

# Dataset: Iris Flower dataset

(a) setosa

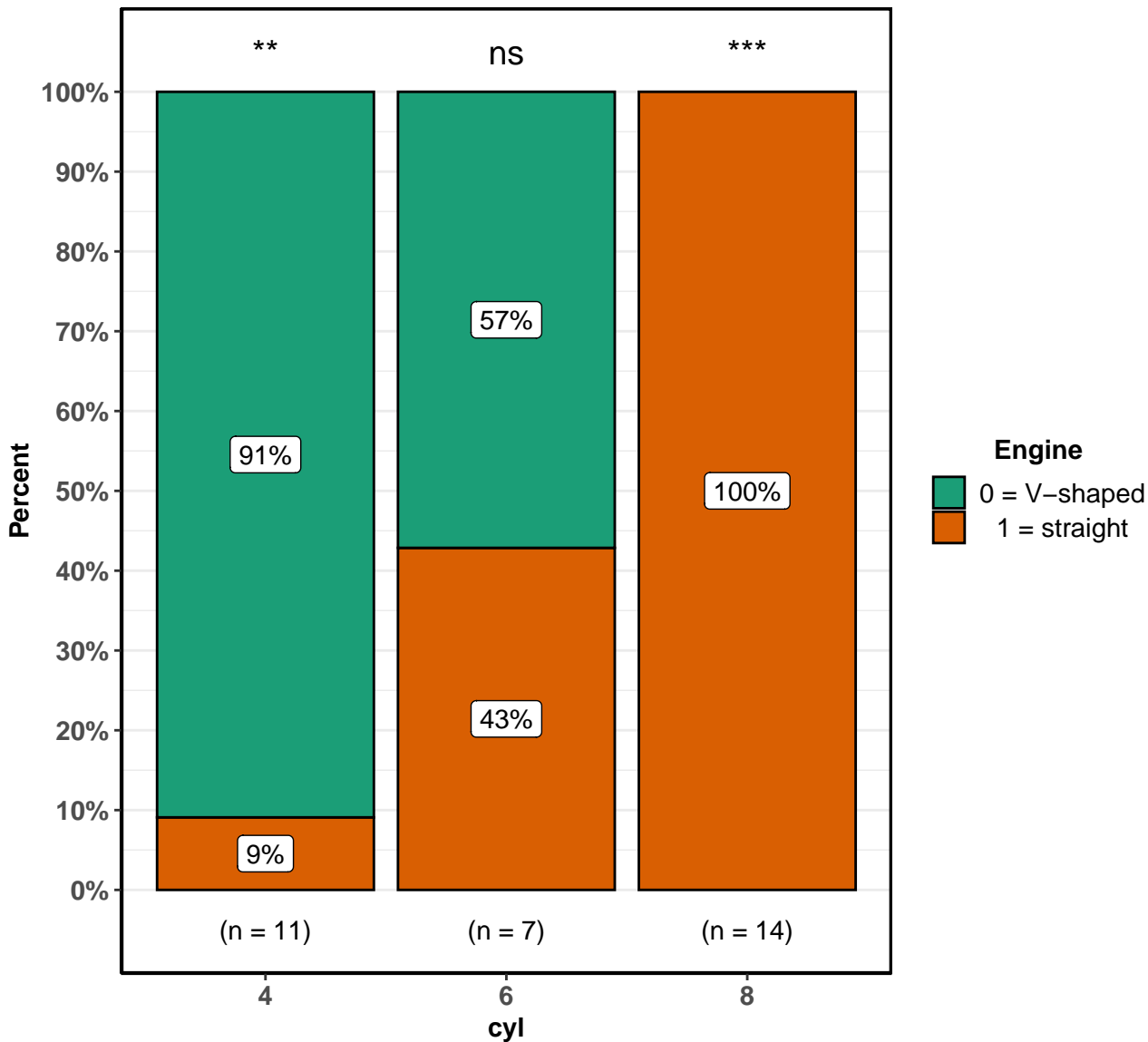


(b) versicolor



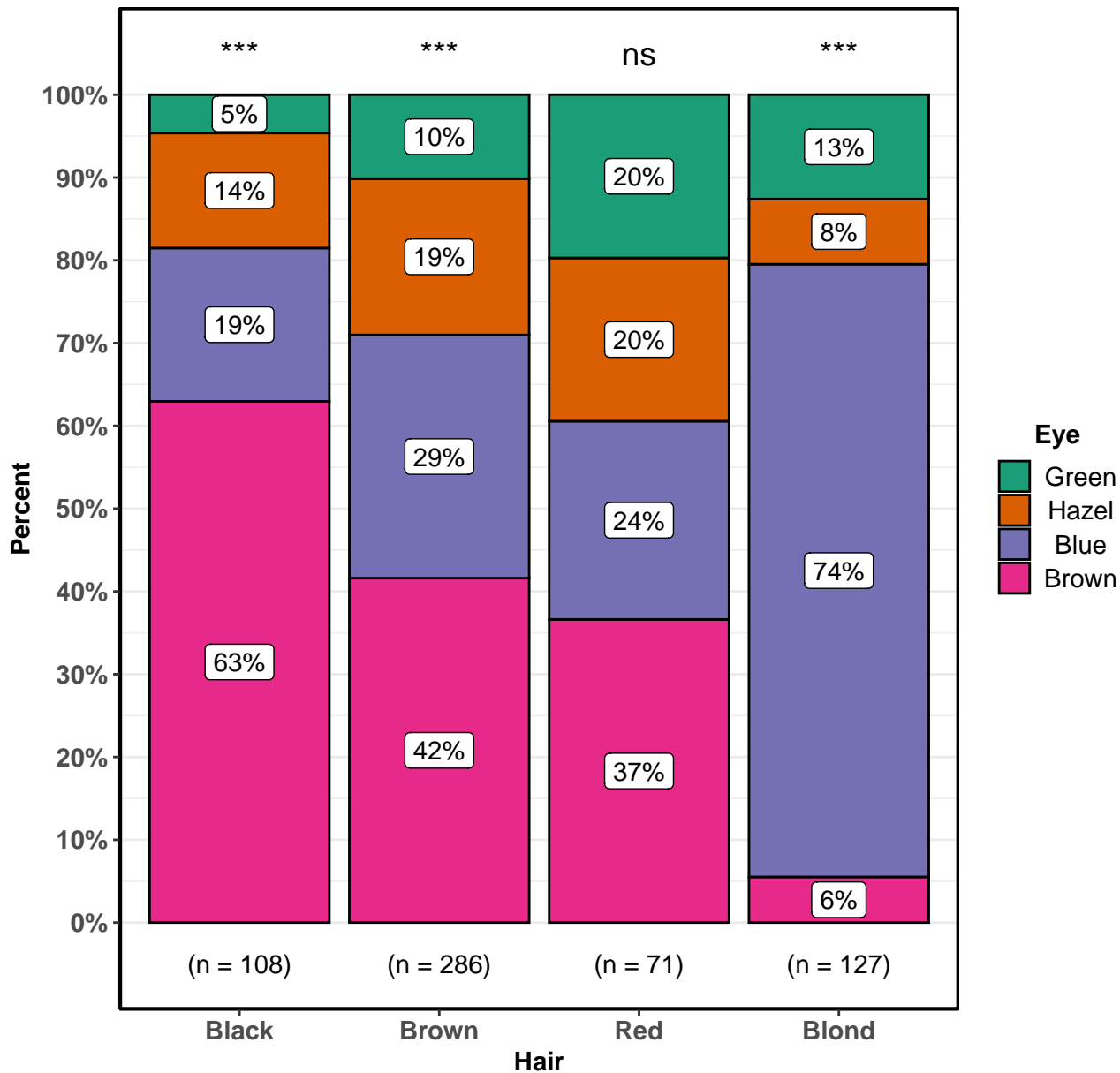
Note: Only two species of flower are displayed

$\chi^2(2) = 21.34$ ,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.82$ ,  $\text{CI}_{95\%} [0.41, 0.68]$ ,  $n = 32$



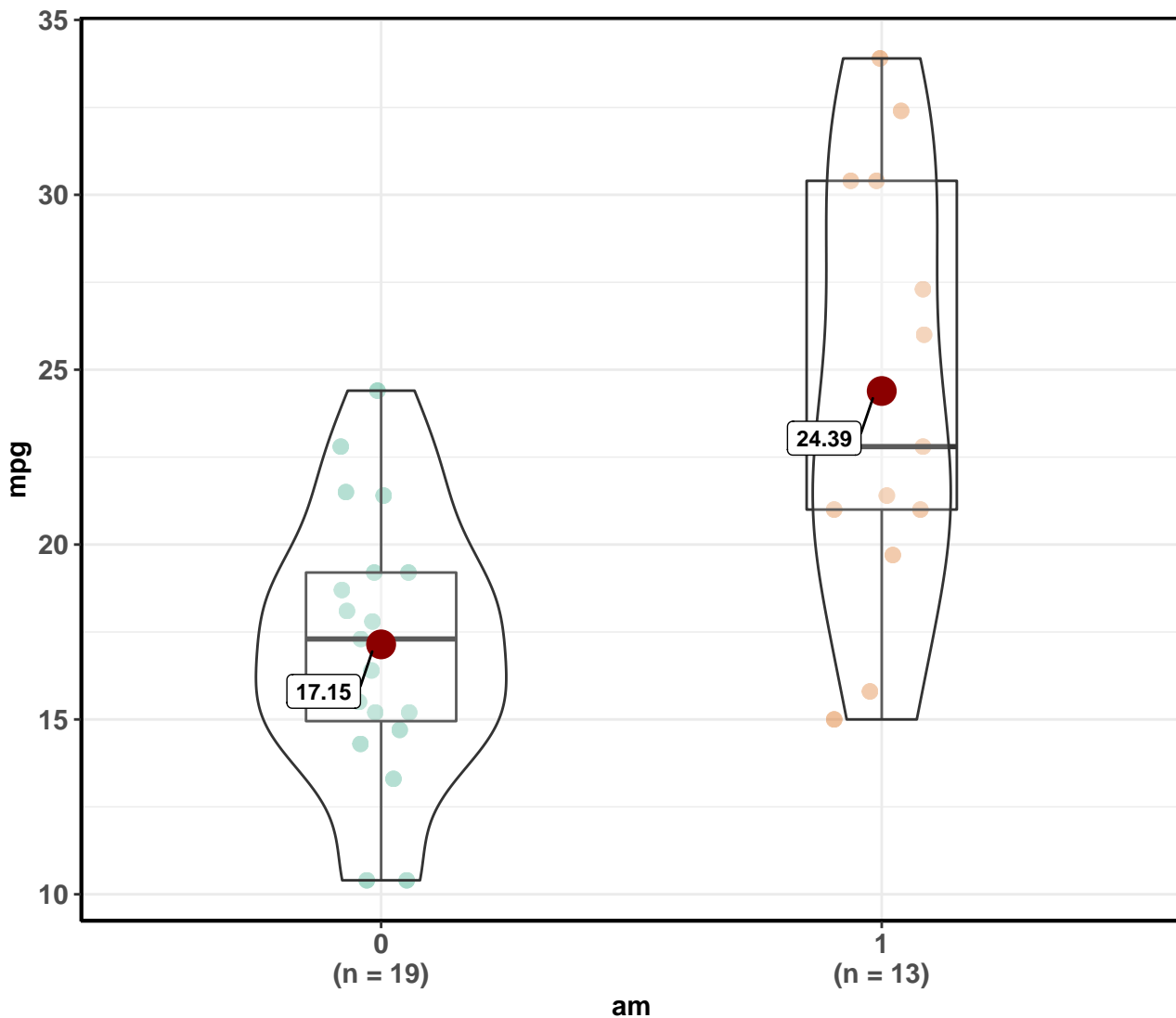
In favor of null:  $\log_e(\text{BF}_{01}) = -10.86$ , sampling = joint multinomial,  $a = 1.00$

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



# Fuel efficiency by type of car transmission

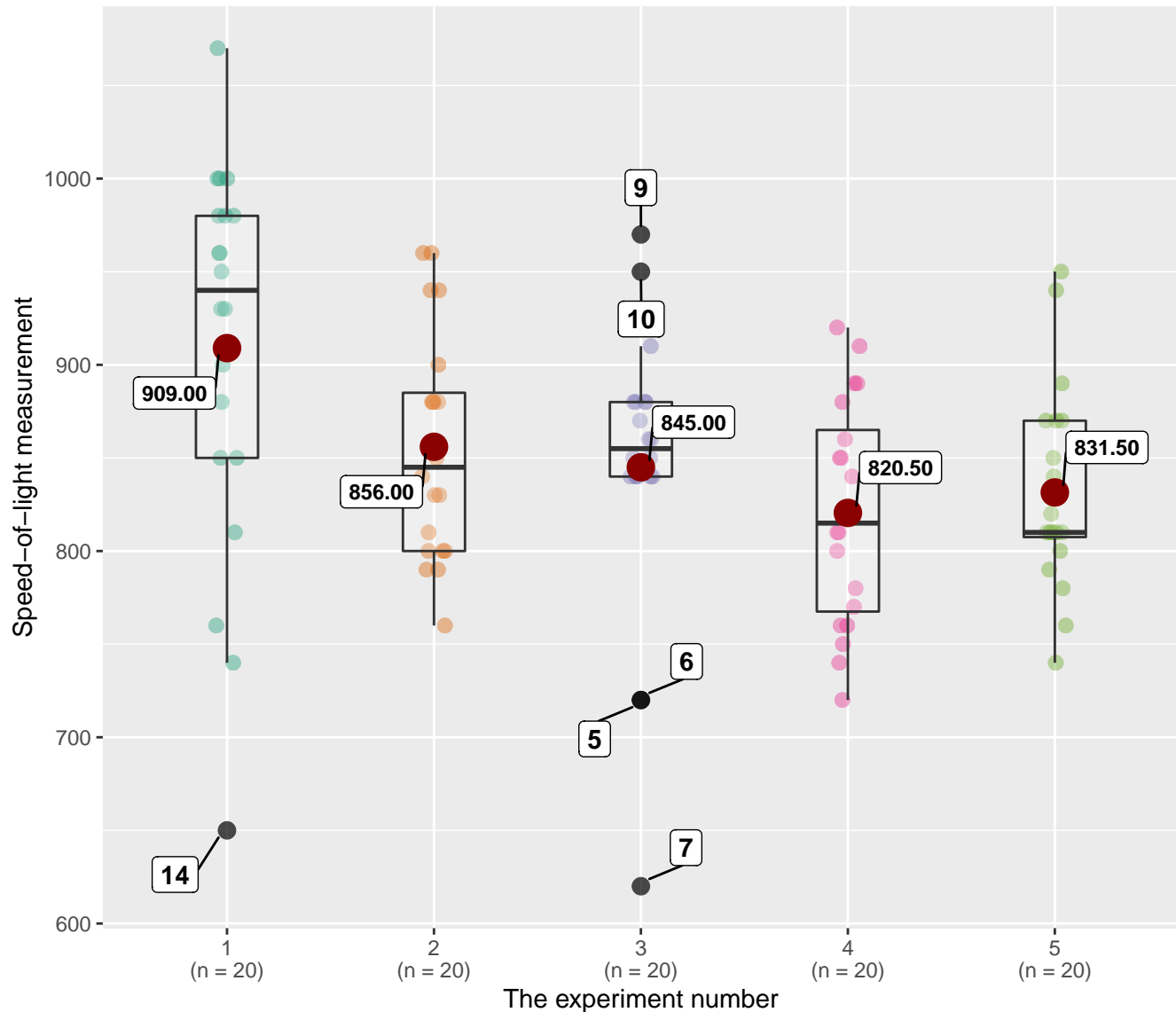
$t(18.33) = -3.77, p = 0.001, g = -1.38, \text{CI}_{95\%} [-2.17, -0.51], n = 32$



Transmission (0 = automatic, 1 = manual)

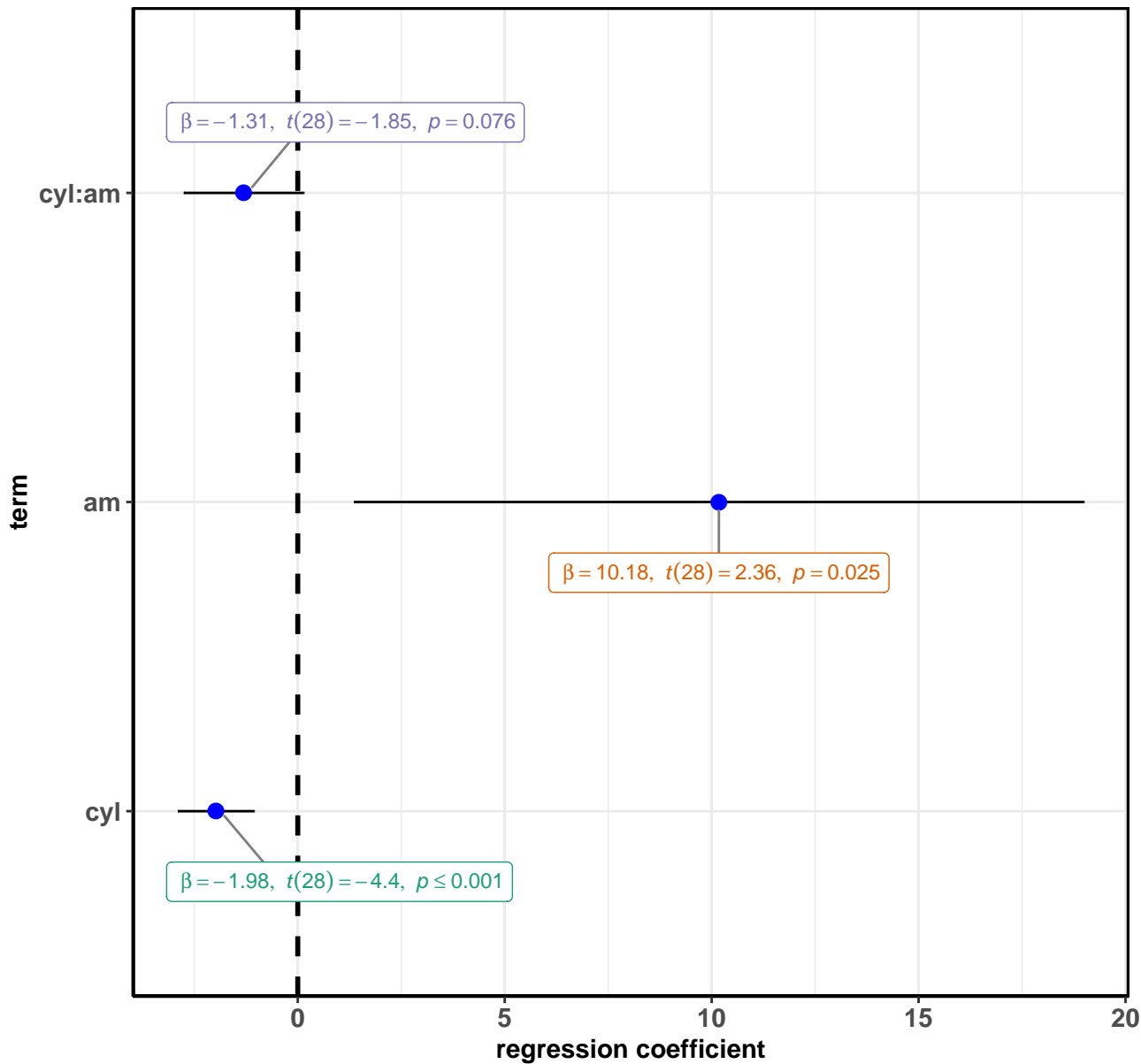
In favor of null:  $\log_e(\text{BF}_{01}) = -4.46, r_{\text{Cauchy}} = 0.71$

$F(4,47.04) = 3.01$ ,  $p = 0.027$ ,  $\omega_p^2 = 0.12$ ,  $CI_{99\%} [-0.03, 0.31]$ ,  $n = 100$



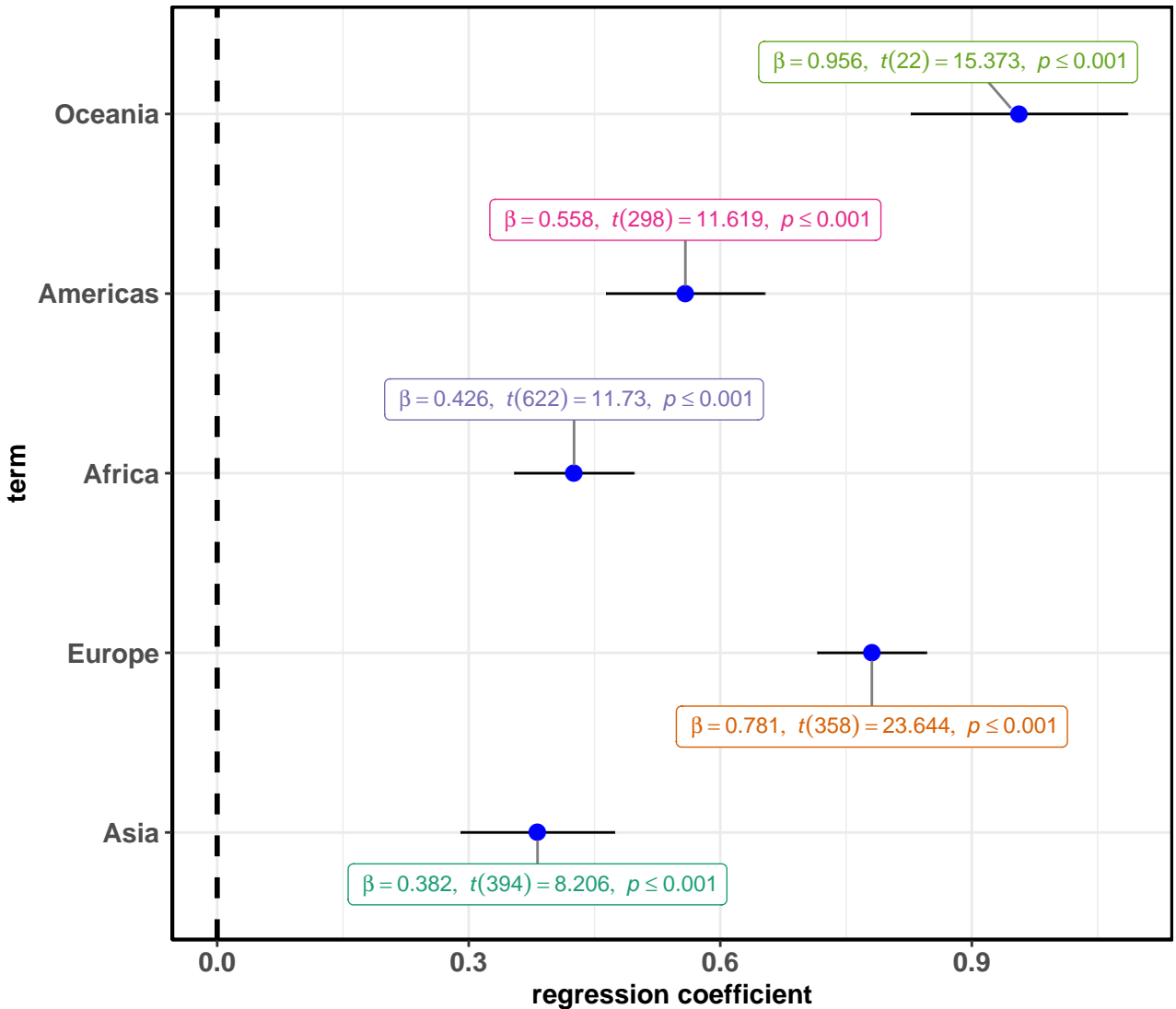
In favor of null:  $\log_e(BF_{01}) = -2.19$ ,  $r_{\text{Cauchy}} = 0.71$

Pairwise comparisons: **Games-Howell test**; Adjustment (p-value): **Benjamini & Hochberg**



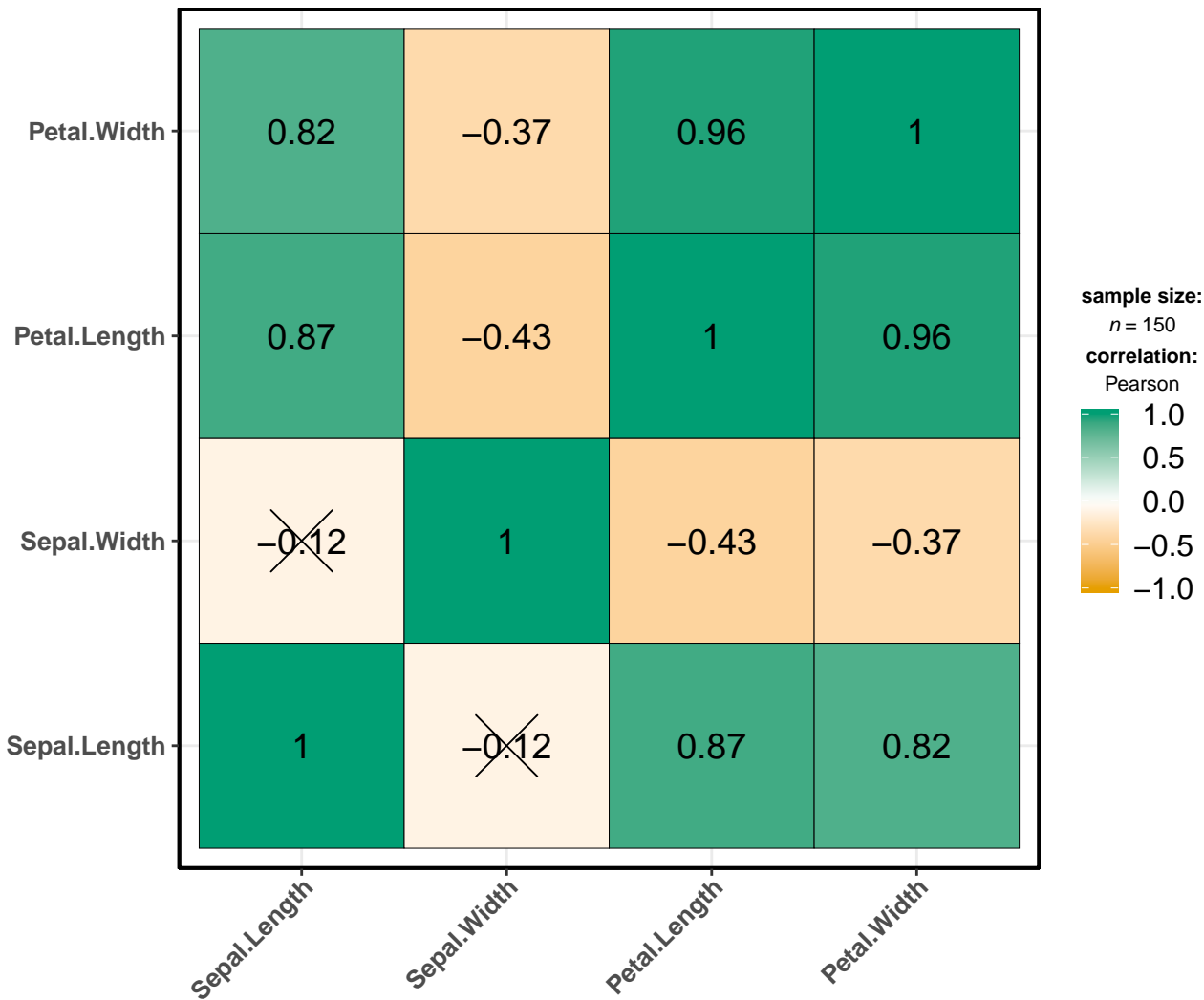
AIC = 166, BIC = 173, log-likelihood = -78

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



In favor of null:  $\log_e(BF_{01}) = -2.680$ ,  $d_{\text{mean}}^{\text{posterior}} = 0.491$ ,  $CI_{95\%} [0.147, 0.775]$

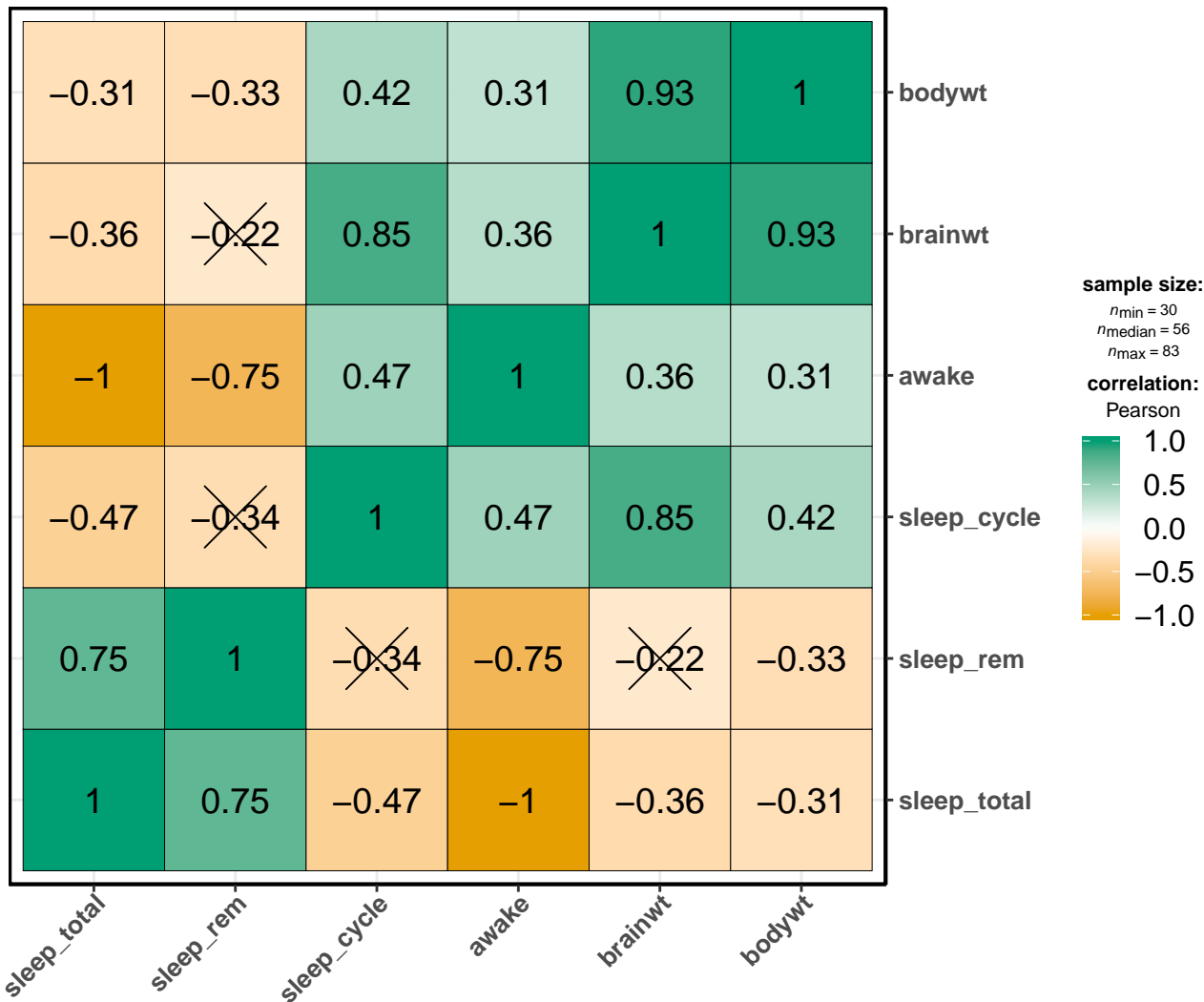
Heterogeneity:  $Q(4) = 109$ ,  $p = < 0.001$ ,  $\tau_{\text{REML}}^2 = 0.056$ ,  $I^2 = 96.81\%$



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

Adjustment (p-value): None

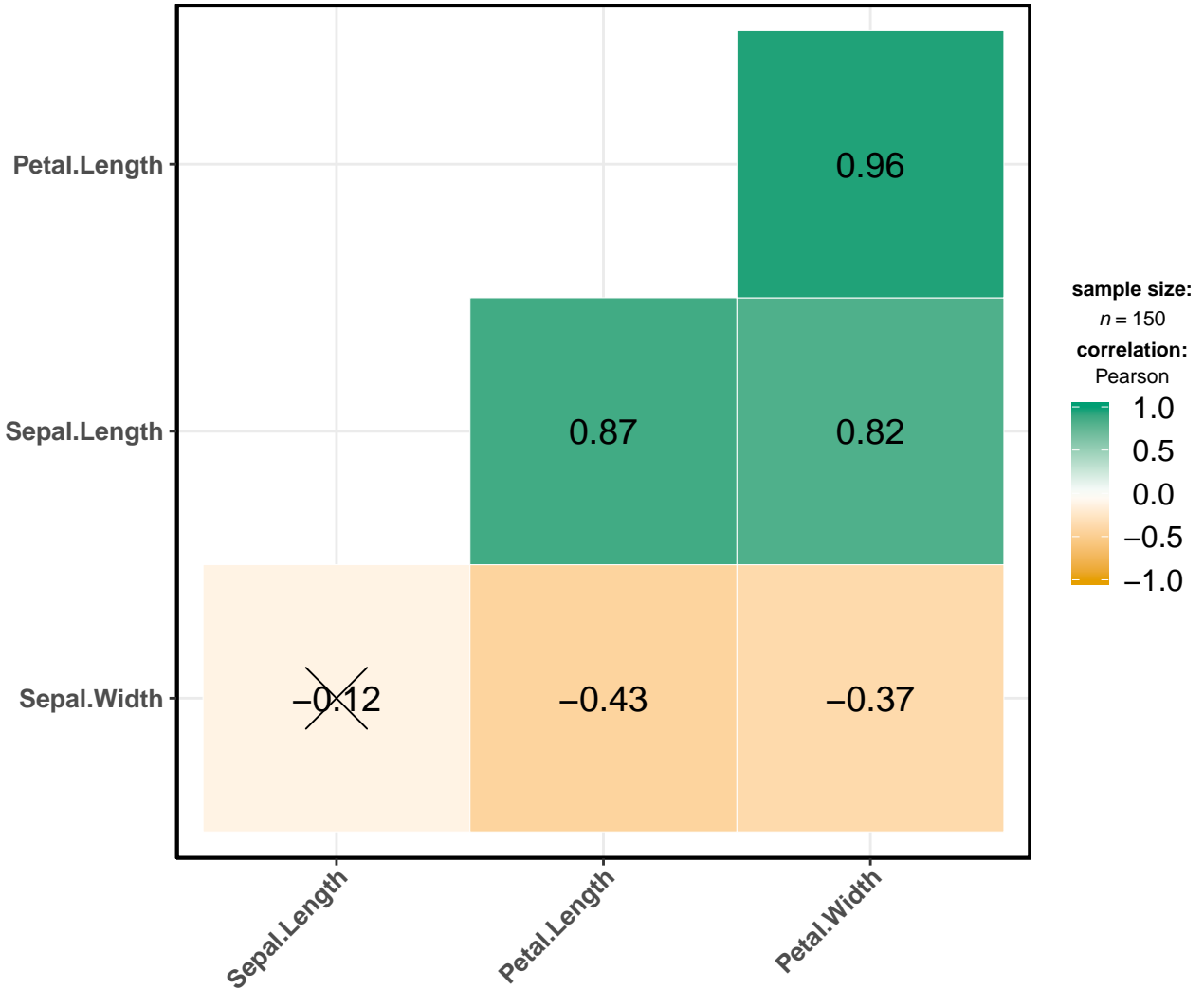




X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None

Dataset: Iris

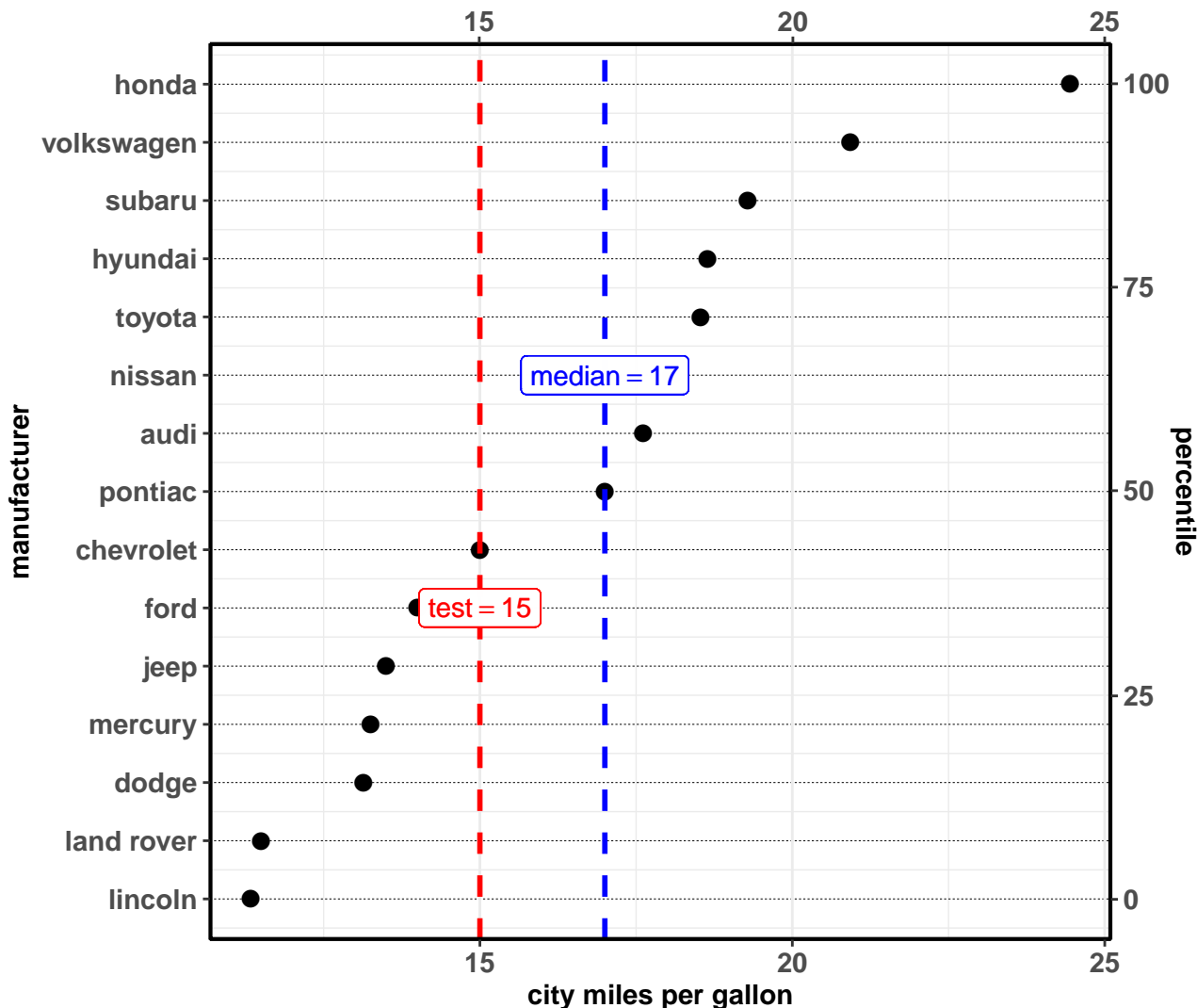


X = correlation non-significant at  $p < 0.01$

Adjustment (p-value): None

# Fuel economy data

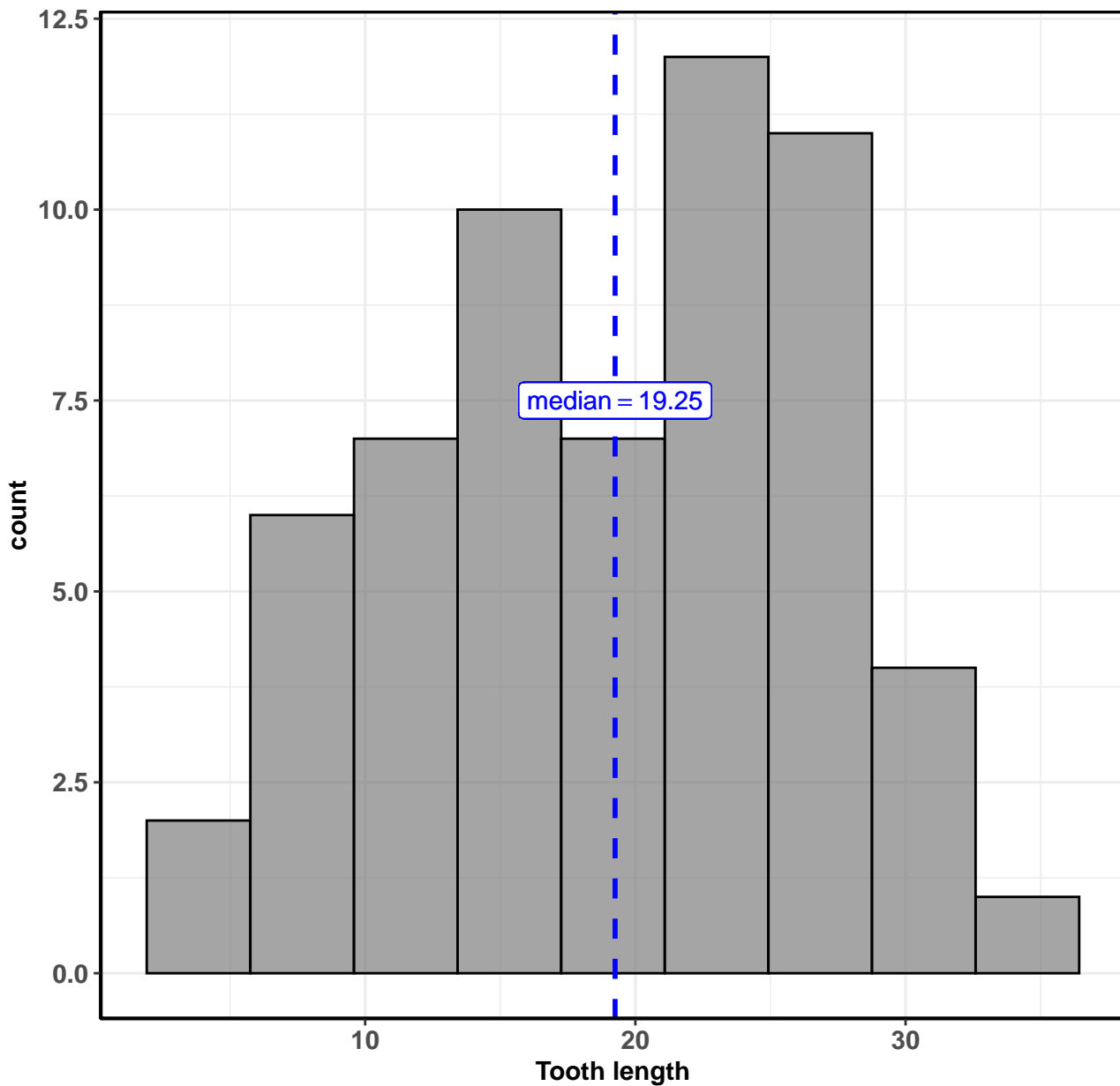
$t(14) = 1.47$ ,  $p = 0.163$ ,  $g = 0.36$ ,  $CI_{99\%} [-0.33, 1.10]$ ,  $n = 15$



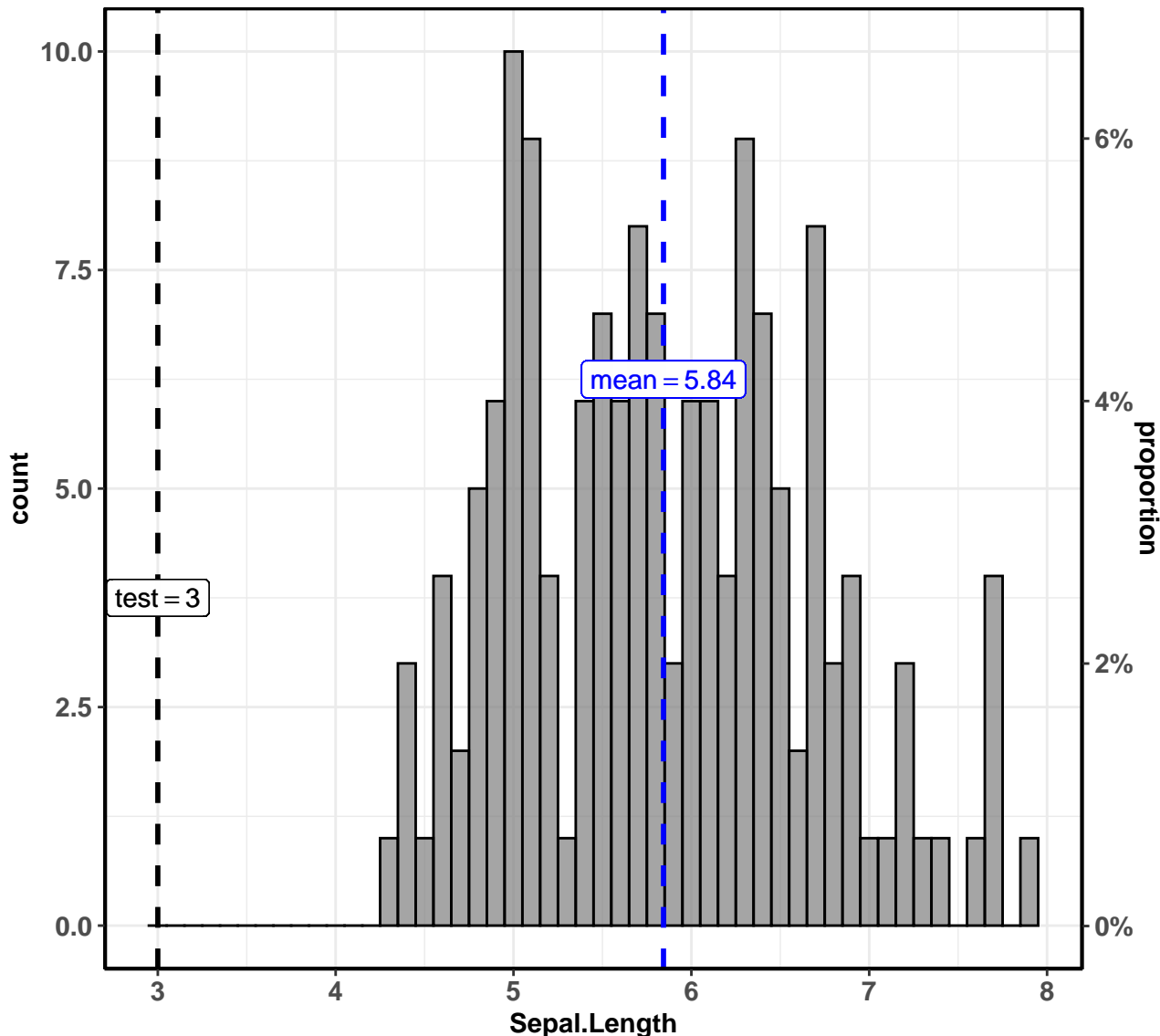
Source: EPA dataset on <http://fuelconomy.gov>

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

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



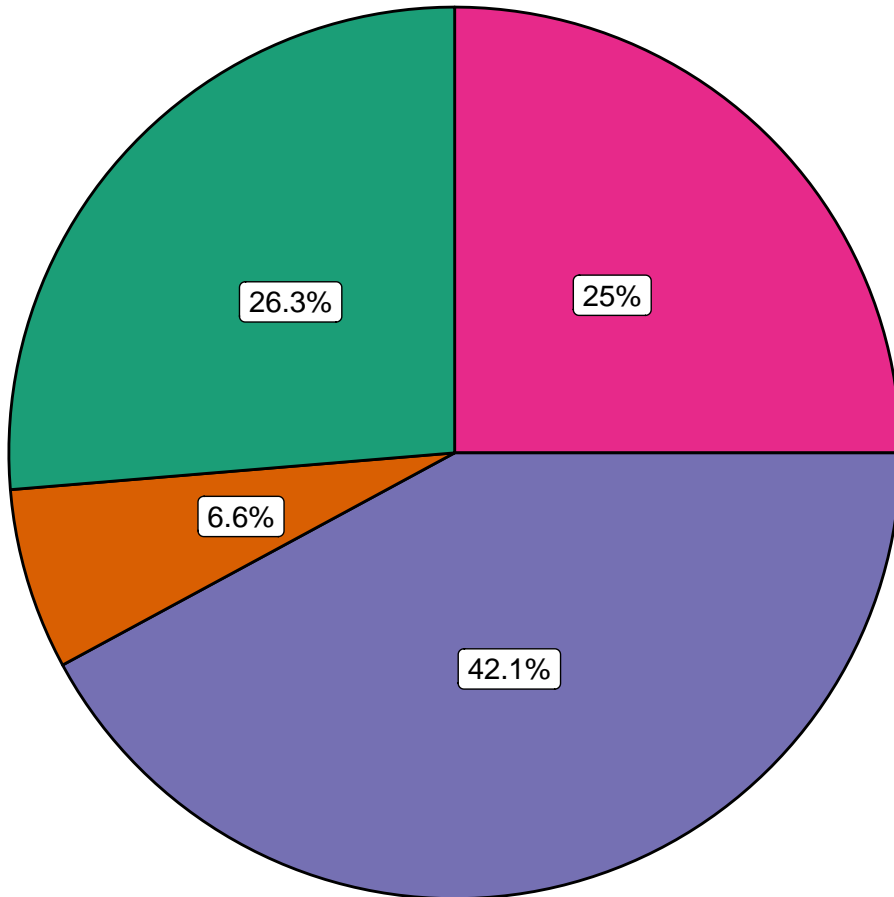
$t(149) = 42.05$ ,  $p = < 0.001$ ,  $g = 3.42$ ,  $CI_{95\%} [3.02, 3.86]$ ,  $n = 150$







Note: Iris dataset by Fisher.

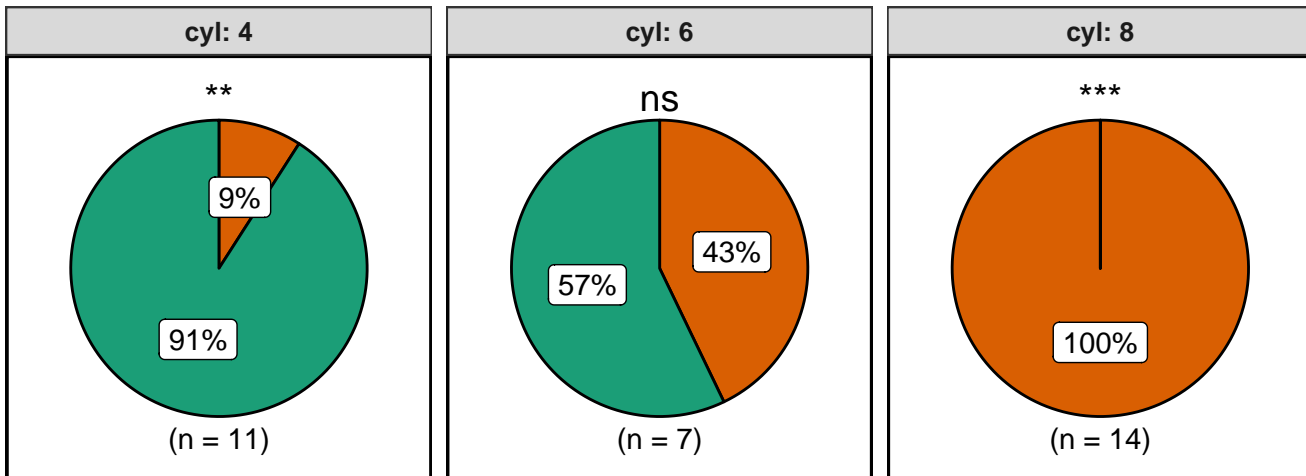
In favor of null:  $\log_e(BF_{01}) = -186.14$ ,  $r_{\text{Cauchy}} = 0.80$



$\chi^2(3) = 19.26, p = < 0.001, n = 76$



**vore**  omni  insecti  herbi  carni

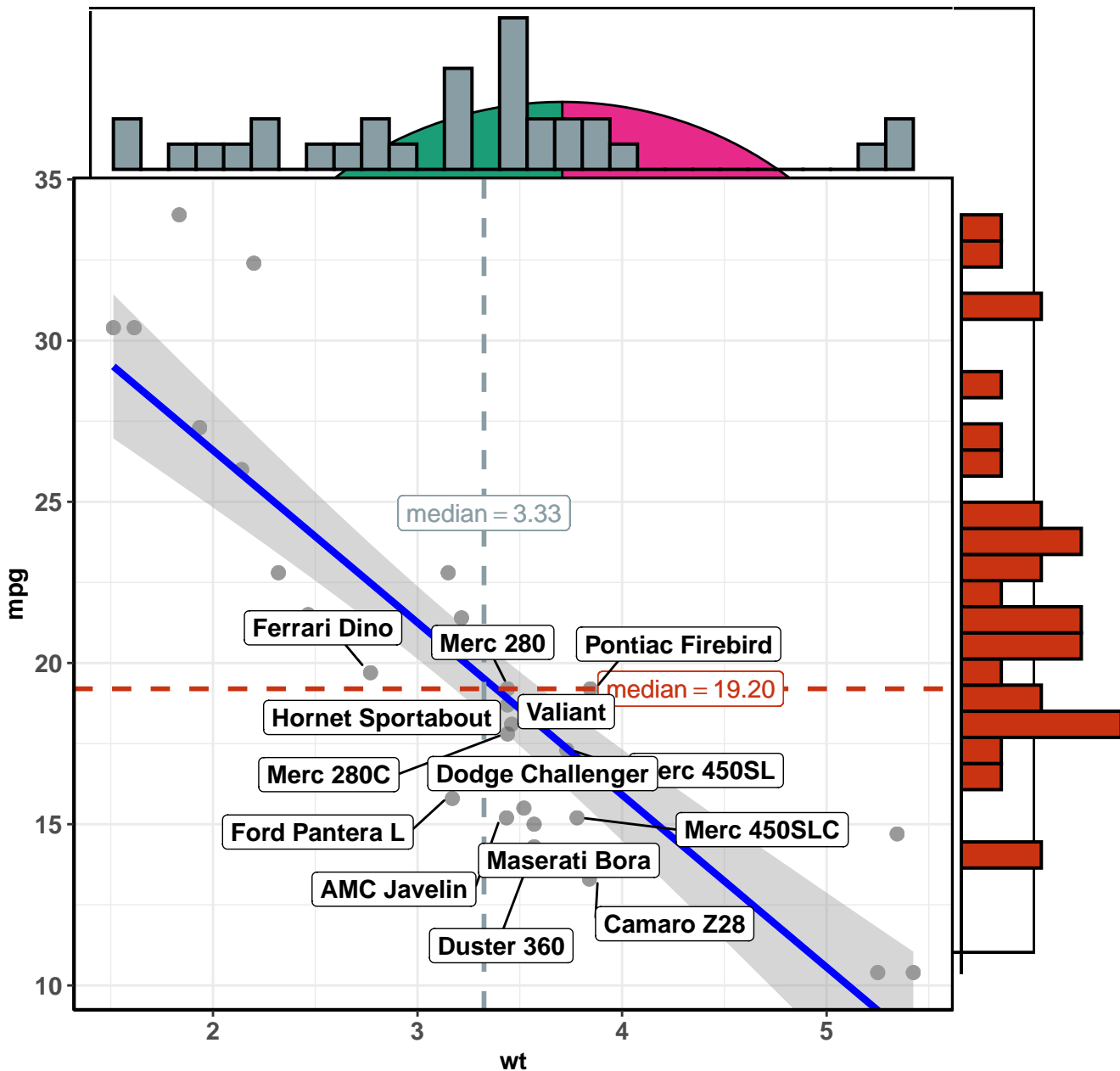
$\chi^2(2) = 21.34$ ,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.82$ ,  $CI_{95\%} [0.41, 0.68]$ ,  $n = 32$



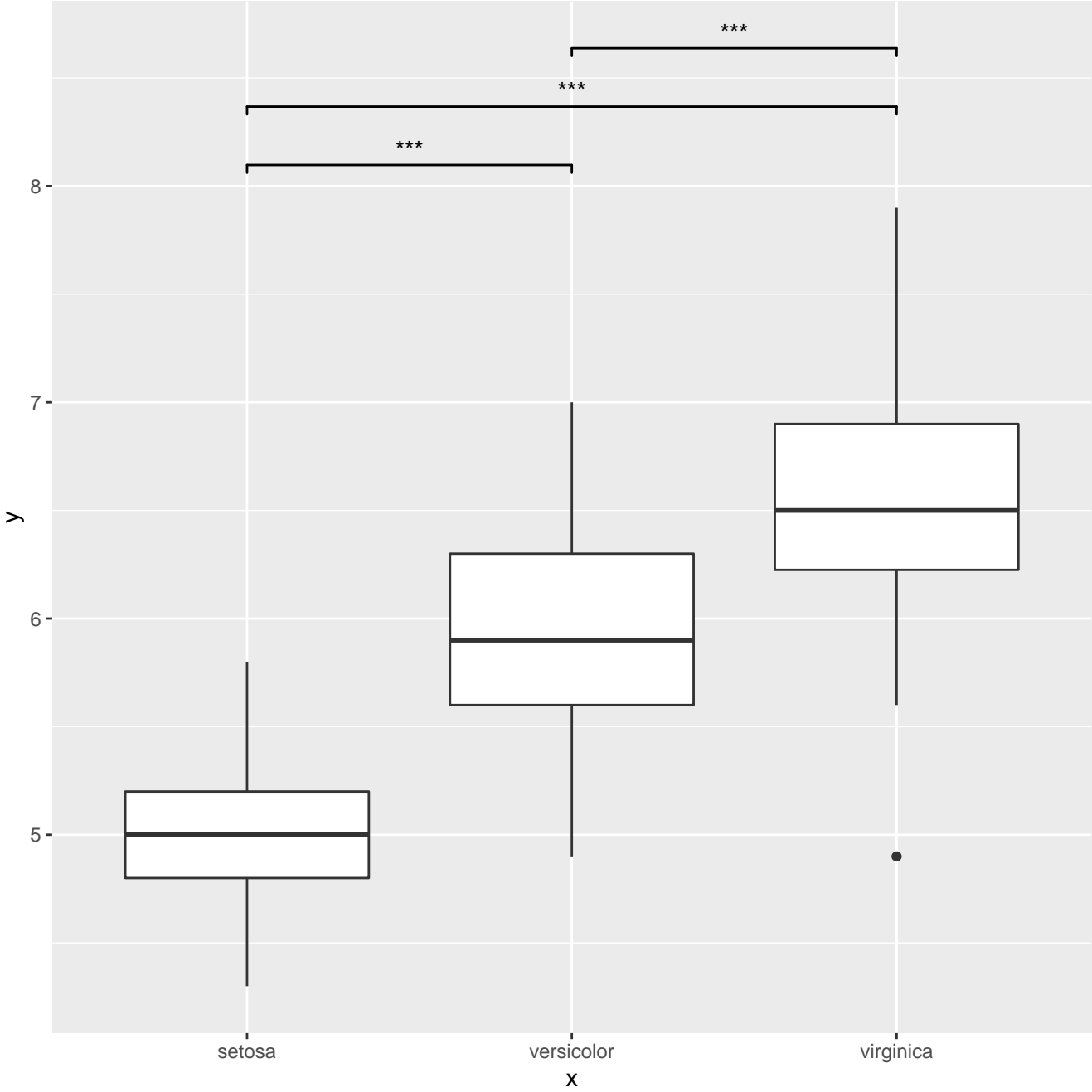
**Engine**  0 = V-shaped  1 = straight

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

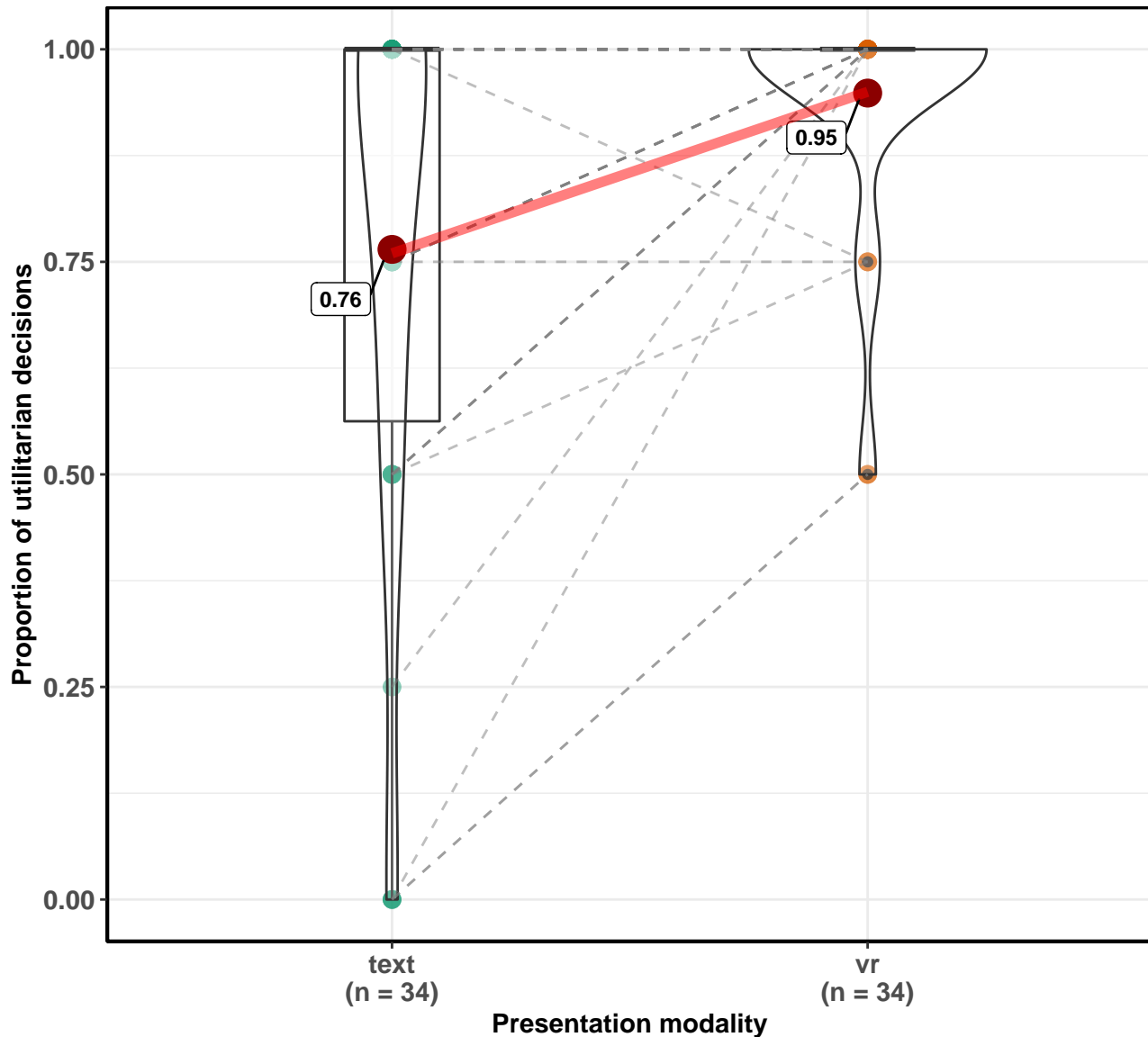
$\log_e(S) = 9.24, p = < 0.001, \rho_{\text{Spearman}} = -0.89, \text{CI}_{95\%} [-0.94, -0.78], n = 32$   
 $\chi^2(3) = 133.47, p = < 0.001, n = 592$





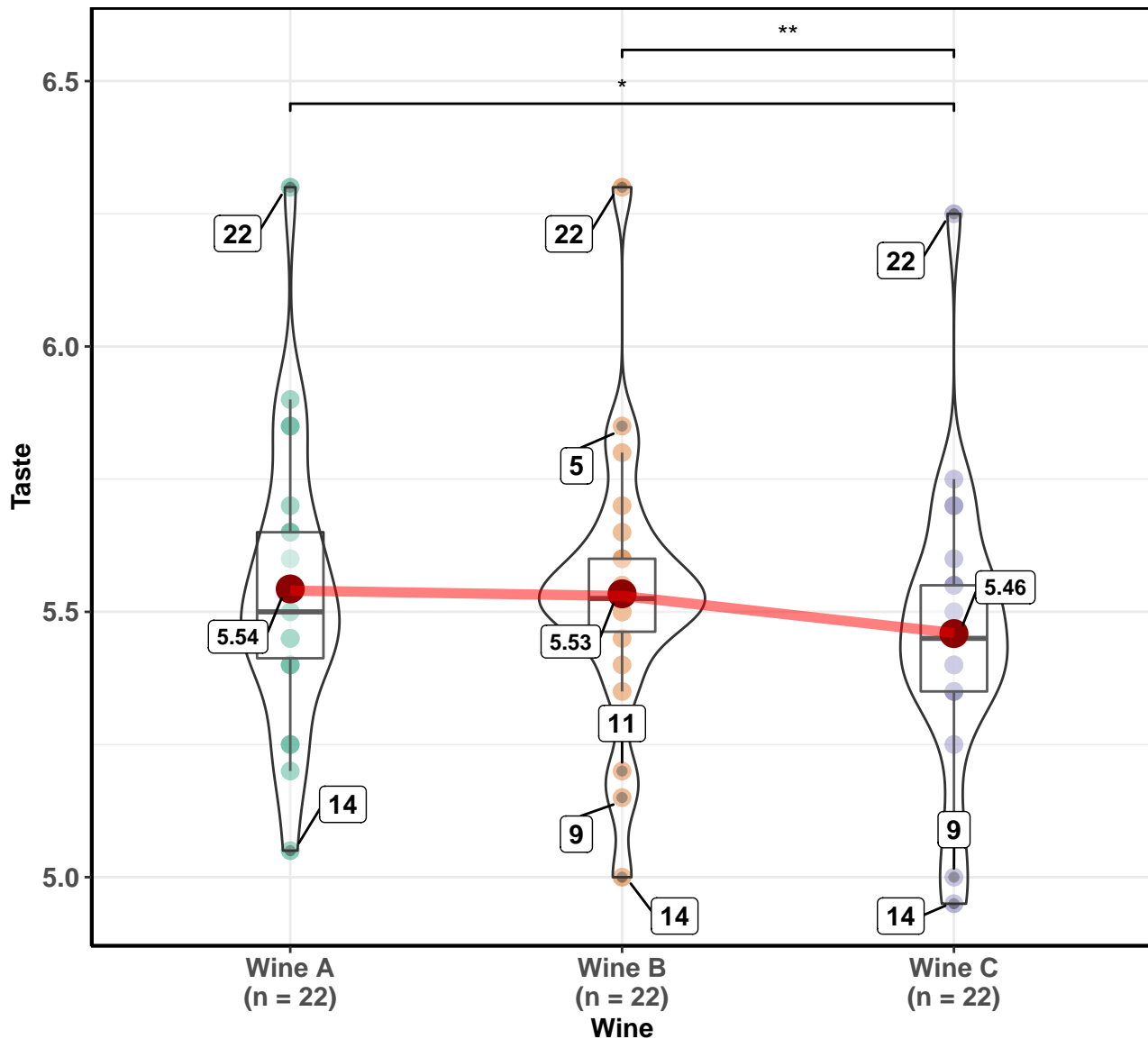


$t(33) = -3.96, p = < 0.001, g = -0.66, CI_{95\%} [-1.07, -0.31], n = 34$



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

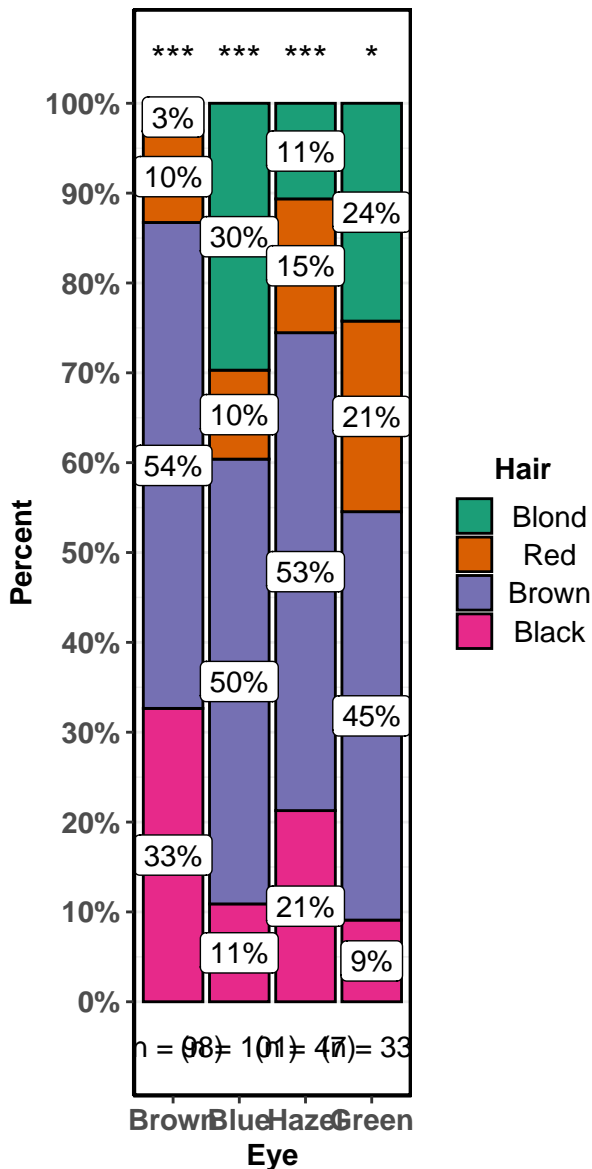
$F(1.65, 27.97) = 4.06, p = 0.035, n = 22$



Pairwise comparisons: **Yuen's trimmed means test**; Adjustment (p-value): **Holm**

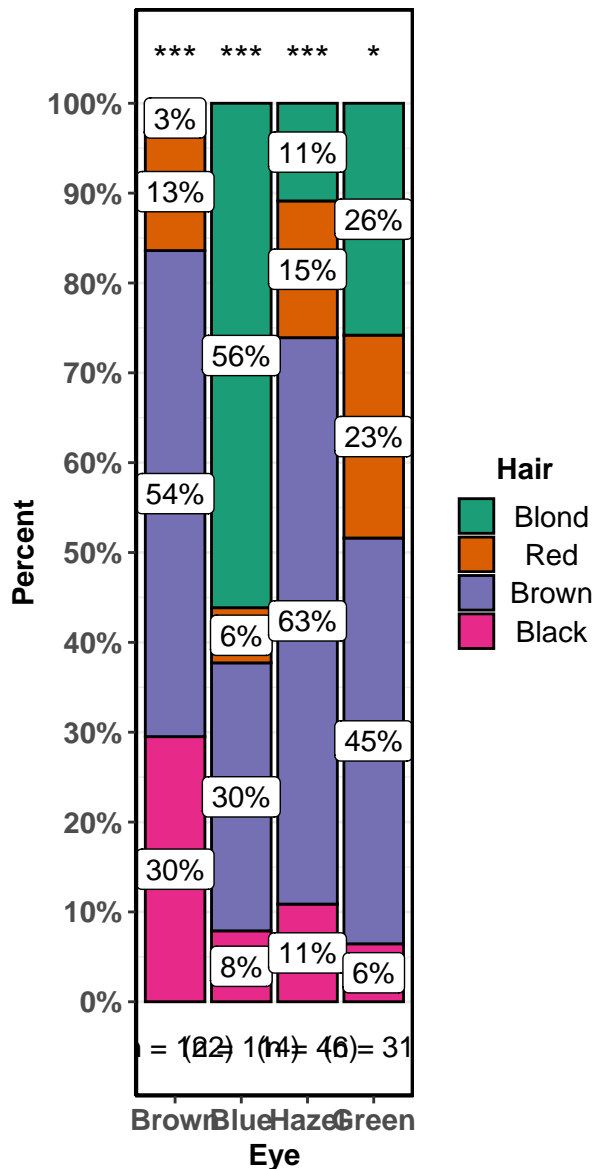
## Sex: Male

28,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.22$ ,  $CI_{95\%} [0.14, 0.26]$ ,  $n = 98$



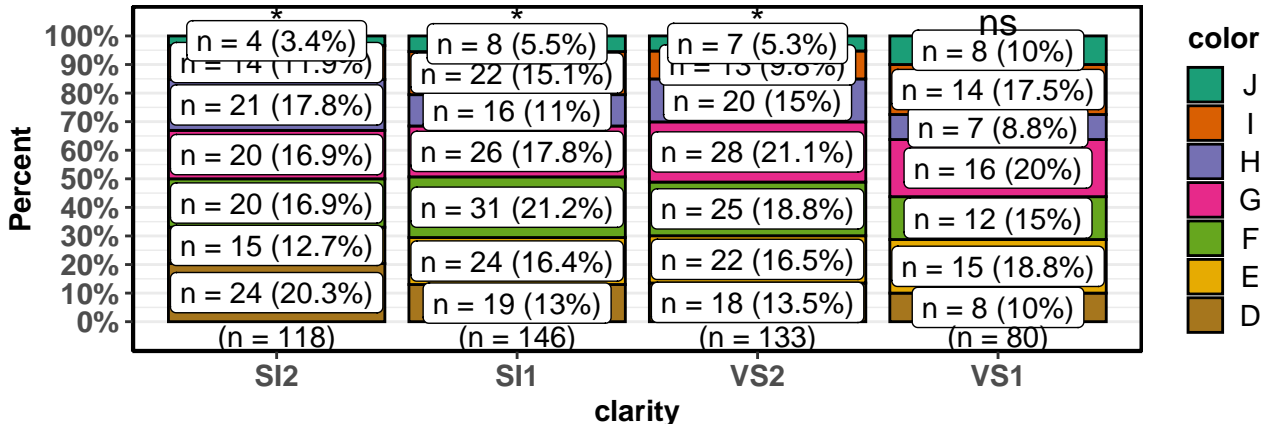
## Sex: Female

66,  $p = < 0.001$ ,  $V_{\text{Cramer}} = 0.34$ ,  $CI_{95\%} [0.28, 0.38]$ ,  $n = 122$



## Quality: Very Good

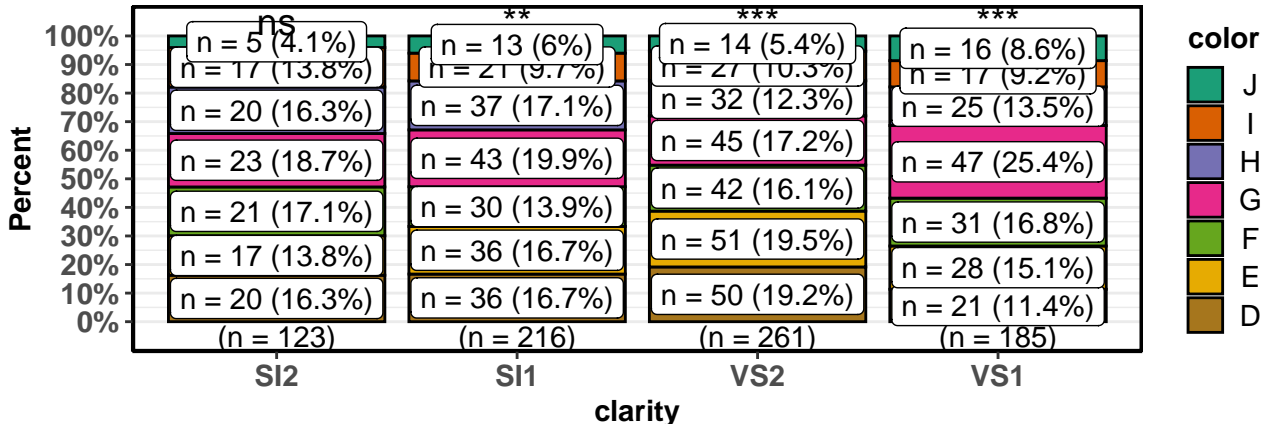
$\chi^2(18) = 17.95$ ,  $p = 0.459$ ,  $V_{\text{Cramer}} = 0.11$ ,  $CI_{95\%} [0.02, 0.11]$ ,  $n = 477$



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

## Quality: Ideal

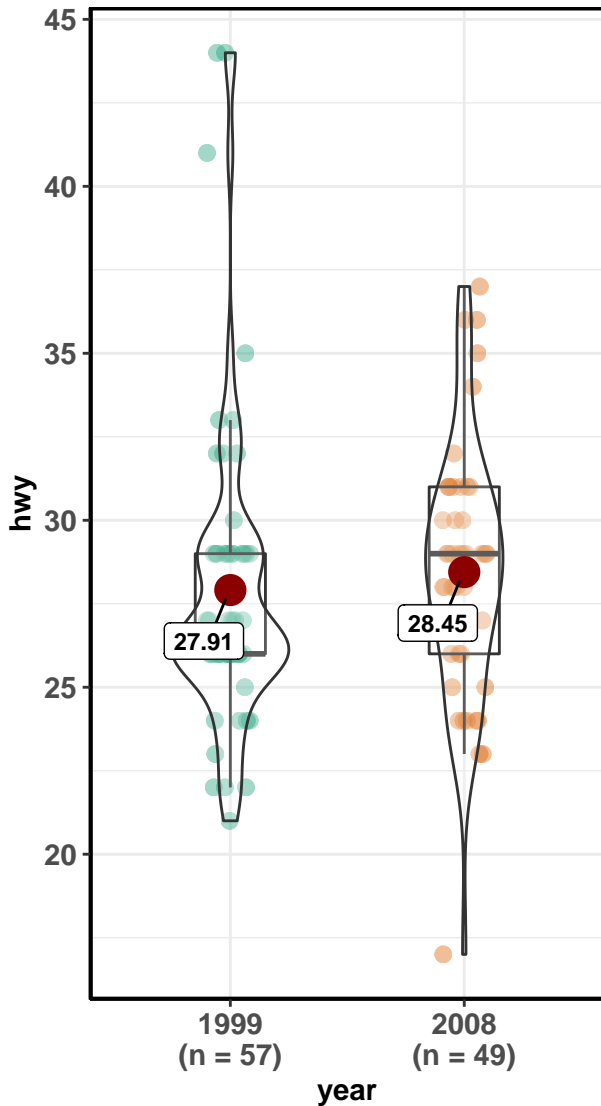
$\chi^2(18) = 17.85$ ,  $p = 0.466$ ,  $V_{\text{Cramer}} = 0.09$ ,  $CI_{95\%} [0.02, 0.08]$ ,  $n = 785$



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

drv: f

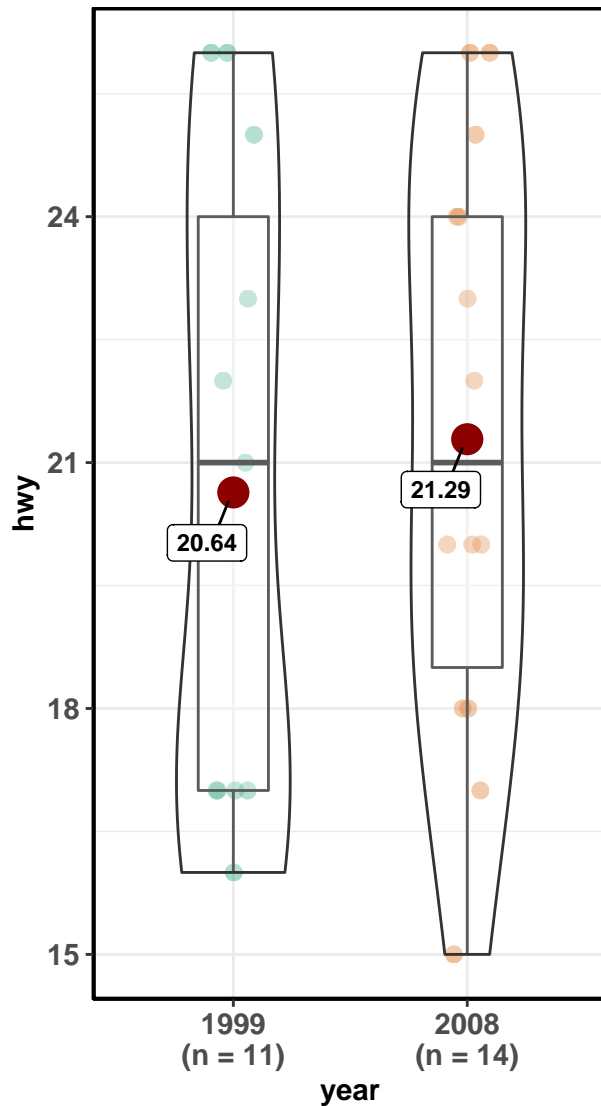
$t(20.71) = -0.66, p = 0.509, g = -0.13, CI_{99\%} [-0.63, 0.19]$



In favor of null:  $\log_e(BF_{01}) = 1.39, r_{\text{Cauchy}} = 0.71$

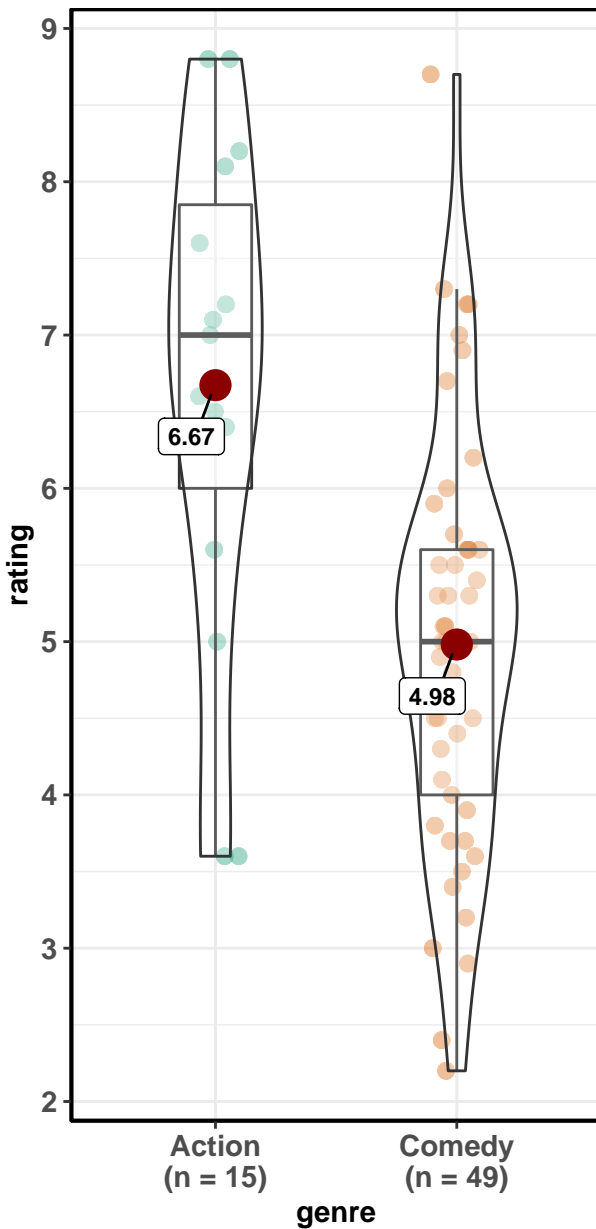
drv: r

$t(21.19) = -0.43, p = 0.675, g = -0.17, CI_{99\%} [-1.21, 0.8]$

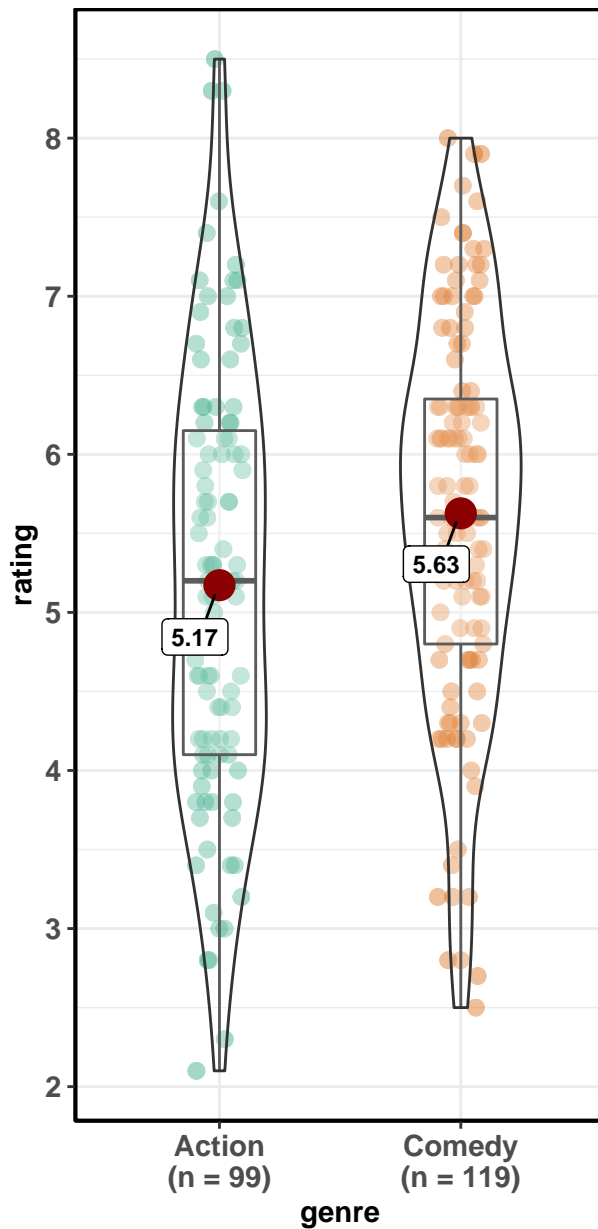


In favor of null:  $\log_e(BF_{01}) = 0.93, r_{\text{Cauchy}} = 0.71$

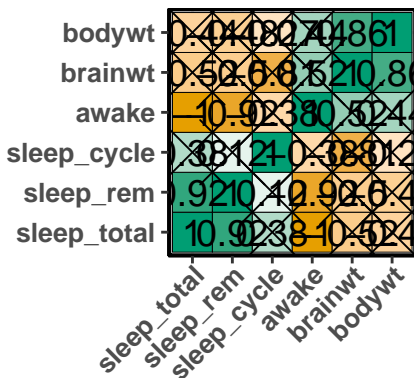
mpaa: PG



mpaa: R



### vore: carni

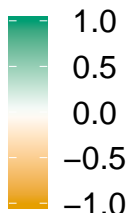


sample size:

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

correlation:

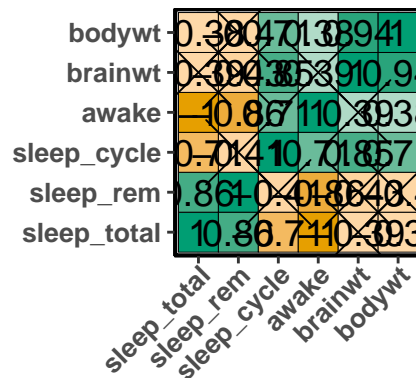
Pearson



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:

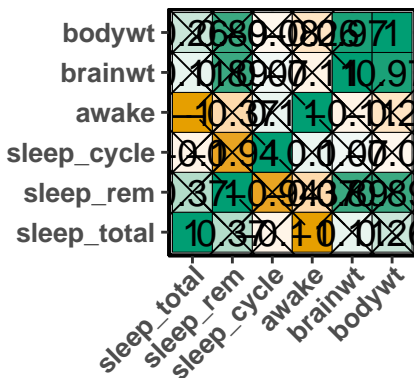
Pearson



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

Adjustment (p-value): None

### vore: insecti

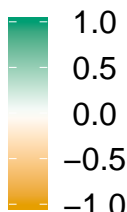


sample size:

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

correlation:

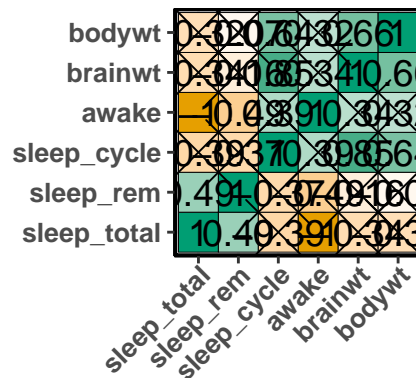
Pearson



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

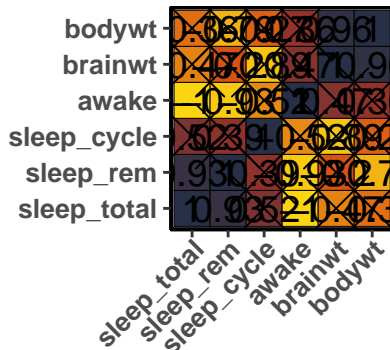


X = correlation non-significant at  $p < 0.05$

Adjustment (p-value): None



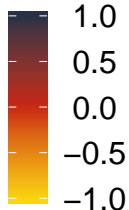
### vore: carni



sample size:

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

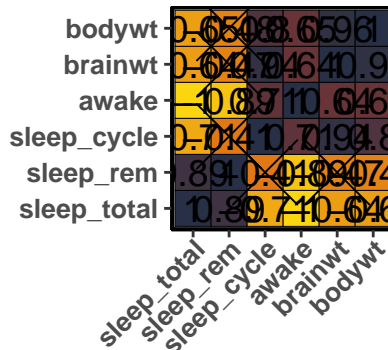
correlation:  
 robust (% bend)



= correlation non-significant at  $p < 0.05$

Adjustment (p-value): Holm

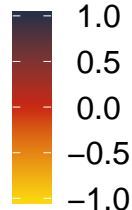
### vore: herbi



sample size:

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

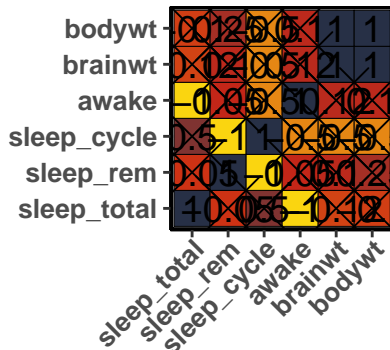
correlation:  
 robust (% bend)



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

Adjustment (p-value): Holm

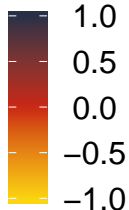
### vore: insecti



sample size:

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

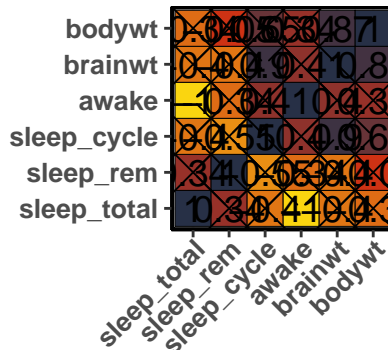
correlation:  
 robust (% bend)



= correlation non-significant at  $p < 0.05$

Adjustment (p-value): Holm

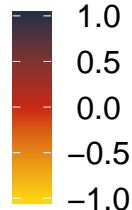
### vore: omni



sample size:

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

correlation:  
 robust (% bend)

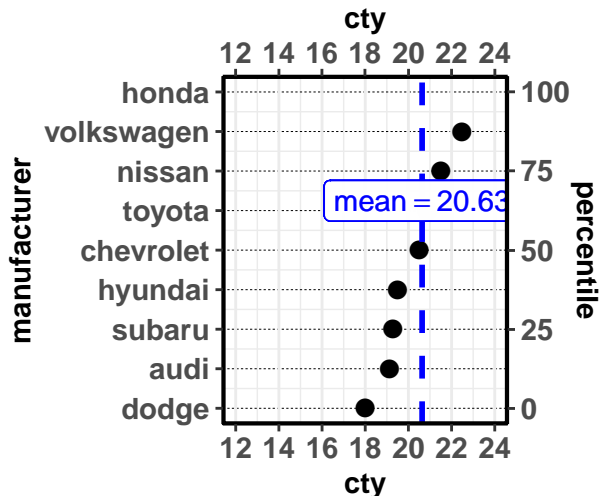


X = correlation non-significant at  $p < 0.05$

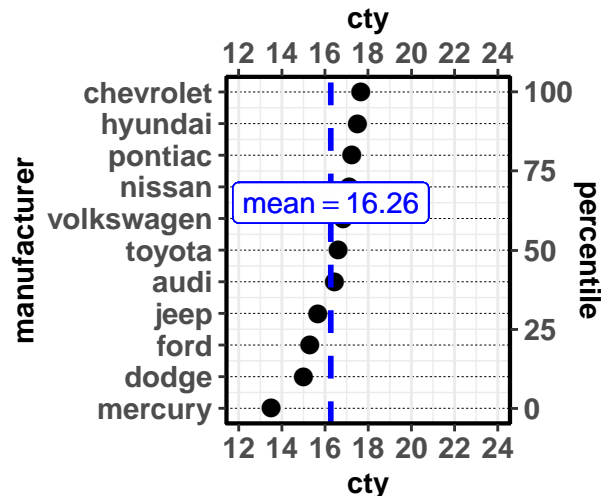
Adjustment (p-value): Holm

### cylinder count: 4

$t(8) = 7.82, p = < 0.001, g = 2.32, CI_{95\%} [1.25, 4.25]$   $t(10) = 1.99, p = 0.075, g = 0.55, CI_{95\%} [-0.06, 1.29]$

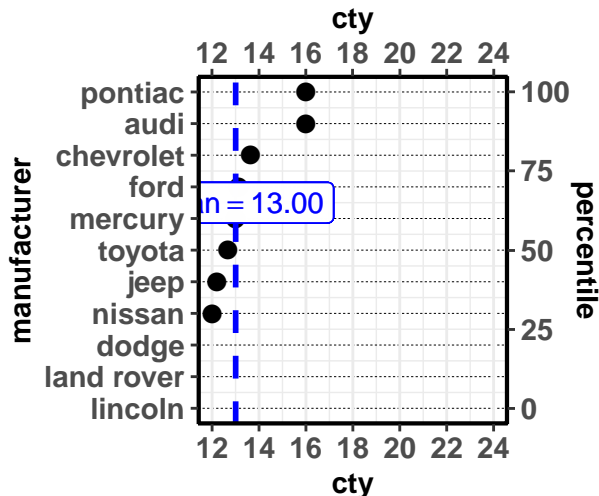


### cylinder count: 6



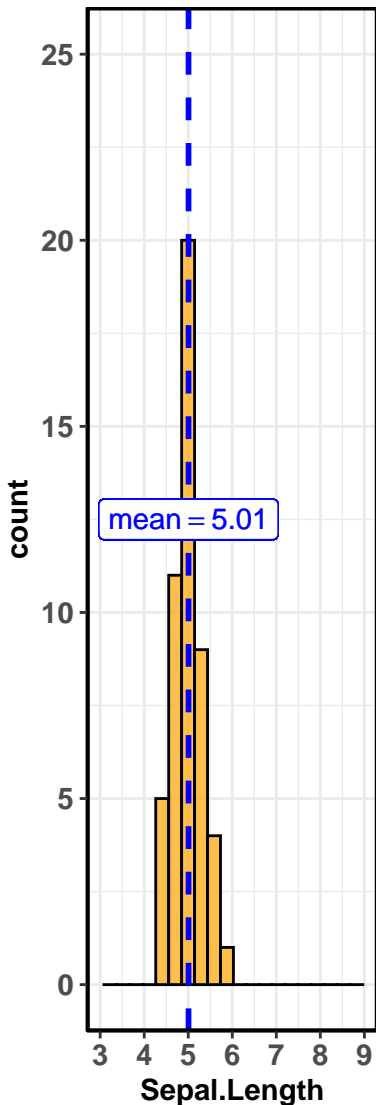
### cylinder count: 8

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



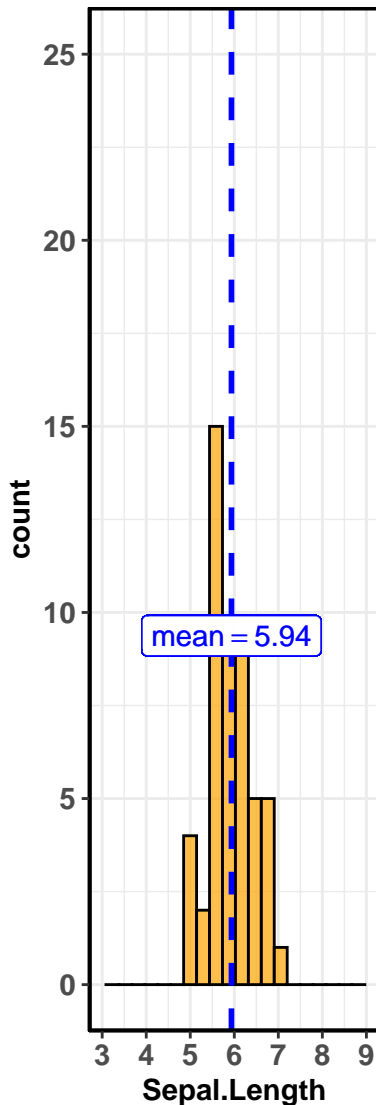
### Species: setosa

12,  $p = 0.905$ ,  $g = 0.02$ ,  $CI_{95\%} = [-0.49, 1.22]$



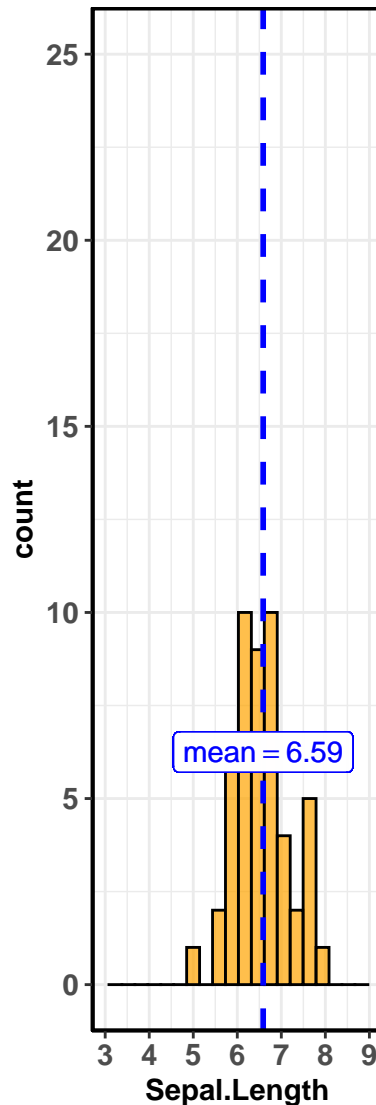
### Species: versicolor

12,  $p = < 0.001$ ,  $g = 1.78$ ,  $CI_{95\%} = [1.49, 1.99]$



### Species: virginica

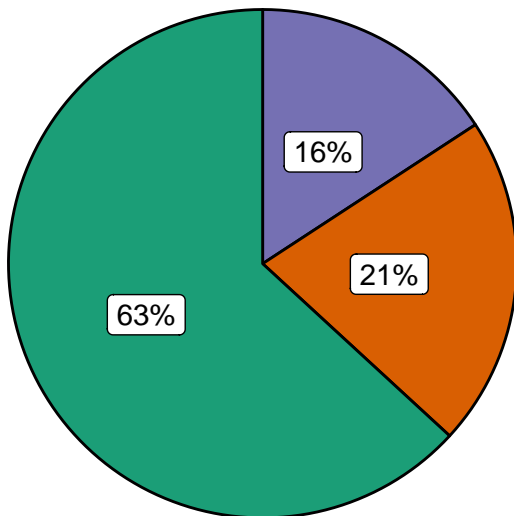
12,  $p = < 0.001$ ,  $g = 2.46$ ,  $CI_{95\%} = [1.99, 2.93]$



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

**am: 0**

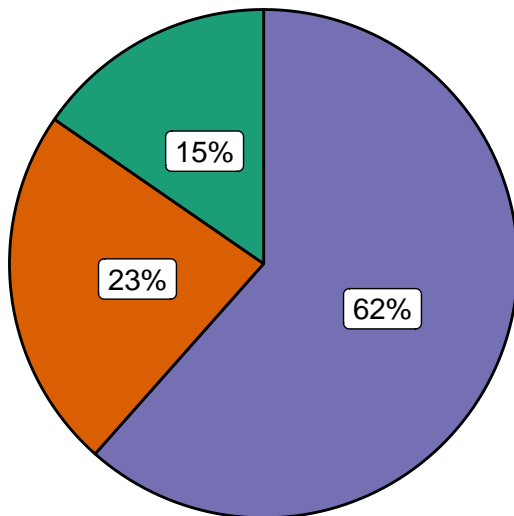
$\chi^2(2) = 7.68, p = 0.021, n = 19$



**cyl**  8  6  4

**am: 1**

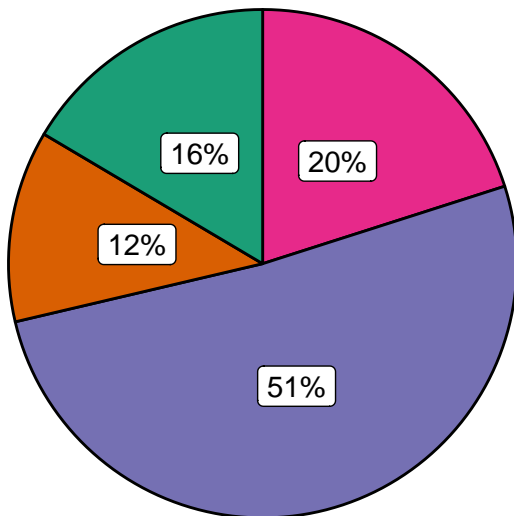
$\chi^2(2) = 4.77, p = 0.092, n = 13$



**cyl**  8  6  4

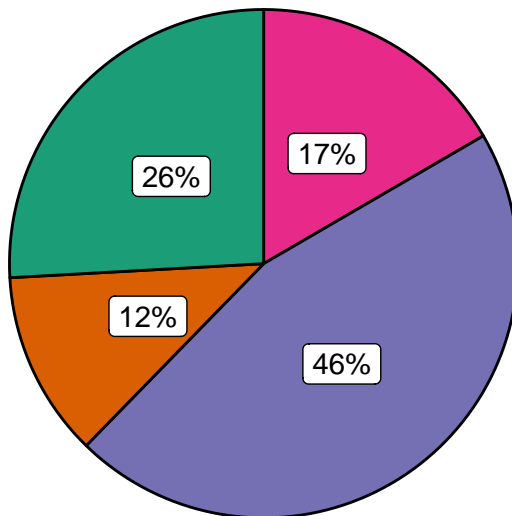
**Sex: Male**









$\chi^2(3) = 106.05, p = < 0.001, n = 279$



**Sex: Female**

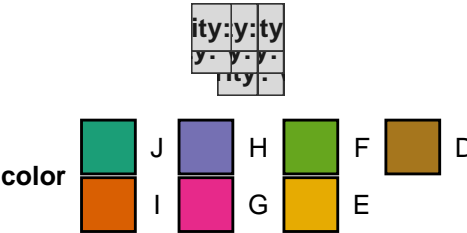
$\chi^2(3) = 84.23, p = < 0.001, n = 313$



**Hair**  Blond  Red  Brown  Black **Hair**  Blond  Red  Brown  Black

Quality: Fair

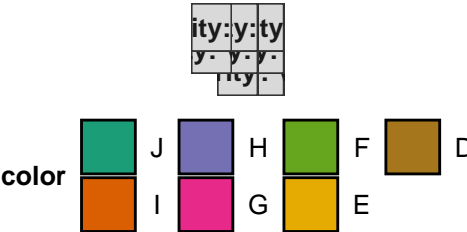
$\chi^2(42) = 55.71, p = 0.076, V_{\text{Cramer}} = 0.23, \text{Cl}_{95\%} [0.11, 0.21], n = 172$



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

Quality: Very Good

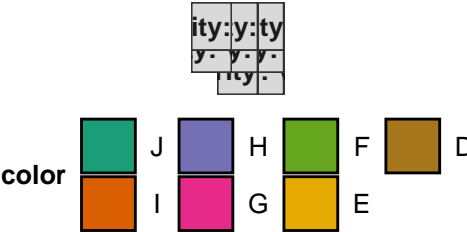
$\chi^2(42) = 64.05, p = 0.016, V_{\text{Cramer}} = 0.10, \text{Cl}_{95\%} [0.04, 0.08], n = 1187$



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

Quality: Ideal

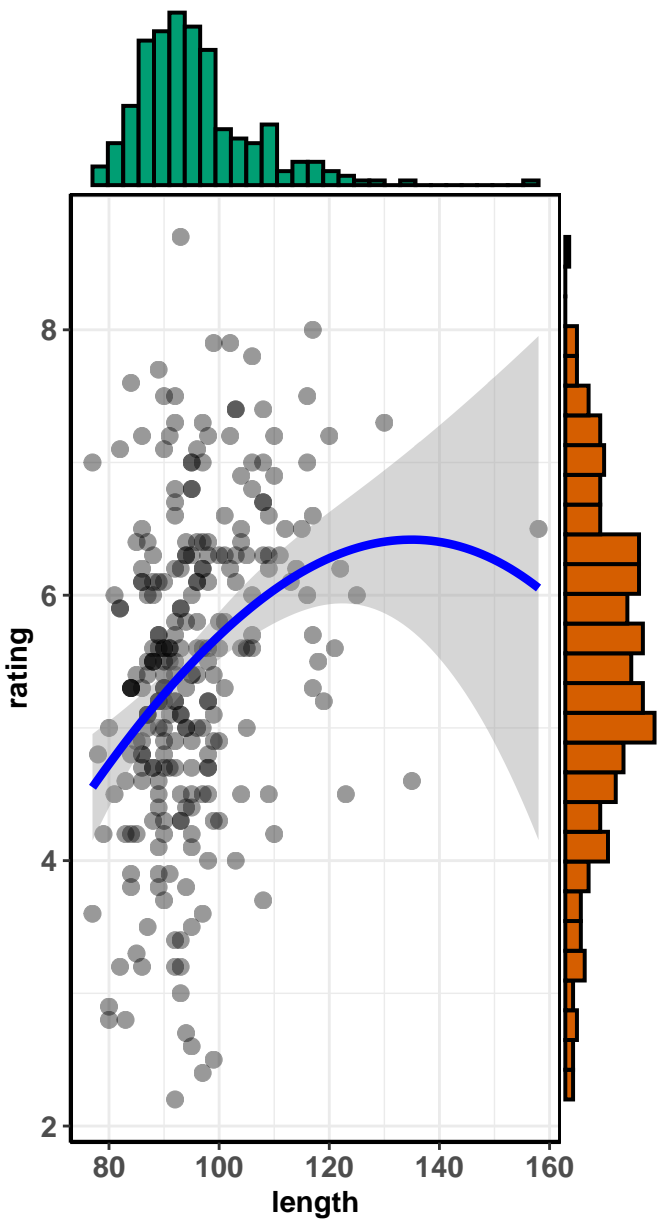
$\chi^2(42) = 153.32, p = < 0.001, V_{\text{Cramer}} = 0.11, \text{Cl}_{95\%} [0.07, 0.10], n = 2165$



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

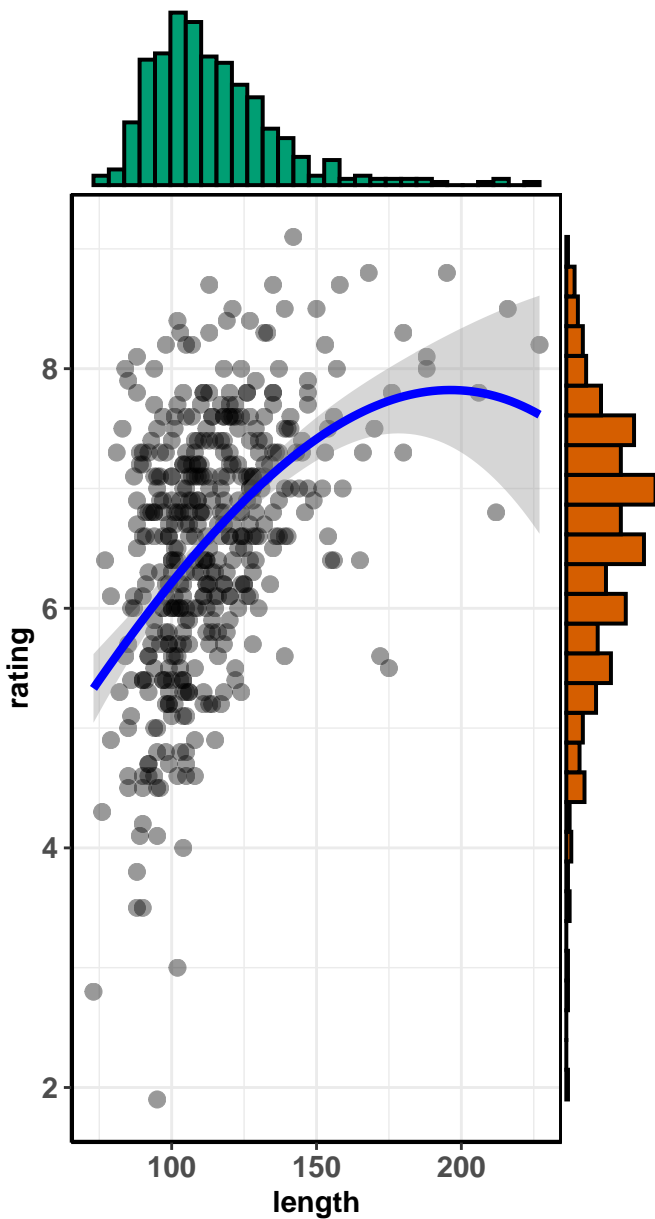
### genre: Comedy

$\rho = < 0.001$ ,  $r_{\text{Pearson}} = 0.31$ ,  $\text{CI}_{95\%} [0.19$



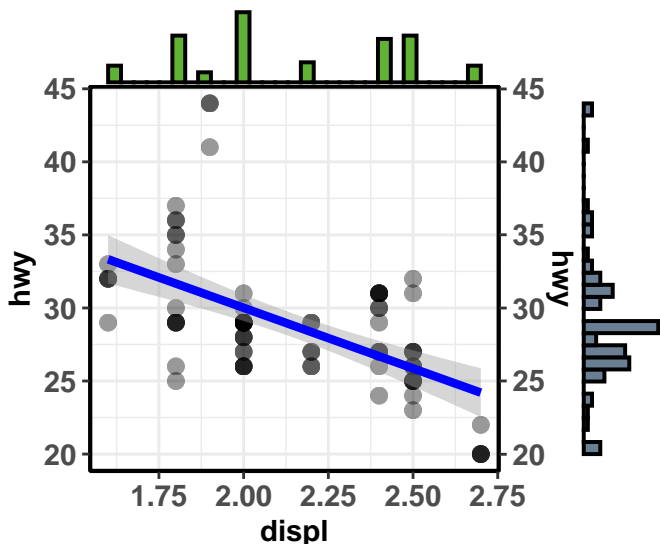
### genre: Drama

$\rho = < 0.001$ ,  $r_{\text{Pearson}} = 0.45$ ,  $\text{CI}_{95\%} [0.37$



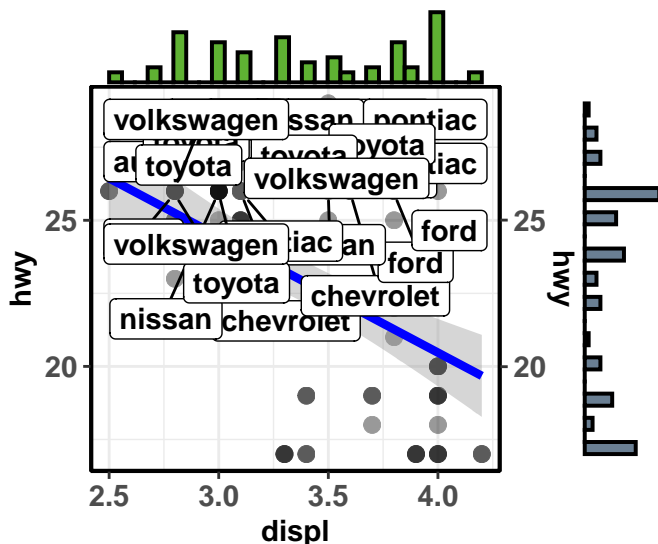
### Cylinder count: 4

$< 0.001$ ,  $\rho_{pb} = -0.61$ ,  $CI_{95\%} [-0.$



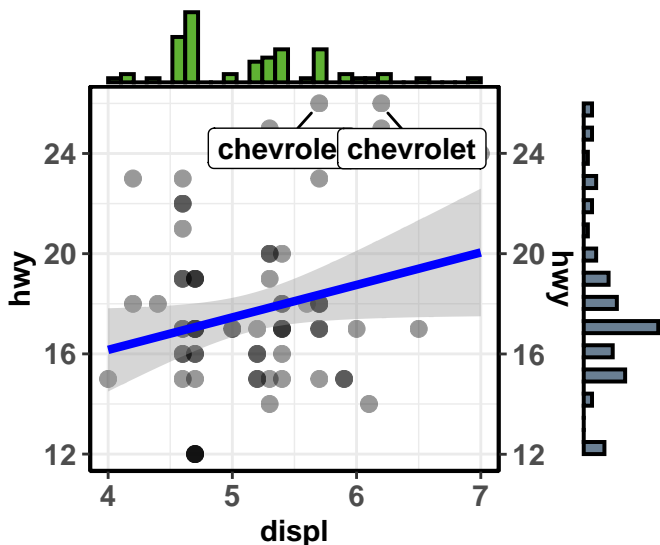
### Cylinder count: 6

$< 0.001$ ,  $\rho_{pb} = -0.50$ ,  $CI_{95\%} [-0.$



### Cylinder count: 8

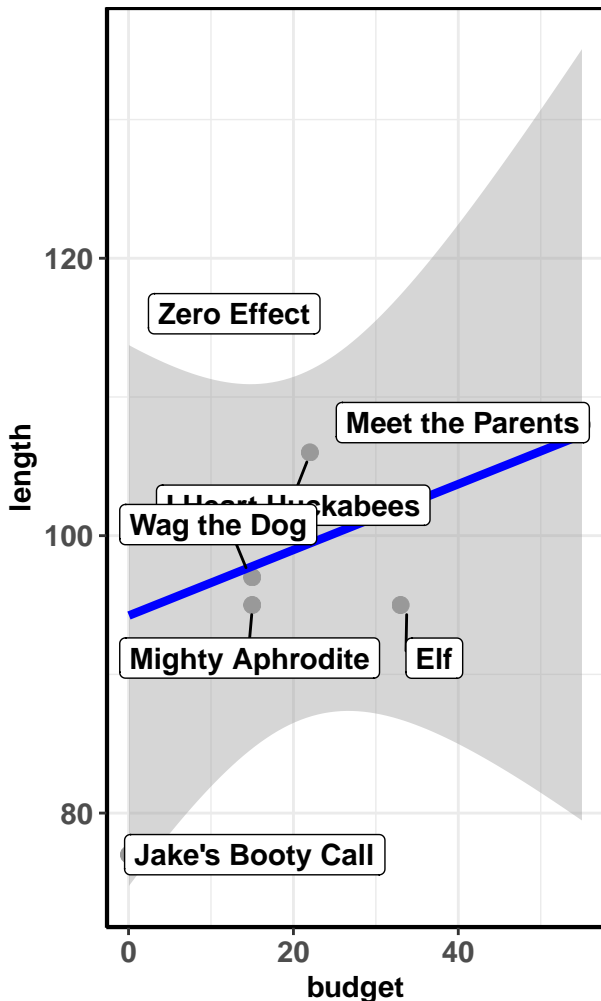
$= 0.216$ ,  $\rho_{pb} = 0.15$ ,  $CI_{95\%} [-0.1$





## Genre: Comedy

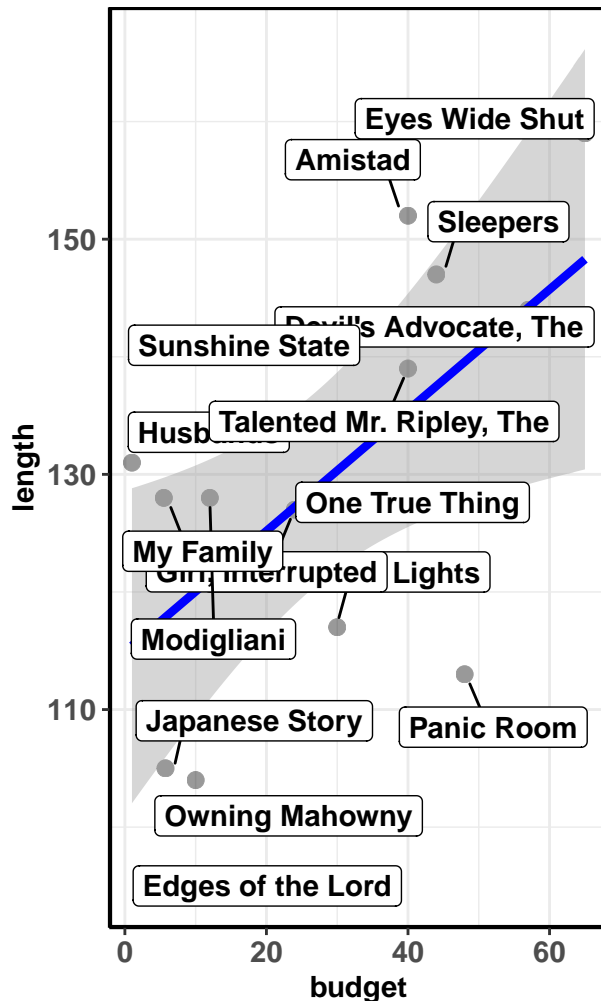
$t(14) = 0.84, p = 0.439, r_{\text{Pearson}} = 0.35, \text{CI}_{95\%} [-0.55, 0.14]$



In favor of null:  $\log_e(\text{BF}_{01}) = 0.39, r_{\text{Cauchy}} = 0.71$

## Genre: Drama

$t(14) = 2.67, p = 0.018, r_{\text{Pearson}} = 0.58, \text{CI}_{95\%} [0.12, 0.84]$

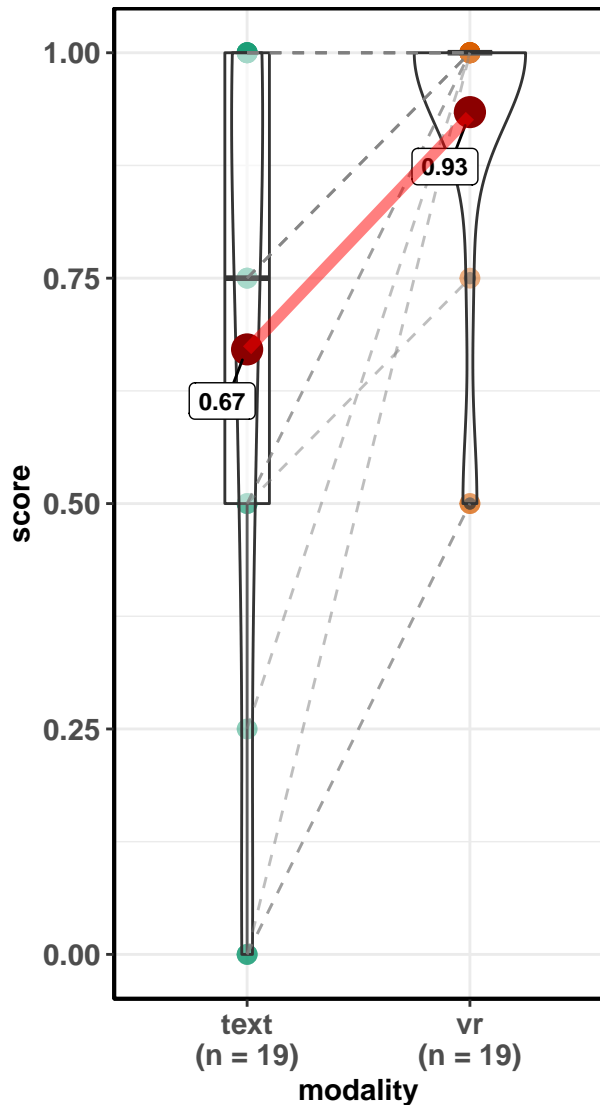


In favor of null:  $\log_e(\text{BF}_{01}) = -1.45, r_{\text{Cauchy}} = 0.71$

All movies have IMDB rating equal to 7.

order: 0

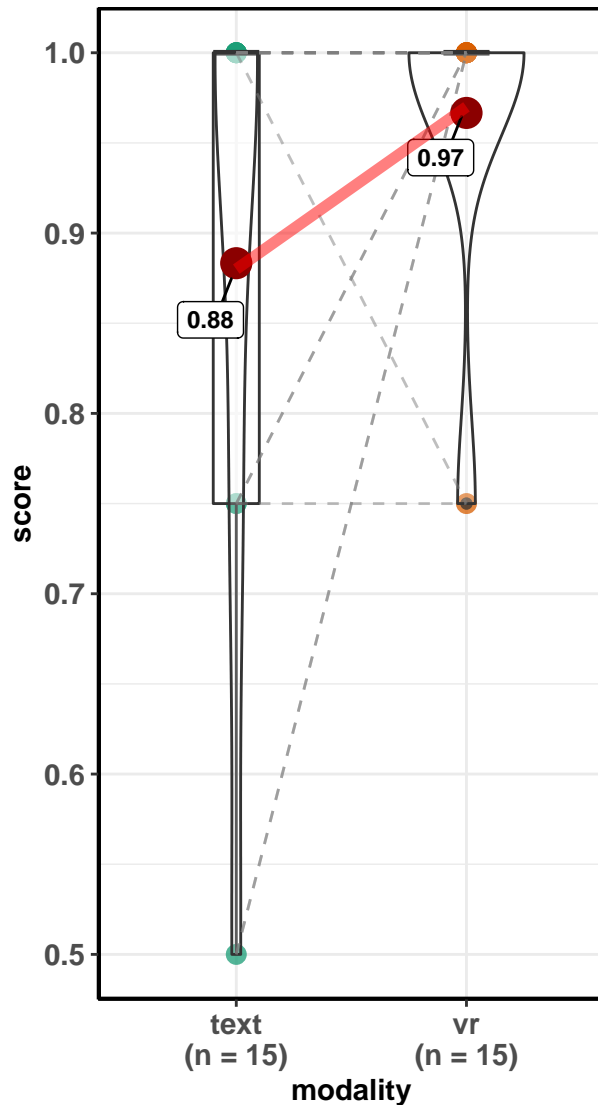
18) = -3.90,  $p = 0.001$ ,  $g = -0.85$ ,  $CI_{95\%} [-1.46, -0.14]$



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

order: 1

14) = -1.58,  $p = 0.136$ ,  $g = -0.38$ ,  $CI_{95\%} [-0.96, 0.13]$



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

