Discrete BCF vs SBCF with Odd Ratio Cost function

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Results with odd-ratio-cost function

The cost for a variable selected in the binary tree is defined as:

$$cost_i = \frac{\max\{p\}}{p_i}$$

10 Covaraites

Table 1: Results with 10 Covariates.

	BCF				S BCF			
subgroup	N	$share$	$CA\bar{C}CE$	σ_{CACCE}	N	$share$	$CA\bar{C}CE$	σ_{CACCE}
negative effect	66	0.66	-1.988	0.238	70	0.70	-1.993	0.234
positive effect	67	0.67	2.020	0.202	73	0.73	2.012	0.221

The BCF algorithm detected both subgroups in 36 data sets, while the $SBCF$ detected both subgroups in 43 data sets.

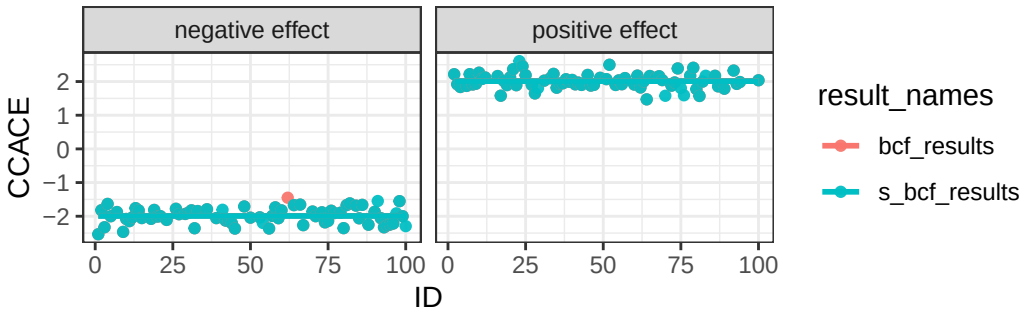

Figure 1: 10 Covariates

50 Covaraites

Table 2: Results with 50 Covariates.

	BCF				S BCF			
subgroup	N	$share$	$C\bar{A}CCE$	σ_{CACCE}	N	$share$	$C\bar{A}CCE$	σ_{CACCE}
negative effect	42	0.42	-2.074	0.277	56	0.56	-2.035	0.266
positive effect	44	0.44	2.033	0.253	58	0.58	2.030	0.242

The BCF algorithm detected both subgroups in 10 data sets, while the $SBCF$ detected both subgroups in 22 data sets.

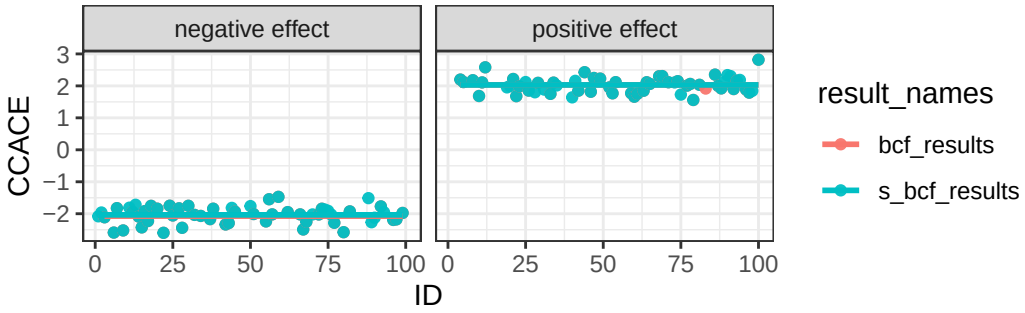

Figure 2: 50 Covariates

Table 3: Results with 100 Covariates.

	BCF				S BCF			
subgroup	N	$share$	$CA\bar{C}CE$	σ_{CACCE}	N	$share$	$CA\bar{C}CE$	σ_{CACCE}
negative effect	36	0.36	-1.982	0.255	50	0.5	-1.980	0.234
positive effect	41	0.41	2.003	0.167	60	0.6	2.017	0.184

100 Covaraites

The BCF algorithm detected both subgroups in 10 data sets, while the $SBCF$ detected both subgroups in 22 data sets.

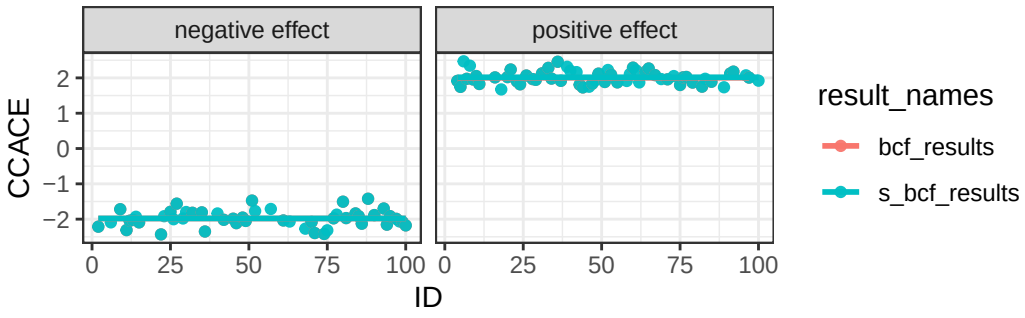

Figure 3: 100 Covariates

Results with odd-ratio-$\sqrt{n}-$cost function

The cost for a variable selected in the binary tree is defined as:

$$cost_i = \frac{\max\{p\}}{p_i}\ \sqrt{n}$$

10 Covaraites

Table 4: Results with 10 Covariates.

	BCF				S BCF			
subgroup	N	$share$	$CA\bar{C}CE$	σ_{CACCE}	N	$share$	$CA\bar{C}CE$	σ_{CACCE}
negative effect	65	0.65	-1.988	0.236	70	0.70	-2.005	0.245
positive effect	71	0.71	2.025	0.213	74	0.74	2.010	0.222

The BCF algorithm detected both subgroups in 39 data sets, while the $SBCF$ detected both subgroups in 44 data sets.

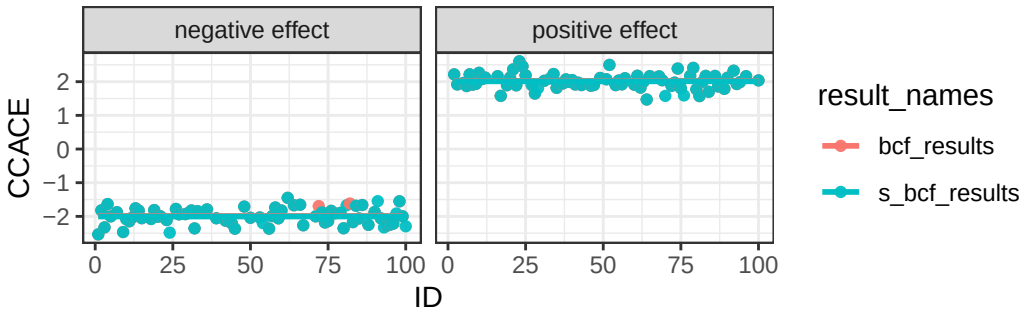

Figure 4: 10 Covariates

50 Covaraites

The BCF algorithm detected both subgroups in 7 data sets, while the $SBCF$ detected both subgroups in 16 data sets.

Table 5: Results with 50 Covariates.

	BCF				S BCF			
subgroup	N	$share$	$CA\bar{C}CE$	σ_{CACCE}	N	$share$	$CA\bar{C}CE$	σ_{CACCE}
negative effect	35	0.35	-2.027	0.27	51	0.51	-2.050	0.267
positive effect	44	0.44	2.055	0.25	55	0.55	2.053	0.241

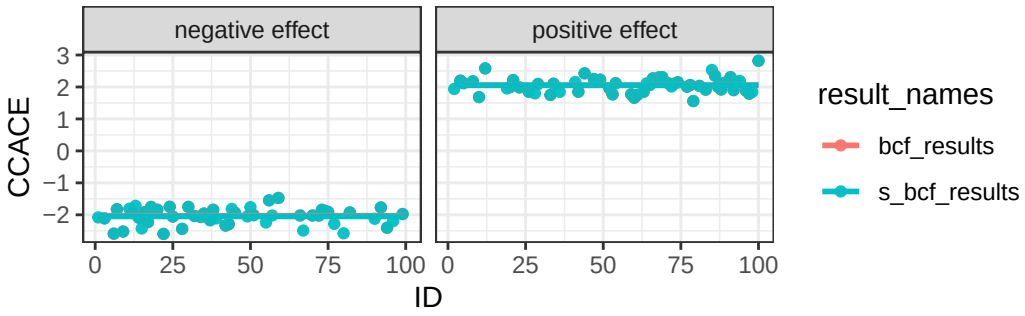

Figure 5: 10 Covariates

100 Covaraites

Table 6: Results with 100 Covariates.

	BCF				S BCF			
subgroup	N	$share$	$CA\bar{C}CE$	σ_{CACCE}	N	$share$	$CA\bar{C}CE$	σ_{CACCE}
negative effect	35	0.35	-1.976	0.260	53	0.53	-1.996	0.250
positive effect	40	0.40	2.019	0.176	67	0.67	2.009	0.178

The BCF algorithm detected both subgroups in 10 data sets, while the $SBCF$ detected both subgroups in 27 data sets.

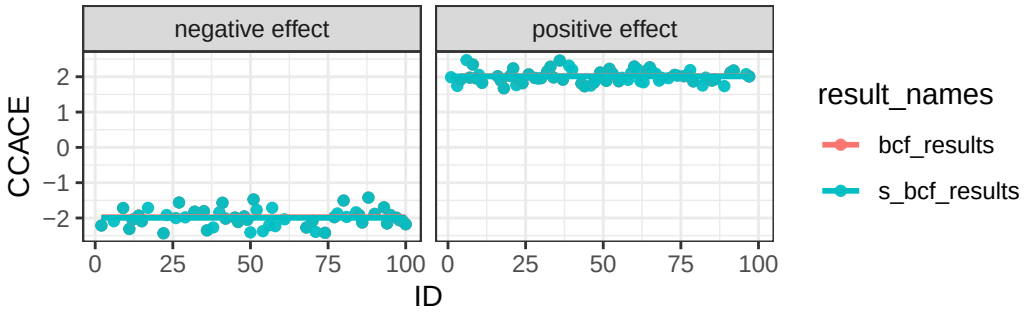

Figure 6: 10 Covariates