



Is this ranked list fair for the item provider?

Which metric to use?

Several fair ranking metrics are proposed to measure provider fairness

How to measure fairness in grid-based browsing model?

### Comprehensive Analysis of Fair Ranking Metrics

#### Contribution

- Described fair ranking metrics using unified notation
- Identified the gaps between the conceptual and practical application of these metrics
- Identified strengths and limitations of the metrics
- Sensitivity analysis showing the impact of external factors on metric implementation
- Aid researchers and practitioners in selecting suitable metrics

#### Key Findings

- Metrics are surprisingly similar in underlying concept
- Missing data, missing relevance information, ranked list size are crucial/delicate factors in implementing metrics
- Metrics differ in their sensitivity towards external factors.

#### Publications

1. Raj, A., & Ekstrand, M. D. (2022, July). Measuring Fairness in Ranked Results: An Analytical and Empirical Comparison. In *Proceedings of the 45th International ACM SIGIR Conference on Research and Development in Information Retrieval* (pp. 726-736) DOI 10.1145/3477495.3532018
2. Raj, A., Wood, C., Montoly, A., & Ekstrand, M. D. (2020). Comparing fair ranking metrics. 3rd FAccTRec Workshop: Responsible Recommendation arXiv:2009.01311.

How to broaden metric applicability?

How to handle the limitations?

### Expanding Applicability of Fair Ranking Metrics

- Goal:** Design fair ranking metrics compatible to grid-based browsing models
- Status:** In-progress: background study, formulating research questions

### Consider Bias in Relevance

- Goal:** Addressing social bias in relevance data while measuring fairness
- Status:** Planning phase

How to consider bias in relevance?