

NDCG@50

1.2  
1.0  
0.8  
0.6  
0.4  
0.2

**0.19** **0.17** **0.17** **0.17** **0.17** **0.17** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.18** **0.17** **0.18** **0.17** **0.17** **0.17** **0.17** **0.17** **0.17** **0.17** **0.17** **0.17** **0.17** **0.18** **0.18**

Initial DCS GT 1 2 3 4 GAPI 1 2 3 4 BTN 1 2 3 4 NMS 1 2 3 4 IMP-P 1 2 3 4 IMP-A 1 2 3 4 CoT 1 2 3 4

Alternate Fair Ranking Methods as defined in Section IV