.96, 0.13], n$



In favor of null:  $\log_e(\text{BF}_{01}) = -3.56, r_{\text{Cauchy}}^{\text{JZS}} = 0.71$

**order: 1**



In favor of null:  $\log_e(\text{BF}_{01}) = 0.32, r_{\text{Cauchy}}^{\text{JZS}} = 0.71$

