

Table 5 Overall comparison of nine reformulations for direct or relaxation algorithms in all groups

Method	Direct				Relaxation			
	Dom	Gap	Inf	Inf_Lobj	Dom	Gap	Inf	Inf_Lobj
MPCC	69	0.52	1.12e+00	2.22e-01	60	0.63	1.39e+02	1.20e-10
WDP	65	0.48	4.50e-01	2.22e-01	131	0.14	3.86e-03	4.94e-07
MDP	53	0.46	6.05e-01	2.22e-01	123	0.13	2.27e-01	5.34e-07
eMDP	46	0.66	1.43e+00	6.67e-01	53	0.33	3.79e-03	4.44e-07
TWDP	66	0.42	6.73e-01	6.67e-01	98	0.17	3.88e-03	6.13e-07
TMDP	73	0.49	1.34e+00	1.33e+00	89	0.15	2.26e-01	6.19e-07
eTMDP	49	0.66	1.19e+00	5.47e-07	52	0.34	2.31e-01	4.80e-07
ETMDP	89	0.40	4.52e-01	4.44e-01	116	0.29	5.26e+01	1.49e-07
eETMDP	4	0.90	1.19e+00	4.44e-01	32	0.43	3.61e-03	3.48e-07