N. Experiments repeated with 10 runs

Table 10. Results for simulated data.

Approach	Policy value			Action fairness
	Overall	$S=0$	$S=1$	
BASELINES				
Optimal unrestricted policy	1.25 ± 0.03	0.74 ± 0.03	1.47 ± 0.05	2.43 ± 0.17
Oracle action fairness	1.04 ± 0.03	0.01 ± 0.07	1.47 ± 0.05	0.00 ± 0.00
OUR FAIRPOL (ACTION FAIR)				
FairPol with $\mathrm{m} = \mathrm{DM}$	1.04 ± 0.03	0.04 ± 0.08	1.46 ± 0.05	0.24 ± 0.18
FairPol with $\mathrm{m} = \mathrm{IPW}$	1.03 ± 0.03	0.03 ± 0.08	1.45 ± 0.05	0.25 ± 0.15
FairPol with $\mathrm{m} = \mathrm{DR}$	1.03 ± 0.03	0.03 ± 0.08	1.45 ± 0.05	0.24 ± 0.15
OUR FAIRPOL (ENVY-FREE FAIR)				
FairPol with $\mathrm{m} = \mathrm{DM}$	0.90 ± 0.16	0.50 ± 0.23	1.08 ± 0.28	0.50 ± 0.73
FairPol with $\mathrm{m} = \mathrm{IPW}$	0.87 ± 0.07	0.36 ± 0.18	1.09 ± 0.17	0.26 ± 0.17
FairPol with $\mathrm{m} = \mathrm{DR}$	0.87 ± 0.07	0.38 ± 0.18	1.07 ± 0.17	0.25 ± 0.18
OUR FAIRPOL (MAX-MIN FAIR)				
FairPol with $\mathrm{m} = \mathrm{DM}$	0.74 ± 0.03	0.74 ± 0.03	0.74 ± 0.03	0.09 ± 0.07
FairPol with $\mathrm{m} = \mathrm{IPW}$	0.73 ± 0.03	0.73 ± 0.03	0.73 ± 0.03	0.14 ± 0.08
FairPol with $\mathrm{m} = \mathrm{DR}$	0.74 ± 0.03	0.73 ± 0.03	0.74 ± 0.03	0.13 ± 0.08

Reported: mean $\pm$ standard deviation ($\times 10$) on test set over 10 runs.