Results

Descriptive Statistics

Descriptive Statistics

		Valid	Missing	Mean	Std. Deviation	Shapiro-Wilk	P-value of Shapiro-Wilk	Minimum	Maximum
rank	abalone	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	adult	1860	0	1.484	0.500	0.636	< .001	1.000	2.000
rank	air_quality	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	bank	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	bike	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	car	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	diabetic	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	fish_toxicity	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	forest_fires	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	housing	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	iris	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	mushroom	1860	0	1.499	0.500	0.637	< .001	1.000	2.000
rank	parkinsons	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	student_performance	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
rank	wine_quality	1860	0	1.500	0.500	0.637	< .001	1.000	2.000
test_loss	abalone	1860	0	2.302	0.478	0.625	< .001	1.941	6.965
test_loss	adult	1860	0	210.711	547.926	0.389	< .001	0.316	8073.729
test_loss	air_quality	1860	0	0.279	0.050	0.400	< .001	0.245	0.744
test_loss	bank	1860	0	0.255	0.145	0.244	< .001	0.201	1.991
test_loss	bike	1860	0	0.088	0.069	0.438	< .001	0.047	0.666
test_loss	car	1860	0	0.254	0.298	0.352	< .001	0.077	2.804
test_loss	diabetic	1860	0	1.149	0.822	0.268	< .001	0.884	23.759
test_loss	fish_toxicity	1860	0	0.112	0.043	0.365	< .001	0.081	0.517
test_loss	forest_fires	1860	0	0.085	0.102	0.572	< .001	0.011	0.884
test_loss	housing	1860	0	0.106	0.051	0.503	< .001	0.061	0.560
test_loss	iris	1860	0	0.266	0.392	0.532	< .001	0.007	6.517
test_loss	mushroom	1860	0	0.159	2.091	0.042	< .001	0.000	60.909
test_loss	parkinsons	1860	0	0.071	0.056	0.206	< .001	0.054	0.657
test_loss	student_performance	1860	0	0.221	0.079	0.673	< .001	0.147	0.603
test_loss	wine_quality	1860	0	1.144	0.248	0.315	< .001	1.021	2.968

Independent Samples T-Test

Independent Samples T-Test

	Test	Statistic	df	p
rank	Student	−4.923	27898	< .001
	Mann-Whitney	9.443e+7		< .001

Assumption Checks

Test of Normality (Shapiro-Wilk)

		W	p
rank	False	NaN[a]	
	True	NaN[a]	

Note. Significant results suggest a deviation from normality.
[a] Number of observations is < 3 or > 5000 in rank after grouping on normalisation

Test of Equality of Variances (Levene's)

	F	df	p
rank	0.548	1	0.459

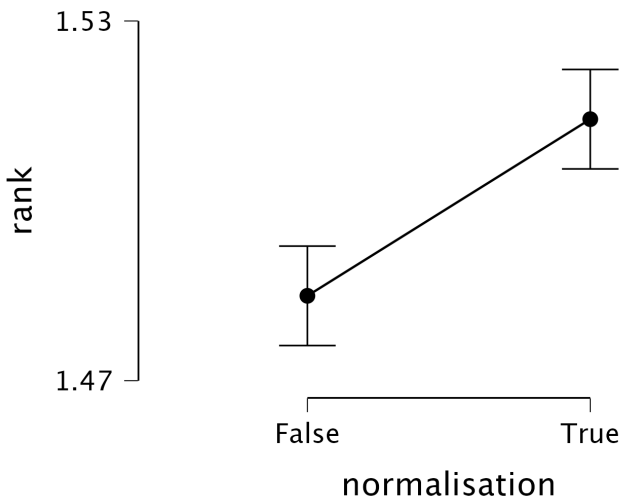
Descriptives

Group Descriptives

	Group	N	Mean	SD	SE
rank	False	13950	1.484	0.500	0.004
	True	13950	1.514	0.500	0.004

Descriptives Plots

rank



ANOVA

ANOVA - rank

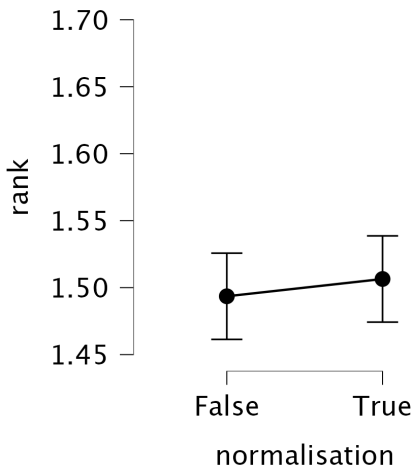
Cases	Sum of Squares	df	Mean Square	F	p
dataset	0.450	14	0.032	0.130	1.000
normalisation	6.055	1	6.055	24.490	< .001
dataset ✻ normalisation	78.266	14	5.590	22.613	< .001
Residuals	6890.195	27870	0.247		

Note. Type III Sum of Squares

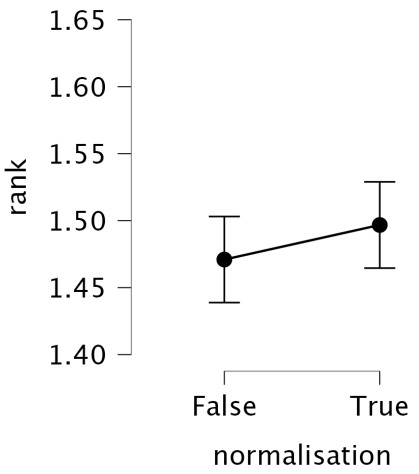
Descriptives

Descriptives plots

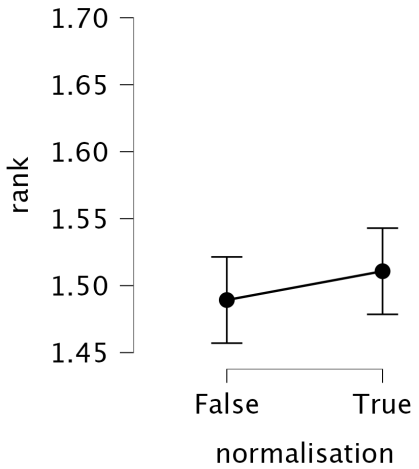
dataset: abalone



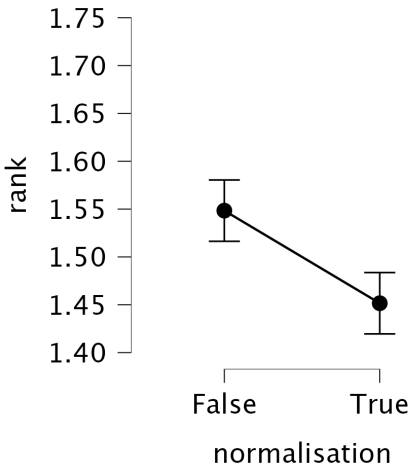
dataset: adult



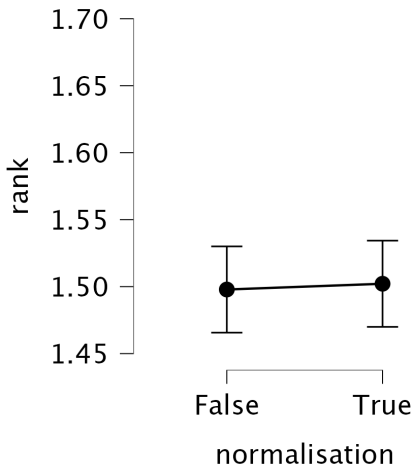
dataset: air_quality



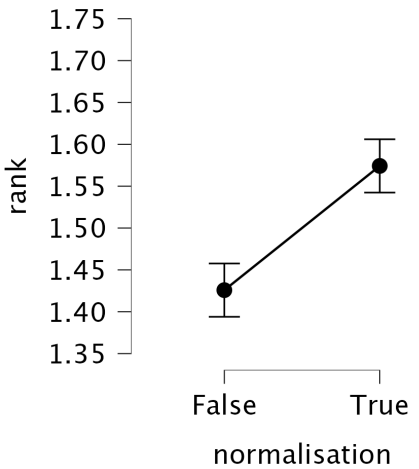
dataset: bank



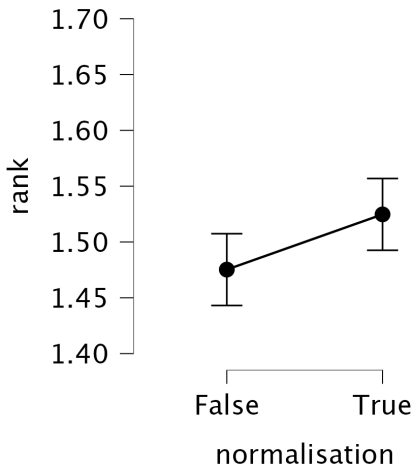
dataset: bike



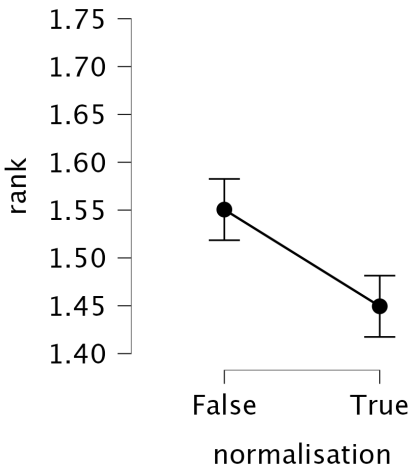
dataset: car



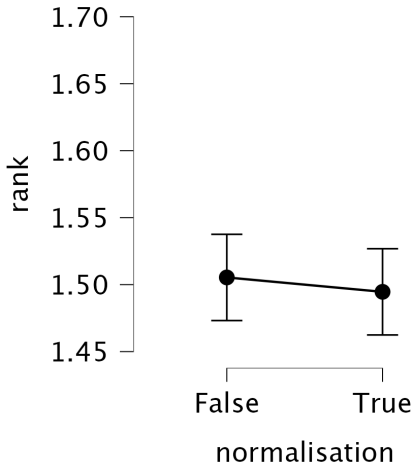
dataset: diabetic



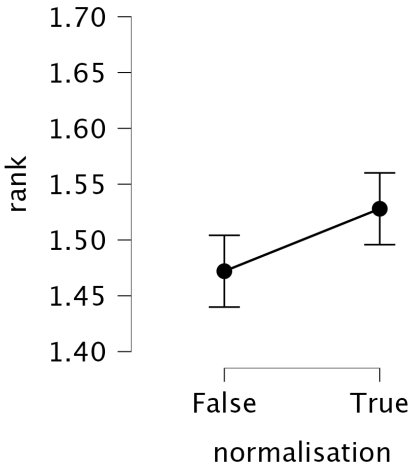
dataset: fish_toxicity



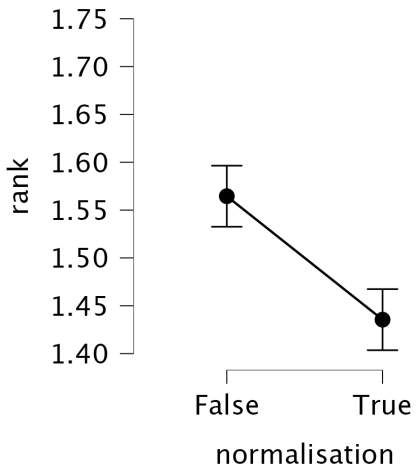
dataset: forest_fires



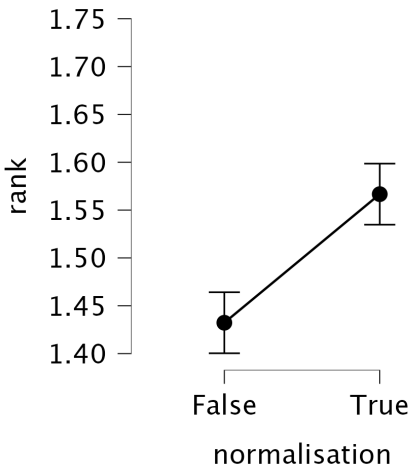
dataset: housing



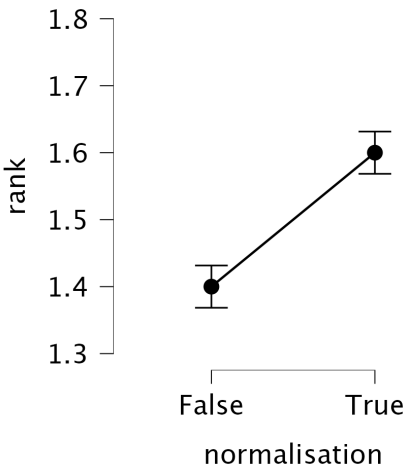
dataset: iris



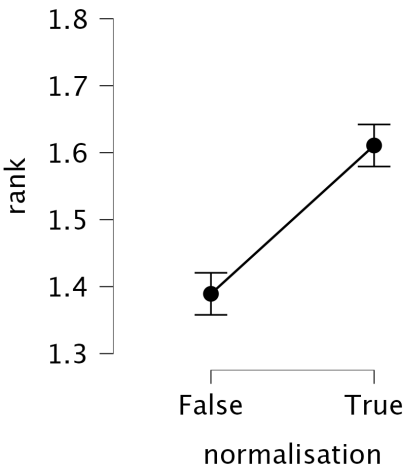
dataset: mushroom



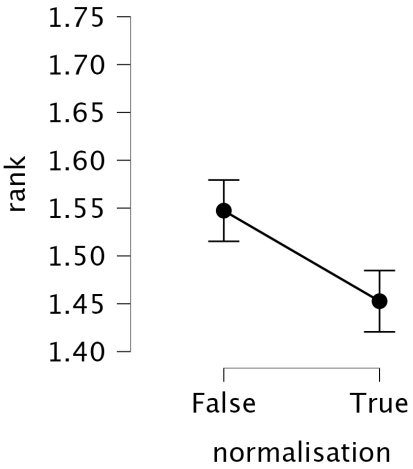
dataset: parkinsons



dataset: student_performance

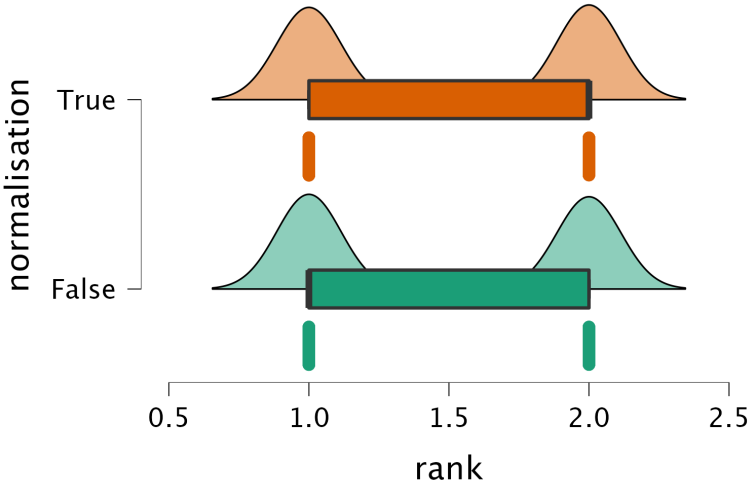


dataset: wine_quality

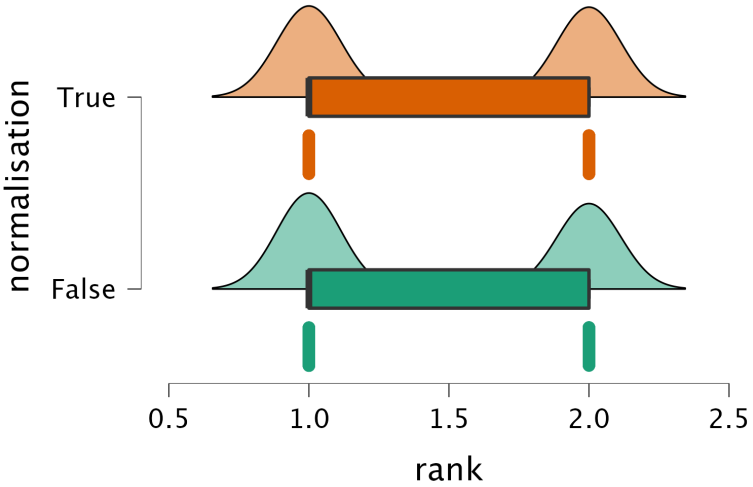


Raincloud plots

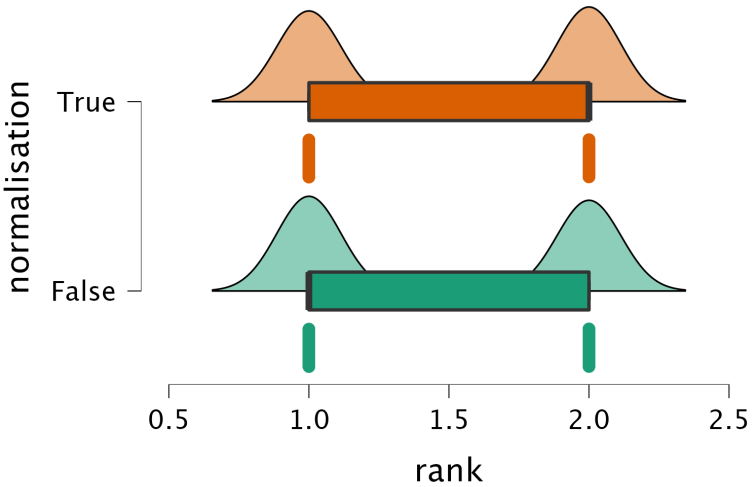
dataset: abalone



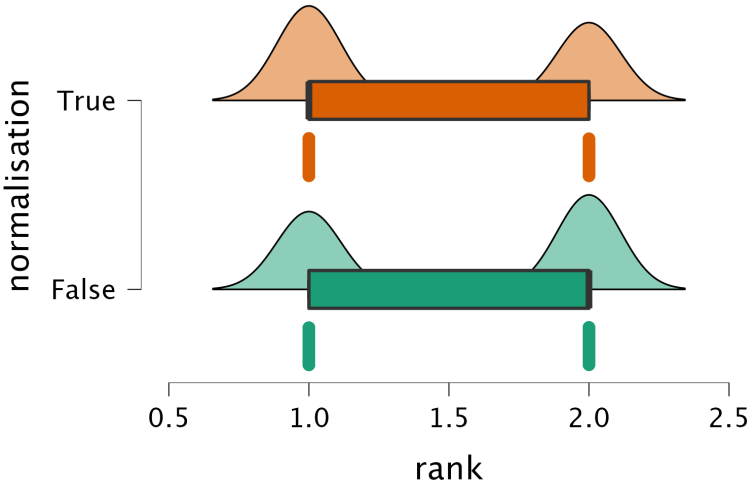
dataset: adult



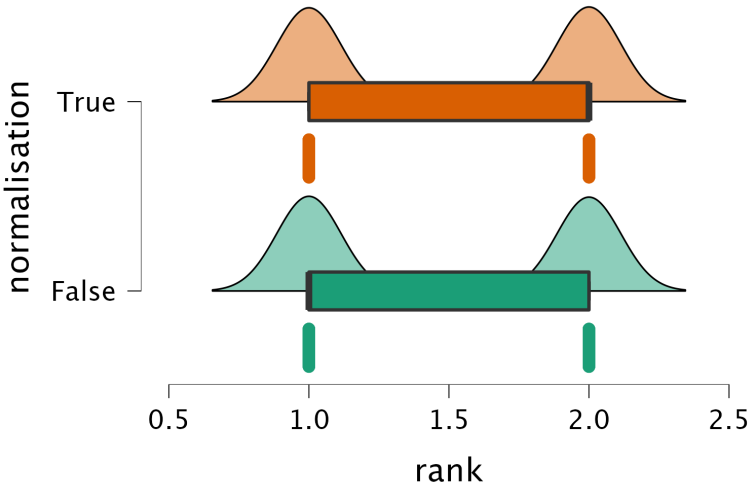
dataset: air_quality



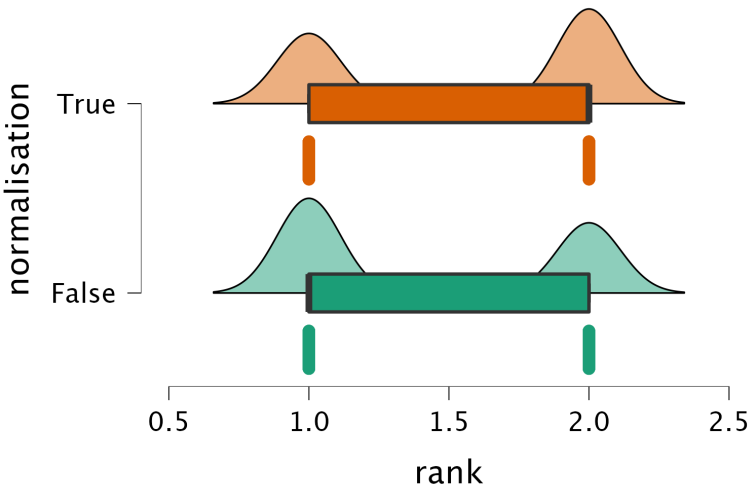
dataset: bank



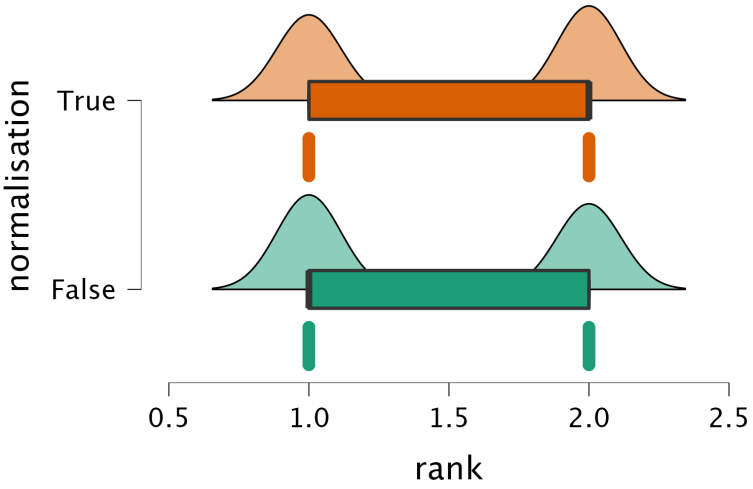
dataset: bike



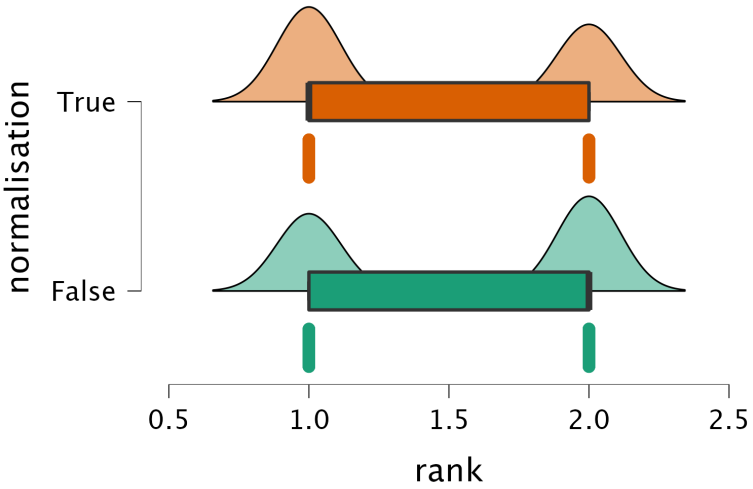
dataset: car



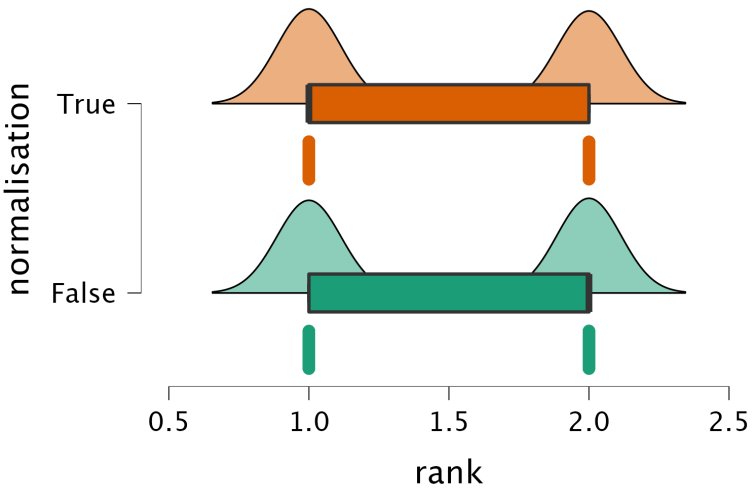
dataset: diabetic



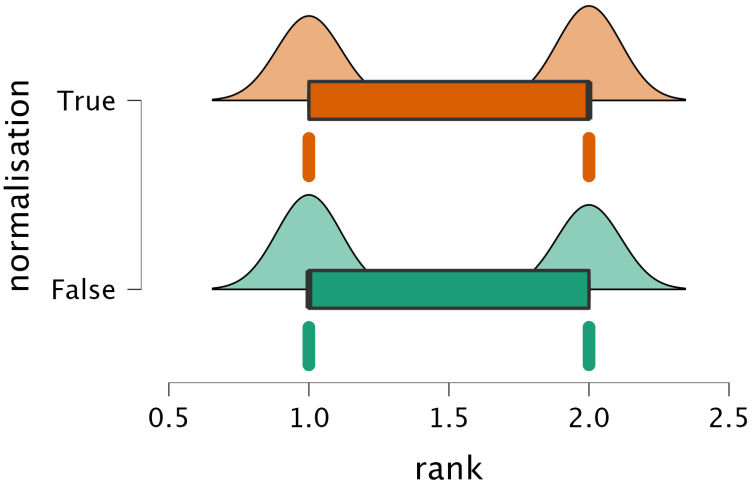
dataset: fish_toxicity



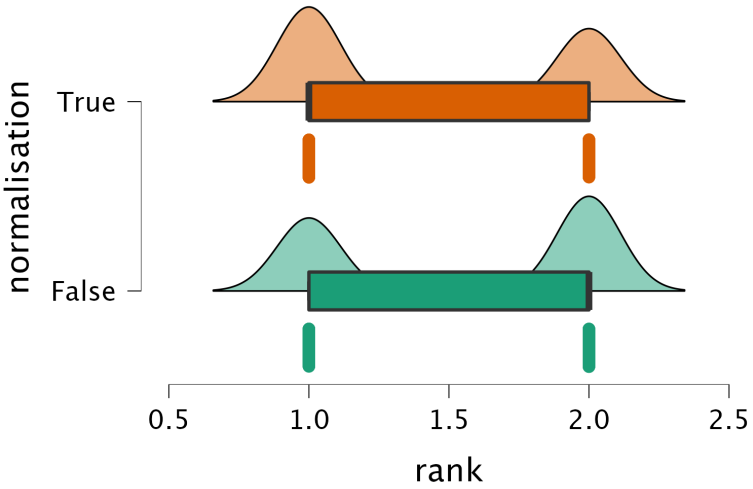
dataset: forest_fires



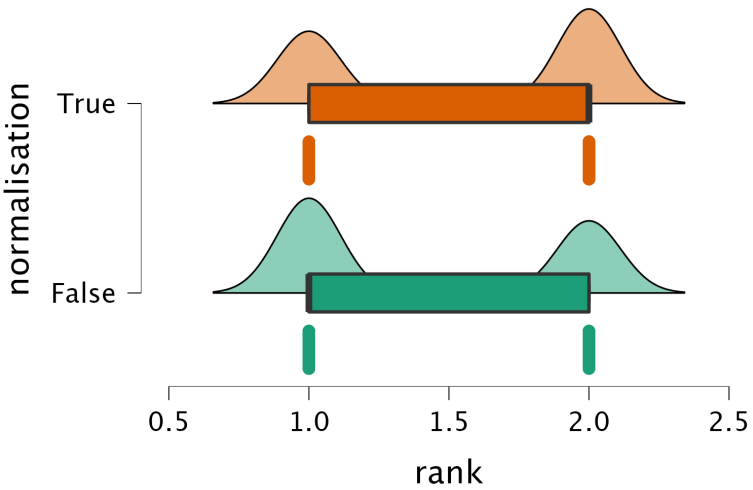
dataset: housing



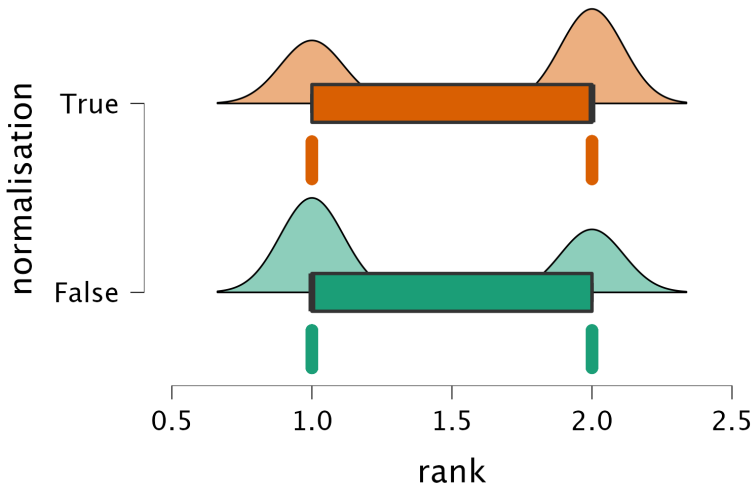
dataset: iris



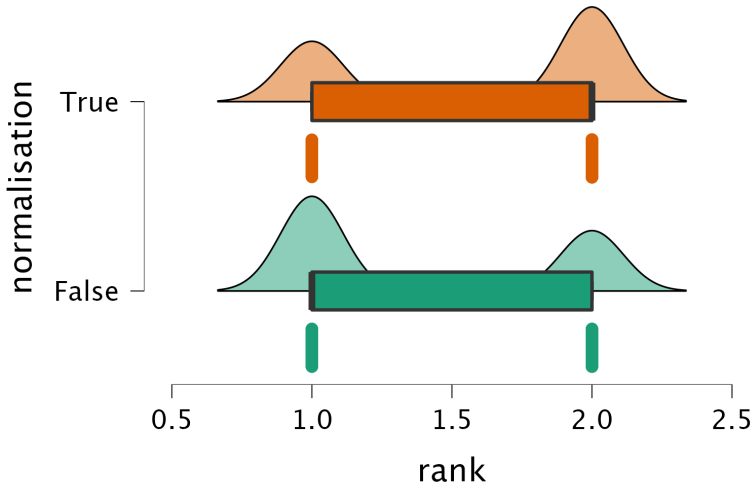
dataset: mushroom



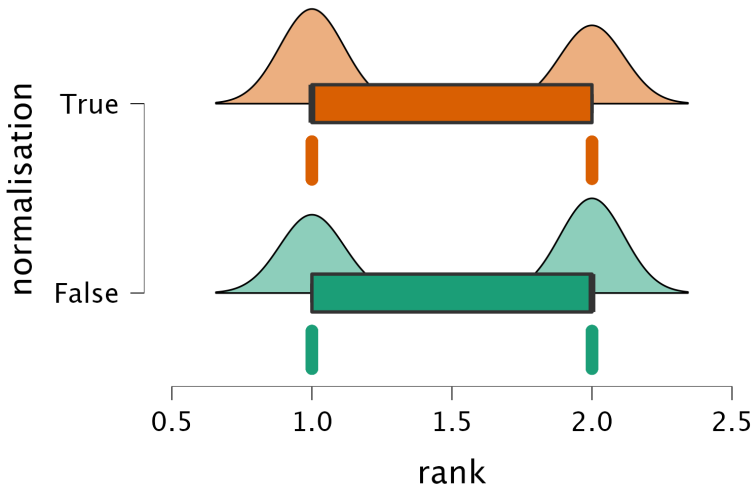
dataset: parkinsons



dataset: student_performance



dataset: wine_quality



Assumption Checks

Test for Equality of Variances (Levene's)

F	df1	df2	p
17.226	29.000	27870.000	< .001

Contrast Tables

Simple Contrast - normalisation

Comparison	Estimate	SE	df	t	p
True - False	0.029	0.006	27870	4.949	< .001

Post Hoc Tests

Standard

Post Hoc Comparisons - normalisation

			95% CI for Mean Difference				
		Mean Difference	Lower	Upper	SE	t	p_{tukey}
False	True	−0.029	−0.041	−0.018	0.006	−4.949	< .001***

Note. Results are averaged over the levels of: dataset
*** p < .001

Kruskal-Wallis Test

Kruskal-Wallis Test

Factor	Statistic	df	p
normalisation	24.217	1	< .001