Input data

Features: hotel, is_canceled, lead_time, arrival_date_year, arrival_date_month, arrival_date_week_number, arrival_date_day_of_month, stays_in_weekend_nights, stays_in_week_nights, adults, children, babies, meal, country, market_segment, distribution_channel, is_repeated_guest, previous_cancellations, previous_bookings_not_canceled, reserved_room_type, assigned_room_type, booking_changes, deposit_type, company, days_in_waiting_list, customer_type, adr, required_car_parking_spaces, total_of_special_requests, reservation_status, reservation_status_date (total: 31 features)
Meta attributes: agent

Output data

Features: hotel, customer_type, market_segment, distribution_channel, reserved_room_type, total_of_special_requests, lead_time, adults, stays_in_week_nights, stays_in_weekend_nights, meal, deposit_type (total: 12 features)
Target: adr

Removed: 19 (reservation_status_date, previous_bookings_not_canceled, arrival_date_year, is_canceled, required_car_parking_spaces, arrival_date_week_number, previous_cancellations, days_in_waiting_list, assigned_room_type, babies, arrival_date_day_of_month, reservation_status, country, company, children, arrival_date_month, booking_changes, is_repeated_guest, agent)

Name: Linear Regression

Model parameters

Regularization: Ridge Regression (L2) with α=0.0001
Fit intercept: Yes

Name: SVM

Model parameters

SVM type: SVM, C=1.0, ε=0.1
Kernel: RBF, exp(-auto|x-y|²)
Numerical tolerance: 0.001
Iteration limt: 100

Name: Tree

Model parameters

Pruning: at least two instances in leaves, at least five instances in internal nodes, maximum depth 100
Splitting: Stop splitting when majority reaches 95% (classification only)
Binary trees: No

Name: Neural Network

Model parameters

Hidden layers: 100
Activation: ReLu
Solver: Adam
Alpha: 0.0001
Max iterations: 200
Replicable training: True

Name: AdaBoost

Model parameters

Base estimator: tree
Number of estimators: 50
Algorithm (classification): Samme.r
Loss (regression): Linear

Name: kNN

Model parameters

Number of neighbours: 5
Metric: Euclidean
Weight: Uniform

Name: Gradient Boosting

Model parameters

Method: Gradient Boosting (scikit-learn)
Number of trees: 100
Learning rate: 0.1
Replicable training: Yes
Maximum tree depth: 3
Fraction of training instances: 1
Stop splitting nodes with maximum instances: 2

Name: Stack

Model parameters

Base learners: ['Linear Regression', 'Neural Network']
Aggregator: default

Settings

Sampling type: Stratified 3-fold Cross validation

Scores

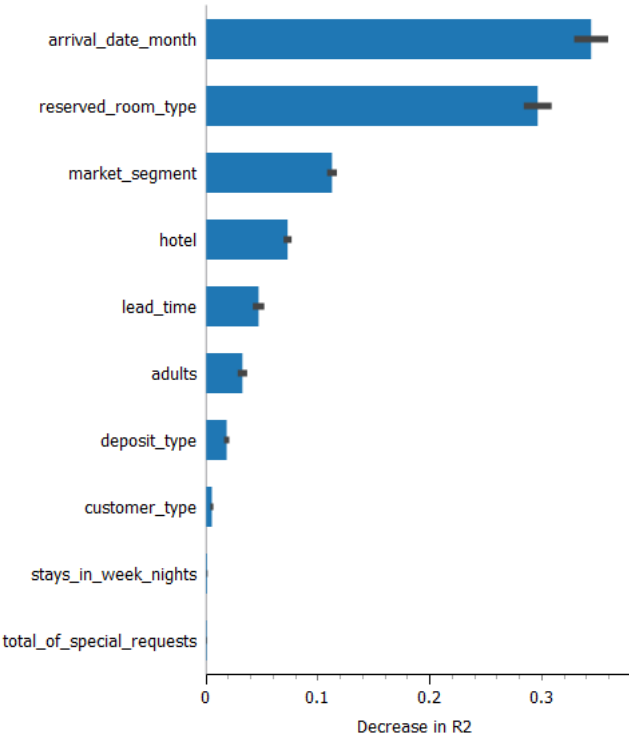| Model	MSE	RMSE	MAE	R2
kNN	2306.7933866140006	48.0290889629816	35.310443	0.03585081976233362
Tree	2365.1757300610684	48.63307238969247	32.68300055998619	0.011449289524955941
Stack	1424.0477374755144	37.73655704321096	27.497654746762702	0.4048038863499368
SVM	2392.6577686440473	48.914801120356685	36.019716190937366	-3.712496053576153e-05
Random Forest	1582.7242462647391	39.783466996539396	27.690705694166944	0.33848332779455303
Neural Network	1448.3949258239845	38.05778403722403	27.626513109613747	0.3946277163368409
Linear Regression	1448.1850799824513	38.05502700015402	27.810205477424265	0.3947154236700007
Gradient Boosting	1477.5640911571015	38.439095868101546	27.400107858583386	0.3824361490264184
AdaBoost	1721.374286010377	41.48944788750963	27.865199709523978	0.280533048009463

Data instances: 2000
Features: 12
Meta attributes: 10
Target: Numeric variable 'adr'

	adr	Linear Regression	SVM	Tree	Random Forest	Neural Network	AdaBoost	kNN	Gradient Boosting	Stack	Fold	hotel	customer_type	market_segment	distribution_channel
1	253.33	214.901	107.893	94.1325	216.737	217.324	196.46	100.67	185.48	208.962	1	City Hotel	Transient	Online TA	TA/TO
2	185.67	145.337	100.724	156.42	146.442	147.23	156.4	140.38	144.35	143.348	1	City Hotel	Transient	Online TA	TA/TO
3	195	144.684	102.593	123.74	126.024	147.126	126	132.034	143.614	142.851	1	City Hotel	Transient	Online TA	TA/TO
4	54	85.1096	96.7585	48.8	64.8778	84.8986	98	72.59	82.1171	86.1861	1	Resort Hotel	Transient	Online TA	TA/TO
5	140	102.517	99.5107	121.615	107.521	103.54	79.2	82.69	102.991	102.842	1	City Hotel	Transient	Online TA	TA/TO
6	62	79.562	101.21	63.15	64.253	81.3101	65	114.814	82.7764	81.3857	1	City Hotel	Transient	Groups	TA/TO
7	182.33	127.56	99.7197	92.3	143.303	127.688	151.29	122.858	121.479	126.229	1	City Hotel	Transient	Online TA	TA/TO
8	112	88.7666	97.2913	156.035	141.896	87.5946	147.07	160.18	100.8	89.422	1	Resort Hotel	Transient	Online TA	TA/TO
9	62	80.2223	102.268	62	62	74.4656	62.8	68	79.1419	80.3873	1	City Hotel	Contract	Groups	TA/TO
10	168	182.846	108.519	182.7	195.848	182.866	200	162.12	187.081	178.261	1	City Hotel	Transient	Online TA	TA/TO
11	94.5	100.451	99.2912	117	117.943	102.992	104.76	111.93	106.955	101.225	1	City Hotel	Transient	Online TA	TA/TO
12	160	109.684	99.5483	110	113.417	105.622	85.5	76.9	95.6758	108.493	1	City Hotel	Transient-Party	Offline TA/TO	TA/TO
13	99.45	109.549	97.9555	82.3967	103.473	105.471	115.6	88.404	102.596	108.363	1	City Hotel	Transient	Online TA	TA/TO
14	176.1	111.029	100.172	174.9	110.085	97.0892	93	125.44	103.305	107.627	1	Resort Hotel	Transient	Direct	TA/TO
15	102.55	129.907	103.044	131.55	136.753	141.478	112.58	96.344	131.575	130.909	1	Resort Hotel	Transient	Online TA	TA/TO
16	75	77.83	96.3908	80	73.0754	72.2237	64	89.504	80.4106	78.1673	1	City Hotel	Transient	Offline TA/TO	TA/TO
17	80	87.9224	99.3455	53.06	70.6766	80.3541	64	86.596	87.8337	87.2464	1	Resort Hotel	Transient	Online TA	TA/TO
18	46	115.886	103.307	91.225	67.8117	62.7923	70	83.614	77.0605	103.748	1	Resort Hotel	Transient	Groups	TA/TO
19	89	97.5464	99.1607	76.8	80.3675	104.81	80	108.92	90.1192	99.5097	1	City Hotel	Transient	Online TA	TA/TO
20	48	88.387	96.8287	42.9	68.0843	86.8428	50.4	113.1	97.3117	88.9842	1	Resort Hotel	Transient	Online TA	TA/TO
21	171	140.253	101.913	150.053	134.969	144.171	162	98.91	143.447	138.998	1	City Hotel	Transient	Online TA	TA/TO
22	75	84.1607	99.4899	80	82.1601	90.2621	80	114.66	85.1399	86.6553	1	City Hotel	Transient	Offline TA/TO	TA/TO
23	125.1	117.528	99.2383	130.25	117.592	106.714	125.1	63.96	105.154	114.421	1	City Hotel	Transient	Online TA	TA/TO
24	55	91.6444	99.5759	48.8	65.8448	60.2931	50.4	79.28	82.0439	85.6168	1	Resort Hotel	Transient	Online TA	TA/TO
25	129.33	91.0796	99.5801	125.5	120.823	93.5827	117	81.664	96.7572	92.3932	1	Resort Hotel	Transient	Direct	Direct
26	39	77.3714	97.8368	49.25	97.5082	70.9646	68.07	133.264	79.153	77.5626	1	Resort Hotel	Transient	Online TA	TA/TO
27	46.1	70.3984	96.1065	156.488	87.934	59.0216	100.09	96.744	81.8604	69.9242	1	Resort Hotel	Transient	Online TA	TA/TO
28	79	100.932	99.1475	140	136.932	109.183	129	135.6	110.28	102.911	1	City Hotel	Transient	Online TA	TA/TO
29	88.2	120.659	99.9086	174.9	139.235	113.869	109.8	105.616	110.22	118.238	1	City Hotel	Transient	Direct	Direct
30	52	72.105	101.017	52	55.0151	43.6645	52	82.94	78.0562	67.8476	1	Resort Hotel	Transient	Offline TA/TO	TA/TO
31	104.39	117.565	101.701	70.97	90.201	99.8964	87.3	112.59	100.844	112.977	1	City Hotel	Transient	Online TA	TA/TO
32	147	147.998	102.982	170.81	181.425	157.703	106	91.18	154.069	147.54	1	Resort Hotel	Transient	Online TA	TA/TO
33	160	67.6126	99.7181	120	85.939	85.423	90	97.14	93.5289	73.6019	1	City Hotel	Transient	Groups	TA/TO
34	0	60.6519	101.518	87.586	115.436	29.1196	103.5	61.17	60.9026	56.3963	1	City Hotel	Transient	Offline TA/TO	TA/TO
35	48	84.2127	96.5192	48.8	67.0219	84.5229	50.4	50.56	80.7625	85.4542	1	Resort Hotel	Transient	Online TA	TA/TO
36	40	51.5693	101.113	45	45.23	55.3049	42	54.6	40.4238	55.4578	1	Resort Hotel	Transient	Corporate	Corporate
37	129.6	115.886	98.2906	84.8733	97.9134	112.323	90.95	88.63	108.196	114.441	1	City Hotel	Transient	Online TA	TA/TO
38	90	118.971	101.926	80	100.937	90.8478	90	118.022	98.9884	112.043	1	City Hotel	Transient	Groups	TA/TO
39	116	168.226	105.747	149.5	181.853	175.323	160	124.2	183.562	166.023	1	Resort Hotel	Transient	Direct	Direct
40	48	88.7528	96.7604	95.465	97.226	89.6012	119	121.4	94.9698	89.8452	1	Resort Hotel	Transient	Online TA	TA/TO
41	74.25	90.2741	99.4921	113.227	89.0023	82.4326	74.25	79.65	92.3818	89.4016	1	Resort Hotel	Transient	Online TA	TA/TO
42	79	101.155	99.2209	93.245	120.453	107.225	105	95.776	104.581	102.65	1	City	Transient	Online TA	TA/TO

												Hotel			
43	43.2	111.644	101.333	114.667	115.474	112.649	109	114.814	116.156	111.433	1	City Hotel	Transient-Party	Offline TA/TO	TA/TO
44	106.2	133.824	100.819	117.75	101.746	130.904	110.13	97.65	122.094	131.469	1	City Hotel	Transient	Online TA	TA/TO
45	69	96.5505	98.3401	95	89.7585	86.9113	103	73.4	87.222	94.9232	1	City Hotel	Transient	Direct	Direct
46	66	78.4041	101.127	70	100.931	89.0073	100	122.2	84.3923	82.2069	1	City Hotel	Transient-Party	Corporate	Corporate
47	106.33	112.864	97.983	108.7	130.628	116.884	119.5	95.808	103.099	113.232	1	City Hotel	Transient	Online TA	TA/TO
48	81.9	88.9154	102.01	74.875	120.288	82.7945	87	93.726	101.057	88.4938	1	City Hotel	Transient-Party	Online TA	TA/TO
49	80	96.874	98.9552	55.2333	71.6023	100.836	64	105.78	107.47	98.164	1	Resort Hotel	Transient	Online TA	TA/TO
50	80	78.042	96.5717	62.625	72.6832	69.7863	68	99.84	80.3659	77.7949	1	City Hotel	Transient	Offline TA/TO	TA/TO
51	30	57.4563	100.274	32.5	57.1663	51.1936	62	88.4	55.9361	58.8424	1	Resort Hotel	Transient	Groups	TA/TO
52	117	109.99	97.9853	116.55	106.692	104.852	100.48	100.75	101.863	108.549	1	City Hotel	Transient	Online TA	TA/TO
53	144	111.743	97.4941	108.7	110.346	118.133	98.4	119.818	103.172	112.688	1	City Hotel	Transient	Online TA	TA/TO
54	63.75	99.4787	100.228	121.615	106.777	90.1054	120	95.69	94.891	97.7377	1	City Hotel	Transient	Online TA	TA/TO
55	79.85	91.3899	102.563	117.92	90.6326	90.9087	85.5	68.368	93.4841	92.0411	1	Resort Hotel	Contract	Offline TA/TO	TA/TO
56	100.3	124.283	99.96	113.485	96.5743	119.489	105.9	85.9	119.35	122.081	1	City Hotel	Transient	Online TA	TA/TO
57	66	79.0555	101.324	70	95.6643	85.6017	80	101.4	84.4655	81.9445	1	City Hotel	Transient	Corporate	Corporate
58	35	51.5693	101.113	45	45.23	55.3049	42	54.6	40.4238	55.4578	1	Resort Hotel	Transient	Corporate	Corporate
59	65	75.9569	96.6235	80	68.633	90.7804	62.5	104.804	81.9014	80.8138	1	City Hotel	Transient-Party	Offline TA/TO	TA/TO
60	169	114.313	97.6397	133.35	112.35	114.675	119.85	144.76	111.626	113.807	1	City Hotel	Transient	Online TA	TA/TO
61	106.4	100.966	99.1497	140	132.352	109.354	120	105.4	110.235	102.972	1	City Hotel	Transient	Online TA	TA/TO
62	73.28	122.724	103.466	81.49	109.611	137.756	89.7	97.306	114.591	124.893	1	Resort Hotel	Transient	Direct	Direct
63	62	80.6288	100.756	62.2	61.64	82.4821	62	74	78.4694	82.4128	1	City Hotel	Transient	Groups	TA/TO
64	120	67.0698	99.2843	95	100.595	85.2625	110	116.95	89.7257	73.1733	1	City Hotel	Transient	Offline TA/TO	TA/TO
65	54.5	72.4754	101.391	54.5	54.9567	67.4025	65.96	88.946	68.4209	73.2407	1	Resort Hotel	Transient-Party	Groups	TA/TO
66	126	124.42	99.5329	101.49	103.377	84.6846	98.1	76.46	111.508	114.667	1	City Hotel	Transient	Direct	TA/TO
67	72	51.2398	96.0829	67	47.768	38.6448	43	52.542	42.2142	51.6223	1	Resort Hotel	Transient	Offline TA/TO	TA/TO
68	101.5	115.992	101.303	102.75	101.583	104.446	101.5	101.5	101.566	112.817	1	City Hotel	Transient-Party	Offline TA/TO	TA/TO
69	169	114.335	97.6404	97.025	112.35	114.789	118	118.78	112.737	113.847	1	City Hotel	Transient	Online TA	TA/TO
70	189.43	148.326	102.853	123.74	127.905	152.081	130	110.382	143.614	146.564	1	City Hotel	Transient	Online TA	TA/TO
71	187	168.382	104.508	207	123.055	171.188	106.2	87.362	179.114	165.243	1	Resort Hotel	Transient	Direct	Direct
72	80	123.028	103.944	70.6667	59.9862	68.0624	75	87.258	73.0821	110.069	1	Resort Hotel	Transient	Groups	Direct
73	55.8	92.9826	103.681	55.5867	55.2121	82.7636	57	121.6	70.1246	91.4386	1	Resort Hotel	Transient-Party	Groups	TA/TO
74	162	115.607	98.0589	121.067	113.417	114.854	117	81.26	109.686	114.784	1	City Hotel	Transient	Online TA	TA/TO
75	47	95.7815	102.731	32.0925	39.2146	96.5546	58	137.016	50.2186	96.4468	1	Resort Hotel	Transient	Offline TA/TO	TA/TO
76	120	98.2015	98.8891	98.0333	102.956	91.0307	102.6	102.94	106.288	97.0105	1	City Hotel	Transient	Direct	Direct
77	115.6	108.793	98.2003	87.345	95.5123	102.533	110	114.06	99.393	107.18	1	City Hotel	Transient	Online TA	TA/TO
78	0	78.0911	101.254	137.59	31.4913	86.6045	76	61.6	60.4583	81.4611	1	City Hotel	Transient	Corporate	Corporate
79	162	151.765	102.133	125.82	161.767	149.76	141.3	102.506	163.398	148.559	1	City Hotel	Transient	Online TA	TA/TO
80	89.1	101.899	100.365	95.7	96.4303	92.7739	105.3	124.588	99.1687	100.07	1	City Hotel	Transient	Online TA	TA/TO
81	100	85.8226	100.256	86.6667	88.6257	93.4809	100	83.5	86.4143	88.5562	1	City Hotel	Transient	Groups	TA/TO
82	81	98.7006	99.3444	105.933	99.4085	101.094	74.8	117.06	100.322	99.5452	1	City Hotel	Transient	Online TA	TA/TO
83	165.6	189.117	107.853	182.7	197.144	189.089	186.3	114.47	181.122	184.155	1	City Hotel	Transient	Online TA	TA/TO
84	66	79.9032	97.0044	86.8333	78.6253	68.4591	67.5	86.532	80.4692	78.8591	1	City Hotel	Transient	Offline TA/TO	TA/TO
85	119.7	93.159	101.148	117.92	94.6784	97.6013	85.5	132.108	93.4841	94.7696	1	Resort Hotel	Transient	Offline TA/TO	TA/TO
86	86	81.2244	100.146	95.3333	82.9671	79.2142	85	67.1	76.2732	82.1396	1	Resort Hotel	Transient-Party	Groups	TA/TO
87	120	66.814	99.6207	88	92.9655	86.1994	90	87.718	83.5502	73.19	1	City Hotel	Transient	Groups	TA/TO
88	72	77.5411	96.3759	91	77.3677	71.3541	89.25	129.096	83.7163	77.7699	1	City Hotel	Transient	Offline TA/TO	TA/TO

89	95.74	96.812	99.1301	101.095	94.3971	83.298	93.5	81.3	104.47	94.3329	1	City Hotel	Transient	Online TA	TA/TO
90	91	77.3514	97.2003	87.835	83.6252	92.5002	88.5	103.69	83.9902	82.197	1	City Hotel	Transient-Party	Offline TA/TO	TA/TO
91	79.2	101.046	99.3129	81.965	92.8397	91.5167	102.6	91.33	103.95	99.1794	1	City Hotel	Transient	Direct	Direct
92	130.5	98.0339	99.3209	77	98.4375	97.423	79.2	118.694	94.891	98.2688	1	City Hotel	Transient	Online TA	TA/TO
93	120	100.334	99.3472	119.308	106.166	100.084	102.43	101.834	100.373	100.513	1	City Hotel	Transient	Online TA	TA/TO
94	88.4	122.473	99.2142	133.35	118.474	123.53	109.7	132.514	111.684	121.64	1	City Hotel	Transient	Online TA	TA/TO
95	119	97.2344	99.0863	79.5	86.5494	106.24	80	110.134	104.739	99.592	1	City Hotel	Transient	Online TA	TA/TO
96	117	112.394	97.6206	97.025	93.1996	105.702	113.79	175.2	114.228	110.477	1	City Hotel	Transient-Party	Online TA	TA/TO
97	60.94	116.386	98.2867	84.8733	87.3636	114.754	80.08	89.574	112.796	115.328	1	City Hotel	Transient	Online TA	TA/TO
98	87.75	116.748	101.034	96.3	109.233	113.801	99	93.48	109.686	115.385	1	City Hotel	Contract	Online TA	TA/TO
99	175.56	205.396	105.813	94.1325	164.799	210.75	210.5	151.328	210.717	200.645	1	Resort Hotel	Transient	Online TA	TA/TO
100	91	91.5799	102.97	78.3333	63.8703	80.7106	82.24	89.85	90.6279	89.9775	1	Resort Hotel	Transient-Party	Groups	Direct

+ 1900 more

Score: R2
Permutations: 5
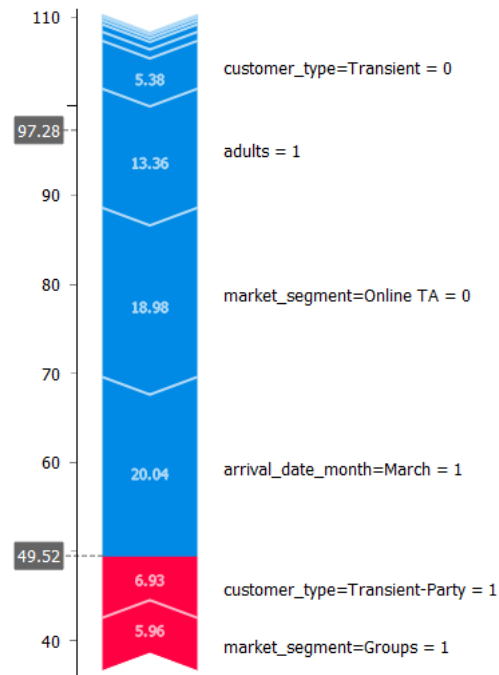
Target class: None

Target class: None

Target class: None

Instances ordered by hierarhical clustering

Color: adr

Color: hotel, **Jittering**: 10
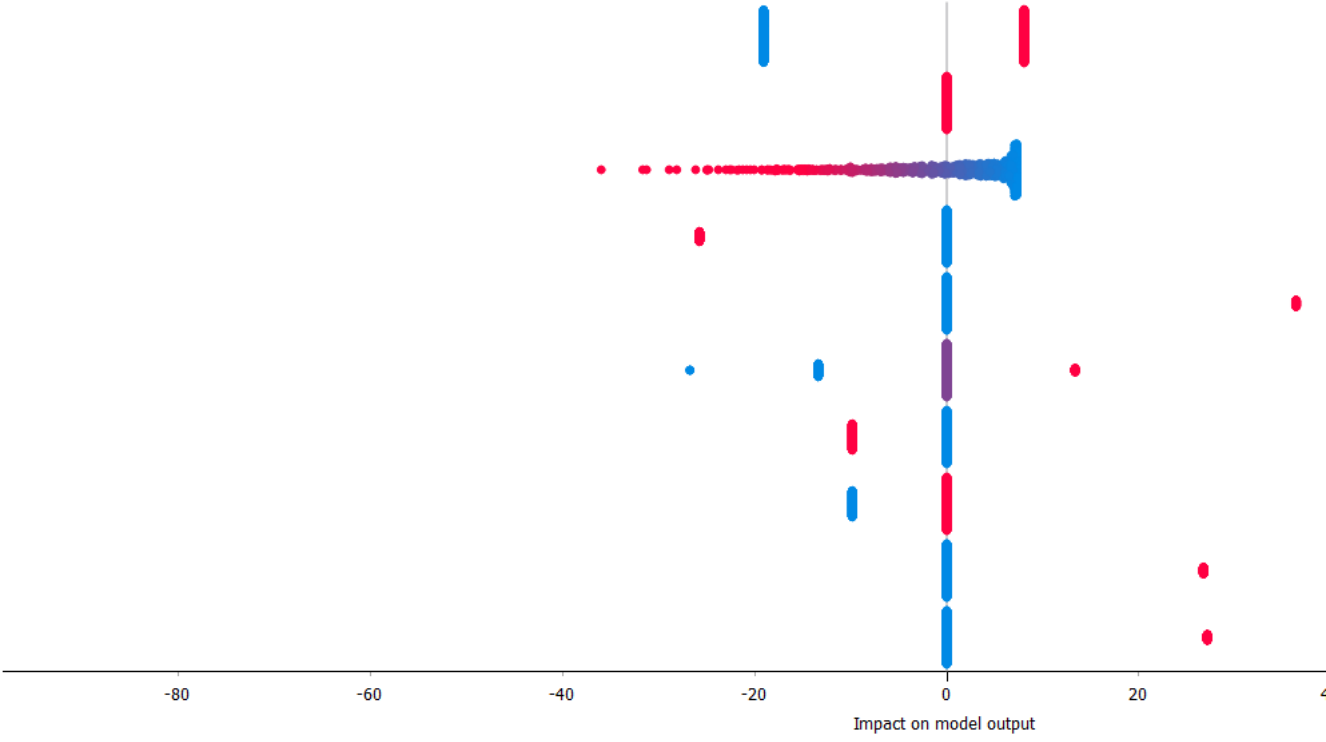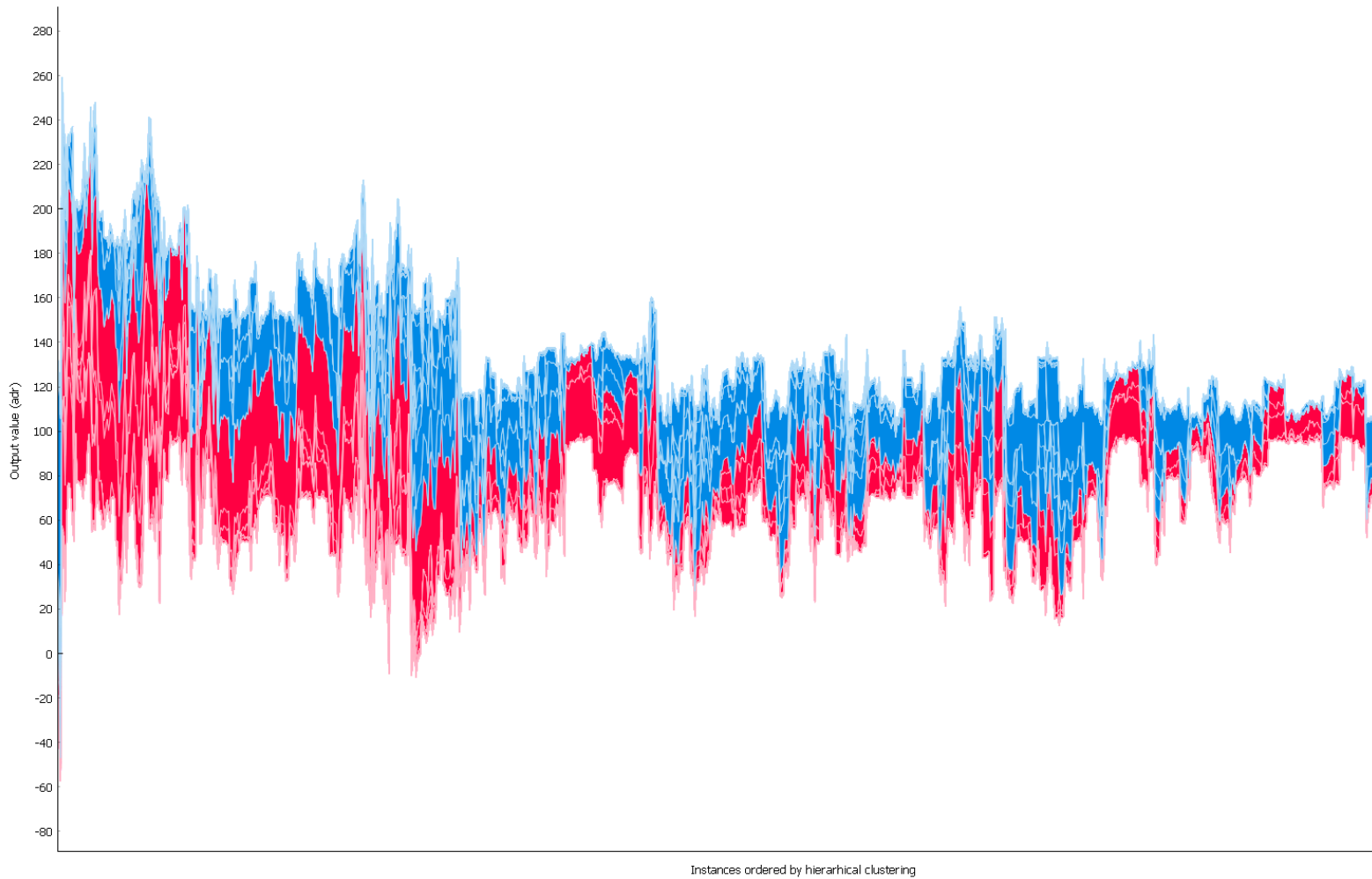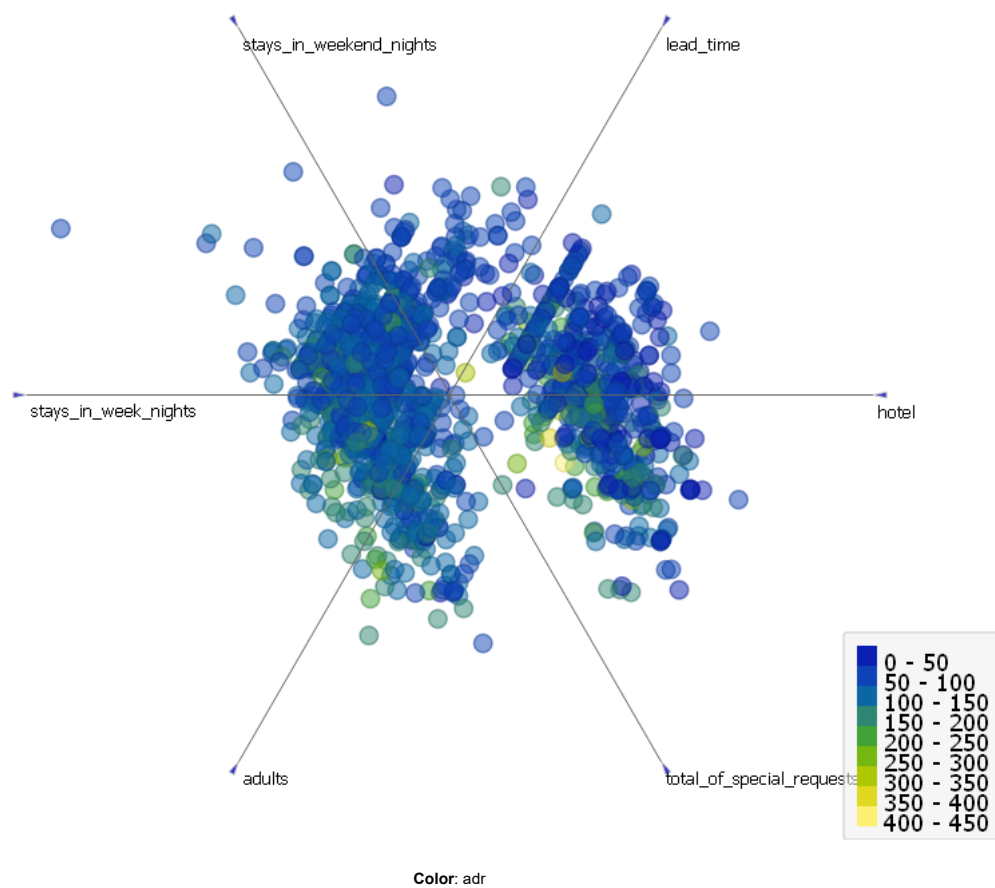
Data instances: 12
Features: 2
Meta attributes: 1

	Feature	Univar. reg.	RReliefF
11	arrival_date_month	-1.79769e+308	0.406275
5	reserved_room_type	-1.79769e+308	0.256191
10	total_of_special_requests	-1.79769e+308	0.100895
7	stays_in_weekend_nights	-1.79769e+308	0.0973409
6	lead_time	-1.79769e+308	0.093987
9	adults	-1.79769e+308	0.0858338
8	stays_in_week_nights	-1.79769e+308	0.0698527
3	market_segment	-1.79769e+308	0.0594917
2	customer_type	-1.79769e+308	0.0489501
1	hotel	-1.79769e+308	0.0483362
4	distribution_channel	-1.79769e+308	0.0176966
12	deposit_type	-1.79769e+308	0.003424