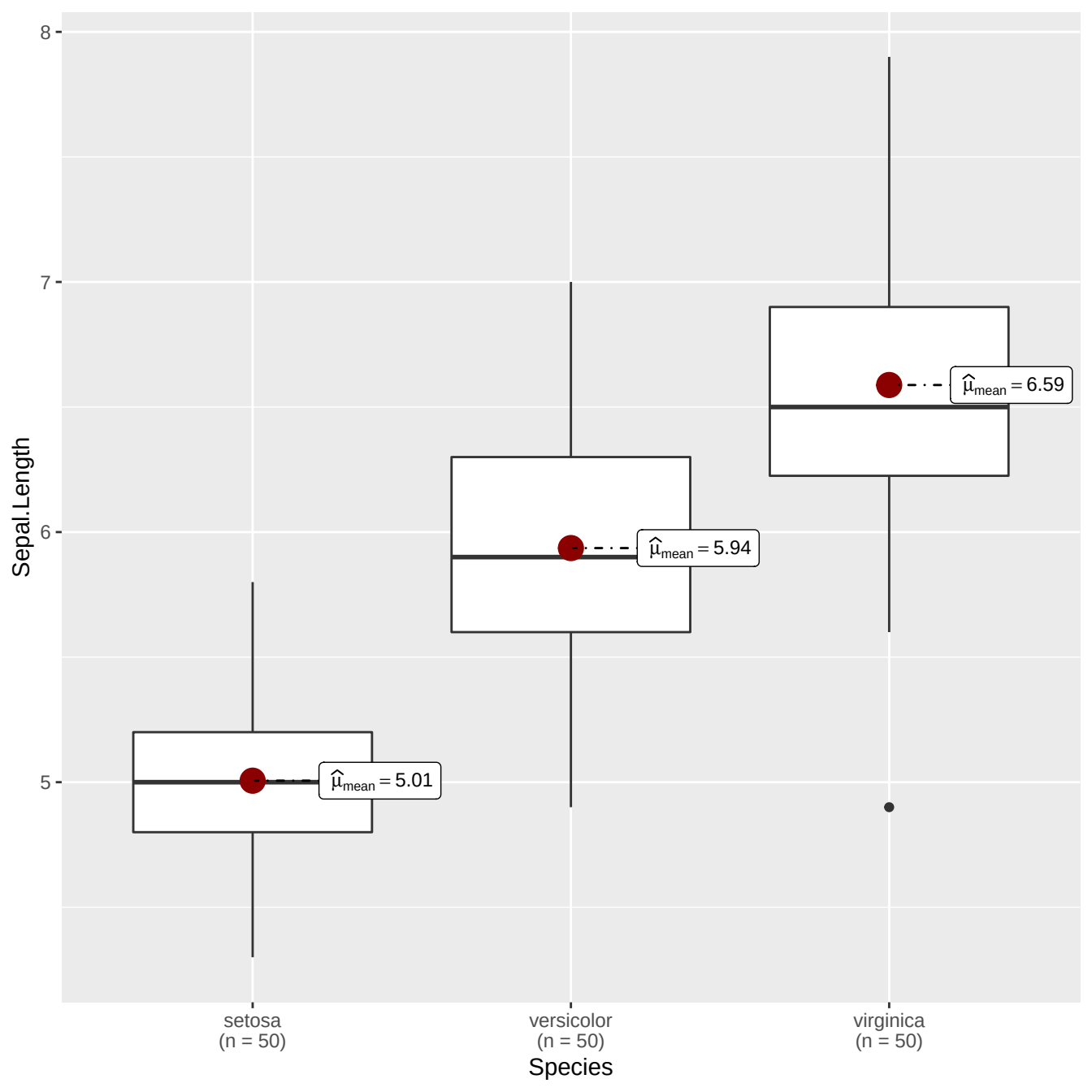
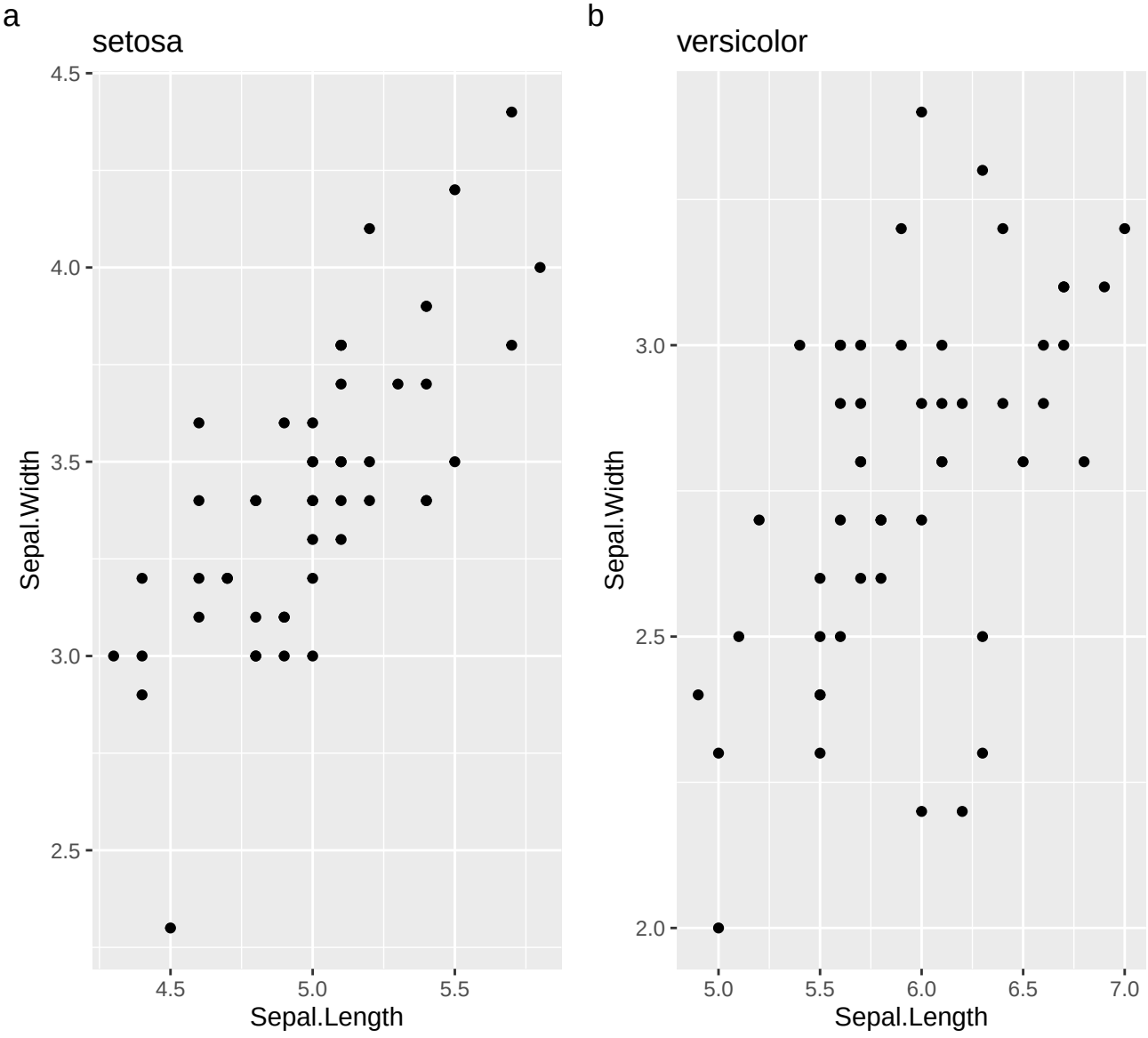
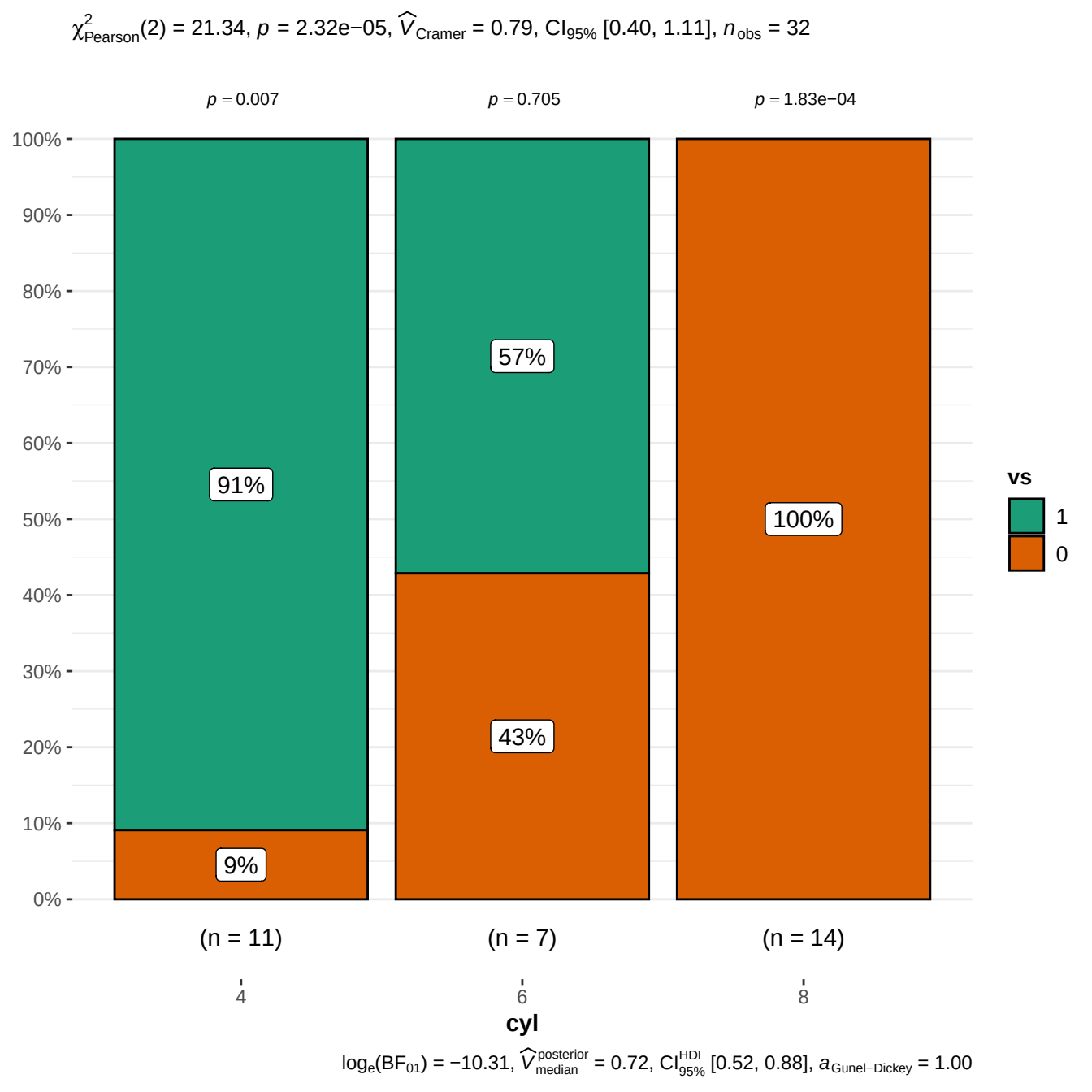

8
7
6
5
Sepal.Length
$\hat{\mu}_{mean} = 5.01$
$\hat{\mu}_{mean} = 5.94$
$\hat{\mu}_{mean} = 6.59$
setosa
(n = 50)
versicolor
(n = 50)
virginica
(n = 50)
Species

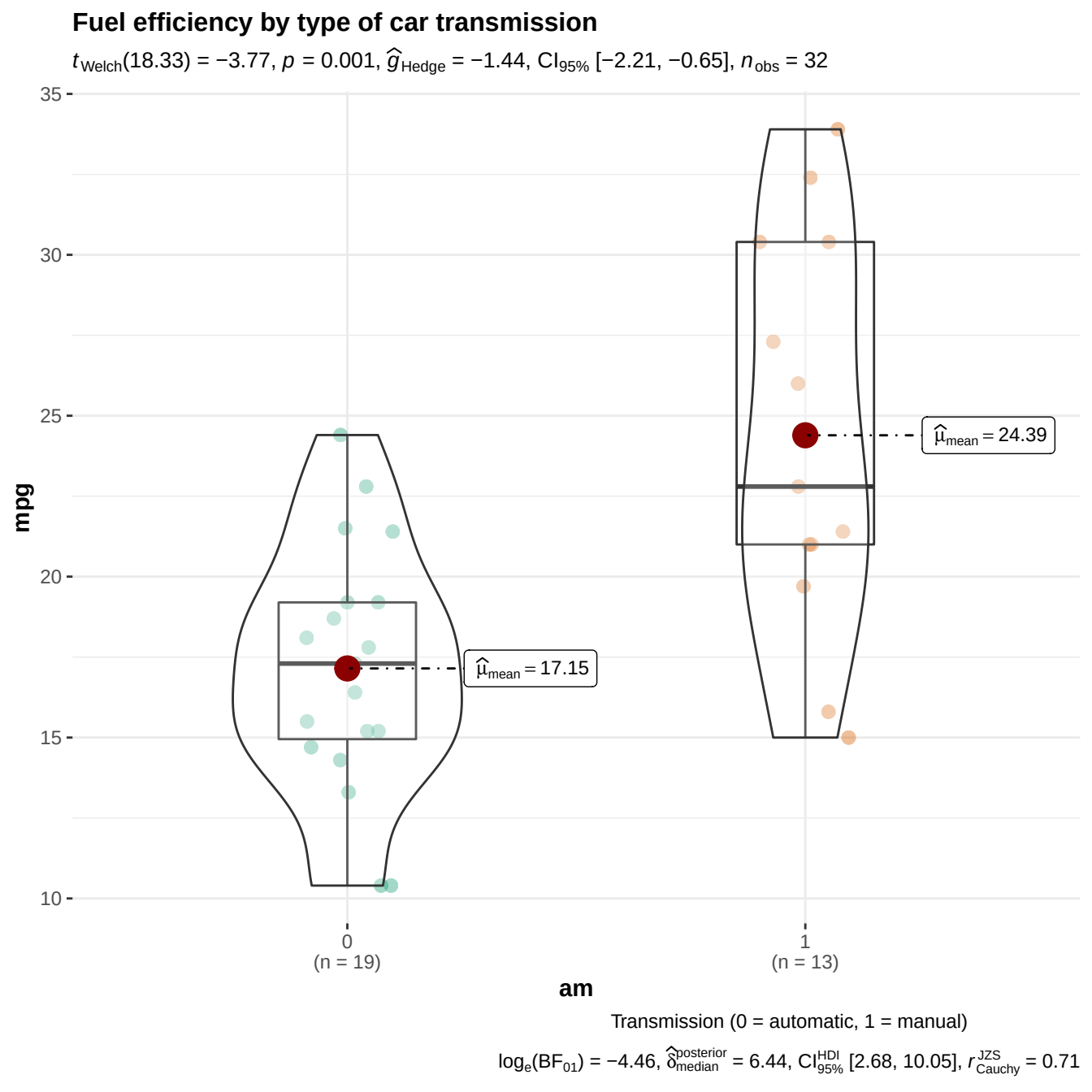
Dataset: Iris Flower dataset

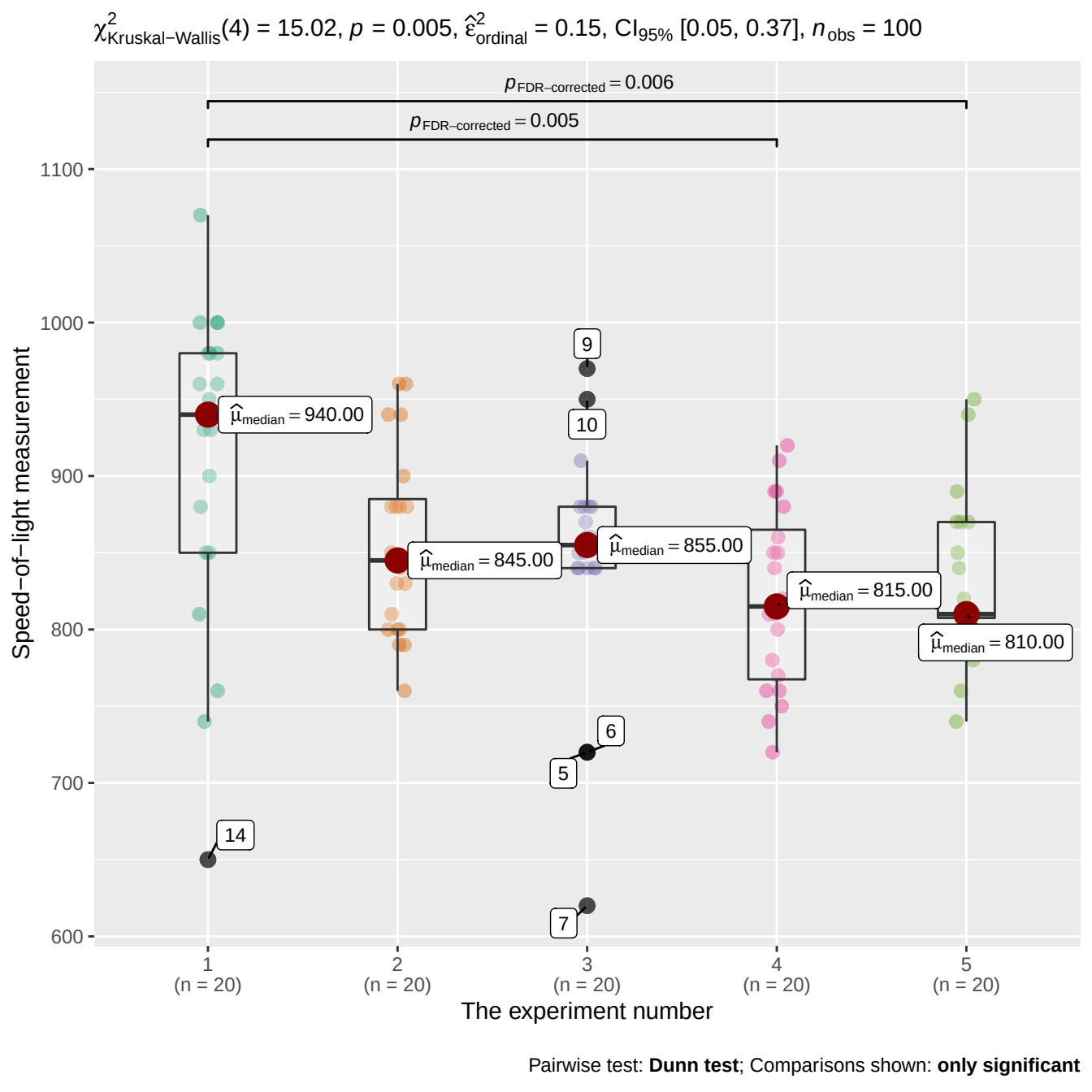
Edgar Anderson collected this data

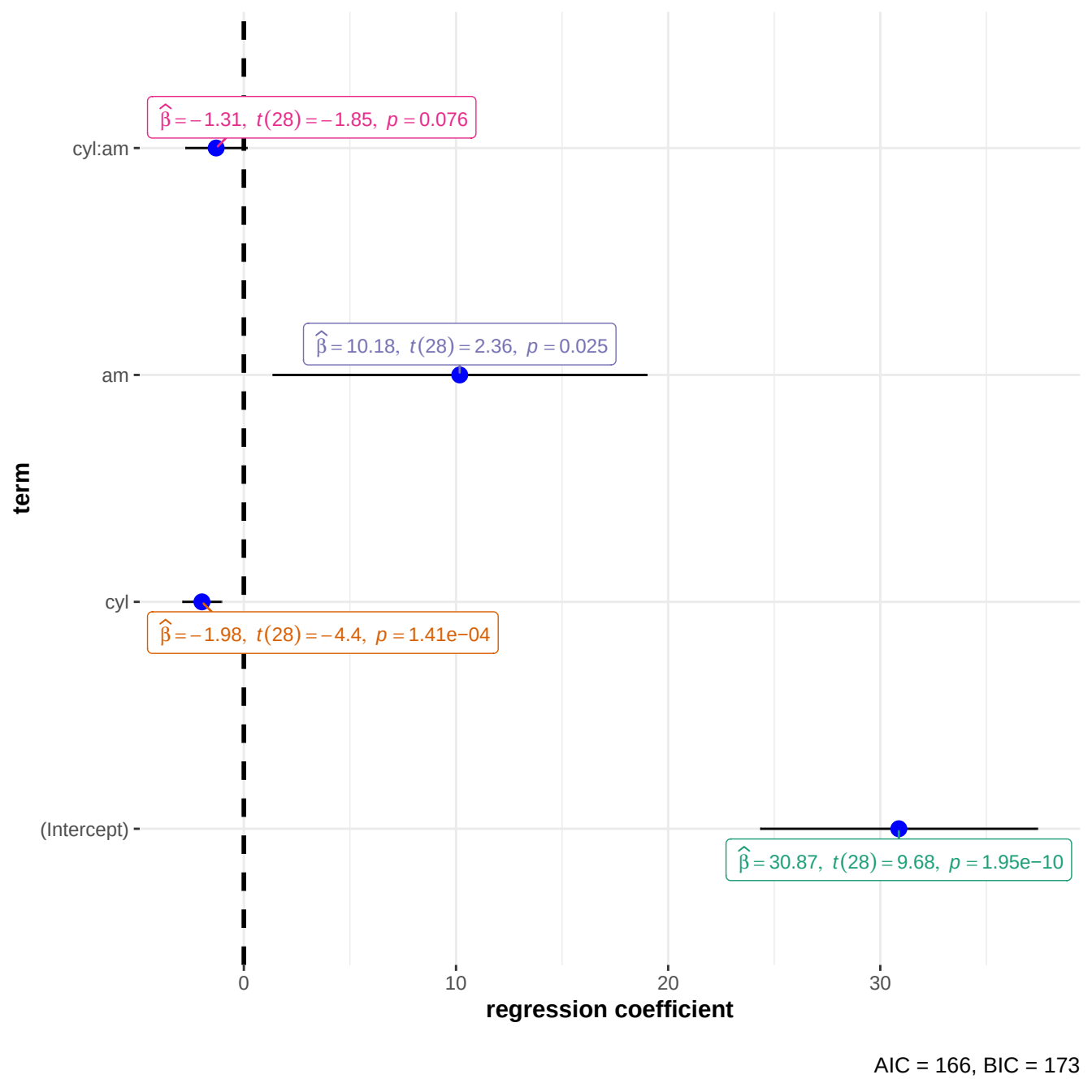


Note: Only two species of flower are displayed

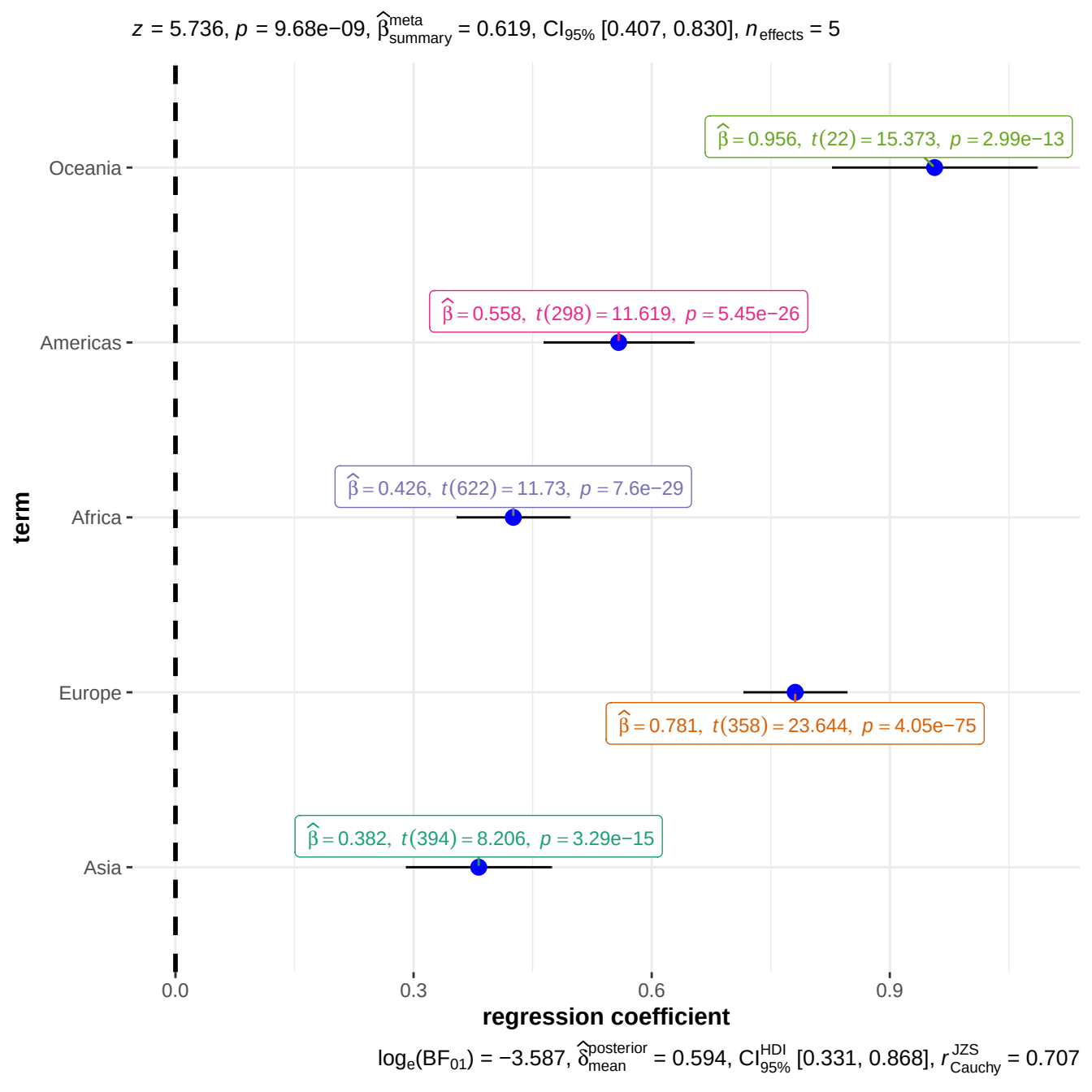

$\chi^2_{Pearson}(2) = 21.34$, $p = 2.32e{-}05$, $\widehat{V}_{Cramer} = 0.79$, $CI_{95\%}$ [0.40, 1.11], $n_{obs} = 32$
$p = 0.007$
$p = 0.705$
$p = 1.83e{-}04$
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
91%
9%
57%
43%
100%
vs
1
0
(n = 11)
(n = 7)
(n = 14)
4
6
8
cyl
$\log_e(BF_{01}) = -10.31$, $\widehat{V}^{posterior}_{median}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

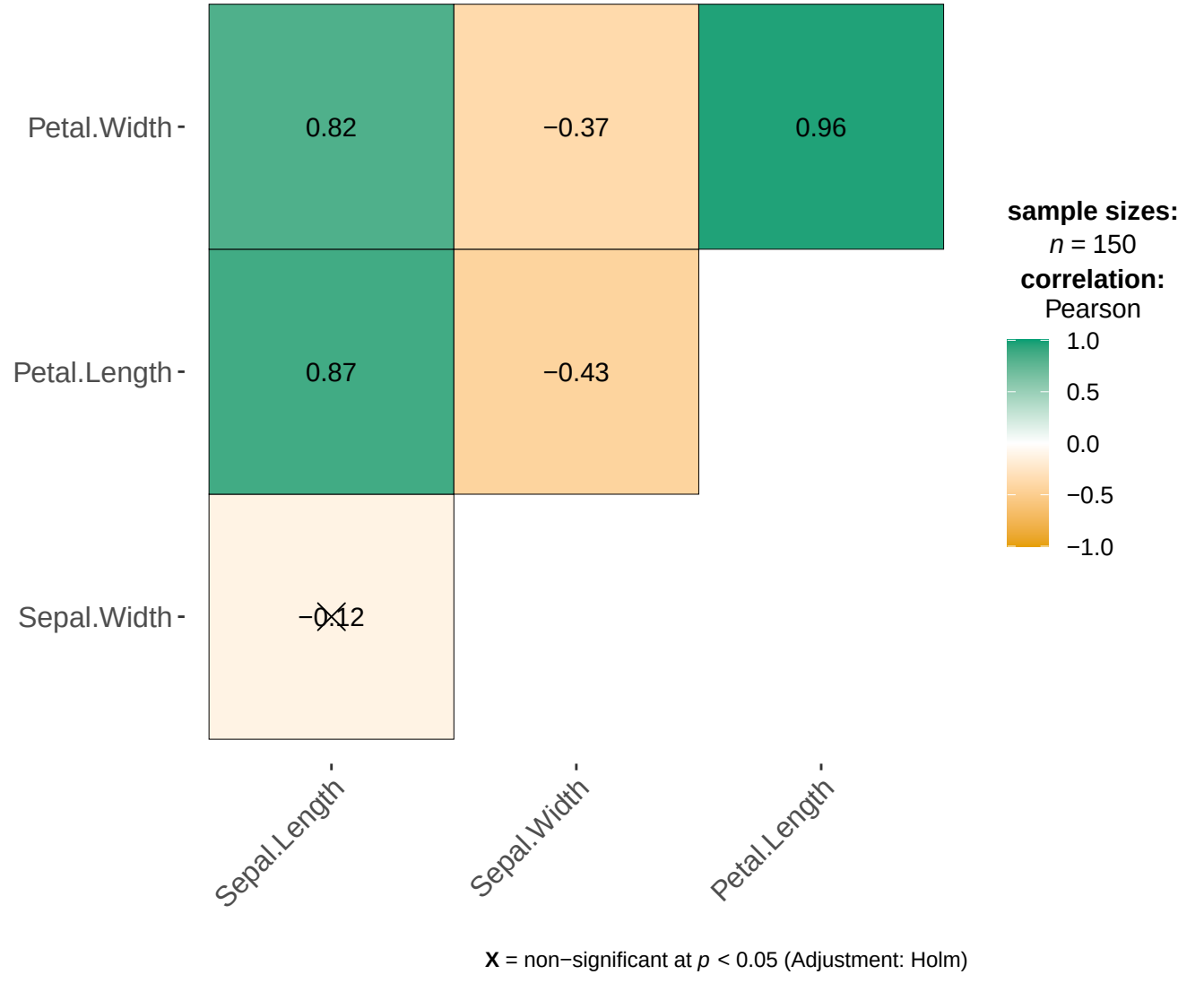

Fuel efficiency by type of car transmission
$t_{Welch}(18.33) = -3.77$, $p = 0.001$, $\hat{g}_{Hedge} = -1.44$, $CI_{95\%}$ [−2.21, −0.65], $n_{obs} = 32$
mpg
35
30
25
20
15
10
$\hat{\mu}_{mean} = 17.15$
$\hat{\mu}_{mean} = 24.39$
0
(n = 19)
1
(n = 13)
am
Transmission (0 = automatic, 1 = manual)
$\log_e(BF_{01}) = -4.46$, $\hat{\delta}^{posterior}_{median} = 6.44$, $CI^{HDI}_{95\%}$ [2.68, 10.05], $r^{JZS}_{Cauchy} = 0.71$

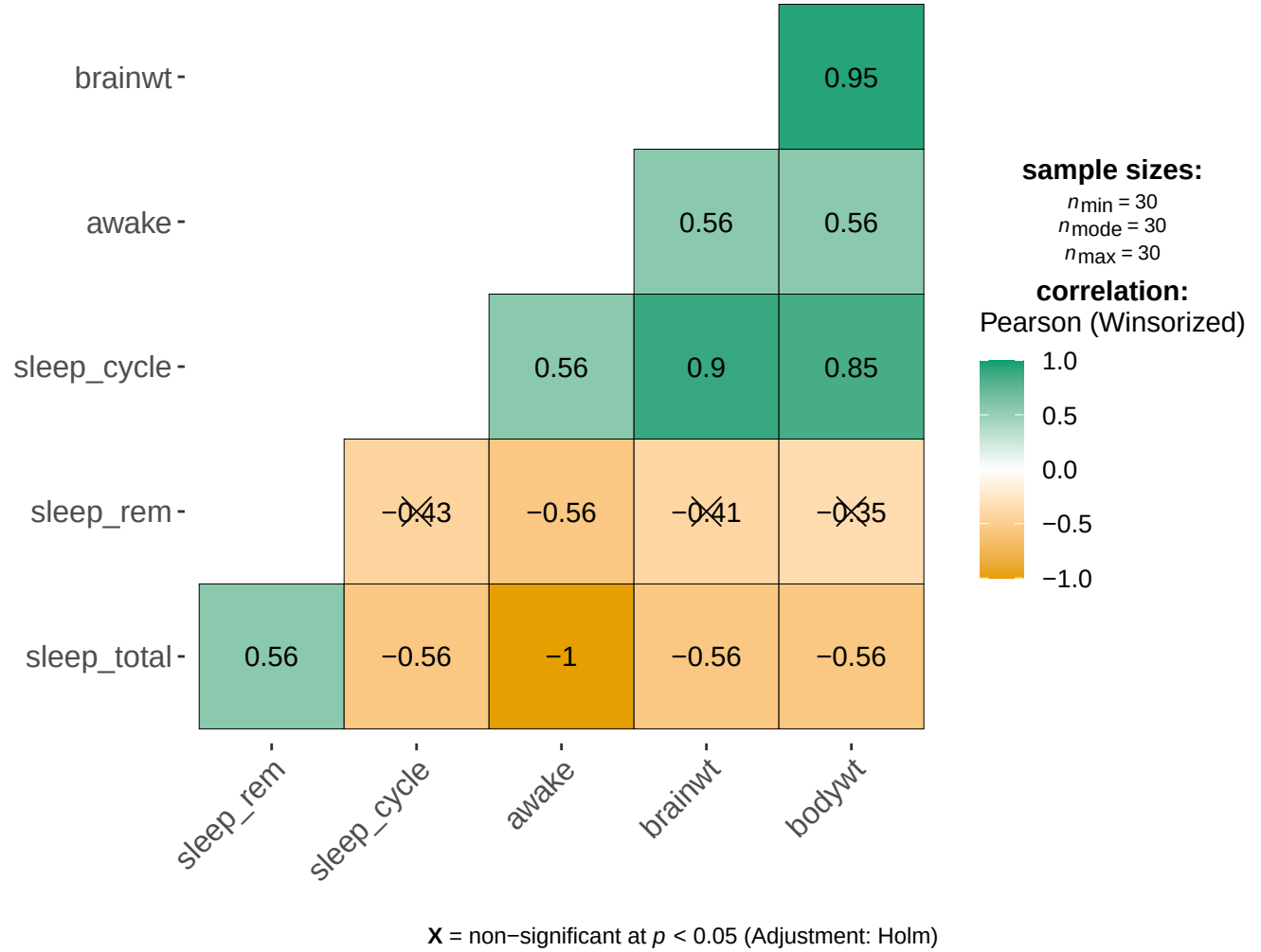

$\chi^2_{Kruskal-Wallis}(4) = 15.02$, $p = 0.005$, $\hat{\varepsilon}^2_{ordinal} = 0.15$, $CI_{95\%}$ [0.05, 0.37], $n_{obs} = 100$
$p_{FDR-corrected} = 0.006$
$p_{FDR-corrected} = 0.005$
$\hat{\mu}_{median} = 940.00$
$\hat{\mu}_{median} = 845.00$
$\hat{\mu}_{median} = 855.00$
$\hat{\mu}_{median} = 815.00$
$\hat{\mu}_{median} = 810.00$
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**



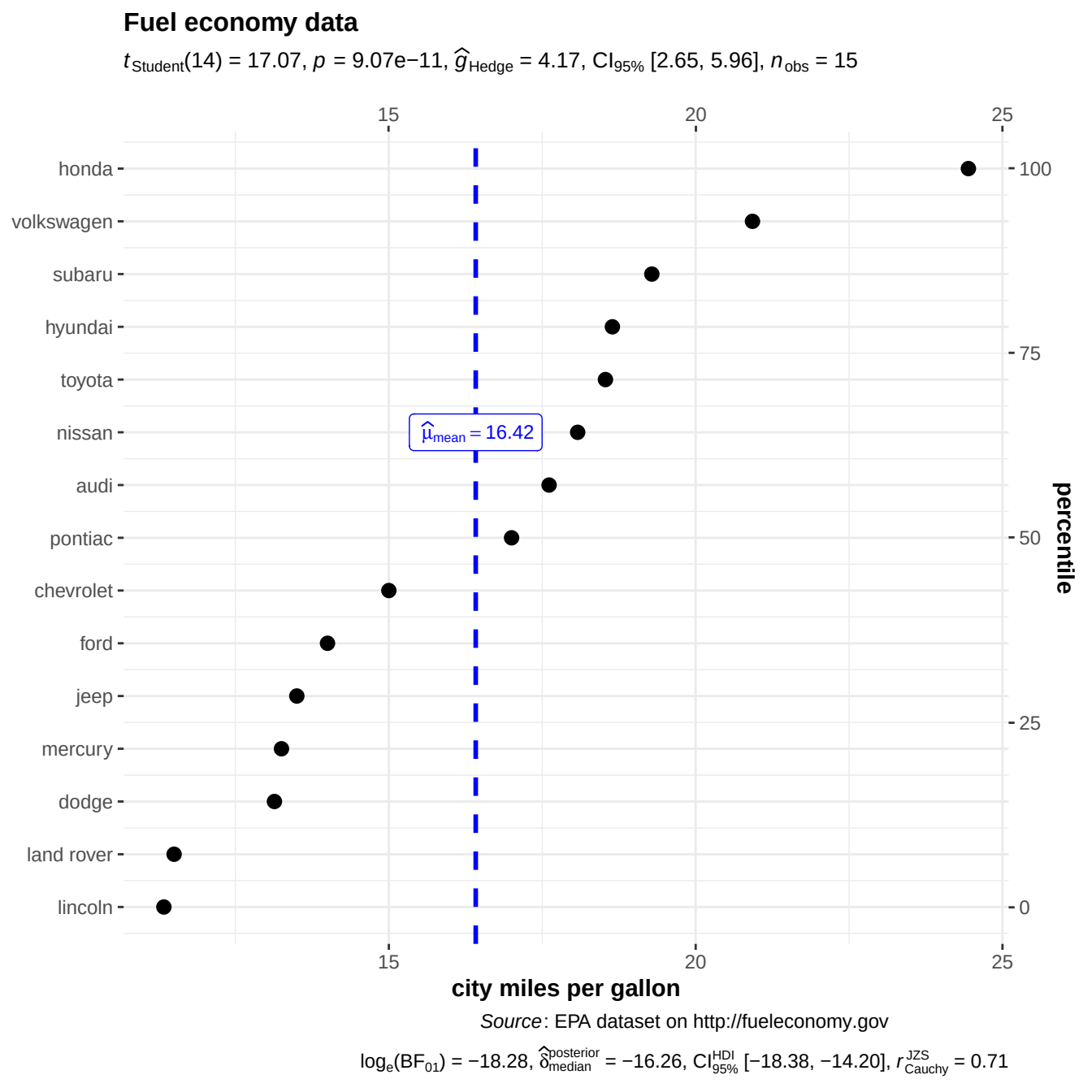
AIC = 166, BIC = 173

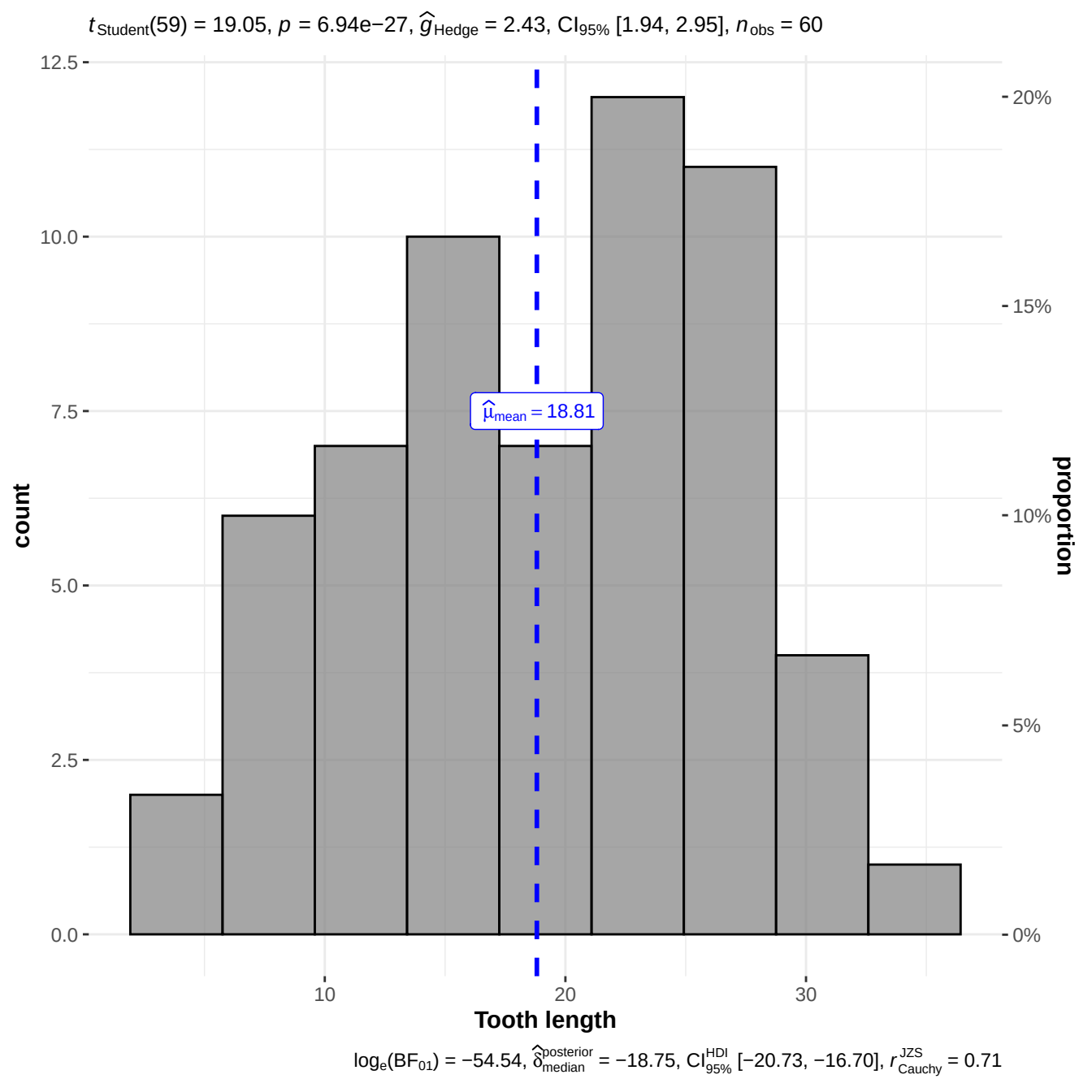

z = 5.736, p = 9.68e−09, $\hat{\beta}^{meta}_{summary}$ = 0.619, $CI_{95\%}$ [0.407, 0.830], $n_{effects}$ = 5
$\hat{\beta} = 0.956,\ t(22) = 15.373,\ p = 2.99e{-}13$
$\hat{\beta} = 0.558,\ t(298) = 11.619,\ p = 5.45e{-}26$
$\hat{\beta} = 0.426,\ t(622) = 11.73,\ p = 7.6e{-}29$
$\hat{\beta} = 0.781,\ t(358) = 23.644,\ p = 4.05e{-}75$
$\hat{\beta} = 0.382,\ t(394) = 8.206,\ p = 3.29e{-}15$
Oceania
Americas
Africa
Europe
Asia
term
0.0
0.3
0.6
0.9
regression coefficient
$\log_e(BF_{01})$ = −3.587, $\hat{\delta}^{posterior}_{mean}$ = 0.594, $CI^{HDI}_{95\%}$ [0.331, 0.868], r^{JZS}_{Cauchy} = 0.707

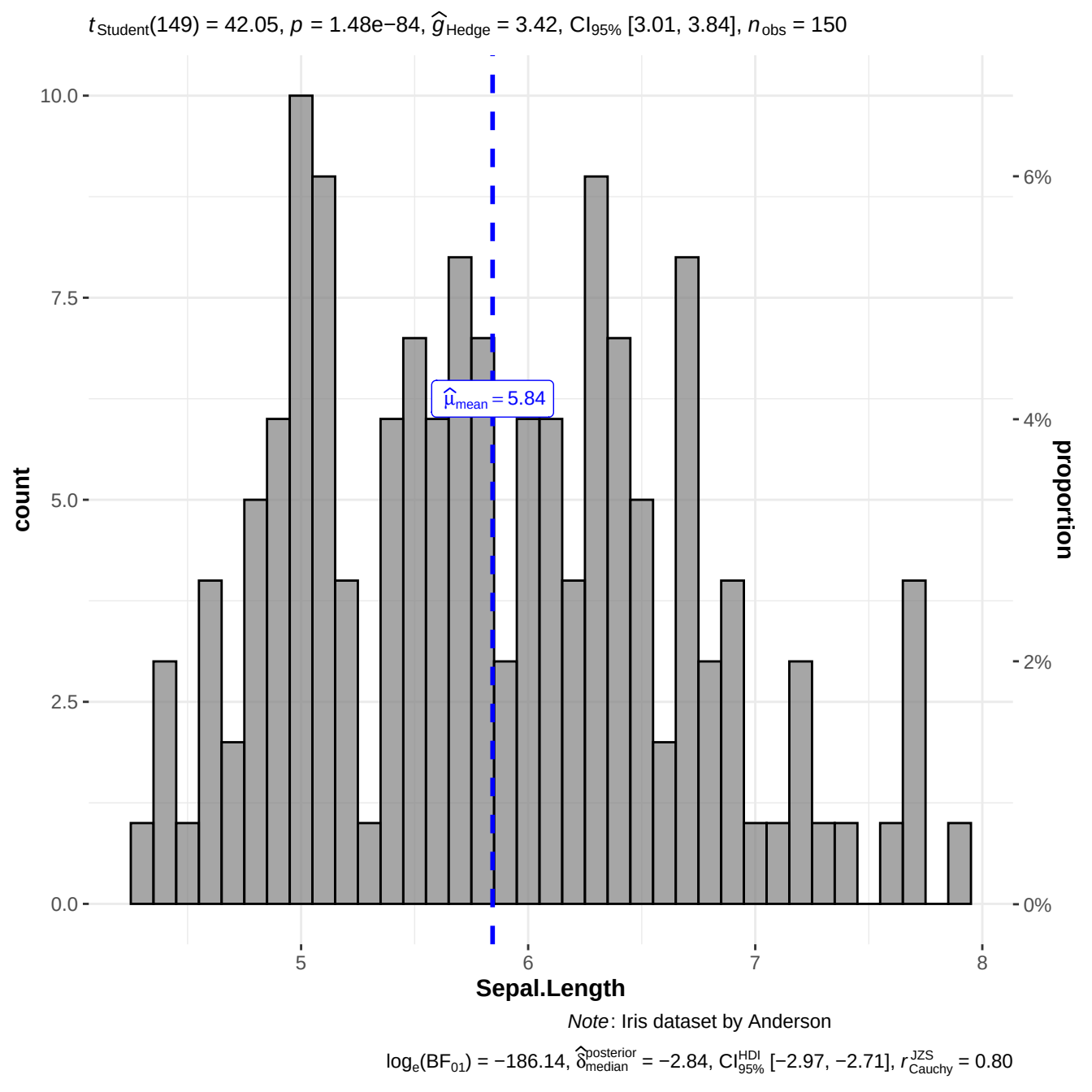

Petal.Width
Petal.Length
Sepal.Width
0.82
−0.37
0.96
0.87
−0.43
−0.12
Sepal.Length
Sepal.Width
Petal.Length
sample sizes:
n = 150
correlation:
Pearson
1.0
0.5
0.0
−0.5
−1.0
X = non−significant at p < 0.05 (Adjustment: Holm)



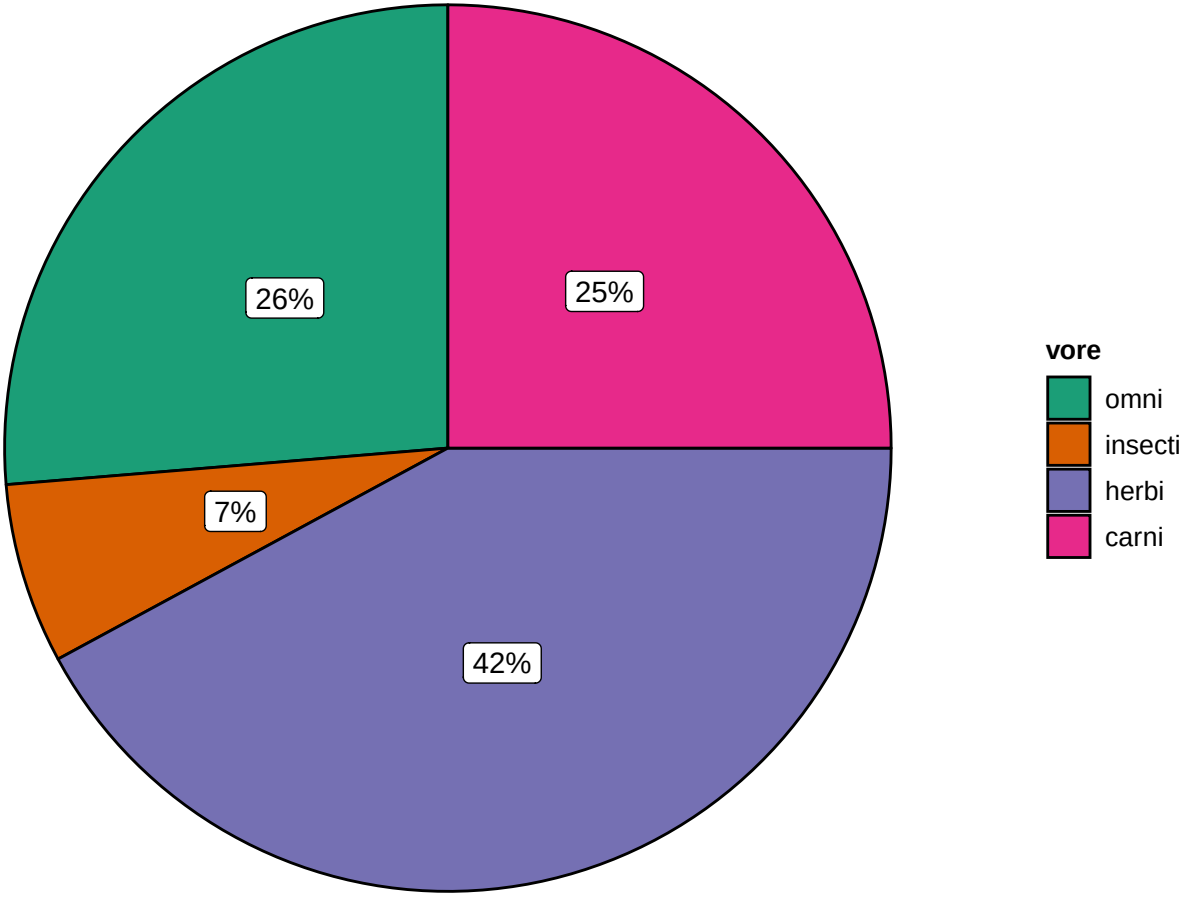
X = non−significant at $p < 0.05$ (Adjustment: Holm)


Fuel economy data
$t_{Student}(14) = 17.07$, $p = 9.07e{-}11$, $\widehat{g}_{Hedge} = 4.17$, $CI_{95\%}$ [2.65, 5.96], $n_{obs} = 15$
15
20
25
honda
volkswagen
subaru
hyundai
toyota
nissan
audi
pontiac
chevrolet
ford
jeep
mercury
dodge
land rover
lincoln
100
75
50
25
0
percentile
$\widehat{\mu}_{mean} = 16.42$
15
20
25
city miles per gallon
Source: EPA dataset on http://fueleconomy.gov
$\log_e(BF_{01}) = -18.28$, $\widehat{\delta}^{posterior}_{median} = -16.26$, $CI^{HDI}_{95\%}$ [−18.38, −14.20], $r^{JZS}_{Cauchy} = 0.71$

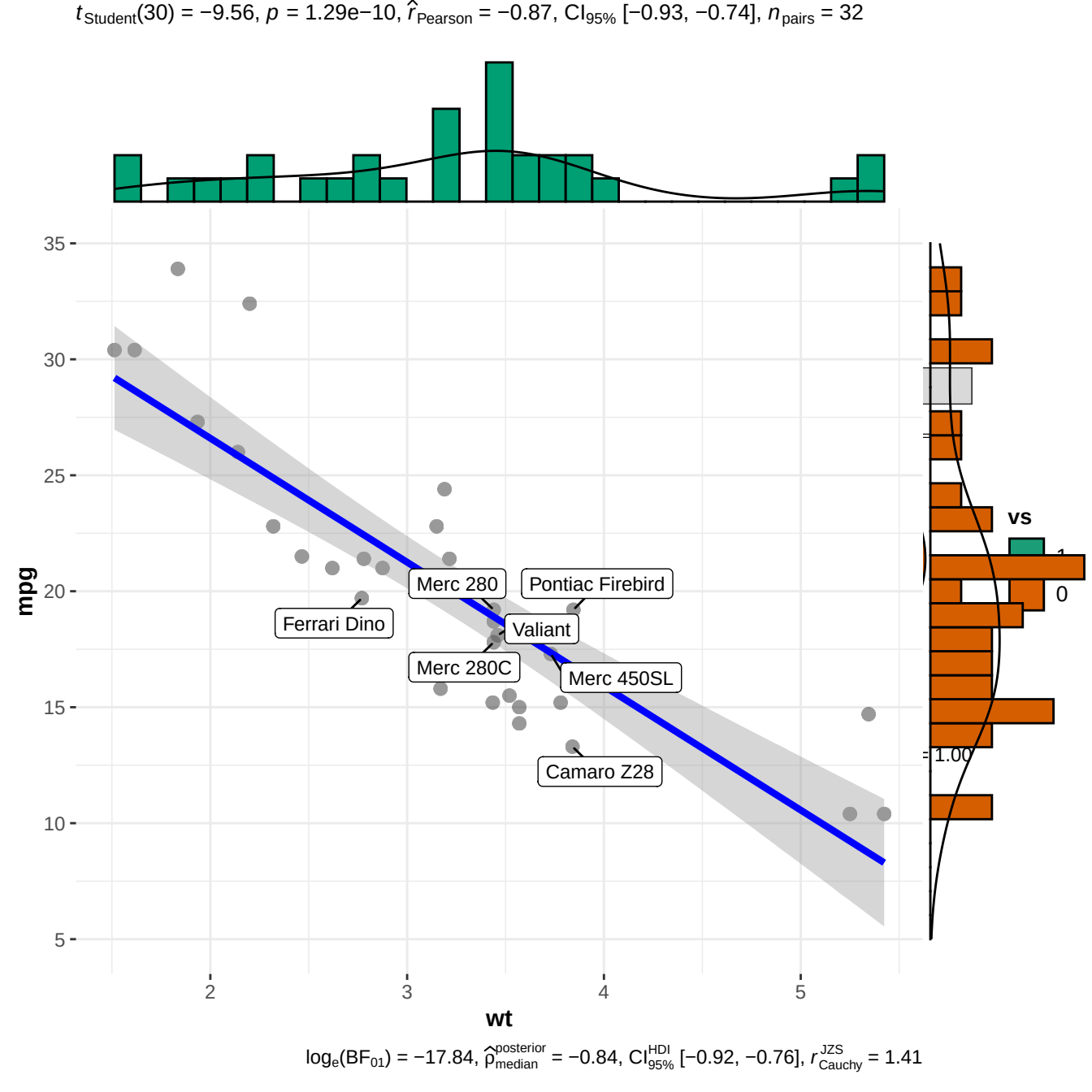

$t_{Student}(59) = 19.05$, $p = 6.94e{-}27$, $\widehat{g}_{Hedge} = 2.43$, $CI_{95\%}$ [1.94, 2.95], $n_{obs} = 60$
12.5
10.0
7.5
5.0
2.5
0.0
count
20%
15%
10%
5%
0%
proportion
$\widehat{\mu}_{mean} = 18.81$
10
20
30
Tooth length
$\log_e(BF_{01}) = -54.54$, $\widehat{\delta}^{posterior}_{median} = -18.75$, $CI^{HDI}_{95\%}$ [−20.73, −16.70], $r^{JZS}_{Cauchy} = 0.71$

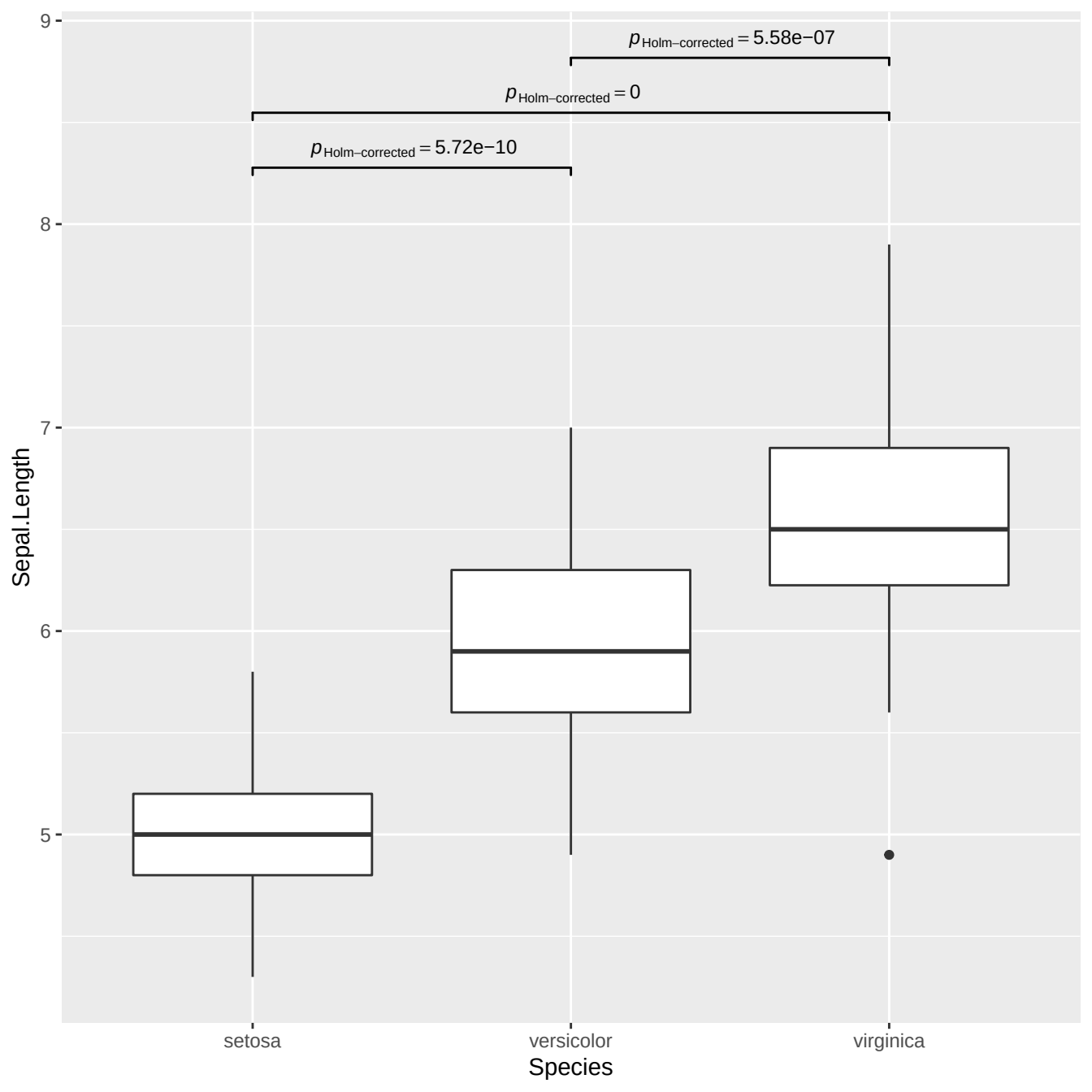

$t_{Student}(149) = 42.05$, $p = 1.48e{-}84$, $\widehat{g}_{Hedge} = 3.42$, $CI_{95\%}$ [3.01, 3.84], $n_{obs} = 150$
10.0
7.5
5.0
2.5
0.0
count
6%
4%
2%
0%
proportion
$\widehat{\mu}_{mean} = 5.84$
5
6
7
8
Sepal.Length
Note: Iris dataset by Anderson
$\log_e(BF_{01}) = -186.14$, $\widehat{\delta}^{posterior}_{median} = -2.84$, $CI^{HDI}_{95\%}$ [−2.97, −2.71], $r^{JZS}_{Cauchy} = 0.80$

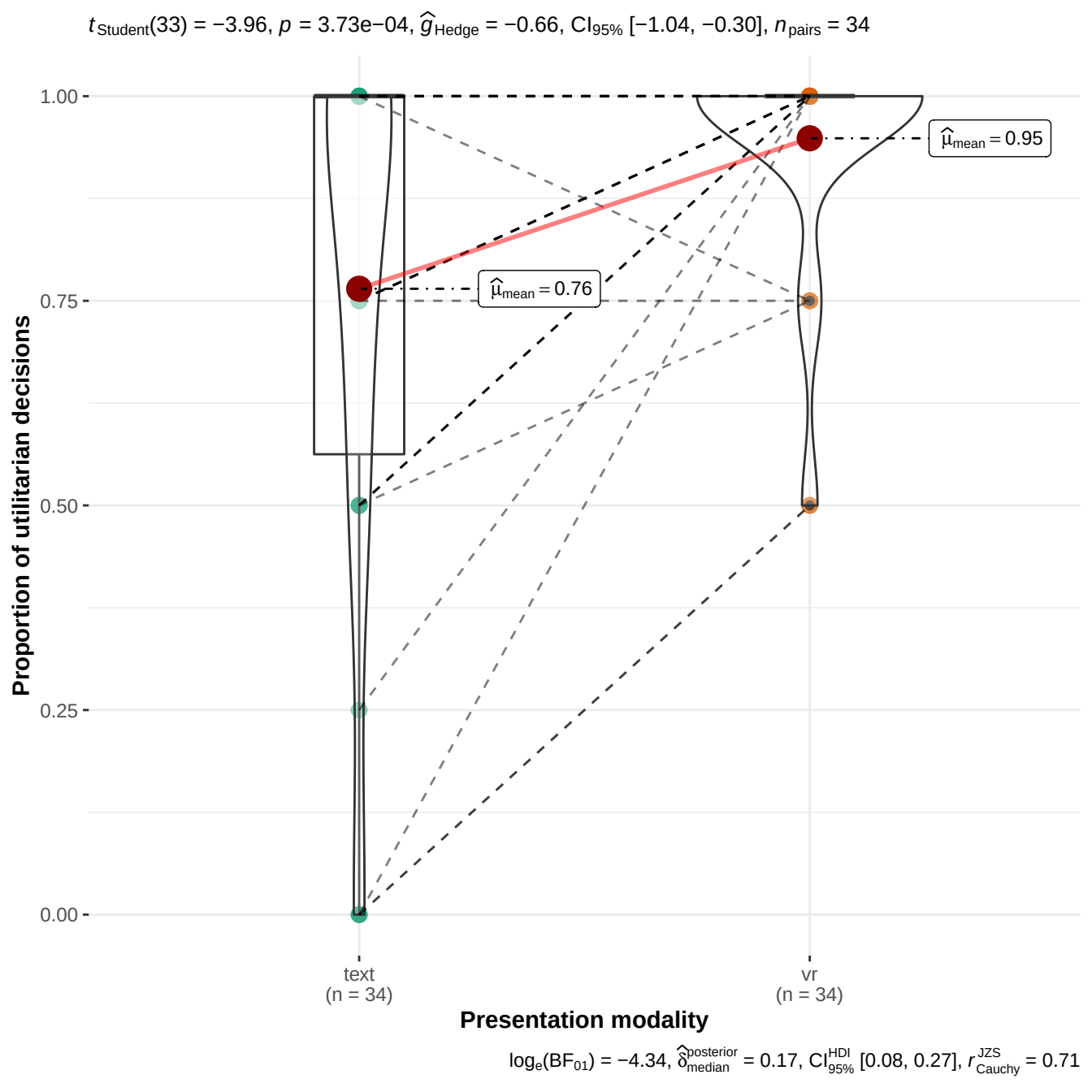
$\chi^2_{gof}(3) = 19.26$, $p = 2.41e{-}04$, $\widehat{V}_{Cramer} = 0.27$, $CI_{95\%}$ [0.11, 0.38], $n_{obs} = 76$

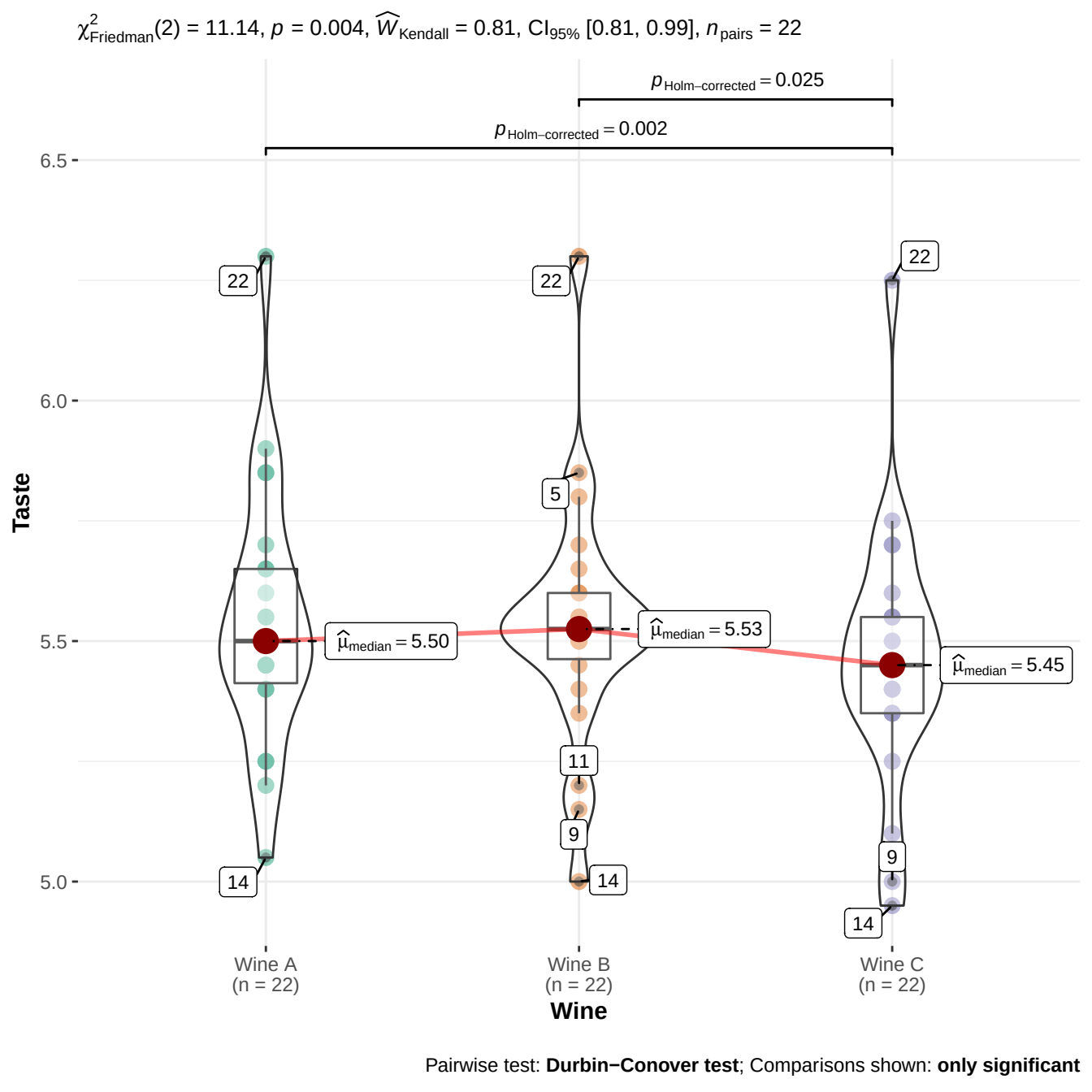


$\log_e(BF_{01}) = -3.74$, $a_{Gunel-Dickey} = 1.00$


$t_{Student}(30) = -9.56$, $p = 1.29e{-}10$, $\hat{r}_{Pearson} = -0.87$, $CI_{95\%}$ [−0.93, −0.74], $n_{pairs} = 32$
mpg
wt
vs
Merc 280
Pontiac Firebird
Ferrari Dino
Valiant
Merc 280C
Merc 450SL
Camaro Z28
$\log_e(BF_{01}) = -17.84$, $\hat{\rho}^{posterior}_{median} = -0.84$, $CI^{HDI}_{95\%}$ [−0.92, −0.76], $r^{JZS}_{Cauchy} = 1.41$

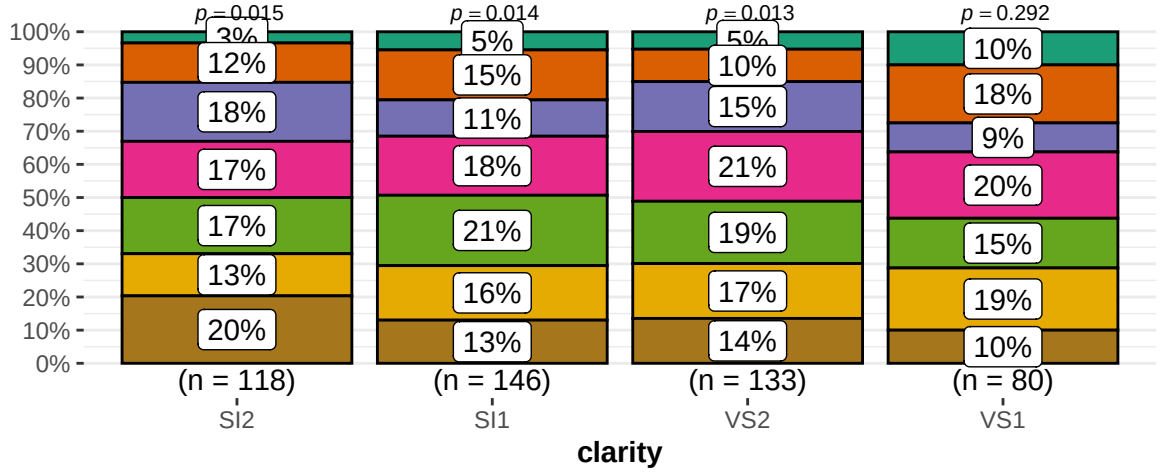

$p_{\text{Holm-corrected}} = 5.58e{-}07$
$p_{\text{Holm-corrected}} = 0$
$p_{\text{Holm-corrected}} = 5.72e{-}10$
9
8
7
6
5
Sepal.Length
setosa
versicolor
virginica
Species


$t_{Student}(33) = -3.96$, $p = 3.73e{-}04$, $\hat{g}_{Hedge} = -0.66$, $CI_{95\%}$ [−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], $r^{JZS}_{Cauchy} = 0.71$


$\chi^2_{Friedman}(2) = 11.14$, $p = 0.004$, $\widehat{W}_{Kendall} = 0.81$, $CI_{95\%}$ [0.81, 0.99], $n_{pairs} = 22$
$p_{Holm-corrected} = 0.025$
$p_{Holm-corrected} = 0.002$
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

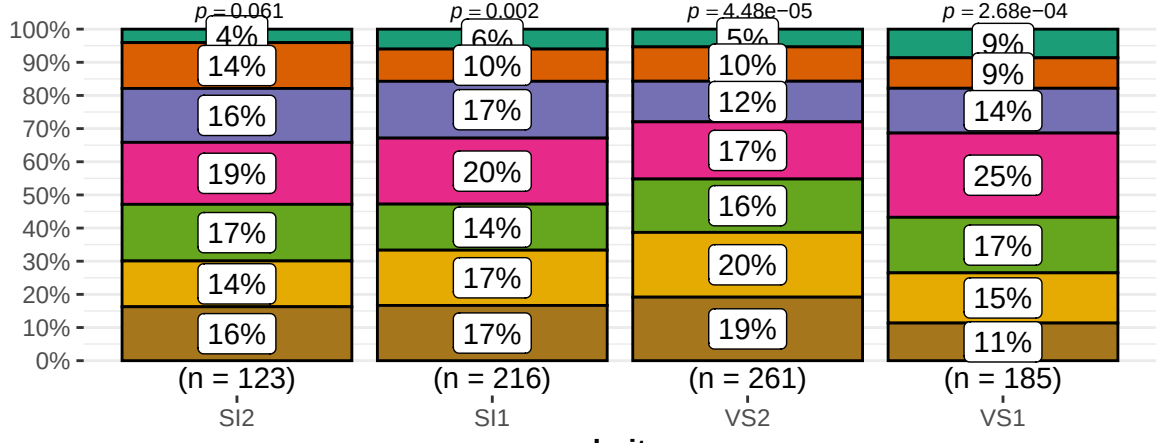
$\chi^2_{\text{Pearson}}(18) = 17.95$, $p = 0.459$, $\widehat{V}_{\text{Cramer}} = 0.00$, $\text{CI}_{95\%}$ [0.00, 0.00], $n_{\text{obs}} = 477$



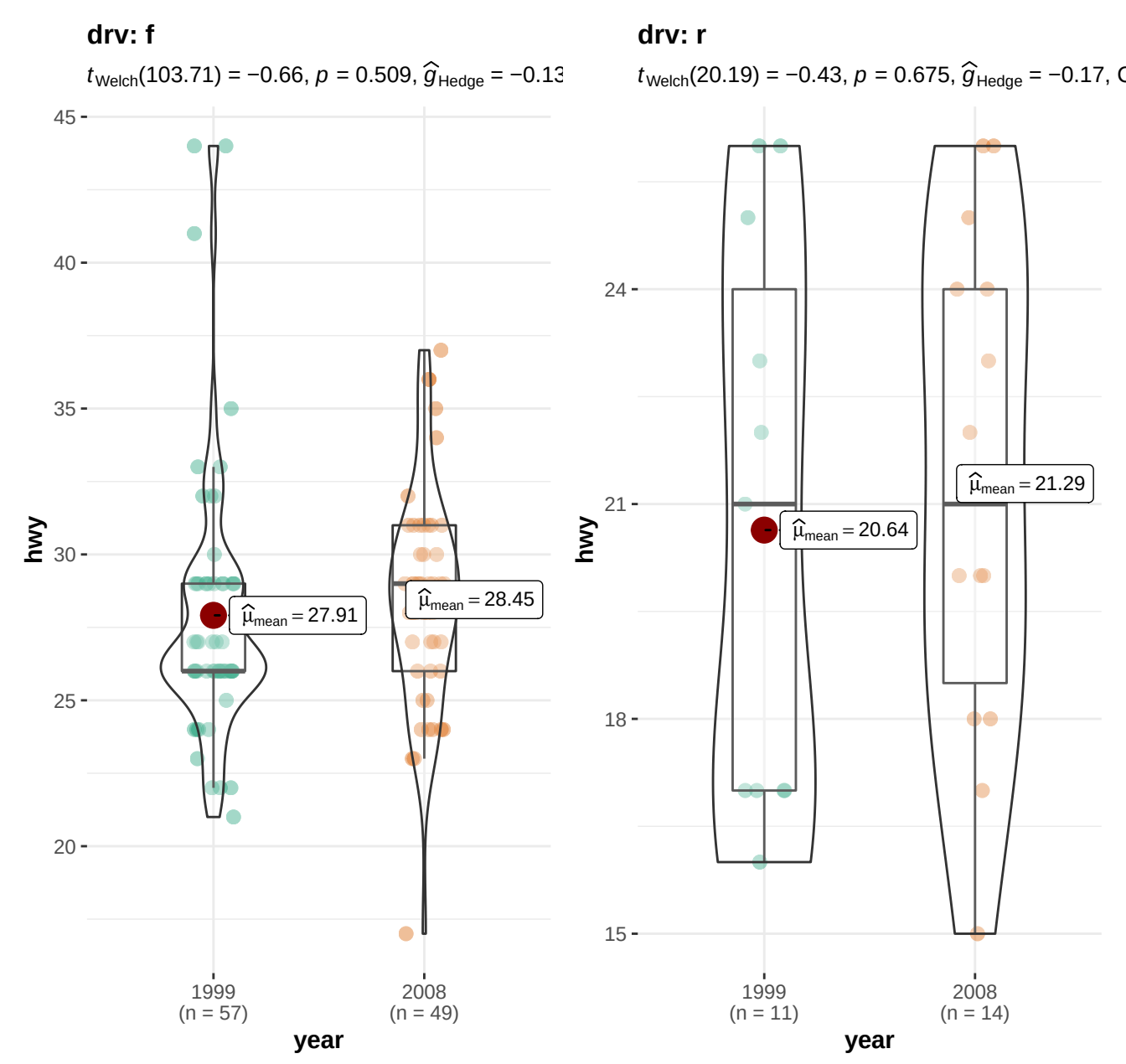
$\log_e(\text{BF}_{01}) = 16.13$, $\widehat{V}^{\text{posterior}}_{\text{median}} = 0.15$, $\text{CI}^{\text{HDI}}_{95\%}$ [0.11, 0.19], $a_{\text{Gunel–Dickey}} = 1.00$

Quality: Ideal

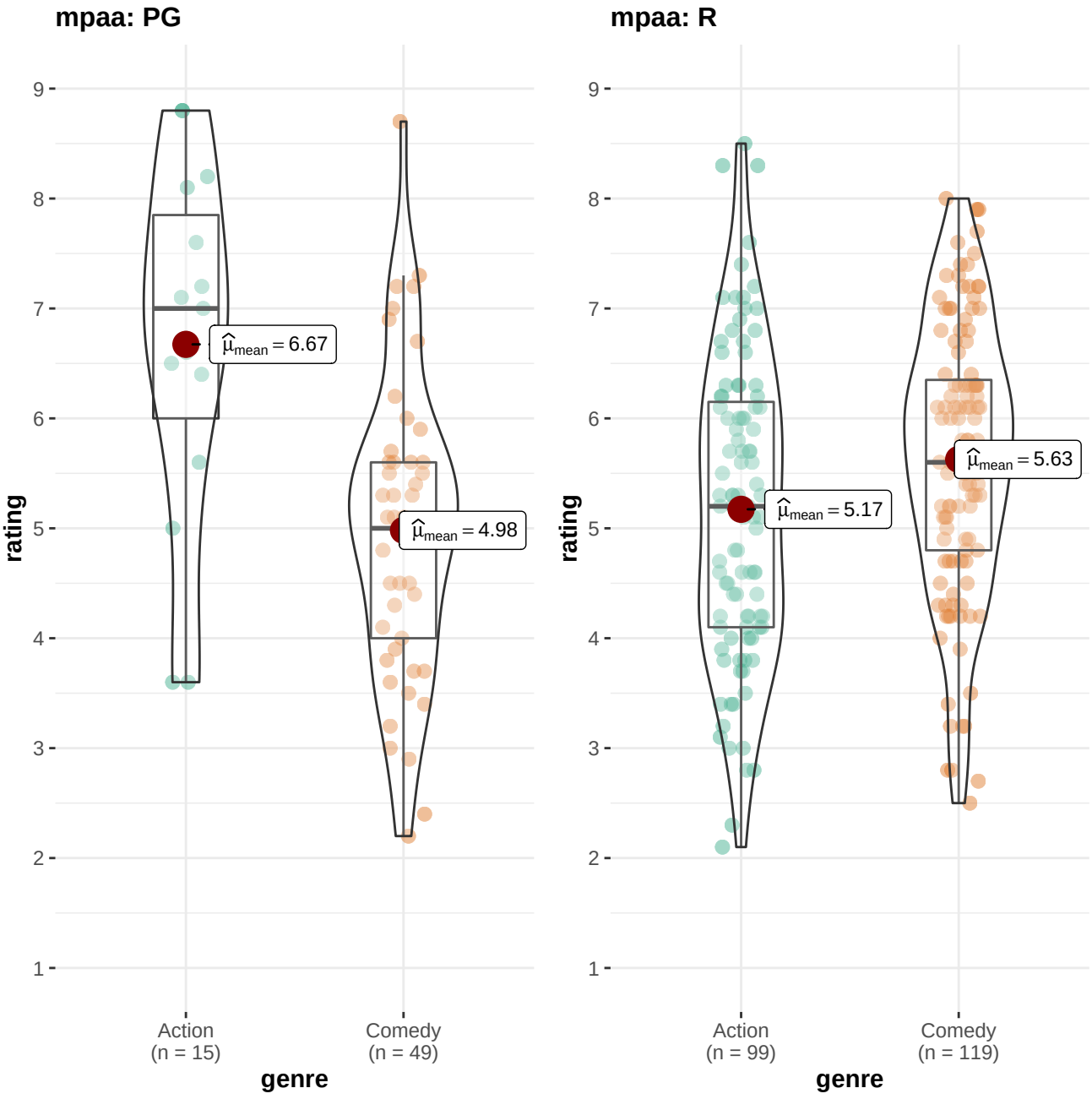
$\chi^2_{\text{Pearson}}(18) = 17.85$, $p = 0.466$, $\widehat{V}_{\text{Cramer}} = 0.00$, $\text{CI}_{95\%}$ [0.00, 0.00], $n_{\text{obs}} = 785$

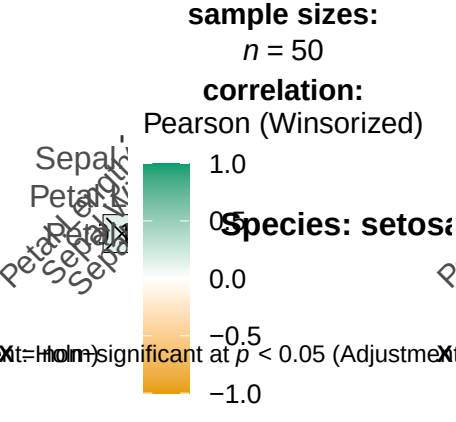


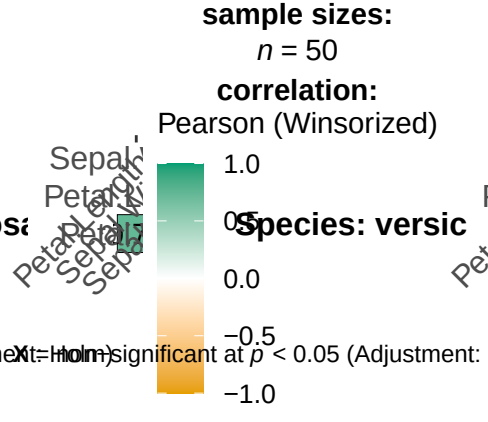
$\log_e(\text{BF}_{01}) = 20.36$, $\widehat{V}^{\text{posterior}}_{\text{median}} = 0.12$, $\text{CI}^{\text{HDI}}_{95\%}$ [0.09, 0.15], $a_{\text{Gunel–Dickey}} = 1.00$

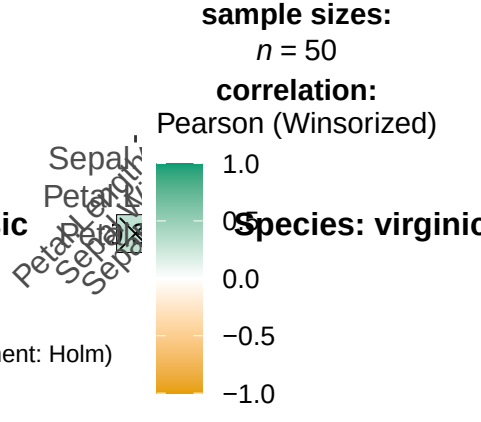


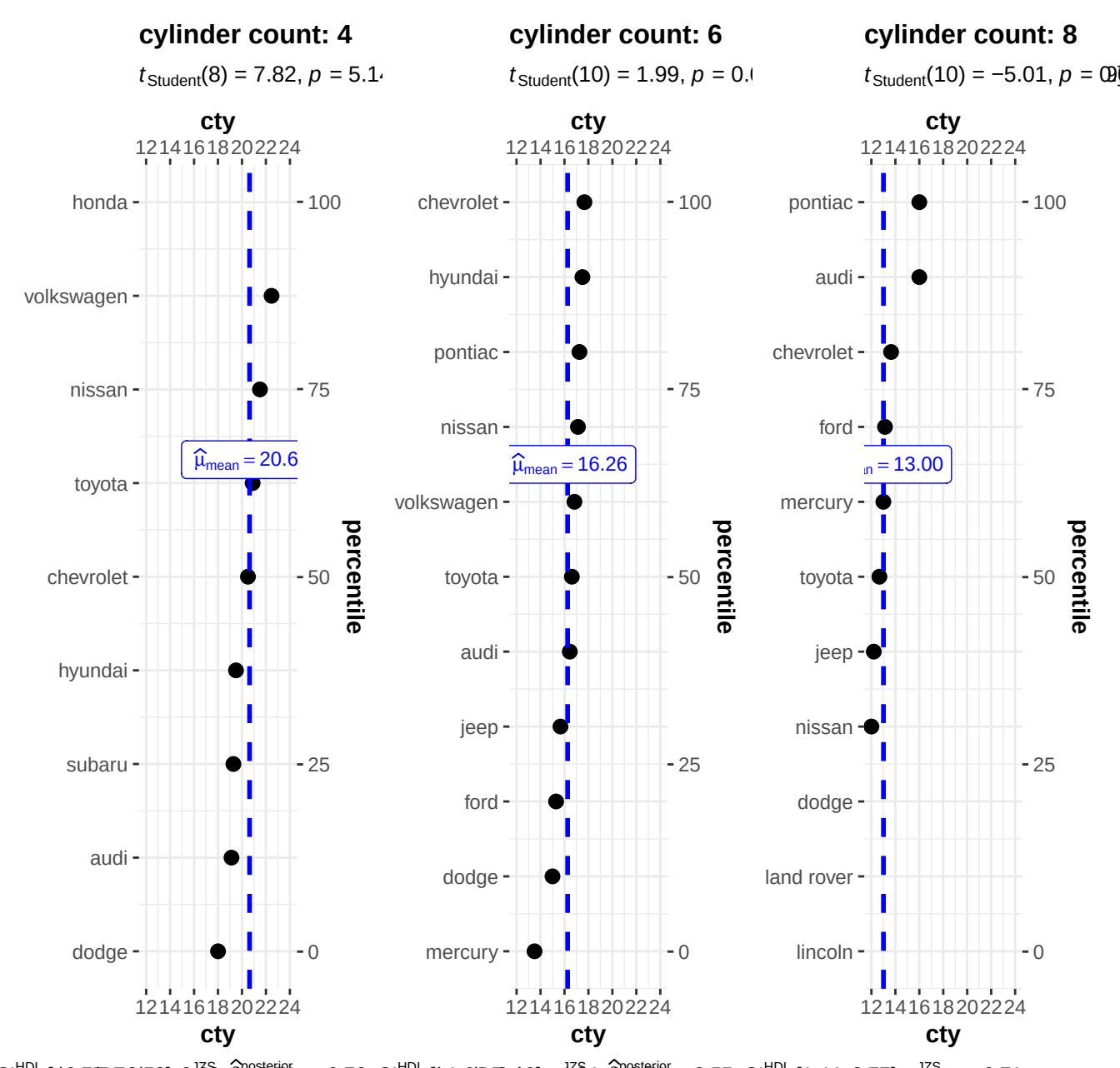
(BF$_{01}$) = 1.39, $\hat{\delta}^{posterior}_{median}$ = 0.47, CI$^{HDI}_{95\%}$ [−1.05, 1.95], r^{JZS}_{Cauchy} = 0.71 (BF$_{01}$) = 0.93, $\hat{\delta}^{posterior}_{median}$ = 0.44, CI$^{HDI}_{95\%}$ [−2.06, 3.07], r^{JZS}_{Cauchy} = 0.71


mpaa: PG
mpaa: R
rating
9
8
7
6
5
4
3
2
1
$\hat{\mu}_{mean} = 6.67$
$\hat{\mu}_{mean} = 4.98$
$\hat{\mu}_{mean} = 5.17$
$\hat{\mu}_{mean} = 5.63$
Action
(n = 15)
Comedy
(n = 49)
Action
(n = 99)
Comedy
(n = 119)
genre
genre

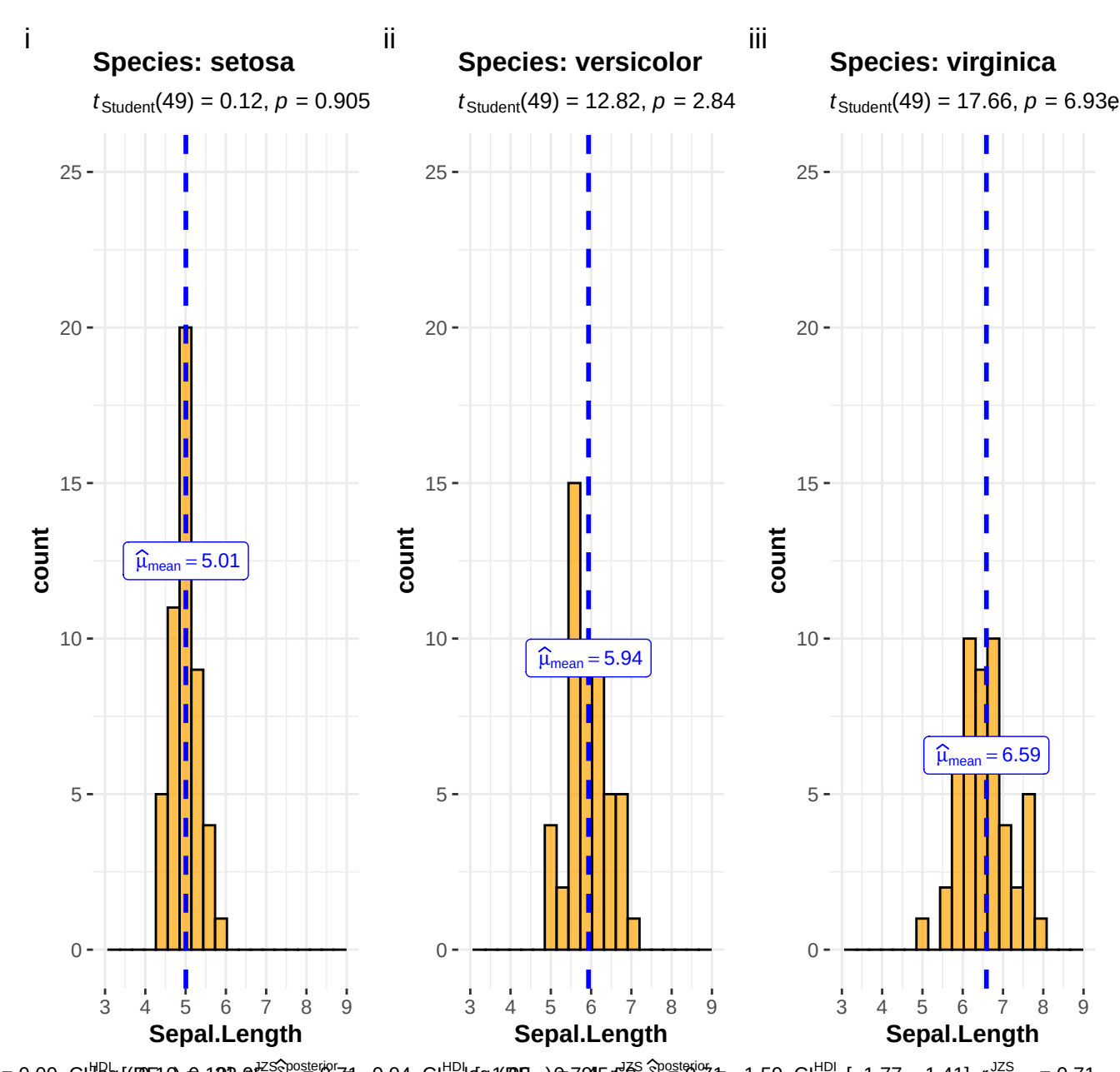

sample sizes:
n = 50
correlation:
Pearson (Winsorized)
Sepal
Petal
Petal.Length
Sepal.Width
Petal.Width
Species: setosa
1.0
0.5
0.0
−0.5
−1.0
X: Holm)
significant at p < 0.05 (Adjustment: Holm)


sample sizes:
n = 50
correlation:
Pearson (Winsorized)
Sepal
Petal
Petal.Length
Sepal.Width
Petal.Width
Species: versic
1.0
0.5
0.0
−0.5
−1.0
X: Holm)
significant at p < 0.05 (Adjustment: Holm)


sample sizes:
n = 50
correlation:
Pearson (Winsorized)
Sepal
Petal
Petal.Length
Sepal.Width
Petal.Width
Species: virginic
1.0
0.5
0.0
−0.5
−1.0



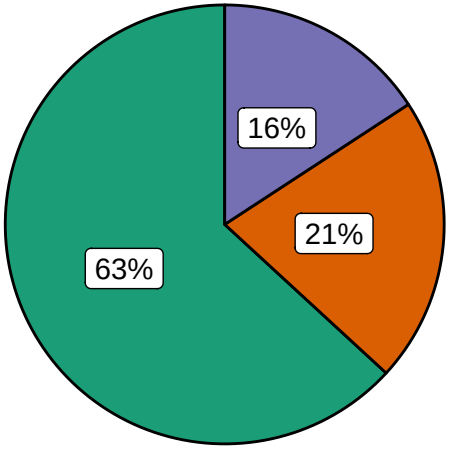
$CI^{HDI}_{95\%}$ [−6.76, −3.53], r^{JZS}_{Cauchy} = 0.71, $\hat{\delta}^{posterior}_{median}$ = −0.76, $CI^{HDI}_{95\%}$ [1.64, 4.24], r^{JZS}_{Cauchy} = 0.71, $\hat{\delta}^{posterior}_{median}$ = 2.55, $CI^{HDI}_{95\%}$ [1.44, 3.77], r^{JZS}_{Cauchy} = 0.71



= 0.00, CI$^{HDI}_{95\%}$[−0.18, 0.18], $r^{JZS}_{Cauchy,median}$ = 0.71 −0.94, CI$^{HDI}_{95\%}$[−1.19, −0.70], $r^{JZS}_{Cauchy,median}$ = 0.71 −1.59, CI$^{HDI}_{95\%}$ [−1.77, −1.41], r^{JZS}_{Cauchy} = 0.71

am: 0

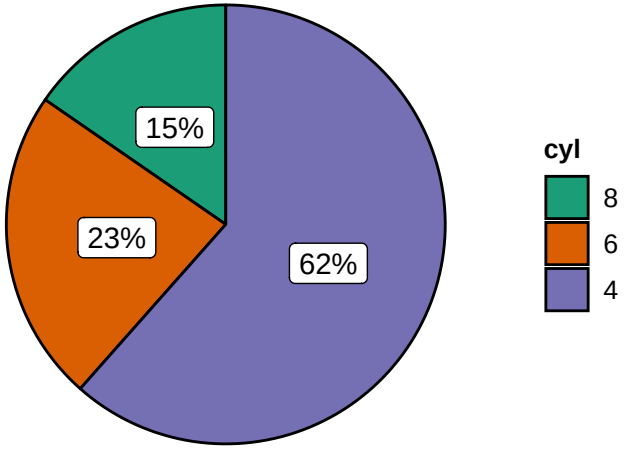
$\chi^2_{gof}(2) = 7.68$, $p = 0.021$, $\widehat{V}_{Cramer} = 0.41$, $CI_{95\%}$ [(



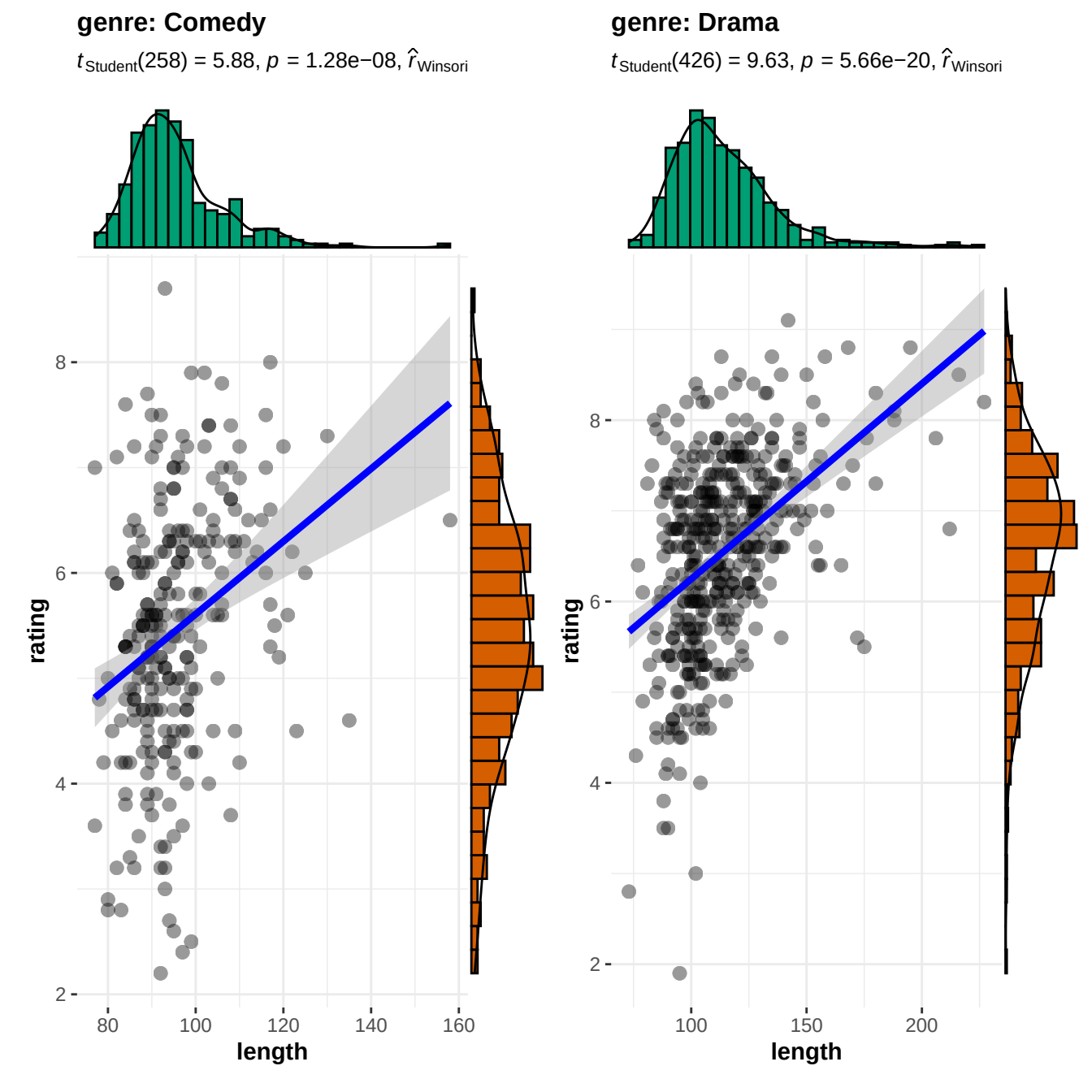
$\log_e(BF_{01}) = -0.13$, $a_{Gunel-Dickey} = 1.00$

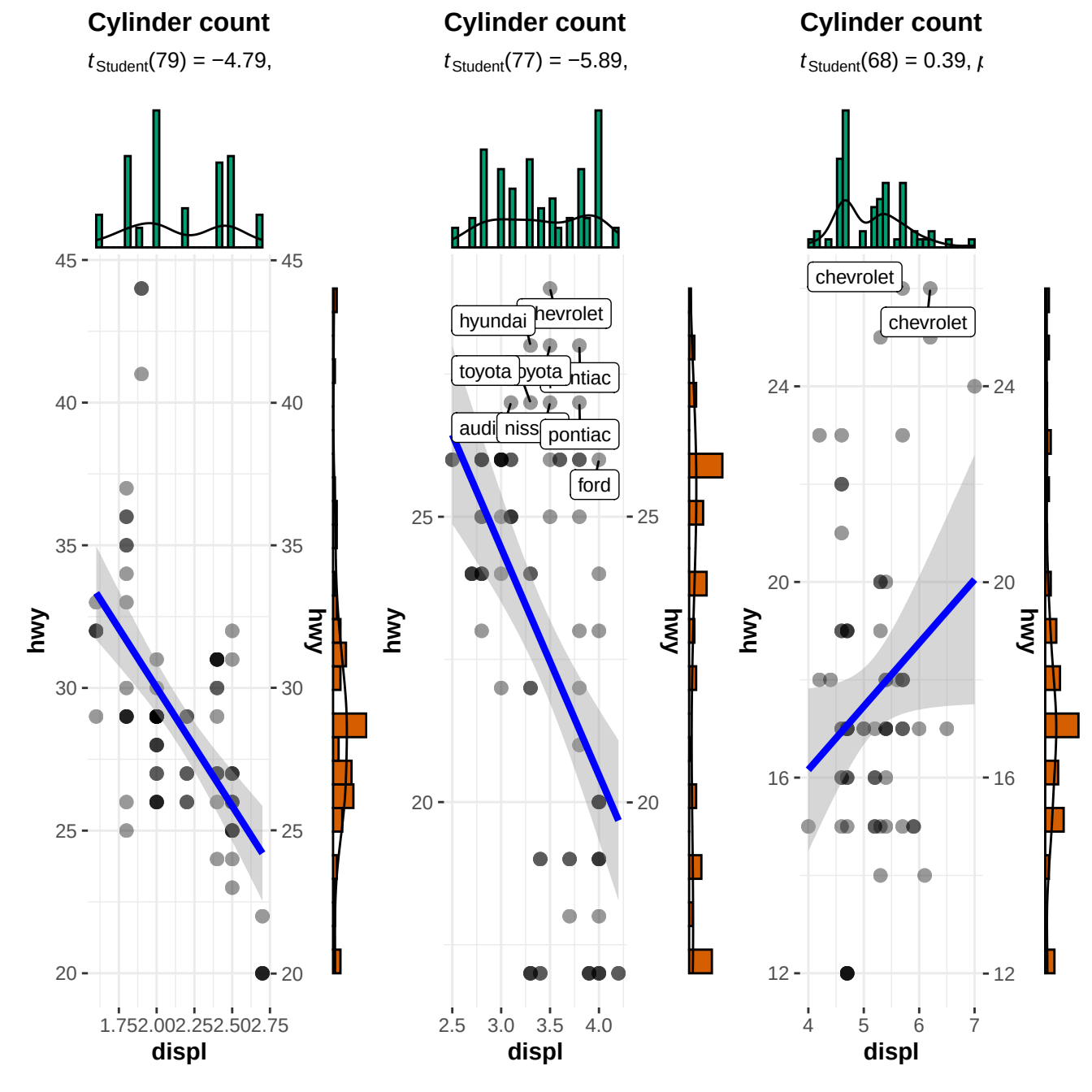
am: 1

$\chi^2_{gof}(2) = 4.77$, $p = 0.092$, $\widehat{V}_{Cramer} = 0.35$, $CI_{95\%}$ [0.00, 0.66], n

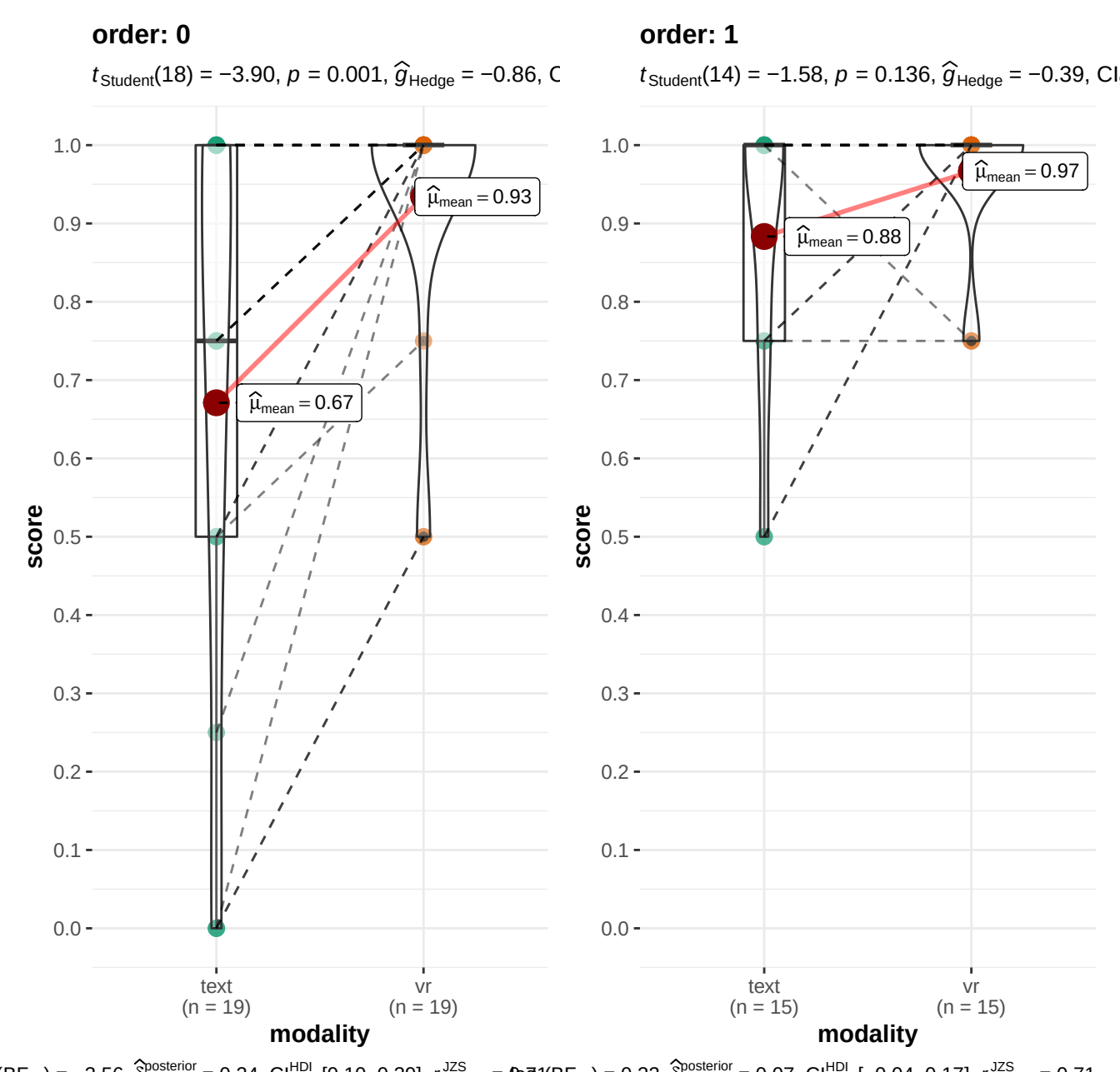


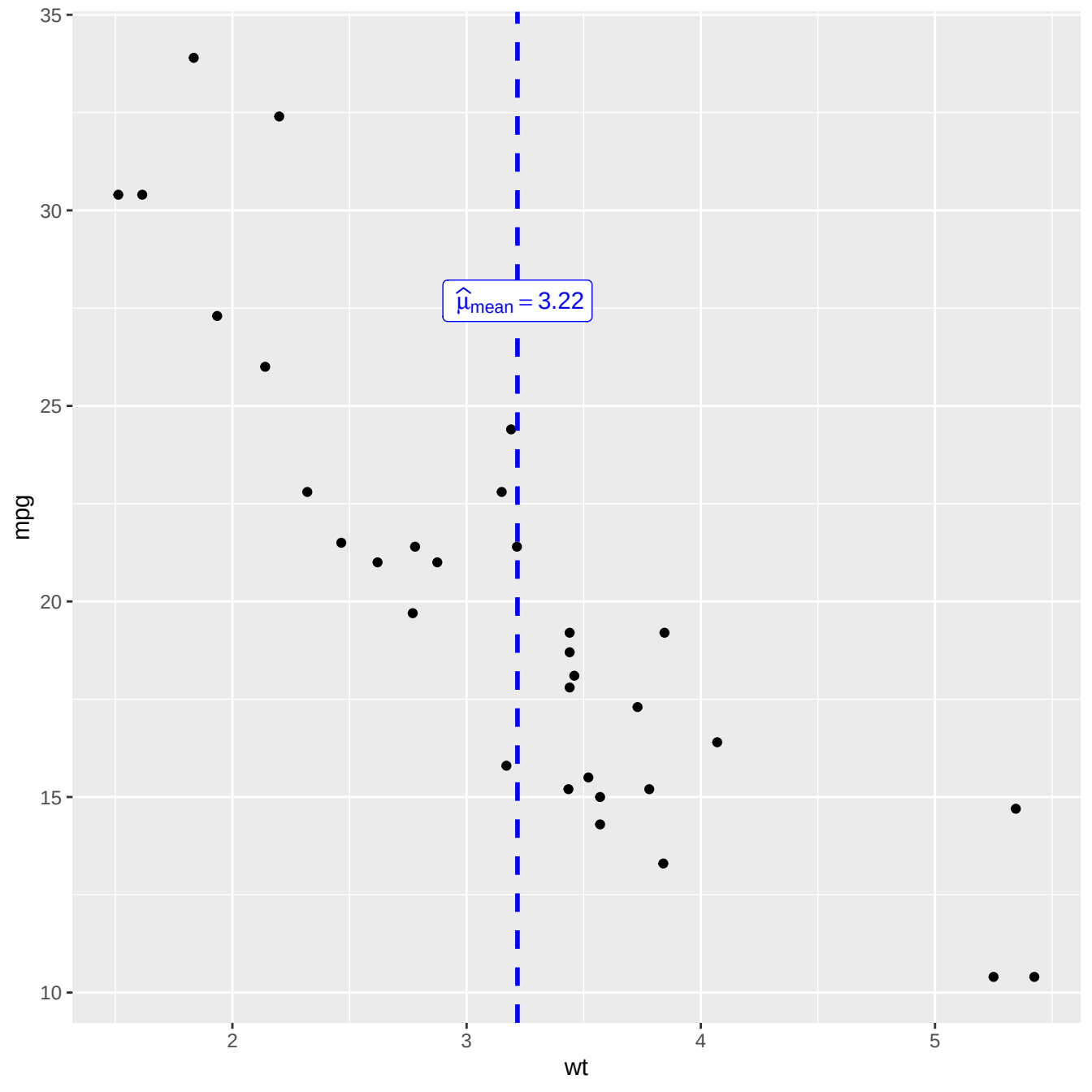
$\log_e(BF_{01}) = 0.82$, $a_{Gunel-Dickey} = 1.00$


genre: Comedy
$t_{Student}(258) = 5.88, p = 1.28e{-}08, \hat{r}_{Winsori}$
genre: Drama
$t_{Student}(426) = 9.63, p = 5.66e{-}20, \hat{r}_{Winsori}$
rating
length
2
4
6
8
80
100
120
140
160
100
150
200


Cylinder count
$t_{Student}(79) = -4.79,$
Cylinder count
$t_{Student}(77) = -5.89,$
Cylinder count
$t_{Student}(68) = 0.39, \mu$
hyundai
chevrolet
toyota
audi
pontiac
ford
chevrolet
chevrolet
hwy
displ
45
40
35
30
25
20
24
16
12
1.75
2.00
2.25
2.50
2.75
2.5
3.0
3.5
4.0
4
5
6
7


Genre: Comedy
$t_{Student}(5) = 0.84, p = 0.439, \hat{r}_{Pearson} = 0.35, CI_{95}$
length
budget
120
100
80
0
20
40
Zero Effect
Meet the Parents
I Heart Huckabees
Wag the Dog
Elf
Mighty Aphrodite
Jake's Booty Call
Genre: Drama
$t_{Student}(14) = 2.67, p = 0.018, \hat{r}_{Pearson} = 0.58, CI_{95}$
length
budget
150
130
110
0
20
40
60
Eyes Wide Shut
Amistad
Sleepers
Devil's Advocate, The
Sunshine State
Talented Mr. Ripley, The
Husbands
One True Thing
My Family
Girl, Interrupted
Friday Night Lights
Panic Room
Japanese Story
Owning Mahowny
Edges of the Lord


order: 0
$t_{Student}(18) = -3.90$, $p = 0.001$, $\widehat{g}_{Hedge} = -0.86$, C
order: 1
$t_{Student}(14) = -1.58$, $p = 0.136$, $\widehat{g}_{Hedge} = -0.39$, CI
score
modality
text
(n = 19)
vr
(n = 19)
text
(n = 15)
vr
(n = 15)
$\widehat{\mu}_{mean} = 0.67$
$\widehat{\mu}_{mean} = 0.93$
$\widehat{\mu}_{mean} = 0.88$
$\widehat{\mu}_{mean} = 0.97$
$(BF_{01}) = -3.56$, $\widehat{\delta}^{posterior}_{median} = 0.24$, $CI^{HDI}_{95\%}$ [0.10, 0.39], $r^{JZS}_{Cauchy} = 0.71$
$(BF_{01}) = 0.32$, $\widehat{\delta}^{posterior}_{median} = 0.07$, $CI^{HDI}_{95\%}$ [−0.04, 0.17], $r^{JZS}_{Cauchy} = 0.71$


35
30
25
20
15
10
mpg
2
3
4
5
wt
$\hat{\mu}_{mean} = 3.22$