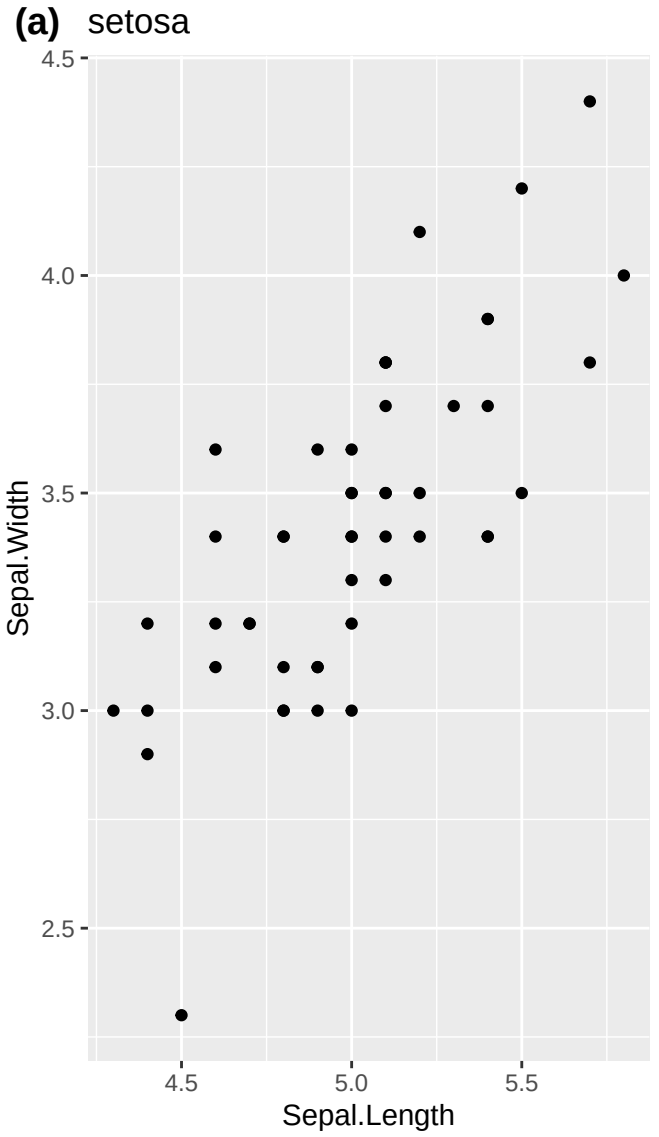
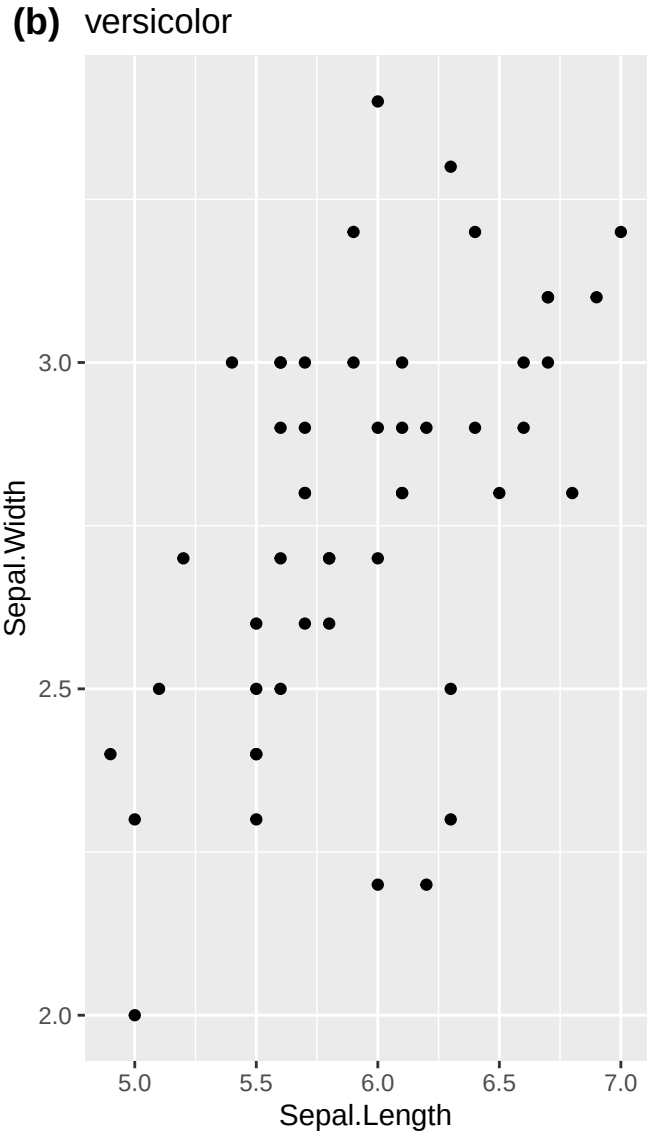
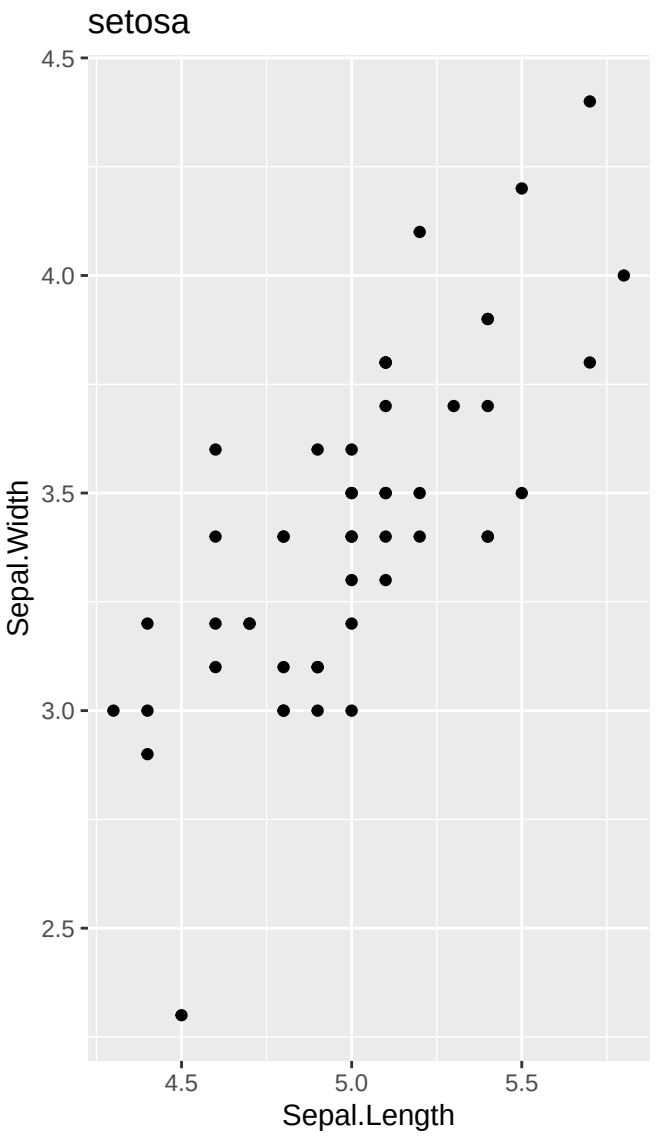
# Dataset: Iris Flower dataset

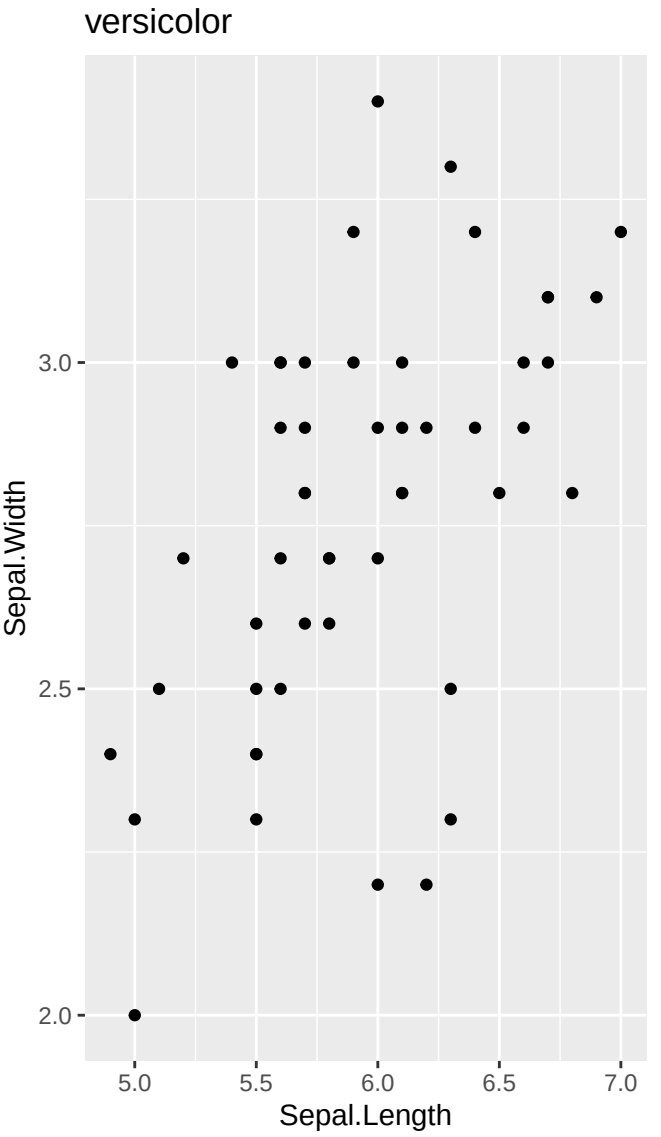


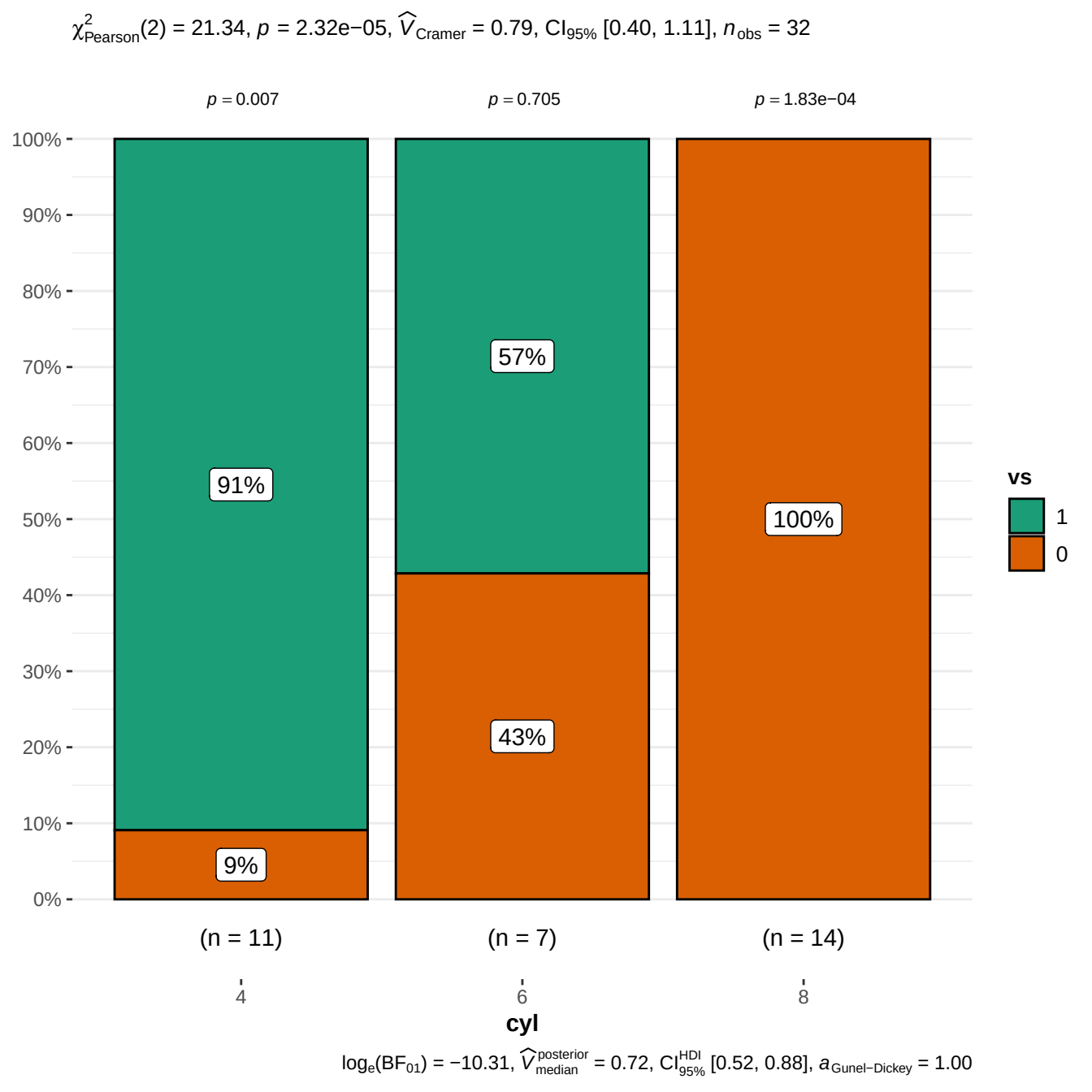

Note: Only two species of flower are displayed

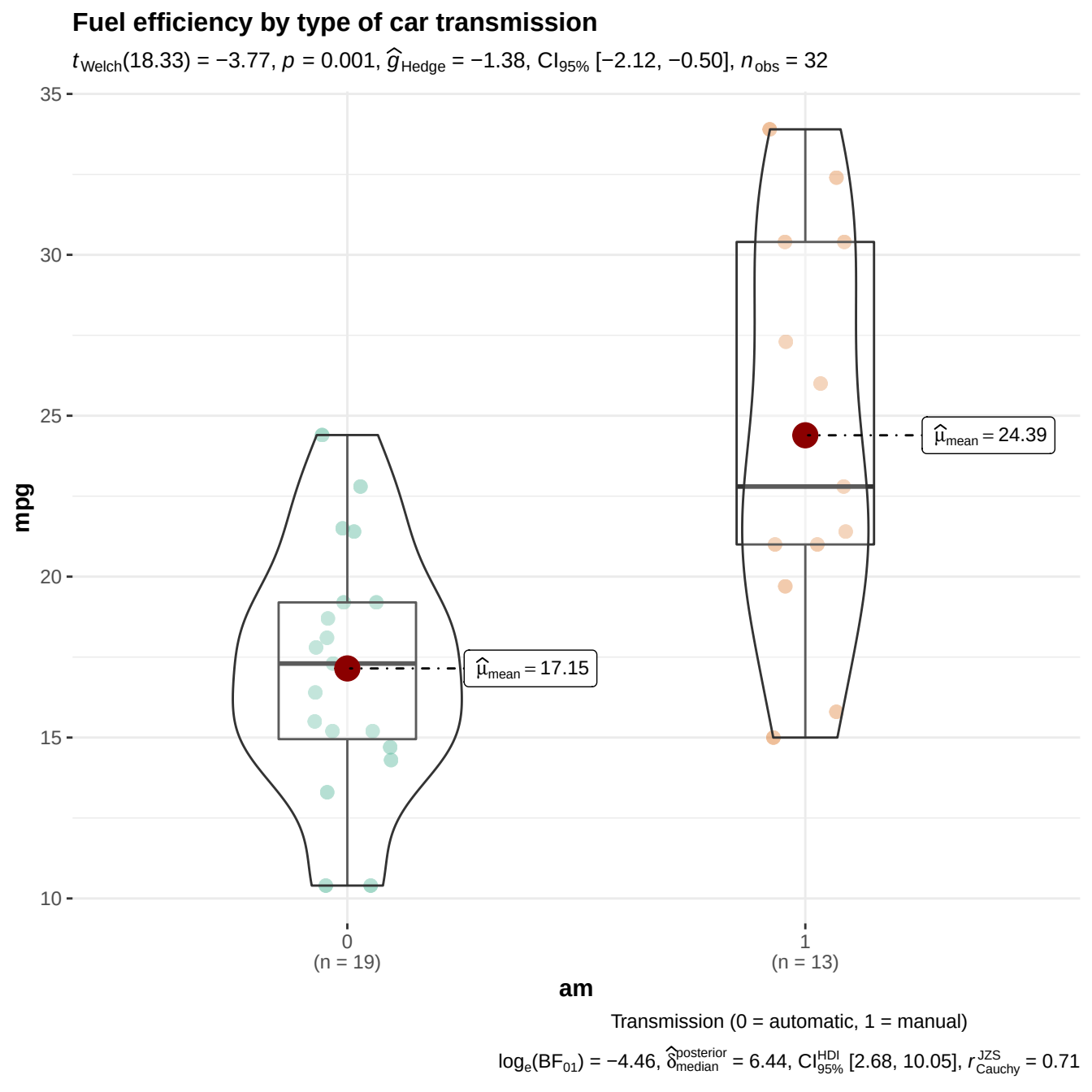
Dataset: Iris Flower dataset

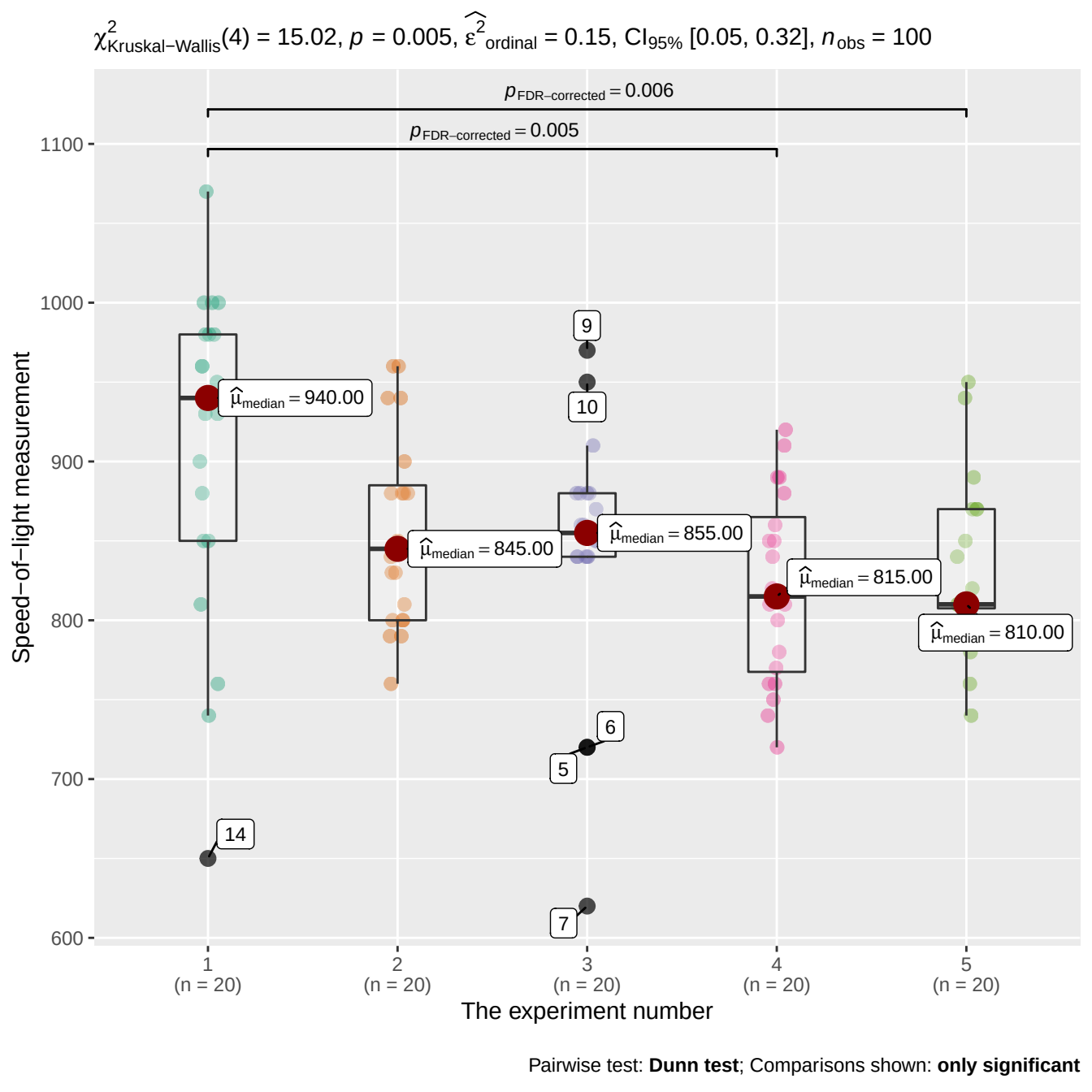


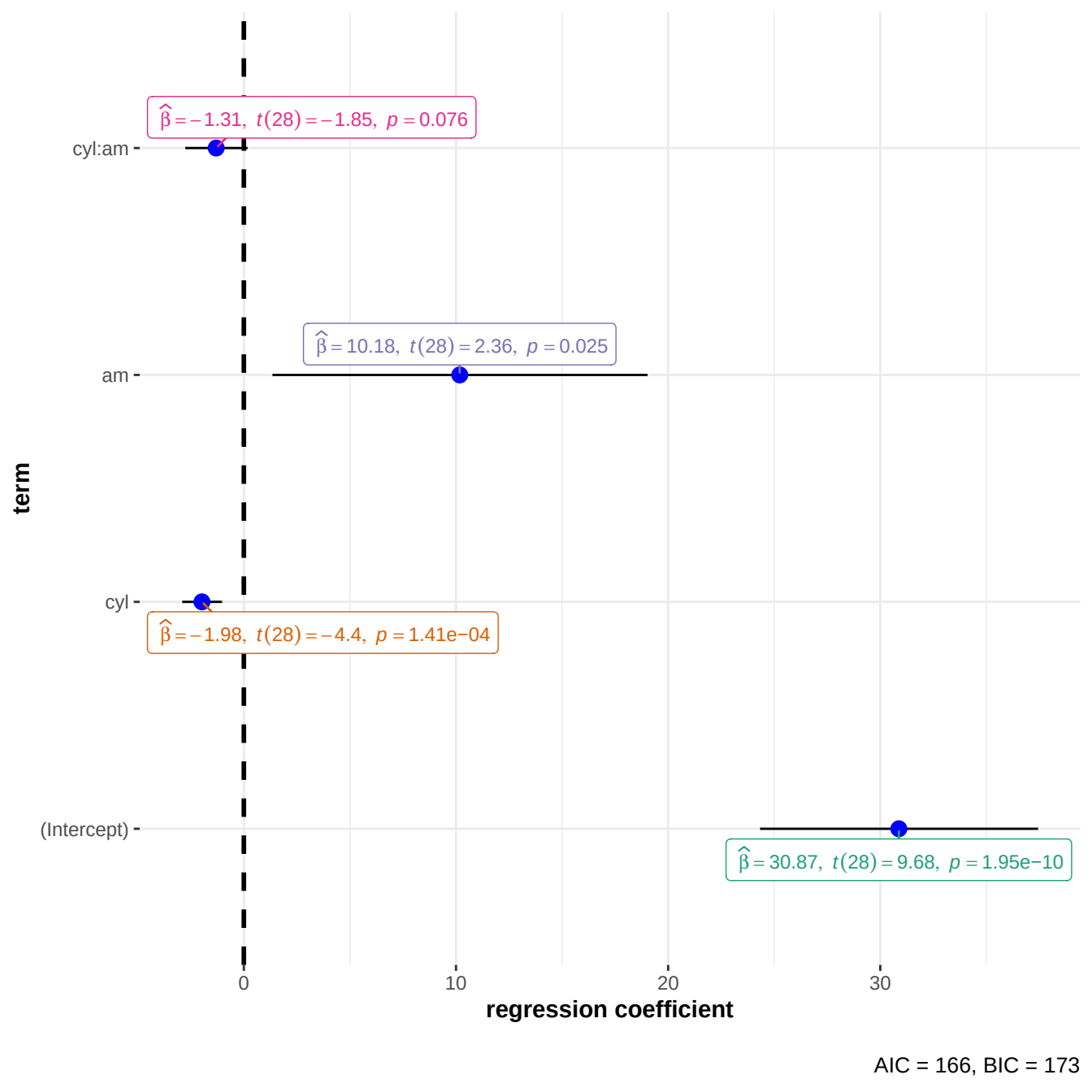




Note: Only two species of flower are displayed

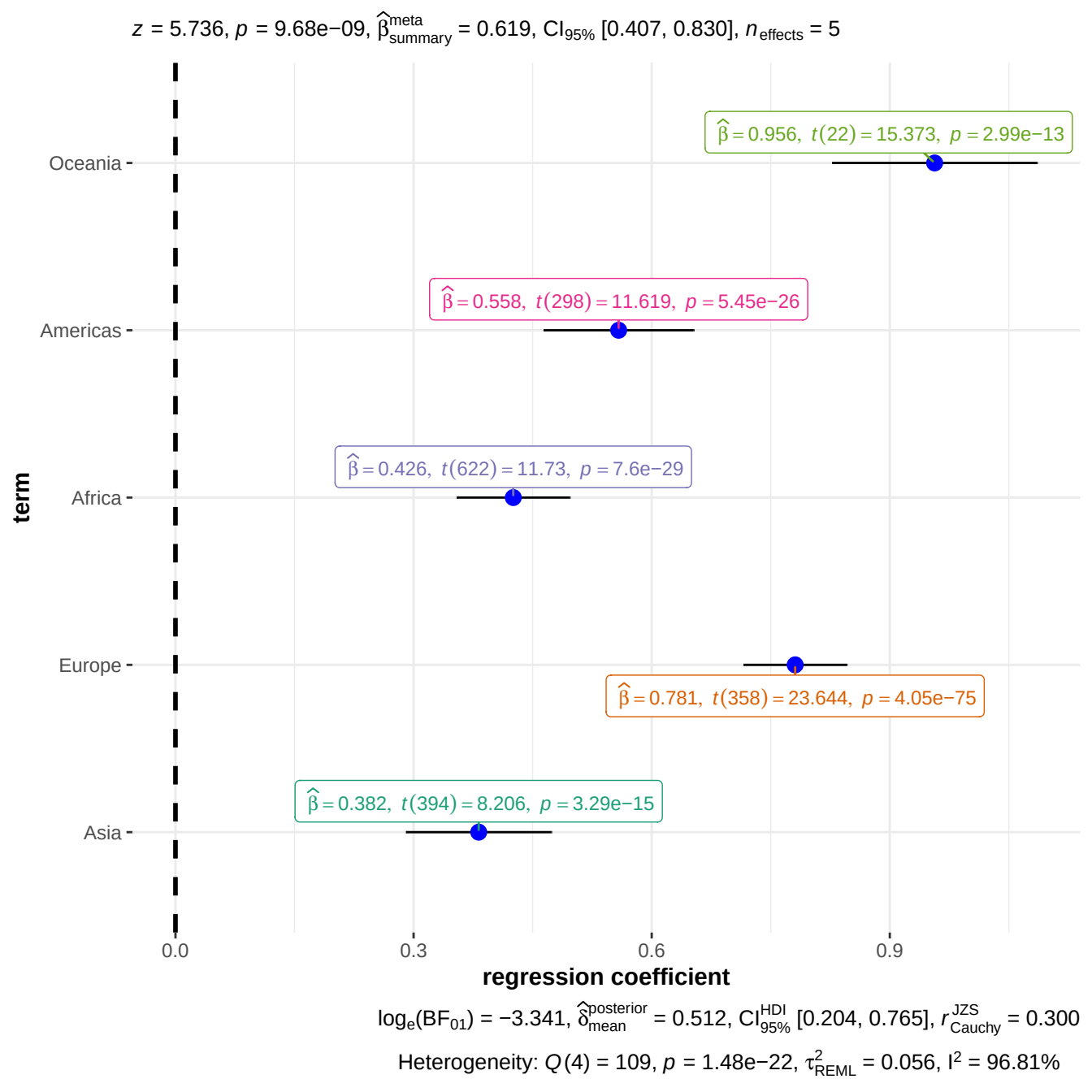

$\chi^2_{Pearson}(2) = 21.34$, $p = 2.32e{-}05$, $\widehat{V}_{Cramer} = 0.79$, $CI_{95\%}$ [0.40, 1.11], $n_{obs} = 32$
$p = 0.007$
$p = 0.705$
$p = 1.83e{-}04$
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
91%
9%
57%
43%
100%
vs
1
0
(n = 11)
(n = 7)
(n = 14)
4
6
8
cyl
$\log_e(BF_{01}) = -10.31$, $\widehat{V}^{posterior}_{median} = 0.72$, $CI^{HDI}_{95\%}$ [0.52, 0.88], $a_{Gunel-Dickey} = 1.00$

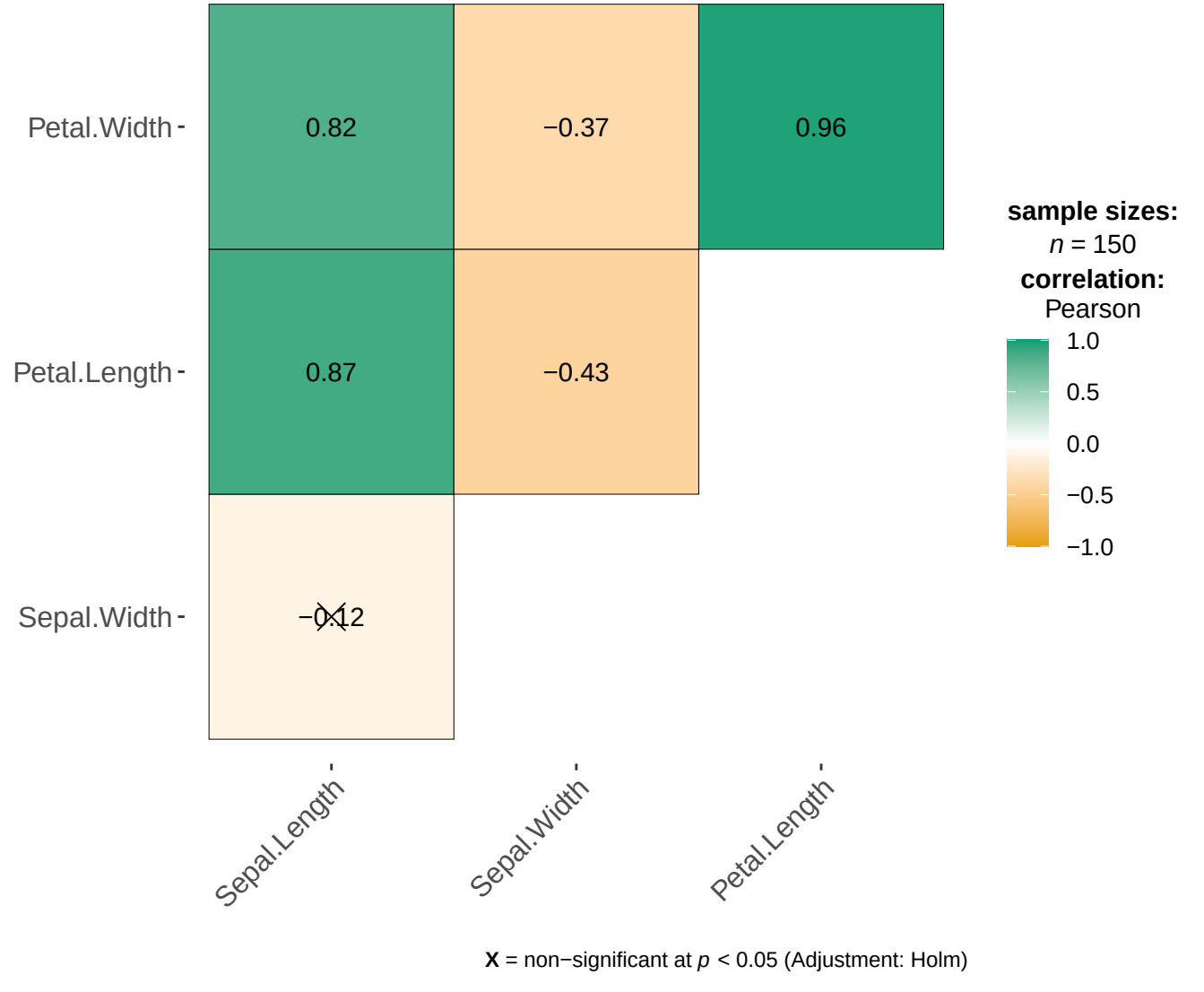

Fuel efficiency by type of car transmission
$t_{Welch}(18.33) = -3.77$, $p = 0.001$, $\hat{g}_{Hedge} = -1.38$, $CI_{95\%}$ [−2.12, −0.50], $n_{obs} = 32$
mpg
35
30
25
20
15
10
$\hat{\mu}_{mean} = 17.15$
$\hat{\mu}_{mean} = 24.39$
0
(n = 19)
1
(n = 13)
am
Transmission (0 = automatic, 1 = manual)
$\log_e(BF_{01}) = -4.46$, $\hat{\delta}^{posterior}_{median} = 6.44$, $CI^{HDI}_{95\%}$ [2.68, 10.05], $r^{JZS}_{Cauchy} = 0.71$

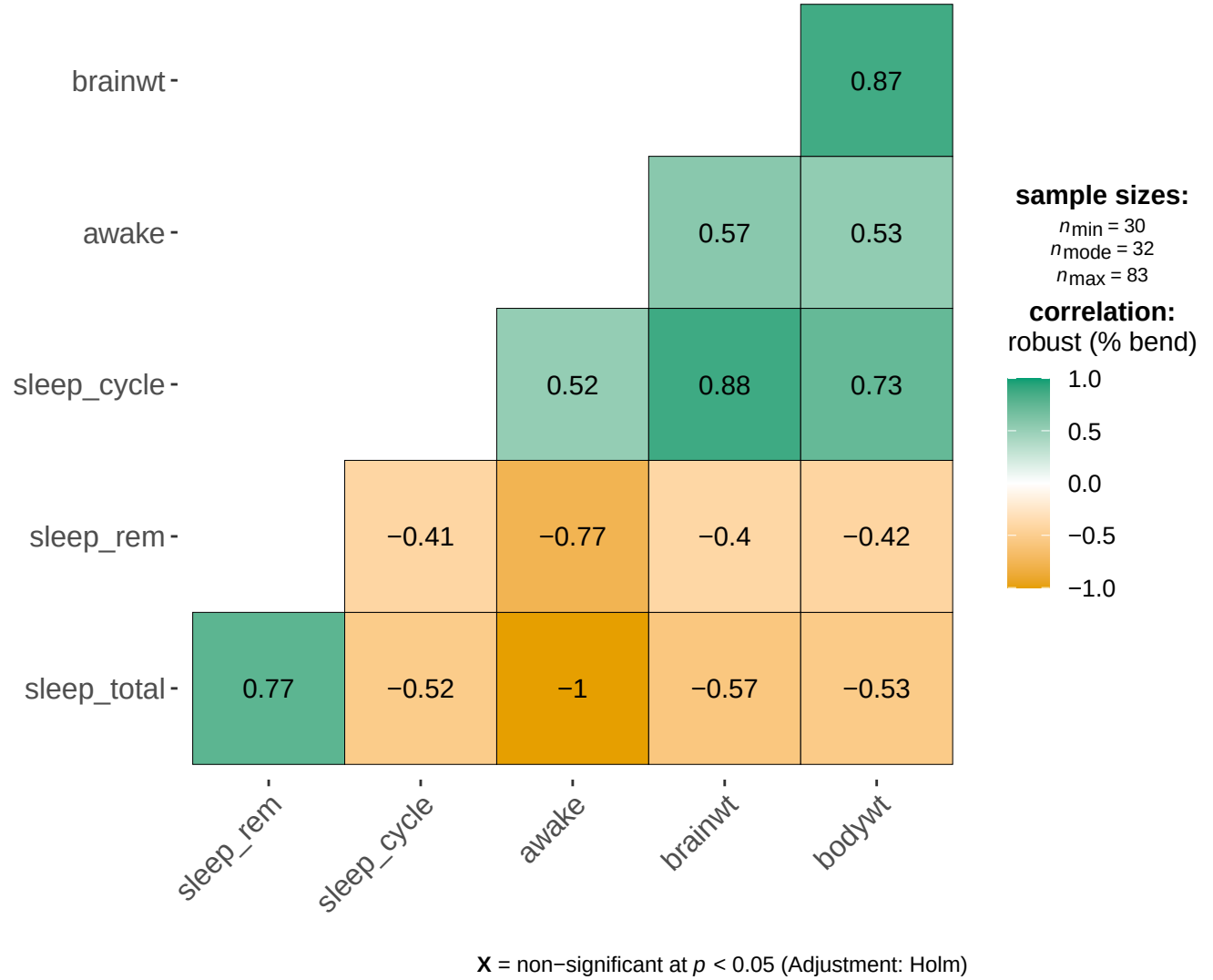

$\chi^2_{Kruskal-Wallis}(4) = 15.02$, $p = 0.005$, $\widehat{\varepsilon^2}_{ordinal} = 0.15$, $CI_{95\%}$ [0.05, 0.32], $n_{obs} = 100$
$p_{FDR-corrected} = 0.006$
$p_{FDR-corrected} = 0.005$
$\hat{\mu}_{median} = 940.00$
$\hat{\mu}_{median} = 845.00$
$\hat{\mu}_{median} = 855.00$
$\hat{\mu}_{median} = 815.00$
$\hat{\mu}_{median} = 810.00$
9
10
6
5
14
7
1100
1000
900
800
700
600
Speed−of−light measurement
1 (n = 20)
2 (n = 20)
3 (n = 20)
4 (n = 20)
5 (n = 20)
The experiment number
Pairwise test: **Dunn test**; Comparisons shown: **only significant**



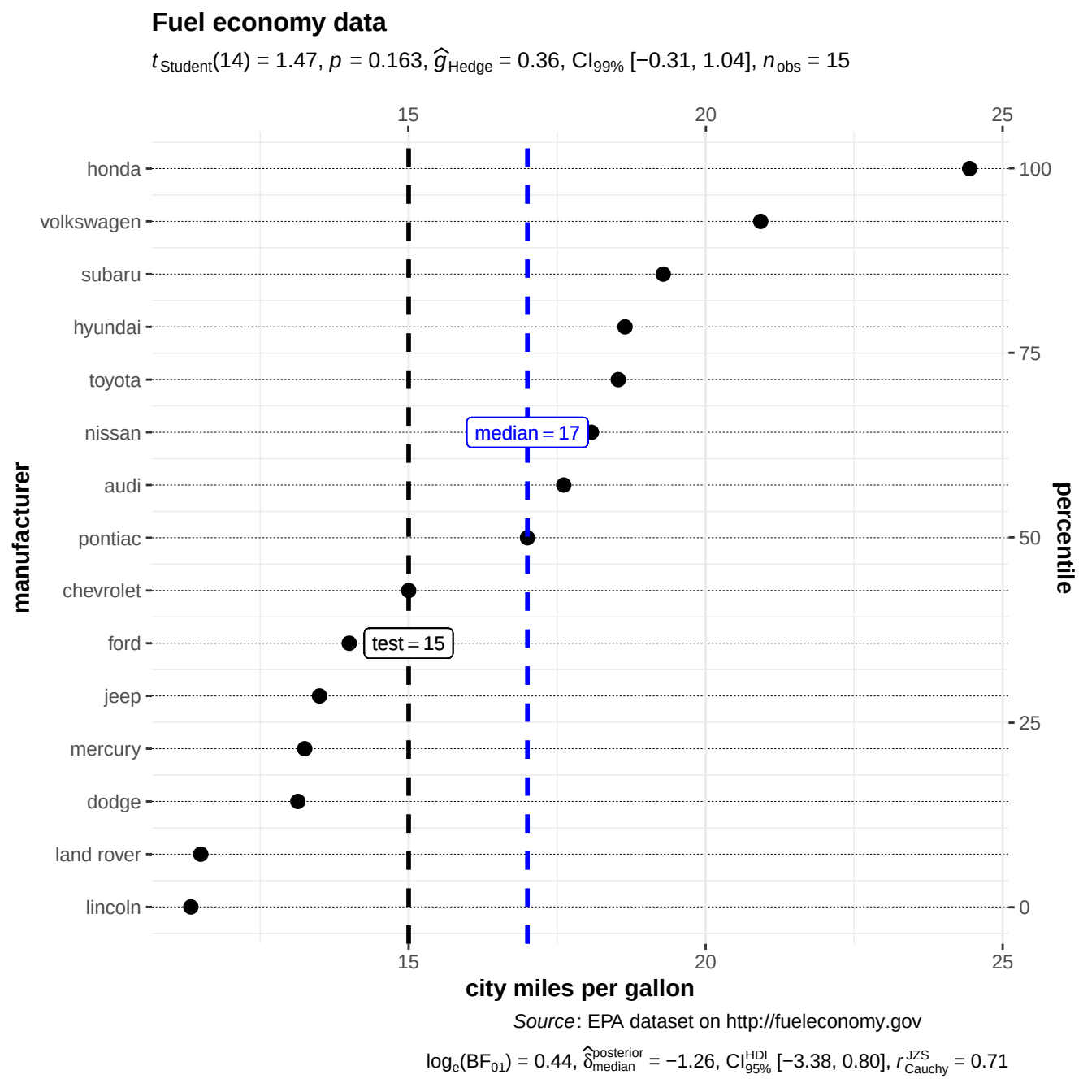

AIC = 166, BIC = 173

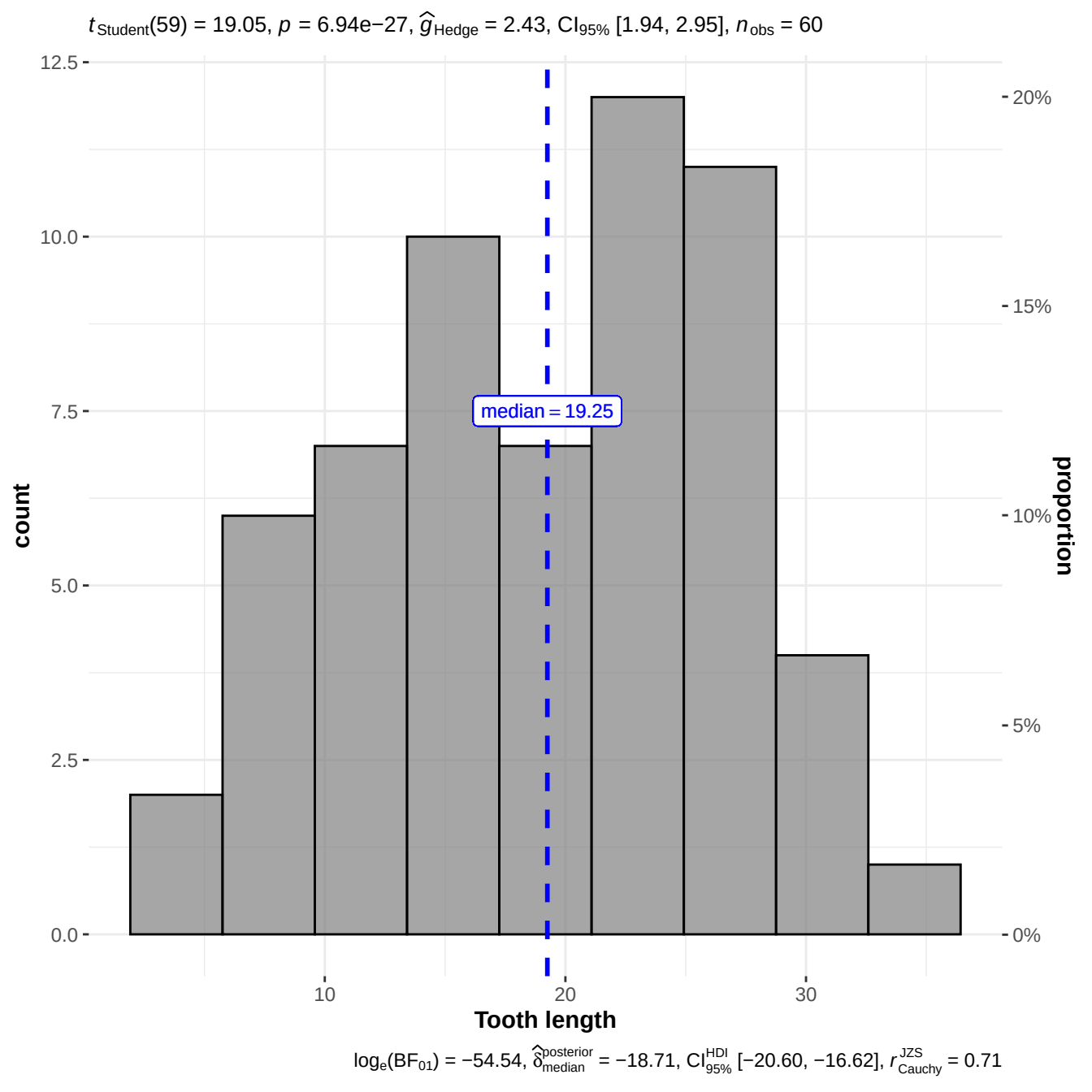

$z$ = 5.736, $p$ = 9.68e−09, $\hat{\beta}^{meta}_{summary}$ = 0.619, $CI_{95\%}$ [0.407, 0.830], $n_{effects}$ = 5
$\hat{\beta} = 0.956,\ t(22) = 15.373,\ p = 2.99e{-}13$
$\hat{\beta} = 0.558,\ t(298) = 11.619,\ p = 5.45e{-}26$
$\hat{\beta} = 0.426,\ t(622) = 11.73,\ p = 7.6e{-}29$
$\hat{\beta} = 0.781,\ t(358) = 23.644,\ p = 4.05e{-}75$
$\hat{\beta} = 0.382,\ t(394) = 8.206,\ p = 3.29e{-}15$
Oceania
Americas
Africa
Europe
Asia
term
0.0
0.3
0.6
0.9
regression coefficient
$\log_e(BF_{01})$ = −3.341, $\hat{\delta}^{posterior}_{mean}$ = 0.512, $CI^{HDI}_{95\%}$ [0.204, 0.765], $r^{JZS}_{Cauchy}$ = 0.300
Heterogeneity: $Q(4)$ = 109, $p$ = 1.48e−22, $\tau^2_{REML}$ = 0.056, $I^2$ = 96.81%

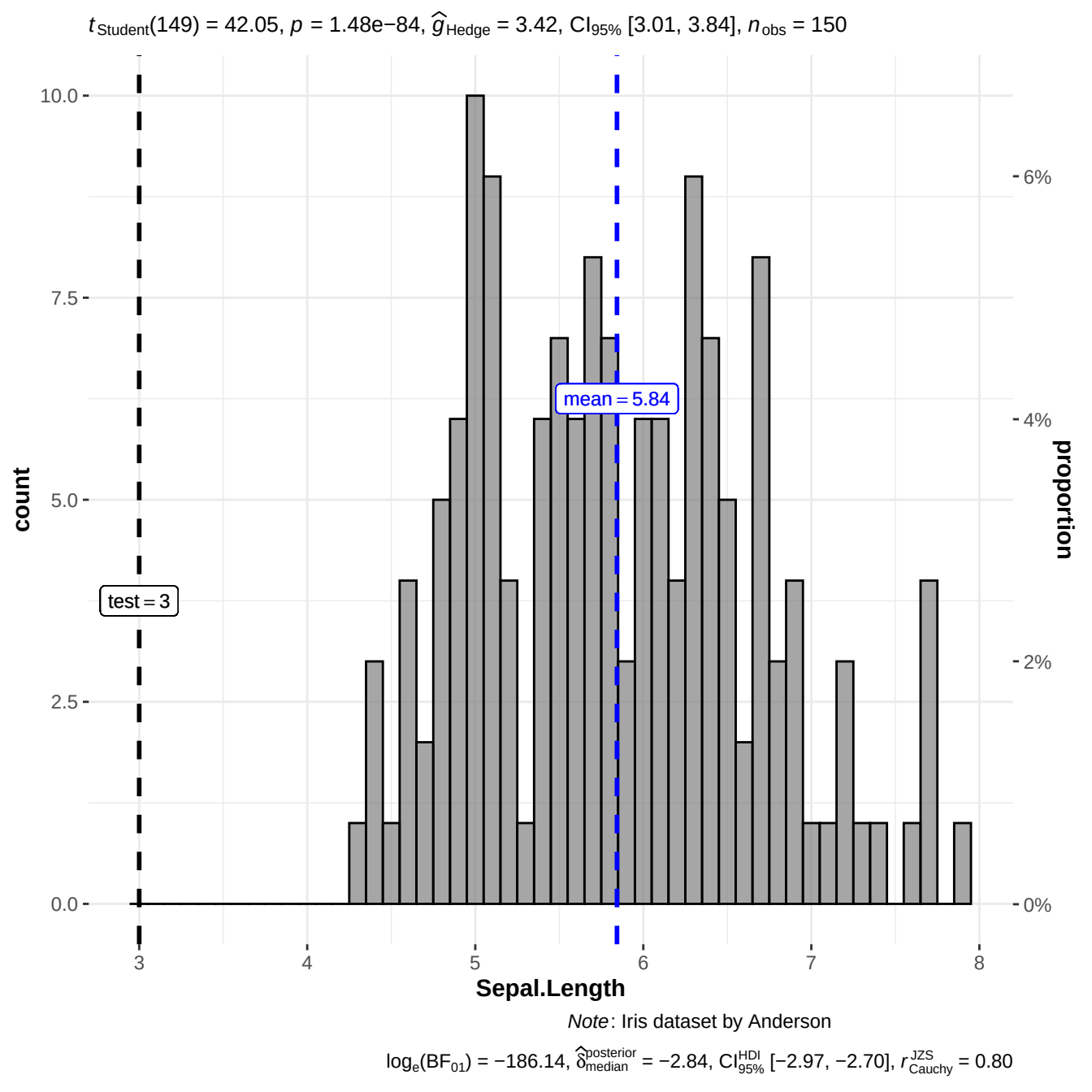

Petal.Width
Petal.Length
Sepal.Width
0.82
−0.37
0.96
0.87
−0.43
−0.12
Sepal.Length
Sepal.Width
Petal.Length
sample sizes:
n = 150
correlation:
Pearson
1.0
0.5
0.0
−0.5
−1.0
X = non−significant at p < 0.05 (Adjustment: Holm)



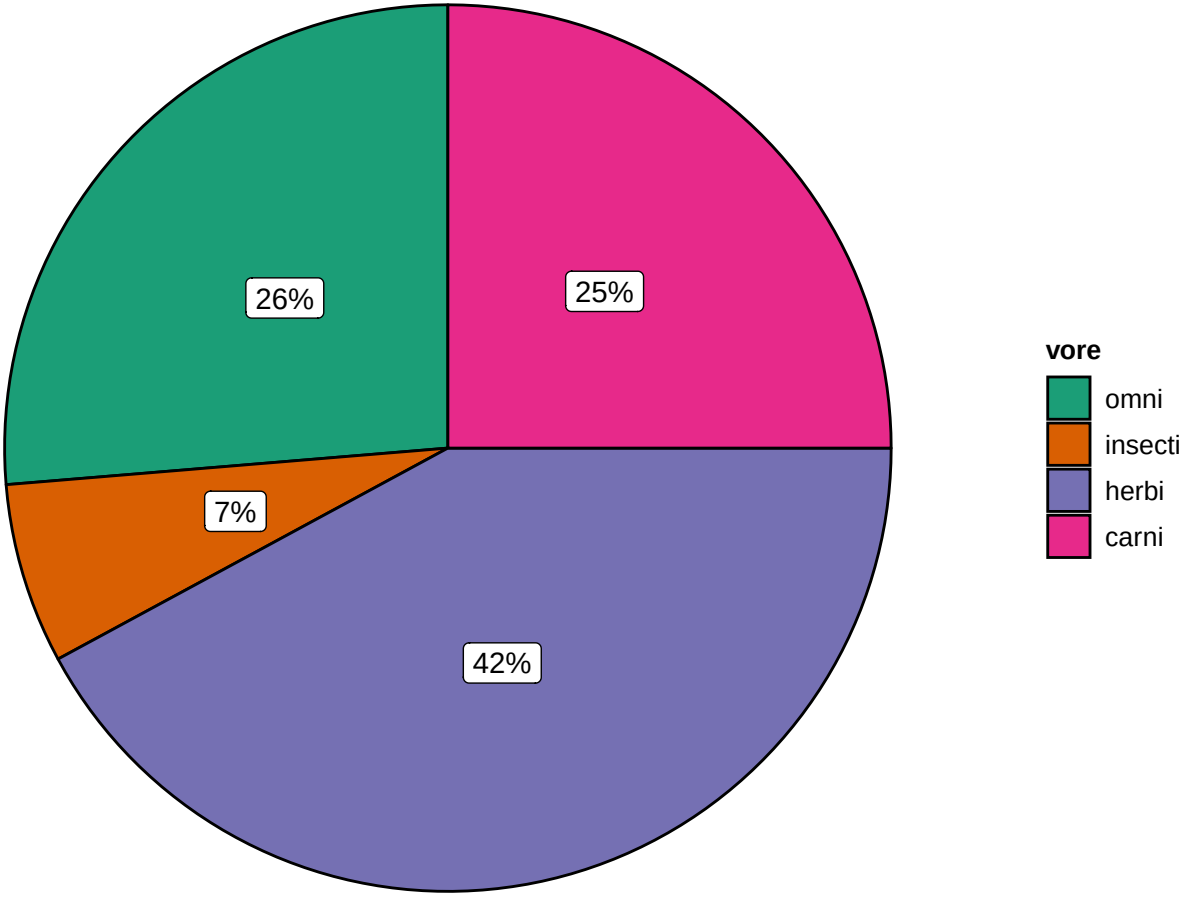

**X** = non−significant at $p < 0.05$ (Adjustment: Holm)


Fuel economy data
$t_{Student}(14) = 1.47$, $p = 0.163$, $\widehat{g}_{Hedge} = 0.36$, $CI_{99\%}$ [−0.31, 1.04], $n_{obs} = 15$
15
20
25
honda
volkswagen
subaru
hyundai
toyota
nissan
audi
pontiac
chevrolet
ford
jeep
mercury
dodge
land rover
lincoln
median = 17
test = 15
100
75
50
25
0
manufacturer
percentile
city miles per gallon
Source: EPA dataset on http://fueleconomy.gov
$\log_e(BF_{01}) = 0.44$, $\widehat{\delta}^{posterior}_{median} = -1.26$, $CI^{HDI}_{95\%}$ [−3.38, 0.80], $r^{JZS}_{Cauchy} = 0.71$

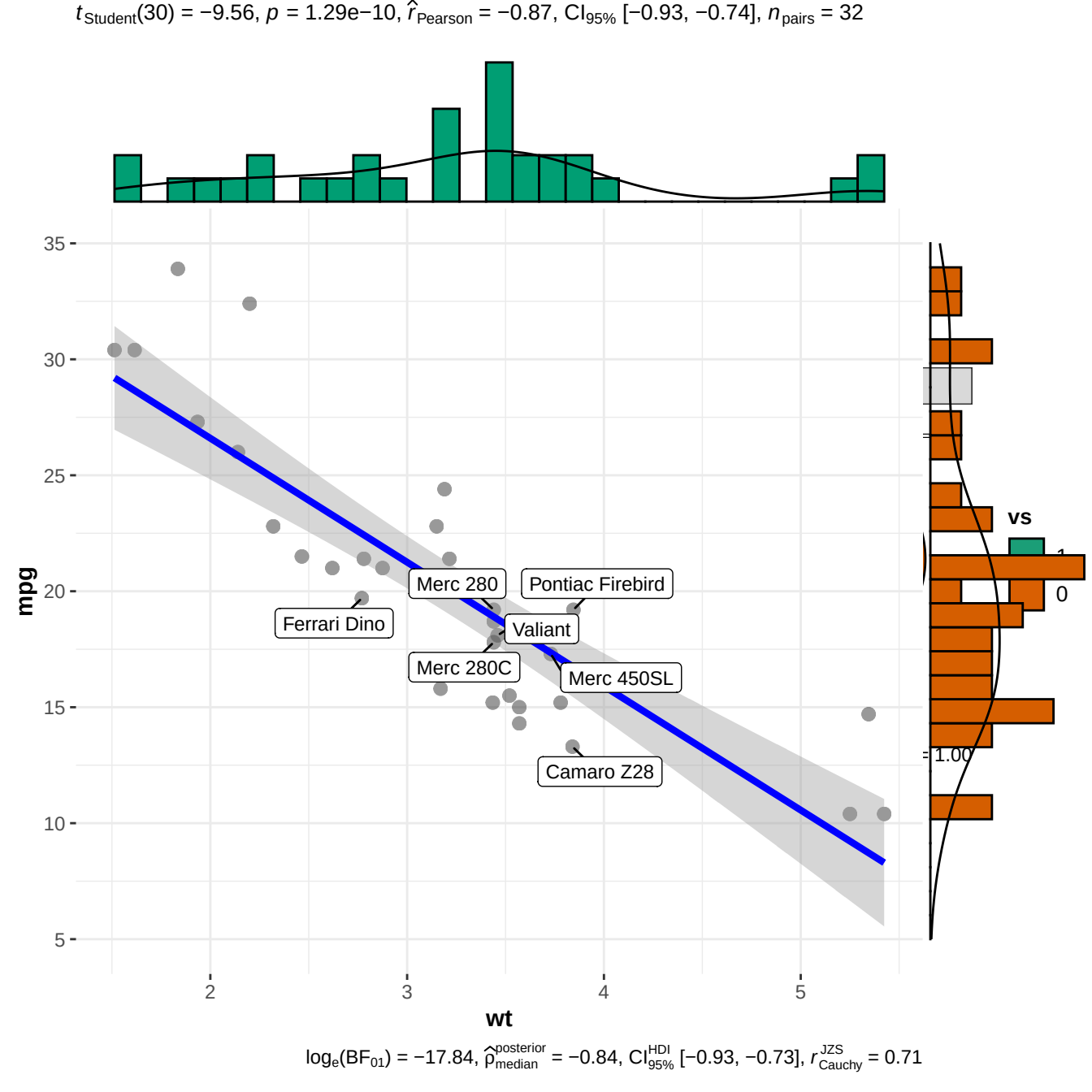

$t_{Student}(59) = 19.05$, $p = 6.94e{-}27$, $\widehat{g}_{Hedge} = 2.43$, $CI_{95\%}$ [1.94, 2.95], $n_{obs} = 60$
median = 19.25
count
proportion
Tooth length
12.5
10.0
7.5
5.0
2.5
0.0
20%
15%
10%
5%
0%
10
20
30
$\log_e(BF_{01}) = -54.54$, $\widehat{\delta}^{posterior}_{median} = -18.71$, $CI^{HDI}_{95\%}$ [−20.60, −16.62], $r^{JZS}_{Cauchy} = 0.71$

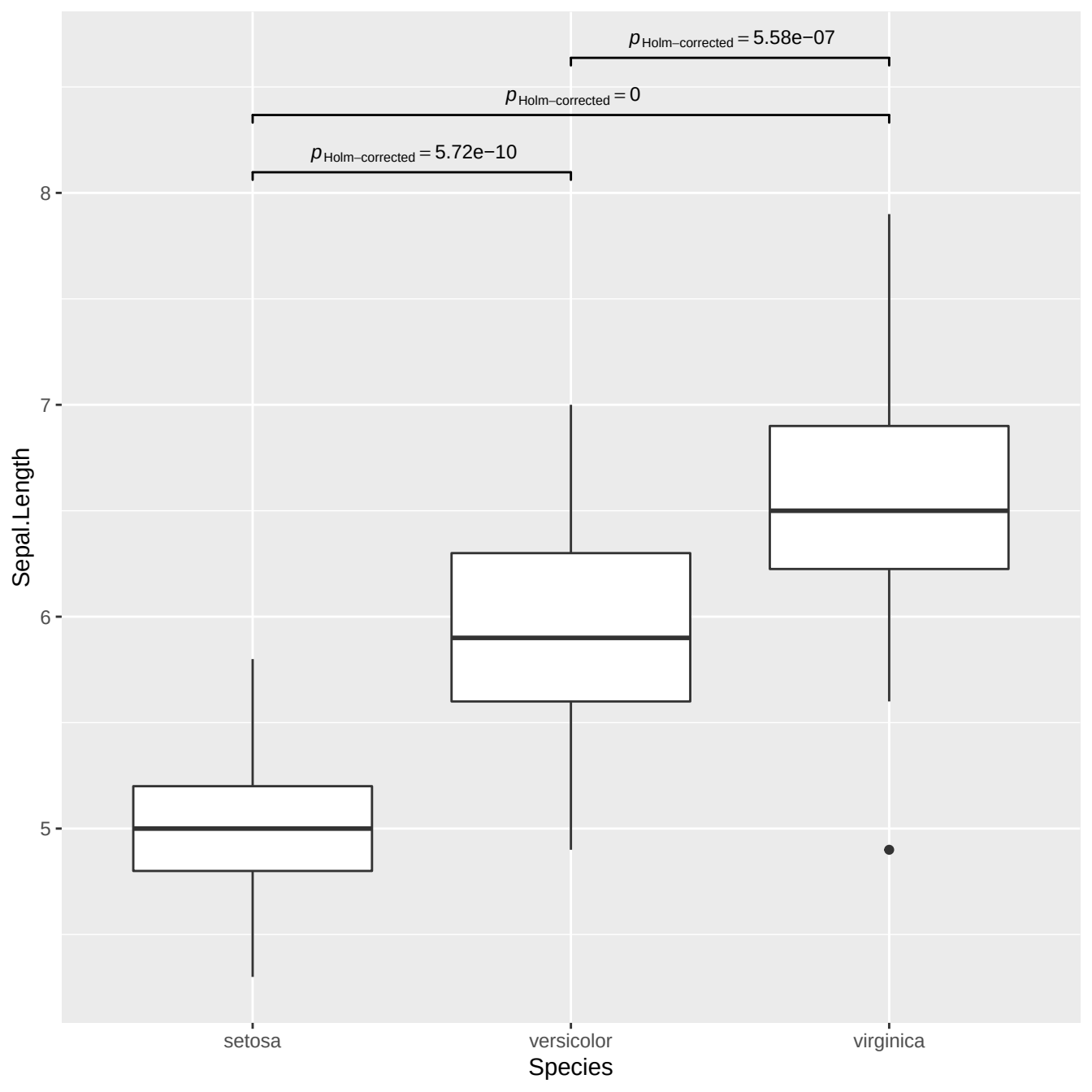

$t_{Student}(149) = 42.05$, $p = 1.48e{-}84$, $\widehat{g}_{Hedge} = 3.42$, $CI_{95\%}$ [3.01, 3.84], $n_{obs} = 150$
10.0
7.5
5.0
2.5
0.0
count
6%
4%
2%
0%
proportion
mean = 5.84
test = 3
3
4
5
6
7
8
Sepal.Length
*Note*: Iris dataset by Anderson
$\log_e(BF_{01}) = -186.14$, $\widehat{\delta}^{posterior}_{median} = -2.84$, $CI^{HDI}_{95\%}$ [−2.97, −2.70], $r^{JZS}_{Cauchy} = 0.80$

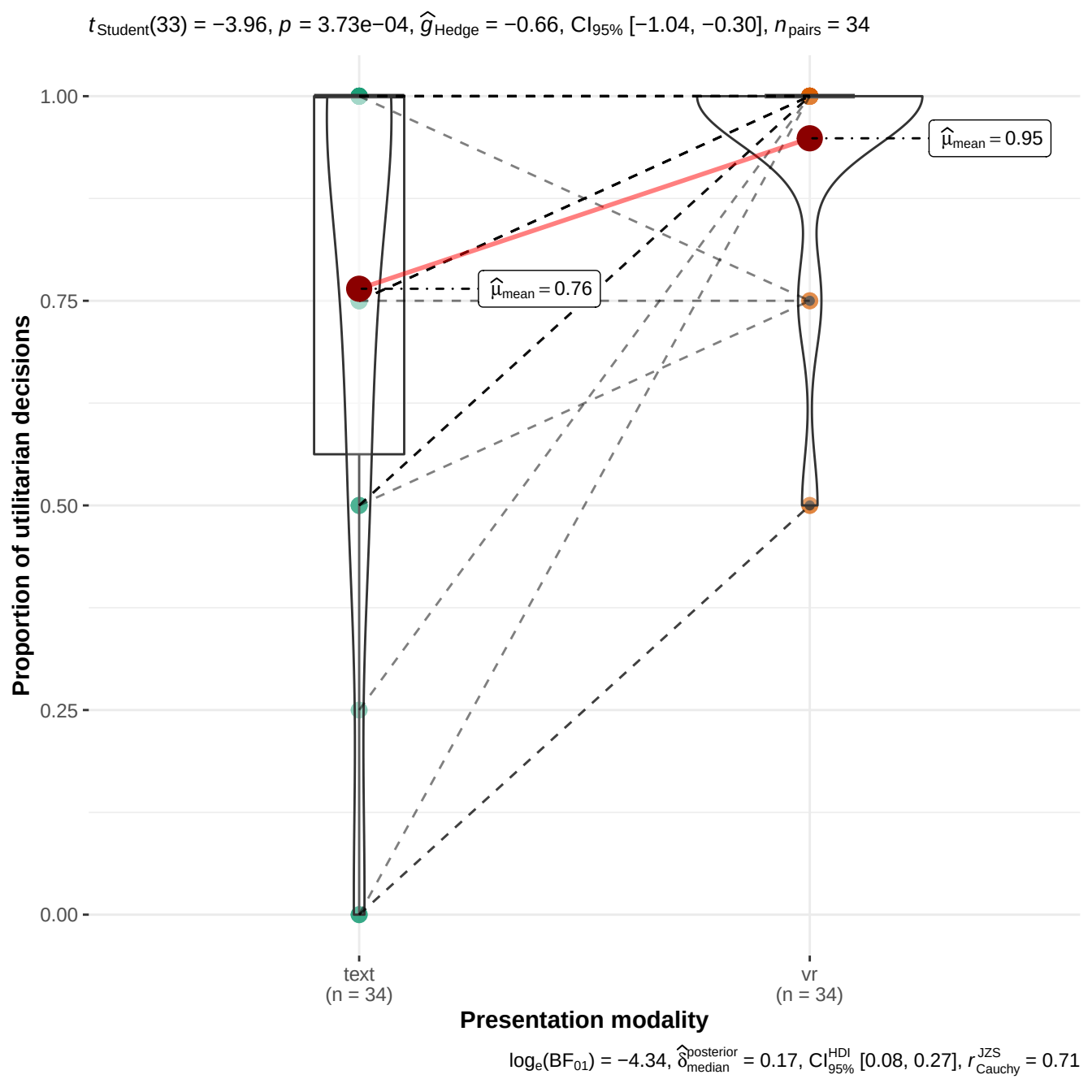
$\chi^2_{gof}(3) = 19.26$, $p = 2.41e{-}04$, $\widehat{V}_{Cramer} = 0.27$, $CI_{95\%}$ [0.11, 0.38], $n_{obs} = 76$

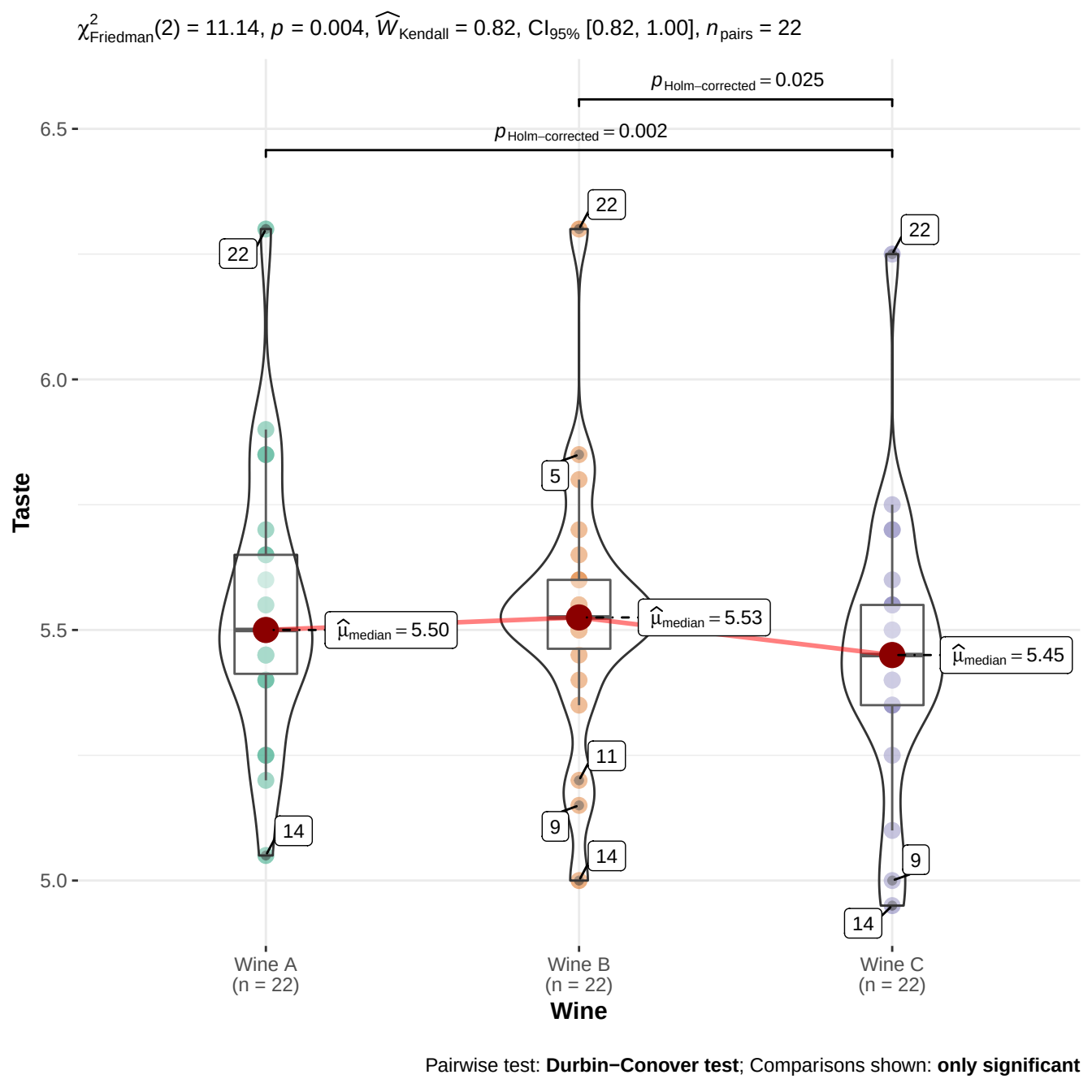



$\log_e(BF_{01}) = -3.74$, $a_{Gunel-Dickey} = 1.00$


$t_{Student}(30) = -9.56$, $p = 1.29e{-}10$, $\hat{r}_{Pearson} = -0.87$, $CI_{95\%}$ [−0.93, −0.74], $n_{pairs} = 32$
mpg
wt
vs
Merc 280
Pontiac Firebird
Ferrari Dino
Valiant
Merc 280C
Merc 450SL
Camaro Z28
$\log_e(BF_{01}) = -17.84$, $\hat{\rho}^{posterior}_{median} = -0.84$, $CI^{HDI}_{95\%}$ [−0.93, −0.73], $r^{JZS}_{Cauchy} = 0.71$

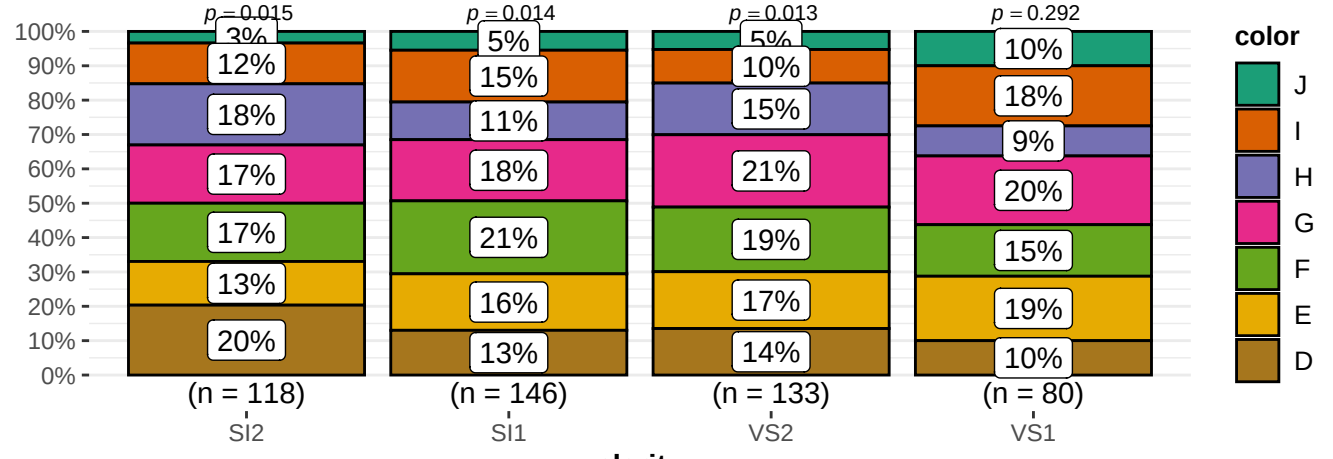

$p_{Holm-corrected} = 5.58e-07$
$p_{Holm-corrected} = 0$
$p_{Holm-corrected} = 5.72e-10$
8
7
6
5
Sepal.Length
setosa
versicolor
virginica
Species


$t_{Student}(33) = -3.96$, $p = 3.73e{-}04$, $\hat{g}_{Hedge} = -0.66$, $CI_{95\%}$ [−1.04, −0.30], $n_{pairs} = 34$
1.00
0.75
0.50
0.25
0.00
Proportion of utilitarian decisions
$\hat{\mu}_{mean} = 0.95$
$\hat{\mu}_{mean} = 0.76$
text
(n = 34)
vr
(n = 34)
Presentation modality
$\log_e(BF_{01}) = -4.34$, $\hat{\delta}^{posterior}_{median} = 0.17$, $CI^{HDI}_{95\%}$ [0.08, 0.27], $r^{JZS}_{Cauchy} = 0.71$


$\chi^2_{Friedman}(2) = 11.14$, $p = 0.004$, $\widehat{W}_{Kendall} = 0.82$, $CI_{95\%}$ [0.82, 1.00], $n_{pairs} = 22$
$p_{Holm-corrected} = 0.025$
$p_{Holm-corrected} = 0.002$
6.5
6.0
5.5
5.0
Taste
22
22
22
5
11
9
14
14
9
14
$\widehat{\mu}_{median} = 5.50$
$\widehat{\mu}_{median} = 5.53$
$\widehat{\mu}_{median} = 5.45$
Wine A
(n = 22)
Wine B
(n = 22)
Wine C
(n = 22)
Wine
Pairwise test: **Durbin−Conover test**; Comparisons shown: **only significant**

## Quality: Very Good

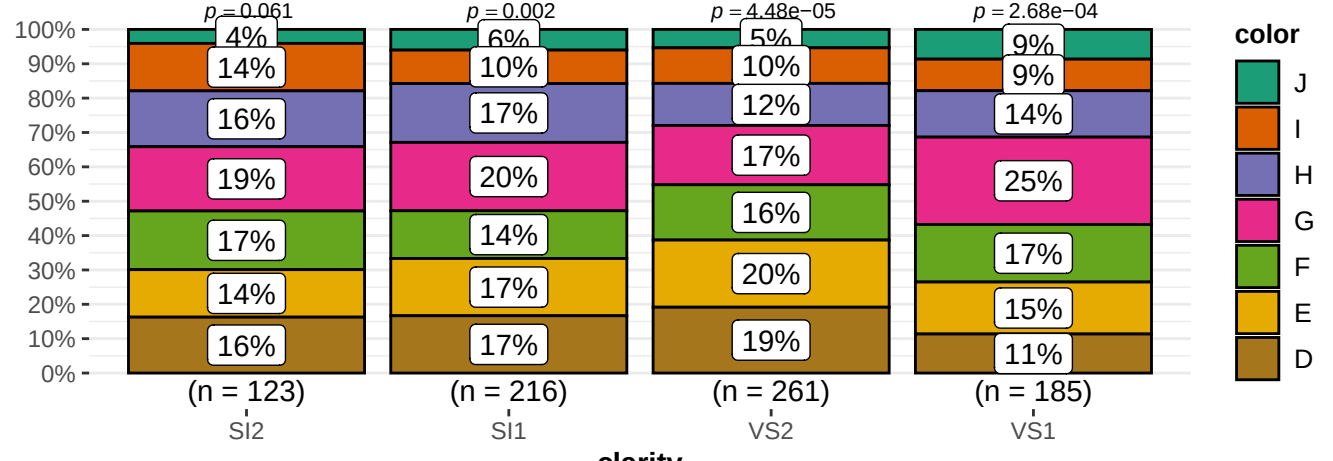
$\chi^2_{\text{Pearson}}(18) = 17.95$, $p = 0.459$, $\widehat{V}_{\text{Cramer}} = 0.00$, $\text{CI}_{95\%}$ [0.00, 0.00], $n_{\text{obs}} = 477$



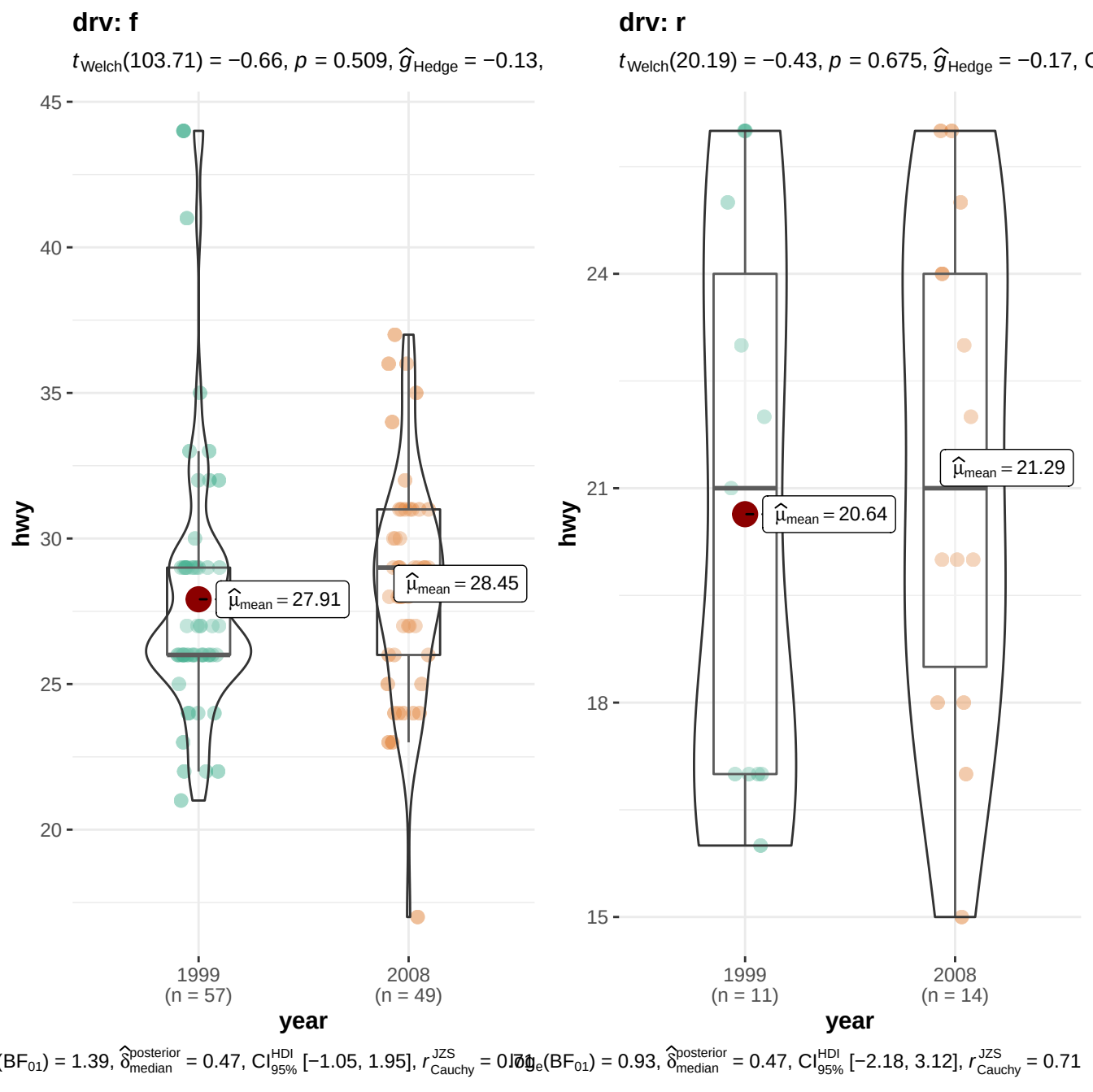

$\log_e(\text{BF}_{01}) = 16.13$, $\widehat{V}^{\text{posterior}}_{\text{median}} = 0.15$, $\text{CI}^{\text{HDI}}_{95\%}$ [0.11, 0.19], $a_{\text{Gunel–Dickey}} = 1.00$

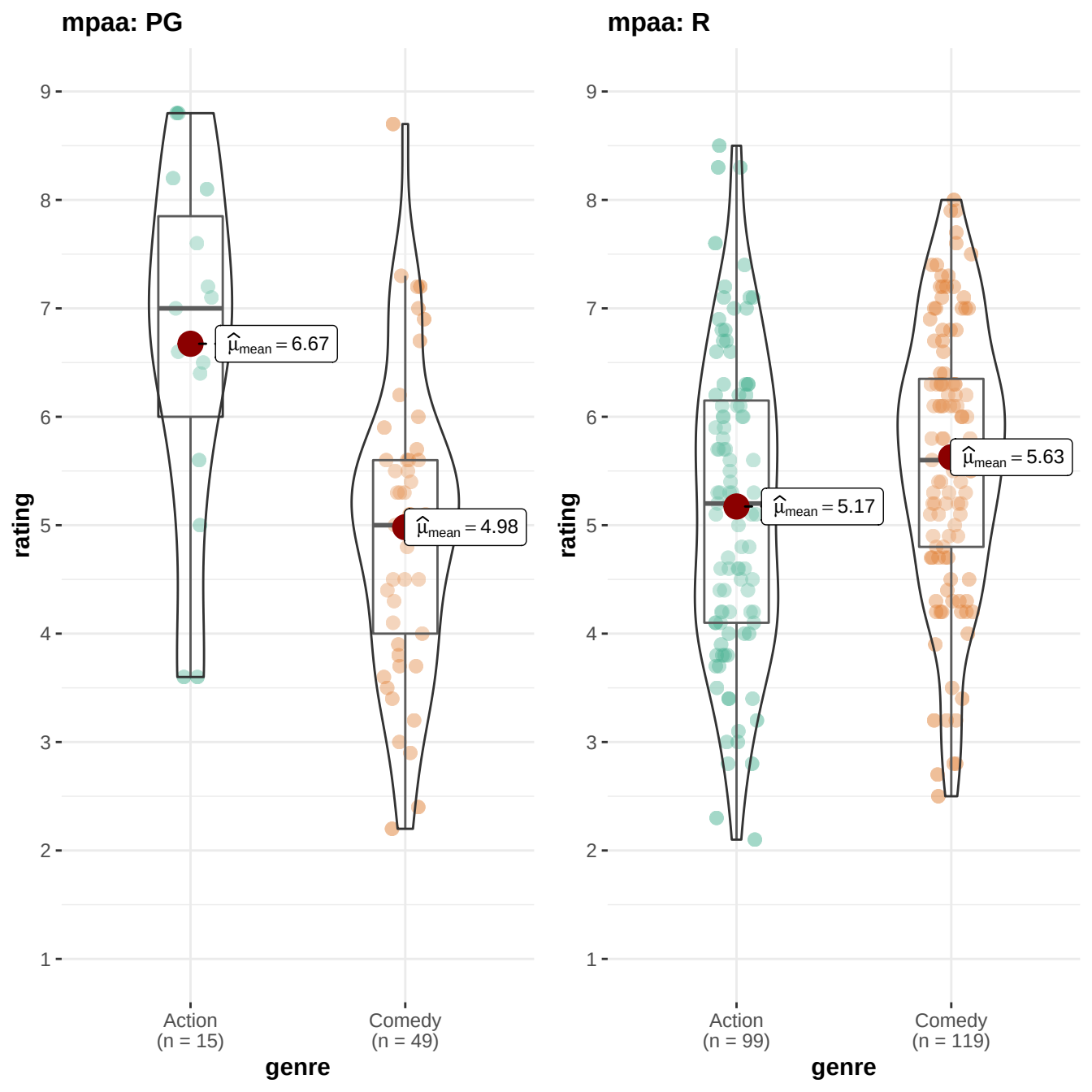
## Quality: Ideal

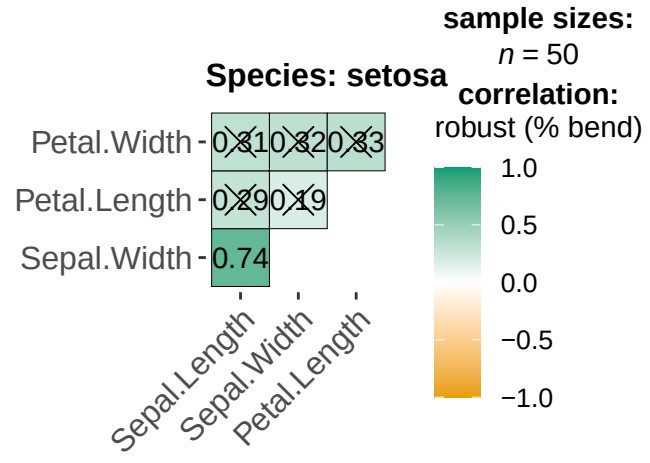
$\chi^2_{\text{Pearson}}(18) = 17.85$, $p = 0.466$, $\widehat{V}_{\text{Cramer}} = 0.00$, $\text{CI}_{95\%}$ [0.00, 0.00], $n_{\text{obs}} = 785$

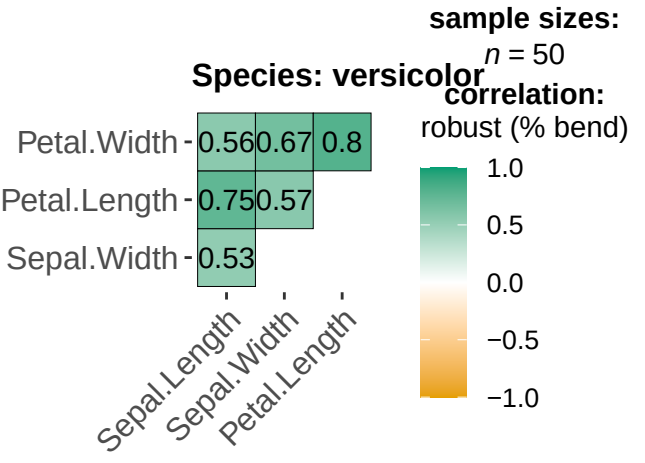



$\log_e(\text{BF}_{01}) = 20.36$, $\widehat{V}^{\text{posterior}}_{\text{median}} = 0.12$, $\text{CI}^{\text{HDI}}_{95\%}$ [0.09, 0.15], $a_{\text{Gunel–Dickey}} = 1.00$


drv: f
$t_{Welch}(103.71) = -0.66$, $p = 0.509$, $\hat{g}_{Hedge} = -0.13$,
45
40
35
30
25
20
hwy
$\hat{\mu}_{mean} = 27.91$
$\hat{\mu}_{mean} = 28.45$
1999
(n = 57)
2008
(n = 49)
year
drv: r
$t_{Welch}(20.19) = -0.43$, $p = 0.675$, $\hat{g}_{Hedge} = -0.17$, C
24
21
18
15
hwy
$\hat{\mu}_{mean} = 20.64$
$\hat{\mu}_{mean} = 21.29$
1999
(n = 11)
2008
(n = 14)
year
$(BF_{01}) = 1.39$, $\hat{\delta}^{posterior}_{median} = 0.47$, $CI^{HDI}_{95\%}$ [−1.05, 1.95], $r^{JZS}_{Cauchy} = 0.71$
$_{Hedge}(BF_{01}) = 0.93$, $\hat{\delta}^{posterior}_{median} = 0.47$, $CI^{HDI}_{95\%}$ [−2.18, 3.12], $r^{JZS}_{Cauchy} = 0.71$

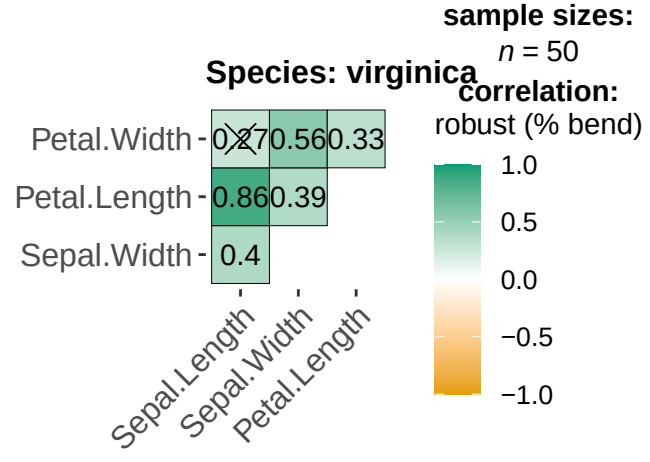

mpaa: PG
mpaa: R
rating
genre
Action
(n = 15)
Comedy
(n = 49)
Action
(n = 99)
Comedy
(n = 119)
μ̂mean = 6.67
μ̂mean = 4.98
μ̂mean = 5.17
μ̂mean = 5.63
1
2
3
4
5
6
7
8
9




ficant at $p < 0.05$ (Adjustment: Holm)

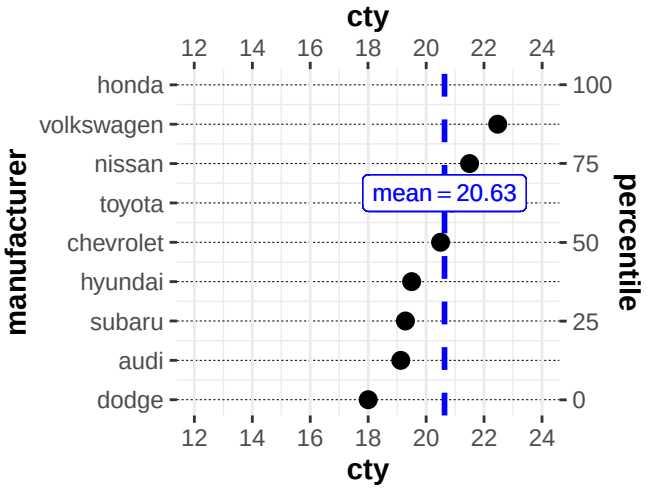
**X** = non−significant at $p < 0.05$ (Adjustment: Holm)




ficant at $p < 0.05$ (Adjustment: Holm)

## cylinder count: 4

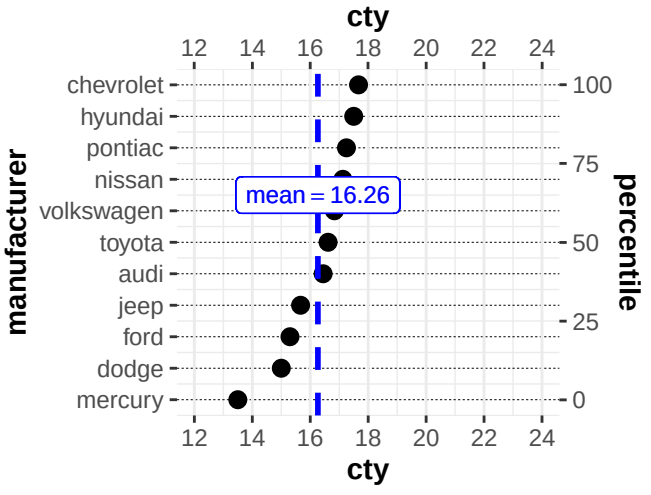
$t_{\text{Student}}(8) = 7.82$, $p = 5.14\text{e}{-05}$, $\widehat{g}_{\text{Hedge}} =$ 2




20, $\widehat{\delta}^{\text{posterior}}_{\text{median}} = -5.06$, $\text{CI}^{\text{HDI}}_{95\%}$ [−6.75, −3.53], $r^{\text{JZS}}_{\text{Cauchy}} =$ 0.7

## cylinder count: 6

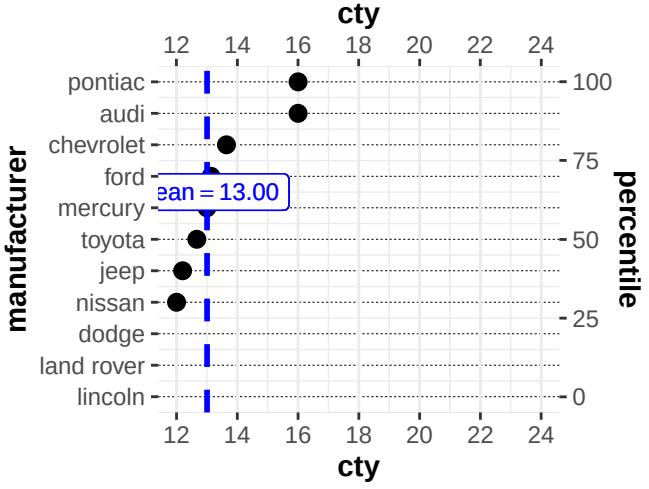
$t_{\text{Student}}(10) = 1.99$, $p = 0.075$, $\widehat{g}_{\text{Hedge}} = 0.5$



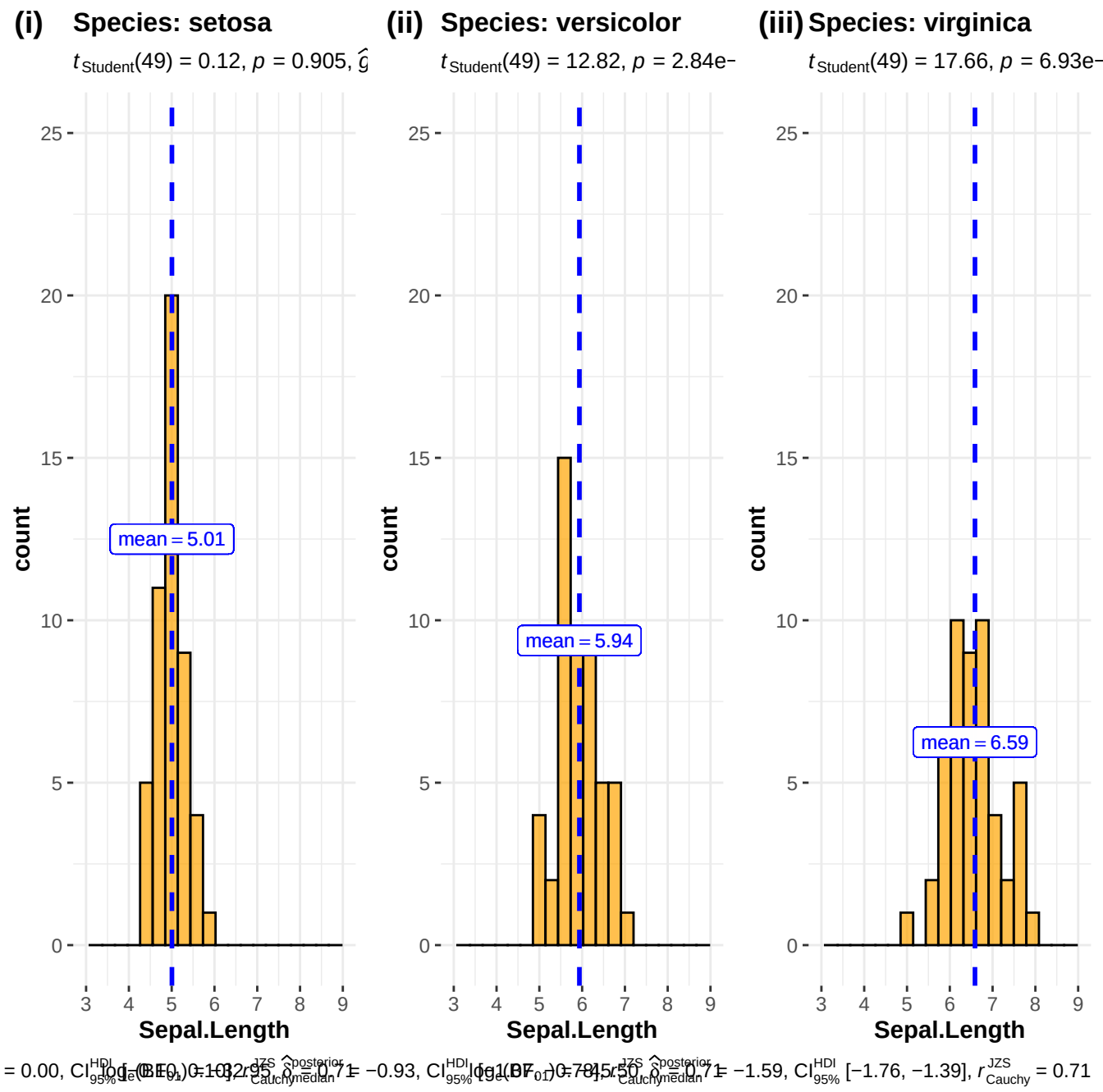

$\log_e(\text{BF}_{01}) = -0.23$, $\widehat{\delta}^{\text{posterior}}_{\text{median}} = -0.75$, $\text{CI}^{\text{HDI}}_{95\%}$ [−1.69, 0.19], $r^{\text{JZS}}_{\text{Cauchy}} = 0.71$

## cylinder count: 8

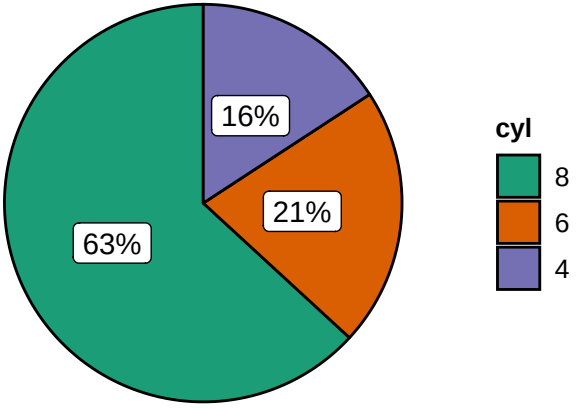
$t_{\text{Student}}(10) = -5.01$, $p = 0.001$, $\widehat{g}_{\text{Hedge}} = -1.40$, $\text{CI}_{95\%}$ [−2.30, −0.60], $n_{\text{obs}} = 11$



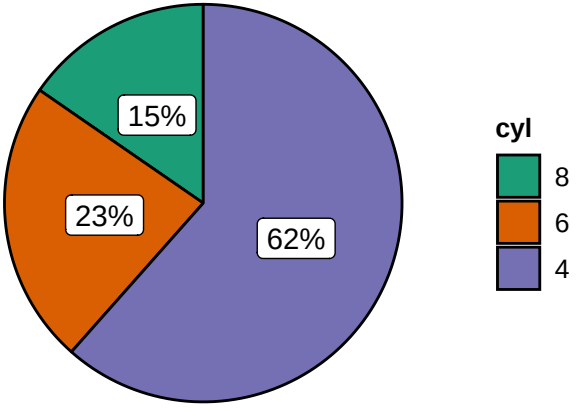

−4.24, $\widehat{\delta}^{\text{posterior}}_{\text{median}} = 2.54$, $\text{CI}^{\text{HDI}}_{95\%}$ [1.27, 3.68], $r^{\text{JZS}}_{\text{Cauchy}} = 0.71$

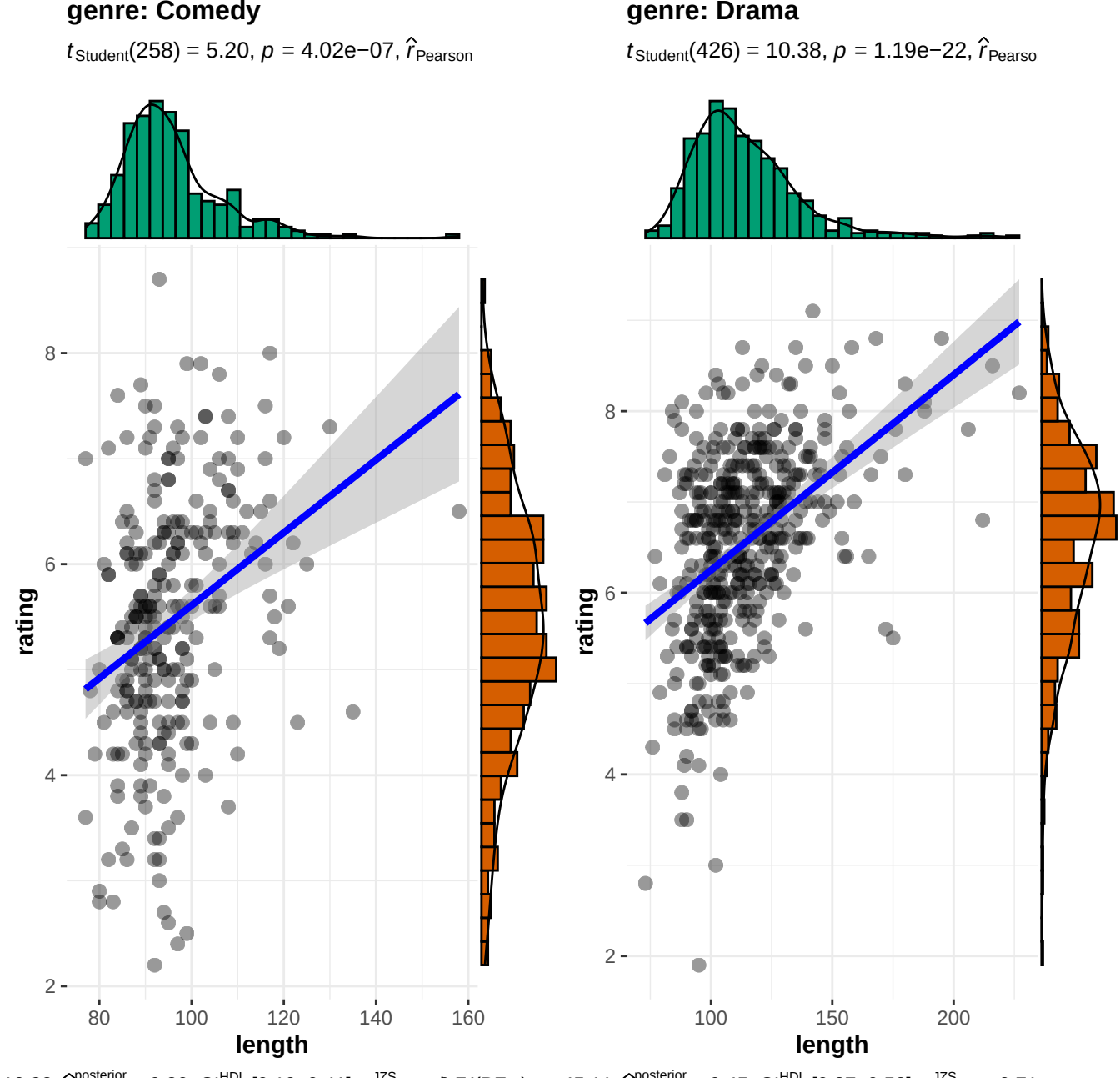

(i) Species: setosa
$t_{Student}(49) = 0.12, p = 0.905, \hat{g}$
(ii) Species: versicolor
$t_{Student}(49) = 12.82, p = 2.84e-$
(iii) Species: virginica
$t_{Student}(49) = 17.66, p = 6.93e-$
count
Sepal.Length
mean = 5.01
mean = 5.94
mean = 6.59
0
5
10
15
20
25
3
4
5
6
7
8
9
= 0.00, CI$^{HDI}_{95\%}$ [−0.32, 0.32], $r^{JZS}_{Cauchy}$ = 0.71
= −0.93, CI$^{HDI}_{95\%}$ [−1.32, −0.71], $r^{JZS}_{Cauchy}$ = 0.71
= −1.59, CI$^{HDI}_{95\%}$ [−1.76, −1.39], $r^{JZS}_{Cauchy}$ = 0.71

**am: 0**




**am: 1**

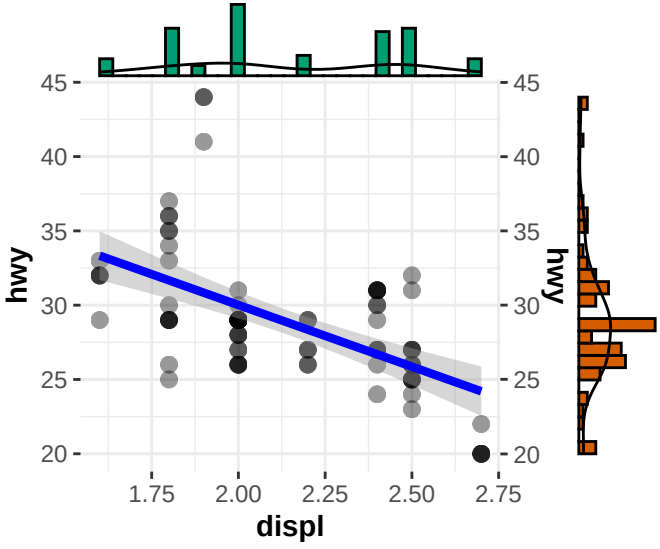





$-10.38, \hat{\rho}^{posterior}_{median} = 0.30, CI^{HDI}_{95\%}$ [0.19, 0.41], $r^{JZS}_{Cauchy} = 0.71$ $\log_e(BF_{01}) = -45.11, \hat{\rho}^{posterior}_{median} = 0.45, CI^{HDI}_{95\%}$ [0.37, 0.52], $r^{JZS}_{Cauchy} = 0.71$

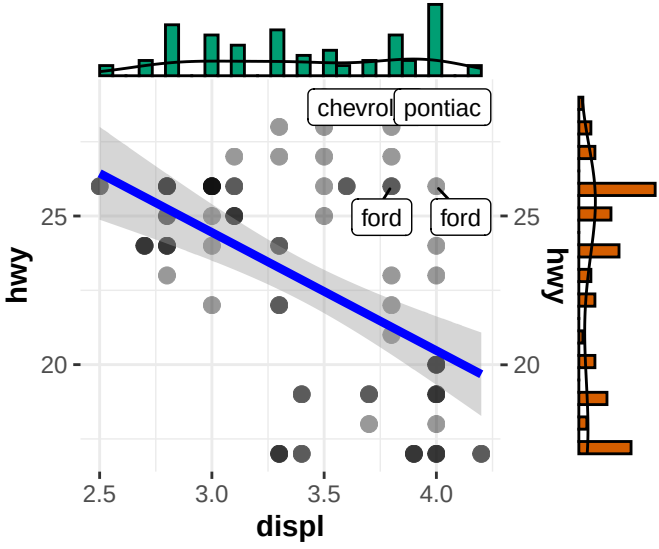
**Cylinder count: 4**

$t_{\text{Student}}(79) = -6.33$, $p = 1.38e{-}08$, $\hat{\rho}$



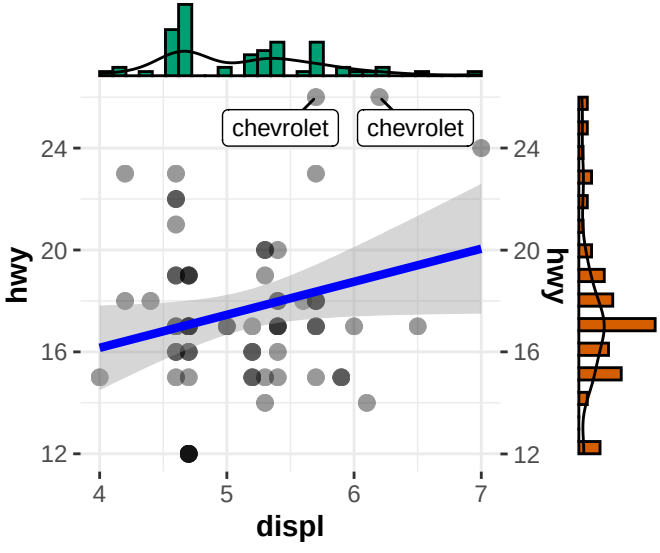

**Cylinder count: 6**

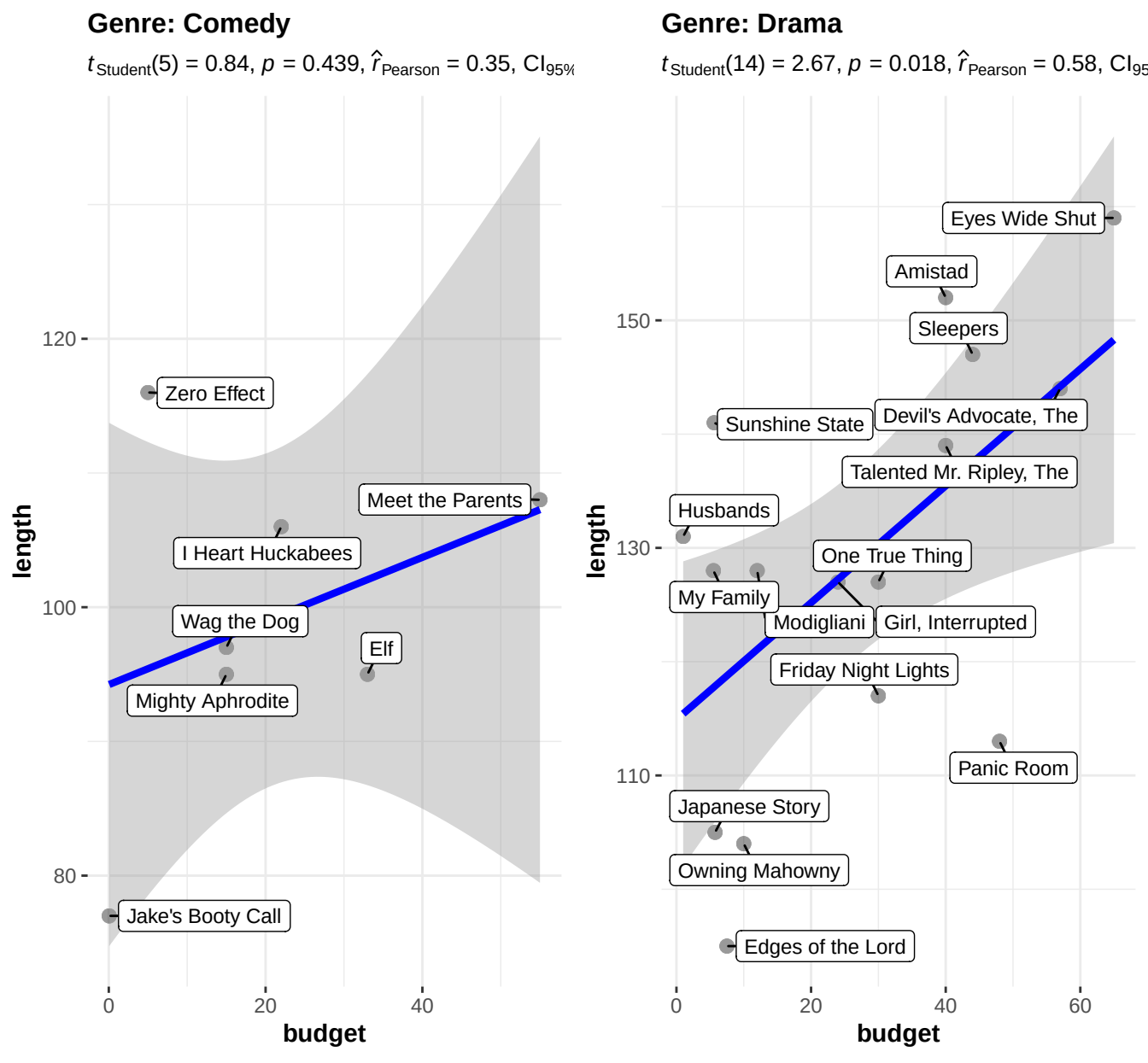
$t_{\text{Student}}(77) = -5.23$, $p = 1.41e{-}06$, $\hat{\rho}$



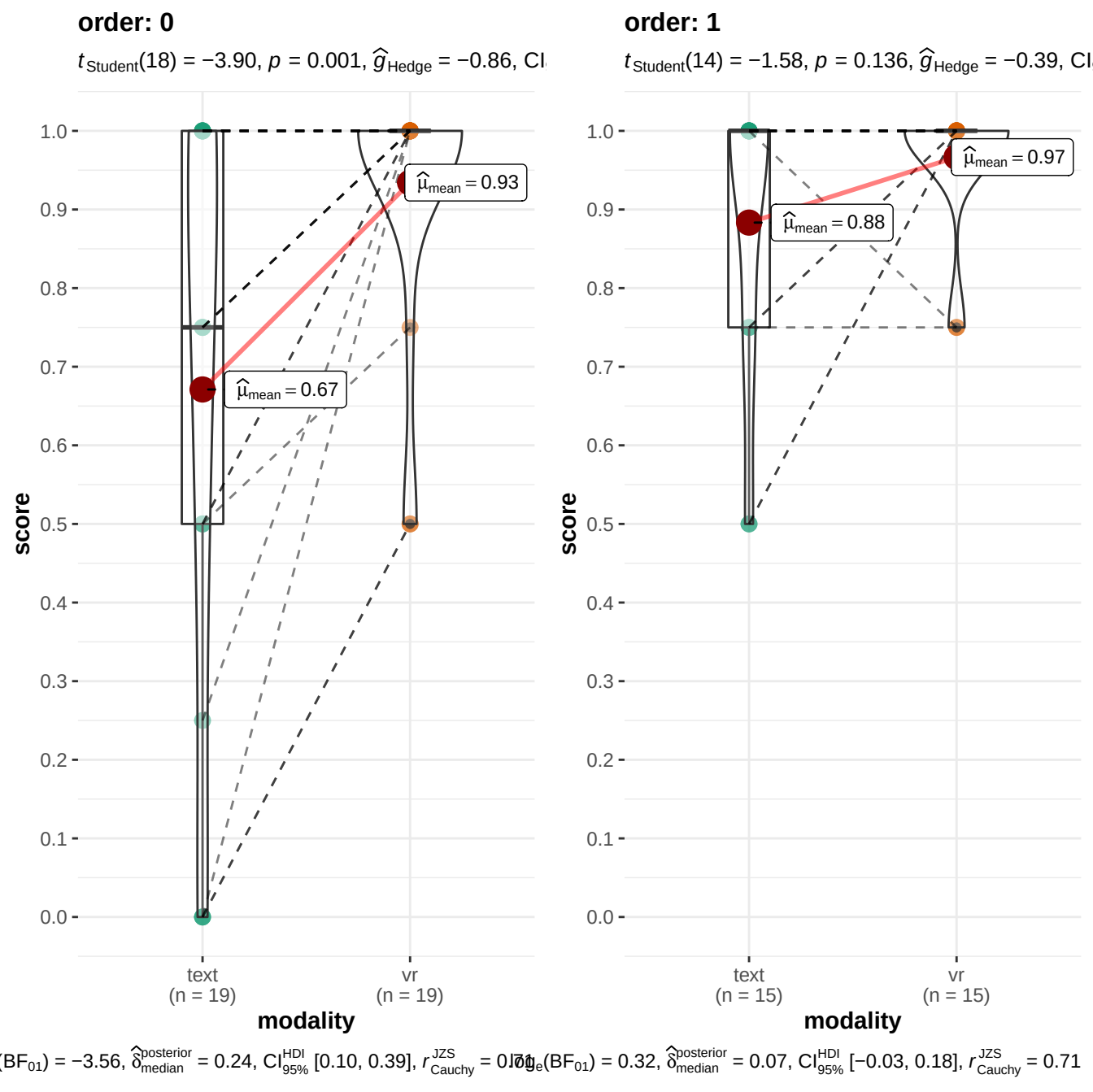

**Cylinder count: 8**

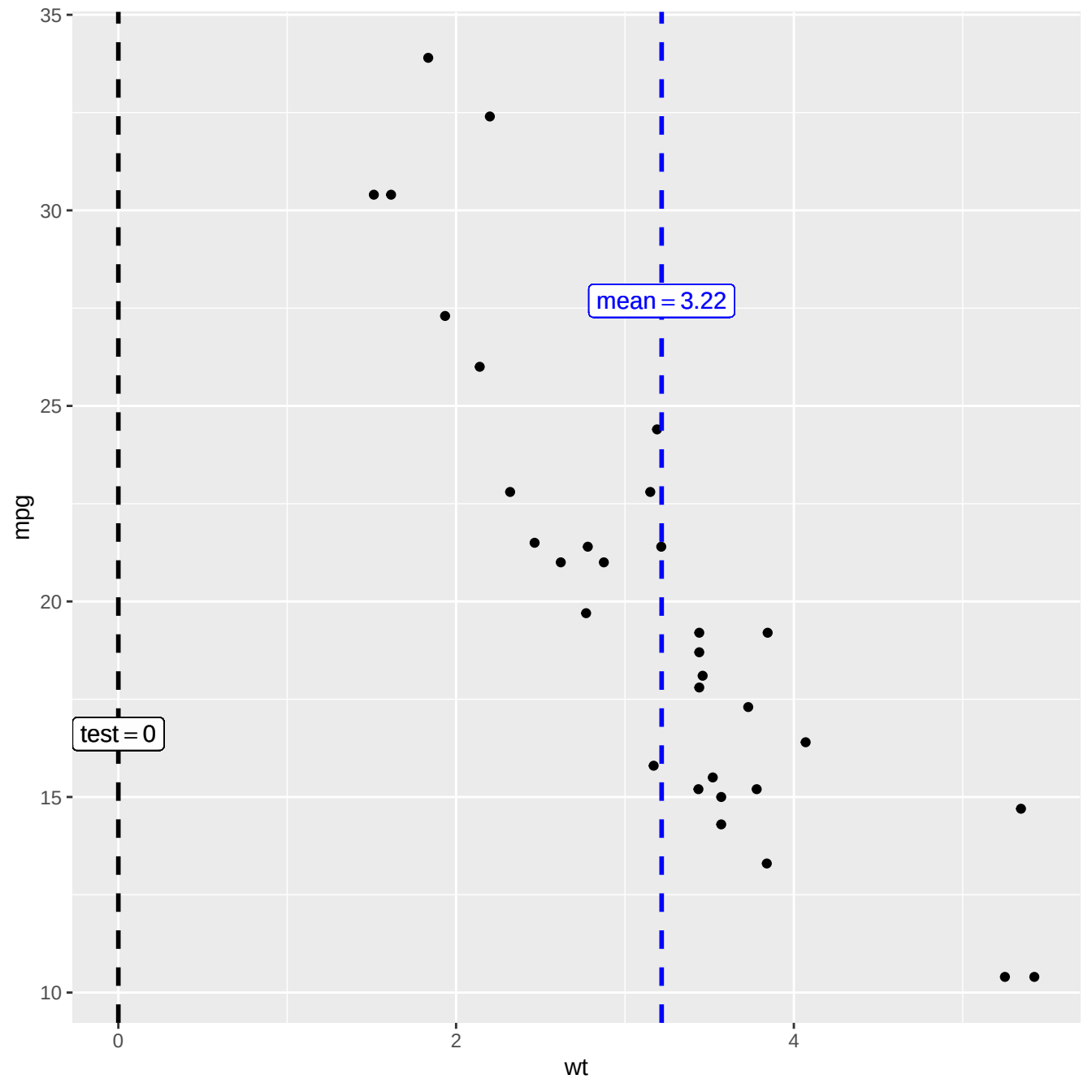
$t_{\text{Student}}(68) = 1.02$, $p = 0.312$, $\hat{\rho}_{\text{\% benc}}$

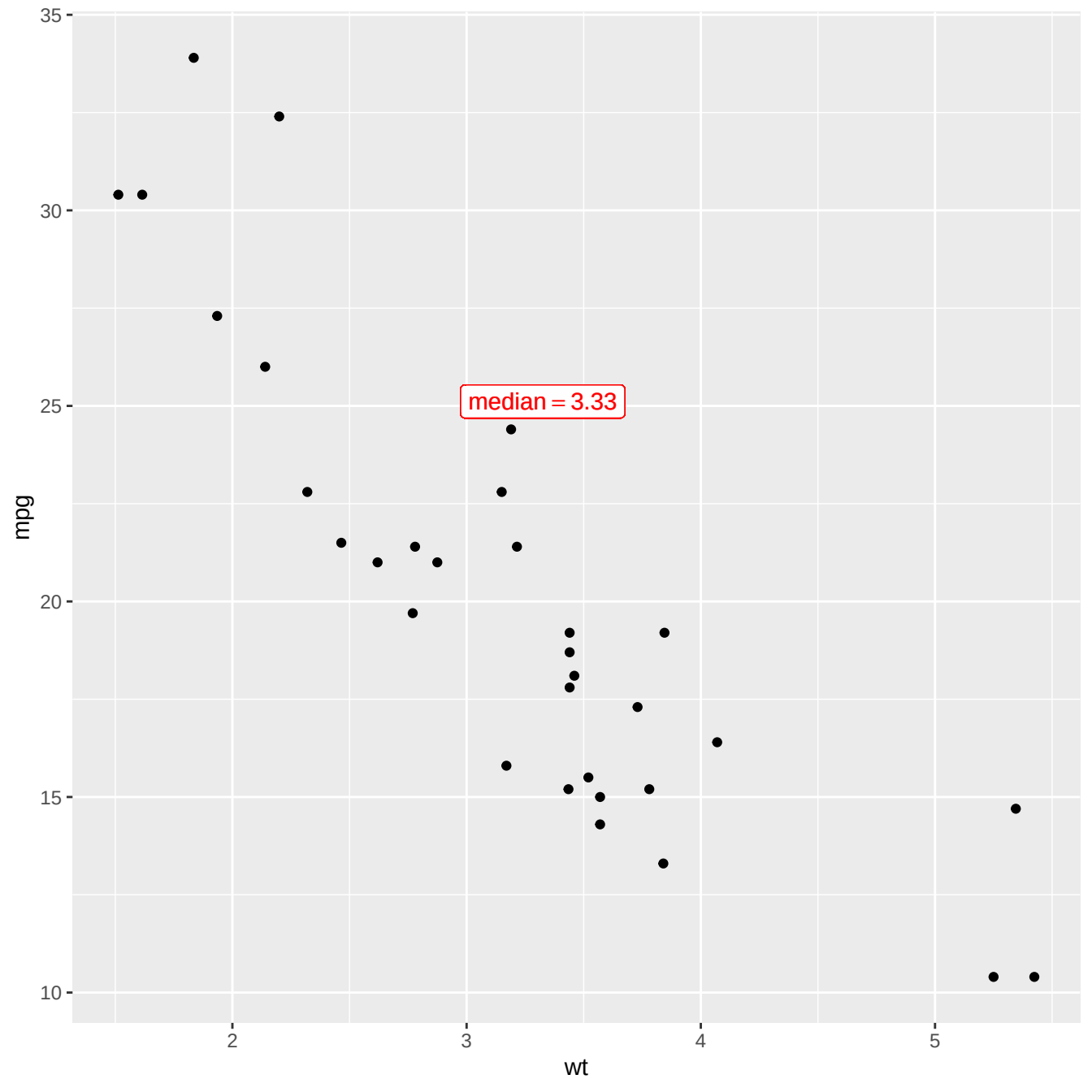


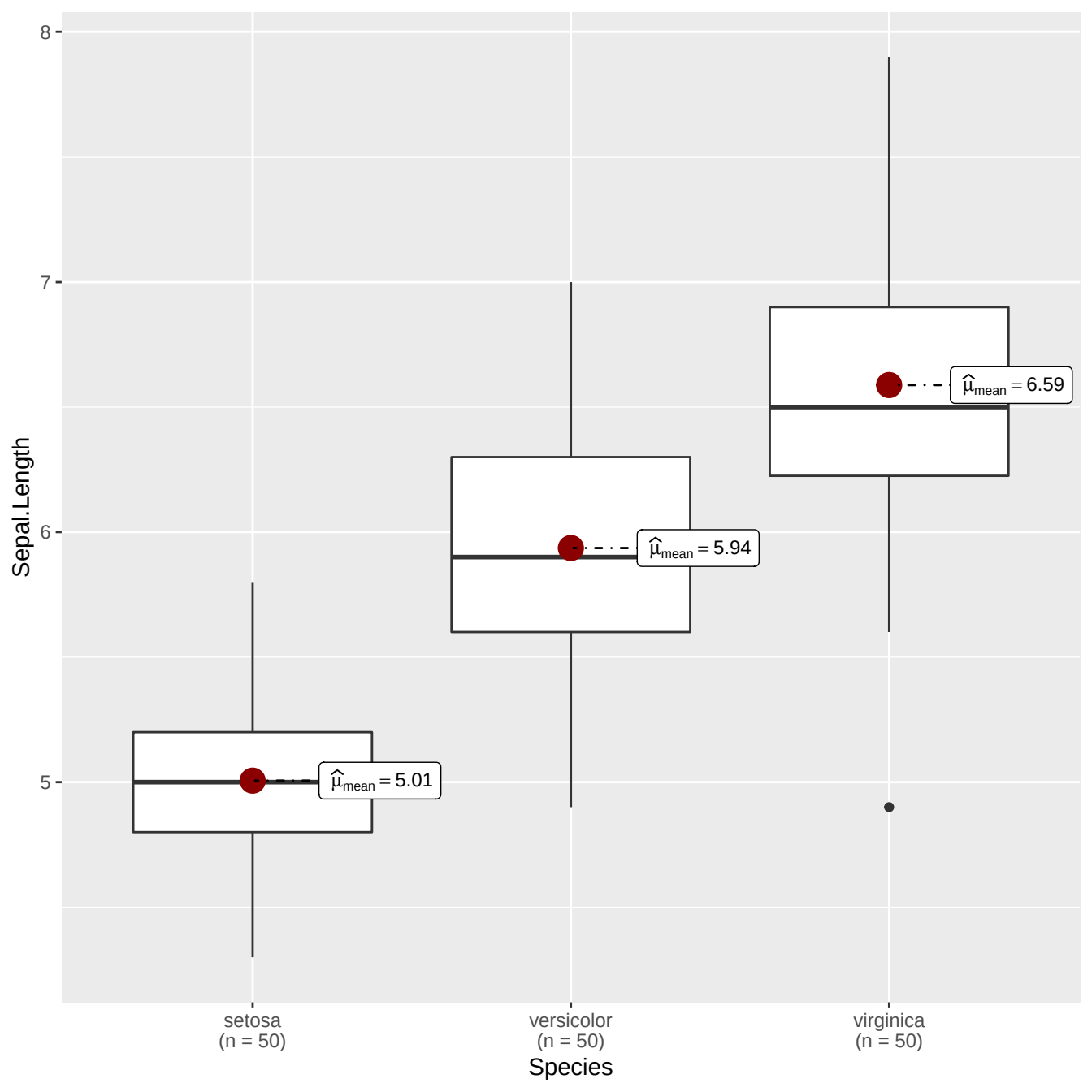



All movies have IMDB rating equal to 7.


order: 0
$t_{Student}(18) = -3.90$, $p = 0.001$, $\hat{g}_{Hedge} = -0.86$, CI
order: 1
$t_{Student}(14) = -1.58$, $p = 0.136$, $\hat{g}_{Hedge} = -0.39$, CI
score
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
$\hat{\mu}_{mean} = 0.93$
$\hat{\mu}_{mean} = 0.67$
$\hat{\mu}_{mean} = 0.97$
$\hat{\mu}_{mean} = 0.88$
text
(n = 19)
vr
(n = 19)
text
(n = 15)
vr
(n = 15)
modality
modality
$(BF_{01}) = -3.56$, $\hat{\delta}^{posterior}_{median} = 0.24$, $CI^{HDI}_{95\%}$ [0.10, 0.39], $r^{JZS}_{Cauchy} = 0.71$
$_{Hedge}(BF_{01}) = 0.32$, $\hat{\delta}^{posterior}_{median} = 0.07$, $CI^{HDI}_{95\%}$ [−0.03, 0.18], $r^{JZS}_{Cauchy} = 0.71$


35
30
25
20
15
10
mpg
0
2
4
wt
mean = 3.22
test = 0


median = 3.33
mpg
wt
35
30
25
20
15
10
2
3
4
5


8
7
6
5
Sepal.Length
$\hat{\mu}_{mean} = 5.01$
$\hat{\mu}_{mean} = 5.94$
$\hat{\mu}_{mean} = 6.59$
setosa
(n = 50)
versicolor
(n = 50)
virginica
(n = 50)
Species