Results

Descriptive Statistics

Descriptive Statistics

		Valid	Missing	Mean	Std. Deviation	Shapiro-Wilk	P-value of Shapiro-Wilk	Minimum	Maximum
rank	abalone	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	adult	4650	0	2.935	1.436	0.883	< .001	1.000	5.000
rank	air_quality	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	bike	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	car	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	fish_toxicity	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	forest_fires	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	housing	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	iris	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	mushroom	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	parkinsons	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	student_performance	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	wine_quality	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	bank	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
rank	diabetic	4650	0	3.000	1.414	0.888	< .001	1.000	5.000
test_loss	abalone	4650	0	2.411	0.687	0.554	< .001	1.913	20.916
test_loss	adult	4650	0	1376.412	12937.744	0.074	< .001	0.314	458888.880
test_loss	air_quality	4650	0	0.281	0.052	0.474	< .001	0.240	0.747
test_loss	bike	4650	0	0.104	0.073	0.619	< .001	0.046	0.668
test_loss	car	4650	0	0.267	0.300	0.402	< .001	0.077	2.845
test_loss	fish_toxicity	4650	0	0.113	0.043	0.374	< .001	0.078	0.537
test_loss	forest_fires	4650	0	0.094	0.108	0.649	< .001	0.007	0.881
test_loss	housing	4650	0	0.113	0.052	0.575	< .001	0.061	0.587
test_loss	iris	4650	0	0.266	1.306	0.064	< .001	1.133e−5	85.517
test_loss	mushroom	4650	0	0.475	3.281	0.123	< .001	0.000	83.959
test_loss	parkinsons	4650	0	0.076	0.056	0.299	< .001	0.053	0.657
test_loss	student_performance	4650	0	0.260	0.121	0.732	< .001	0.146	0.616
test_loss	wine_quality	4650	0	1.150	0.249	0.332	< .001	1.010	2.986
test_loss	bank	4650	0	0.277	0.162	0.346	< .001	0.202	2.043
test_loss	diabetic	4650	0	1.513	3.283	0.151	< .001	0.878	116.299

ANOVA

ANOVA - rank

Cases	Sum of Squares	df	Mean Square	F	p
dataset	18.065	14	1.290	0.895	0.564
reselection	23391.735	4	5847.934	4055.181	< .001
dataset ✻ reselection	15911.336	56	284.131	197.027	< .001
Residuals	100477.574	69675	1.442		

Note. Type III Sum of Squares

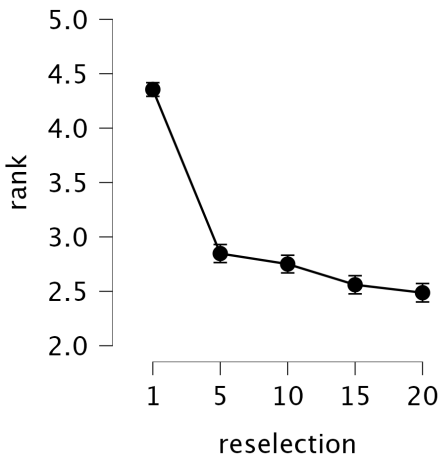
Descriptives

Descriptives - rank

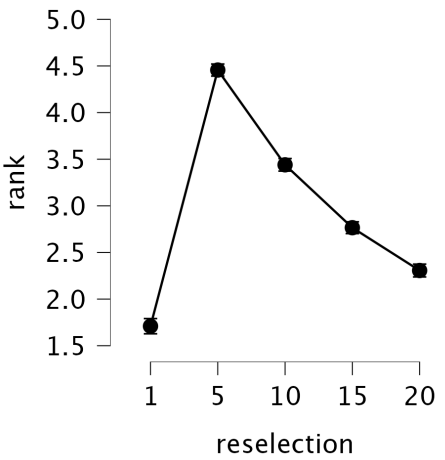
dataset	reselection	Mean	SD	N
abalone	1	4.355	0.976	930
	10	2.751	1.262	930
	15	2.560	1.299	930
	20	2.487	1.318	930
	5	2.847	1.288	930
adult	1	1.710	1.267	930
	10	3.440	1.045	930
	15	2.766	0.984	930
	20	2.306	1.067	930
	5	4.456	1.005	930
air_quality	1	3.735	1.405	930
	10	2.969	1.278	930
	15	2.424	1.228	930
	20	2.465	1.291	930
	5	3.408	1.379	930
bank	1	4.568	0.704	930
	10	2.424	1.133	930
	15	2.246	1.114	930
	20	2.130	1.096	930
	5	3.632	1.127	930
bike	1	4.794	0.612	930
	10	2.516	0.863	930
	15	2.076	0.901	930
	20	1.694	0.891	930
	5	3.920	0.648	930
car	1	4.641	0.785	930
	10	2.655	1.175	930
	15	2.531	1.244	930
	20	2.220	1.217	930
	5	2.953	1.158	930
diabetic	1	3.013	1.048	930
	10	2.796	1.175	930
	15	2.606	1.439	930
	20	2.123	1.264	930
	5	4.462	0.869	930
fish_toxicity	1	3.748	1.238	930
	10	3.034	1.406	930
	15	2.466	1.304	930
	20	2.614	1.432	930
	5	3.138	1.317	930
forest_fires	1	3.819	1.433	930
	10	2.866	1.346	930
	15	2.819	1.305	930
	20	2.224	1.219	930
	5	3.272	1.248	930
housing	1	4.189	1.099	930
	10	2.587	1.354	930
	15	2.531	1.265	930
	20	2.675	1.340	930
	5	3.017	1.288	930
iris	1	2.984	1.424	930
	10	3.346	1.418	930
	15	3.014	1.405	930
	20	2.685	1.429	930
	5	2.971	1.317	930
mushroom	1	4.206	1.236	930
	10	2.586	1.234	930
	15	2.788	1.340	930
	20	2.451	1.226	930
	5	2.969	1.299	930
parkinsons	1	4.765	0.756	930
	10	2.296	1.209	930
	15	2.497	1.128	930
	20	2.255	1.097	930
	5	3.188	1.021	930
student_performance	1	3.971	1.094	930
	10	2.477	1.221	930
	15	2.249	1.200	930
	20	2.280	1.132	930
	5	4.023	1.120	930
wine_quality	1	4.069	1.122	930
	10	2.956	1.383	930
	15	2.403	1.378	930
	20	2.652	1.280	930
	5	2.920	1.293	930

Descriptives plots

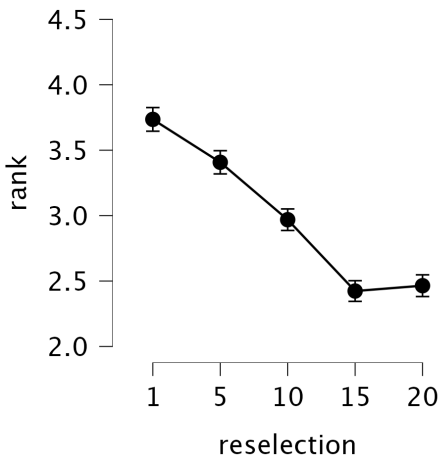
dataset: abalone



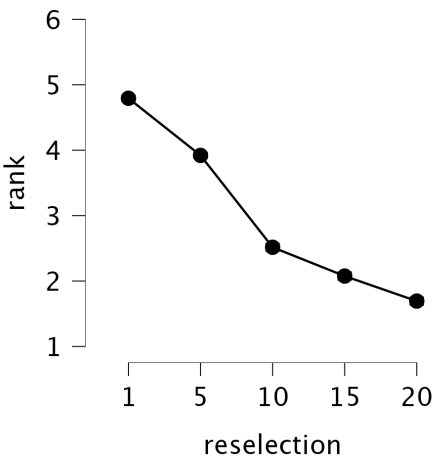
dataset: adult



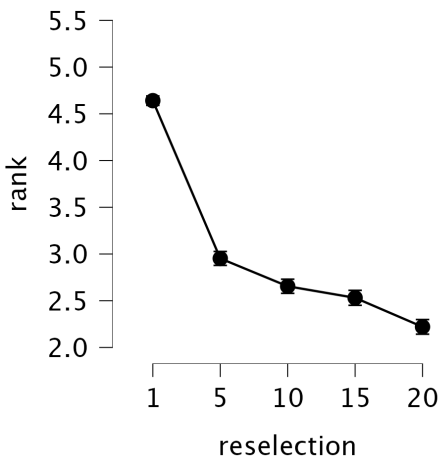
dataset: air_quality



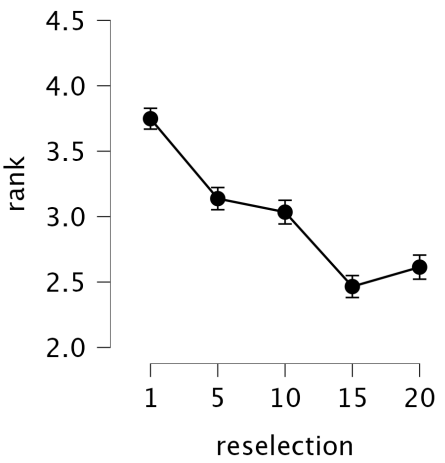
dataset: bike



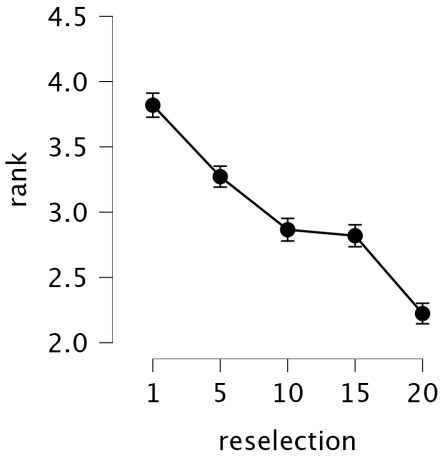
dataset: car



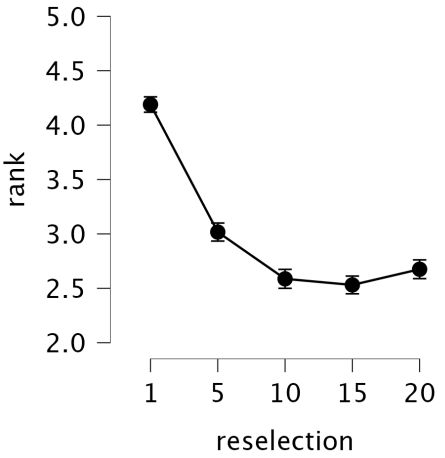
dataset: fish_toxicity



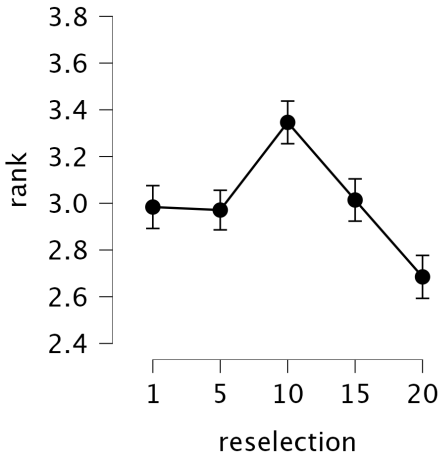
dataset: forest_fires



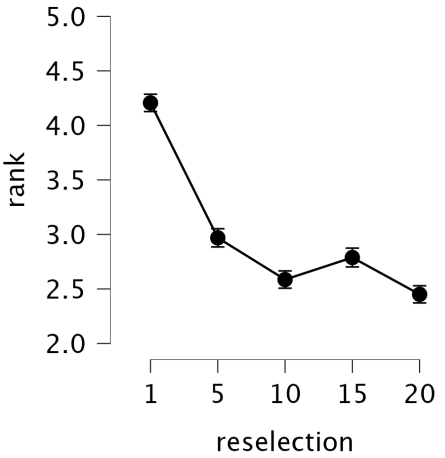
dataset: housing



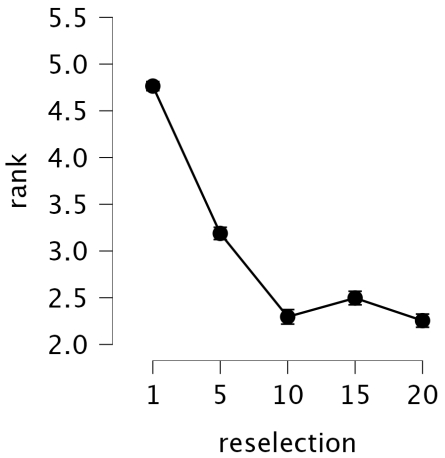
dataset: iris



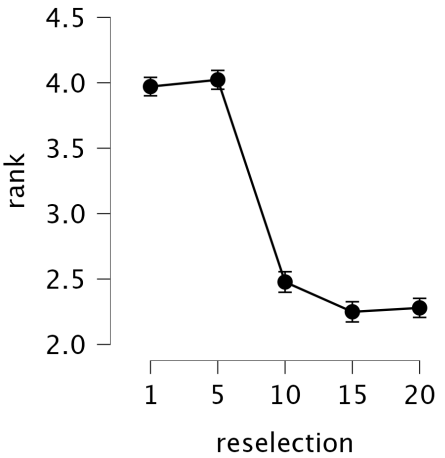
dataset: mushroom



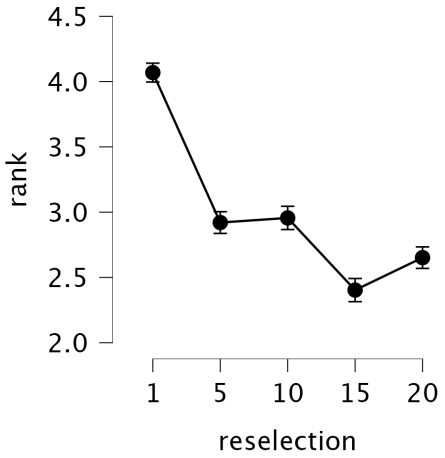
dataset: parkinsons



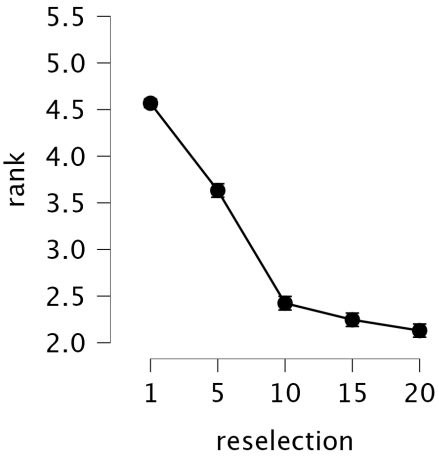
dataset: student_performance



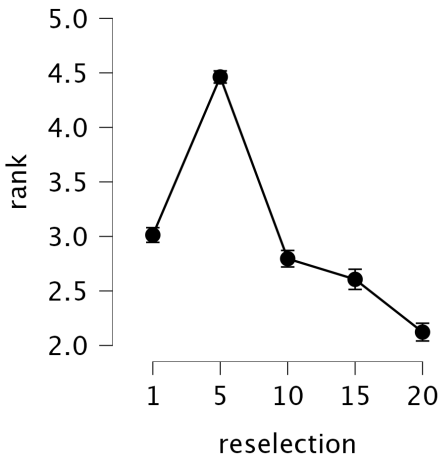
dataset: wine_quality



dataset: bank

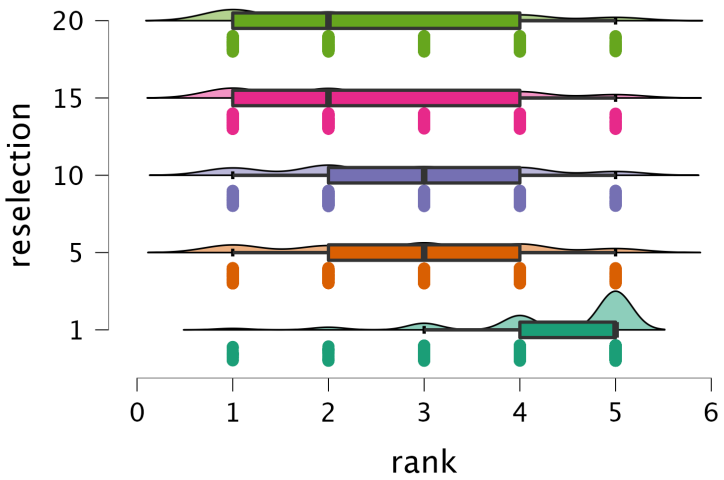


dataset: diabetic

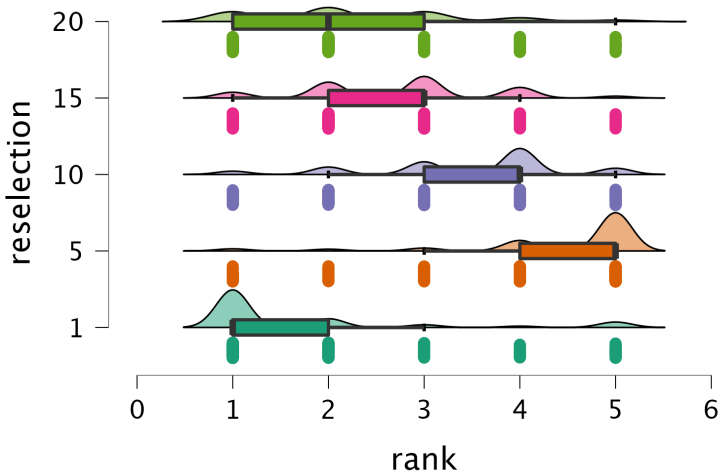


Raincloud plots

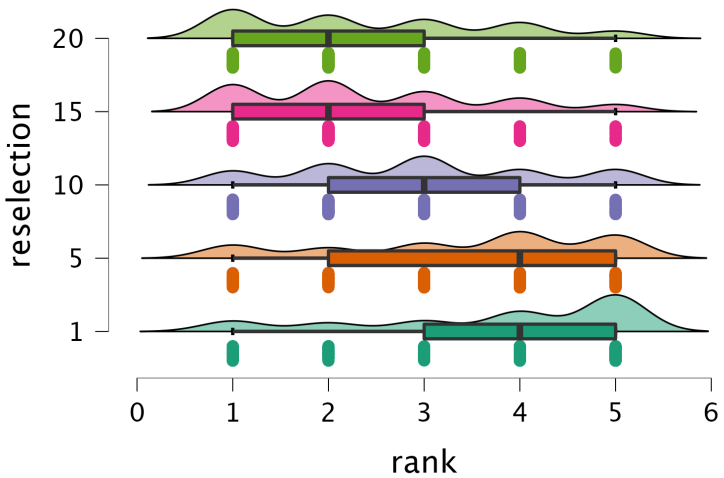
dataset: abalone



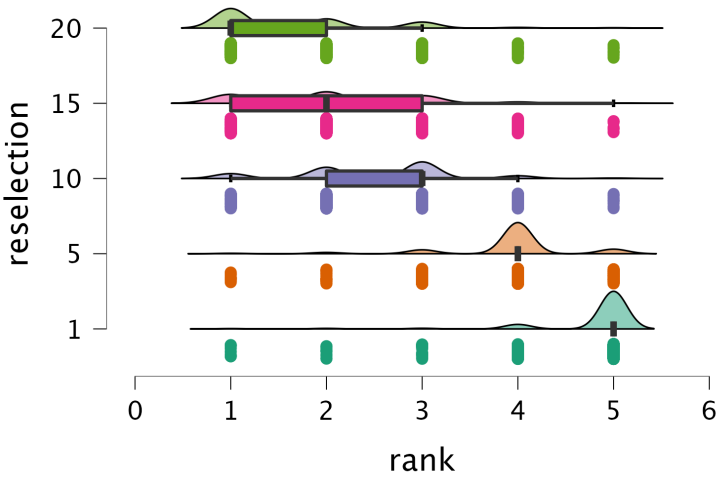
dataset: adult



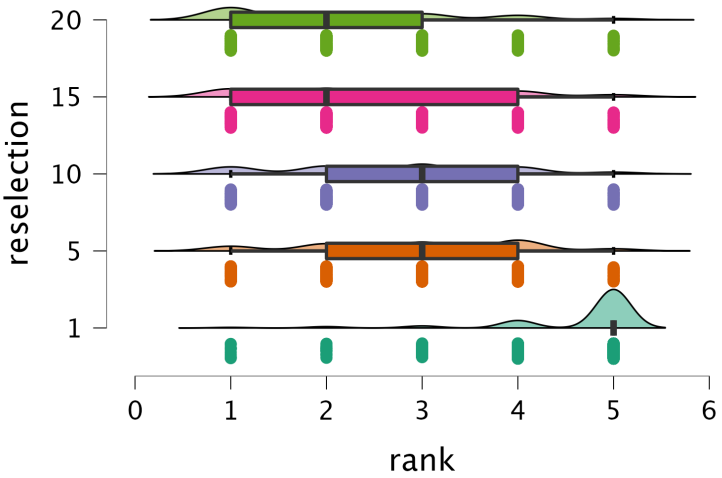
dataset: air_quality



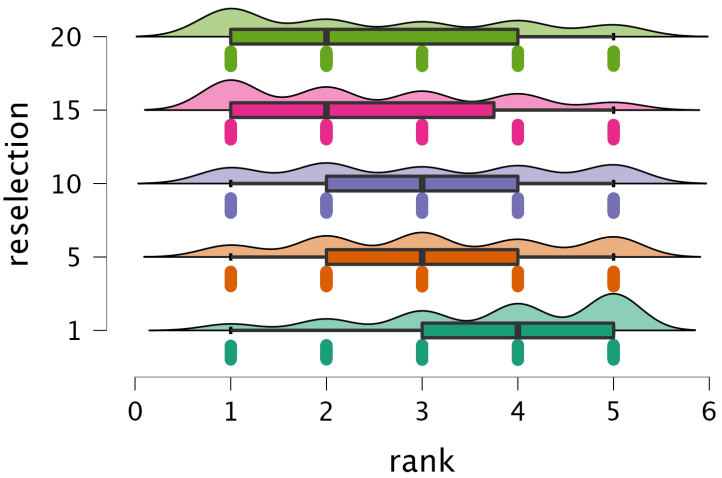
dataset: bike



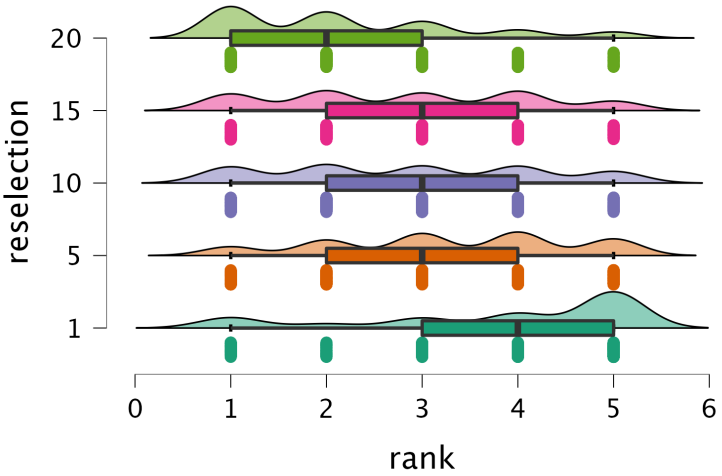
dataset: car



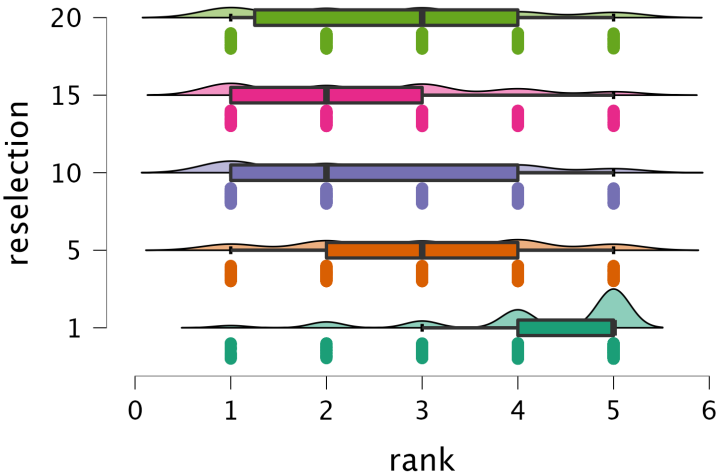
dataset: fish_toxicity



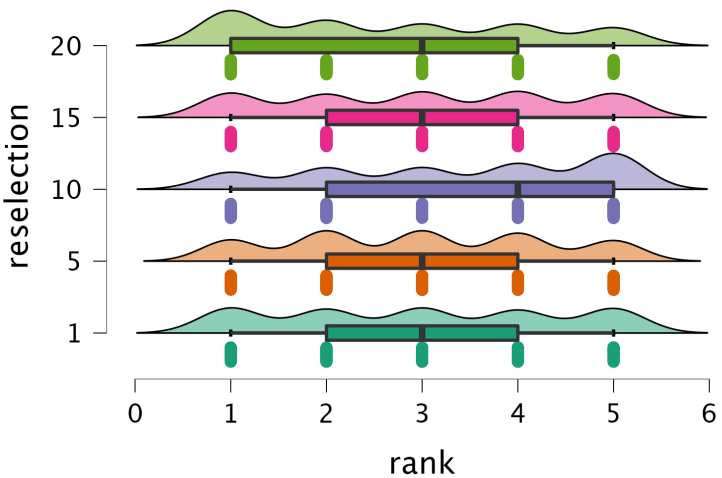
dataset: forest_fires



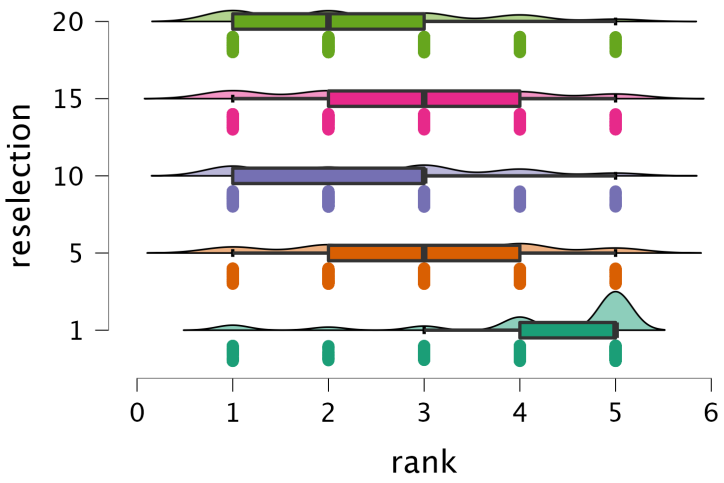
dataset: housing



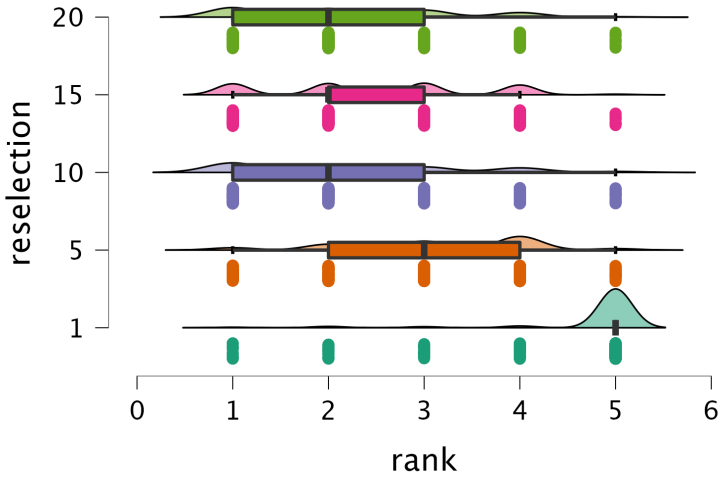
dataset: iris



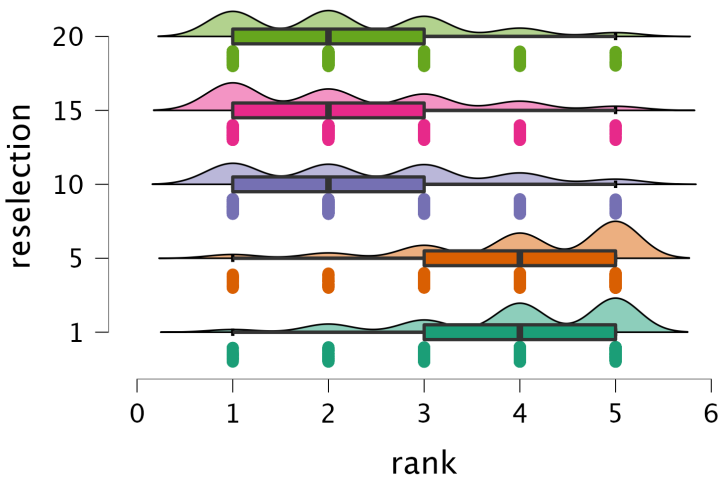
dataset: mushroom



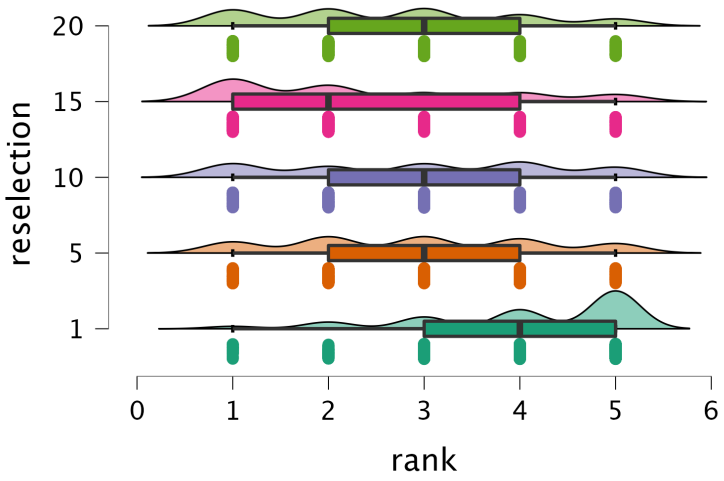
dataset: parkinsons



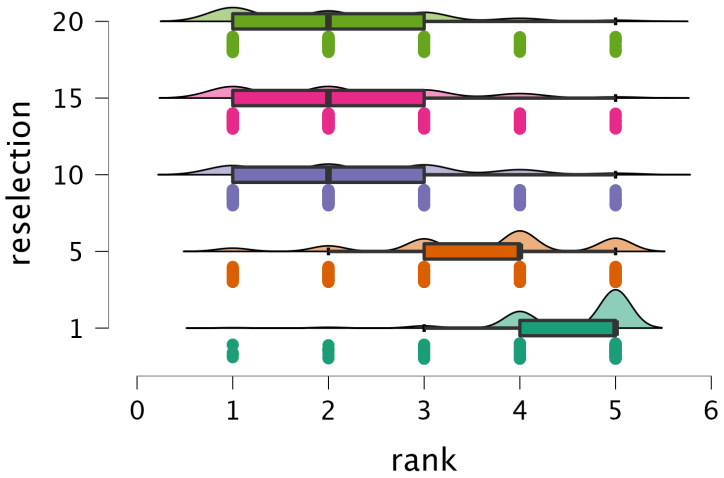
dataset: student_performance



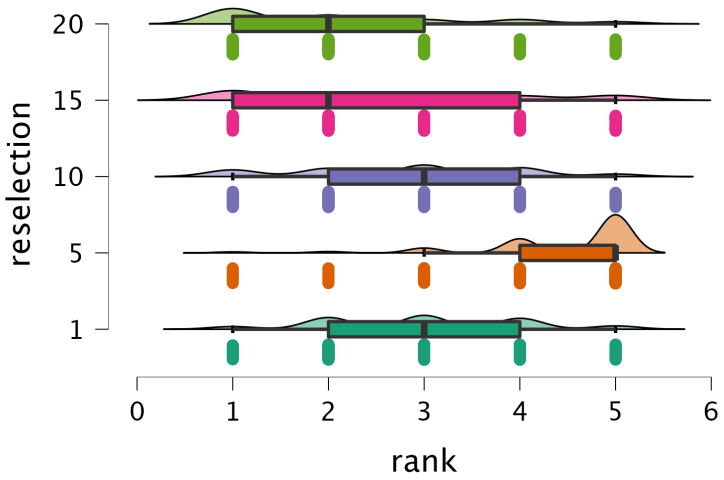
dataset: wine_quality



dataset: bank



dataset: diabetic



Assumption Checks

Test for Equality of Variances (Levene's)

F	df1	df2	p
91.856	74.000	69675.000	< .001

Contrast Tables

Simple Contrast - reselection

Comparison	Estimate	SE	df	t	p
5 - 1	−0.493	0.014	69675	−34.265	< .001
10 - 1	−1.125	0.014	69675	−78.211	< .001
15 - 1	−1.373	0.014	69675	−95.461	< .001
20 - 1	−1.554	0.014	69675	−108.064	< .001

Post Hoc Tests

Standard

Post Hoc Comparisons - reselection

			95% CI for Mean Difference				
		Mean Difference	Lower	Upper	SE	t	p_{tukey}
1	5	0.493	0.453	0.532	0.014	34.265	< .001***
	10	1.125	1.085	1.164	0.014	78.211	< .001***
	15	1.373	1.333	1.412	0.014	95.461	< .001***
	20	1.554	1.515	1.593	0.014	108.064	< .001***
5	10	0.632	0.593	0.671	0.014	43.946	< .001***
	15	0.880	0.841	0.919	0.014	61.196	< .001***
	20	1.061	1.022	1.100	0.014	73.799	< .001***
10	15	0.248	0.209	0.287	0.014	17.250	< .001***
	20	0.429	0.390	0.468	0.014	29.853	< .001***
15	20	0.181	0.142	0.220	0.014	12.603	< .001***

Note. Results are averaged over the levels of: dataset
Note. P-value and confidence intervals adjusted for comparing a family of 5 estimates (confidence intervals corrected using the tukey method).
*** p < .001

Kruskal-Wallis Test

Kruskal-Wallis Test

Factor	Statistic	df	p
reselection	11663.796	4	< .001