

A Stakeholder-Centered View on Fairness in Music Recommender Systems

Karlijn Dinnissen & Christine Bauer

Utrecht University, The Netherlands

Structure

1. Literature review highlights
2. Identified challenges



**What is the state-of-the-art of
MRS fairness research from the
various stakeholders' perspectives?**

Review Results

Stakeholders in MRS



Equity of utility: good listening experience regardless of background

Streaming →
~65% (\$11b) of
global music
industry revenue

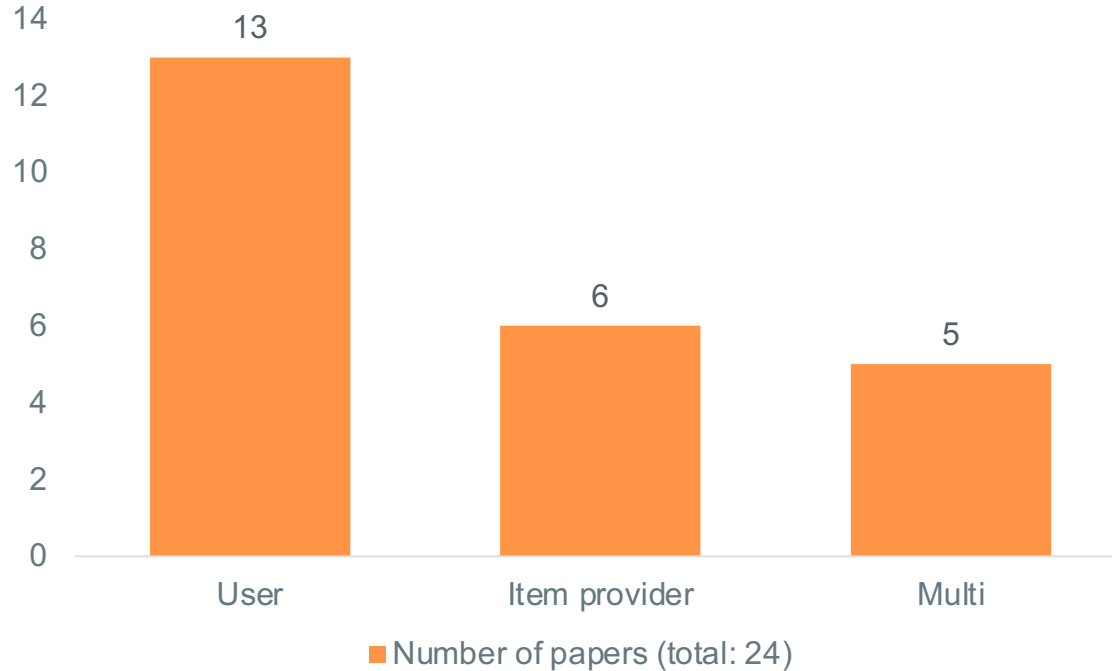


Multi-stakeholder MRS



- Flexer et al. (2020) Hubness as a case of technical algorithmic bias in music recommendation (IEEE '18)
- Mehrotra et al. (2020) Bandit based optimization of multiple objectives on a music streaming platform (KDD '20)
- Mousavifar & Vassileva (2022) Investigating the efficacy of persuasive strategies on promoting fair recommendations (PERSUASIVE '22)
- Oliveira et al. (2017) A multiobjective music recommendation approach for aspect-based diversification (ISMIR '17)

MRS fairness research: Stakeholder focus



User fairness



Focus: Some user groups receive worse recommendations

Considered attributes:

Age

Contemporaneity

Country

Gender

'Mainstreaminess'

Type (group/solo)

Provider fairness



Focus: Items from some artist groups are less frequently recommended

Considered attributes:

Age

Contemporaneity

Country

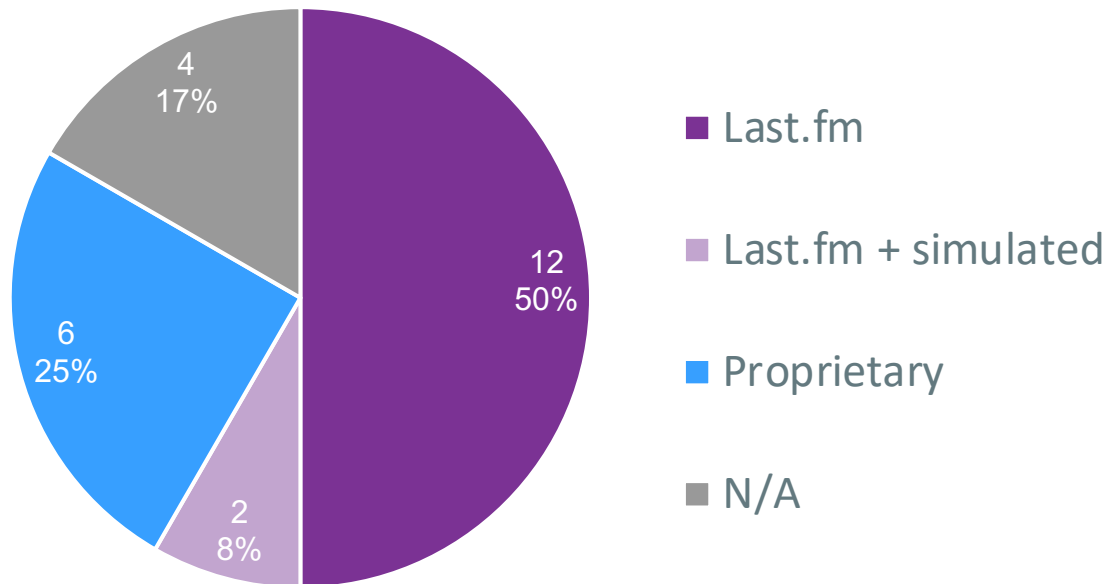
Gender

Popularity

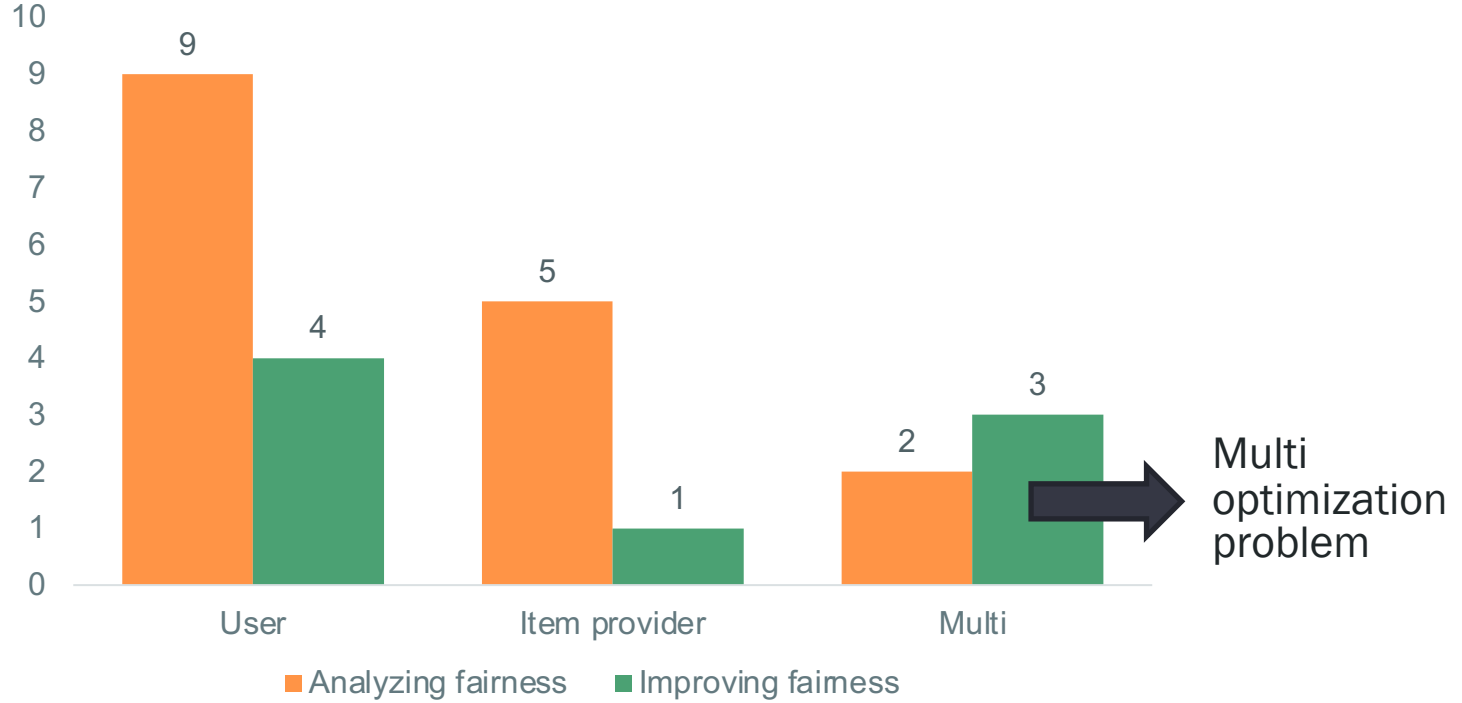
Type (group/solo)

Challenges

MRS fairness research: Datasets



MRS fairness research: Focus



Challenge 1: Data availability

Limited data is publicly available to conduct fairness research; most datasets either originate from the **same source** or are **proprietary**

Challenge 2: Fairness improvements

The large majority of works analyze the **current situation** of MRS fairness, whereas only few works propose **approaches to improve it**

Music domain specificities

Item characteristics

- Often no 'one best thing'
- Frequently repeated consumption, often serial nature
- Long item lifetime (vs. news)
- Short item length (vs. movies, books, podcasts)

Evaluation

- Explicit rating data is rare, played \neq liked
- Real world biases, e.g. gender

→ Schedl et al. (2022) *Music Recommender Systems: Techniques, Use Cases, and Challenges* (Springer)



Utrecht University



Discussion

- Data availability
- Improving fairness in MRS
- Domain-specific differences
- ...



Christine Bauer
c.bauer@uu.nl



Karlijn Dinnissen
k.dinnissen@uu.nl