Looking at the FAccTs: Exploring Music Industry Professionals' Perspectives on Music Streaming Services and Recommendations

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A typical online music platform provides access to ~100 million music tracks

Music Recommender Systems

- Recommender systems offer users music based on their current goal (e.g., query, mood, time of day, musical taste, …)

- Collaborative filtering and content-based filtering

- Automatic choices influence which music users play

- Traditionally designed to satisfy the user
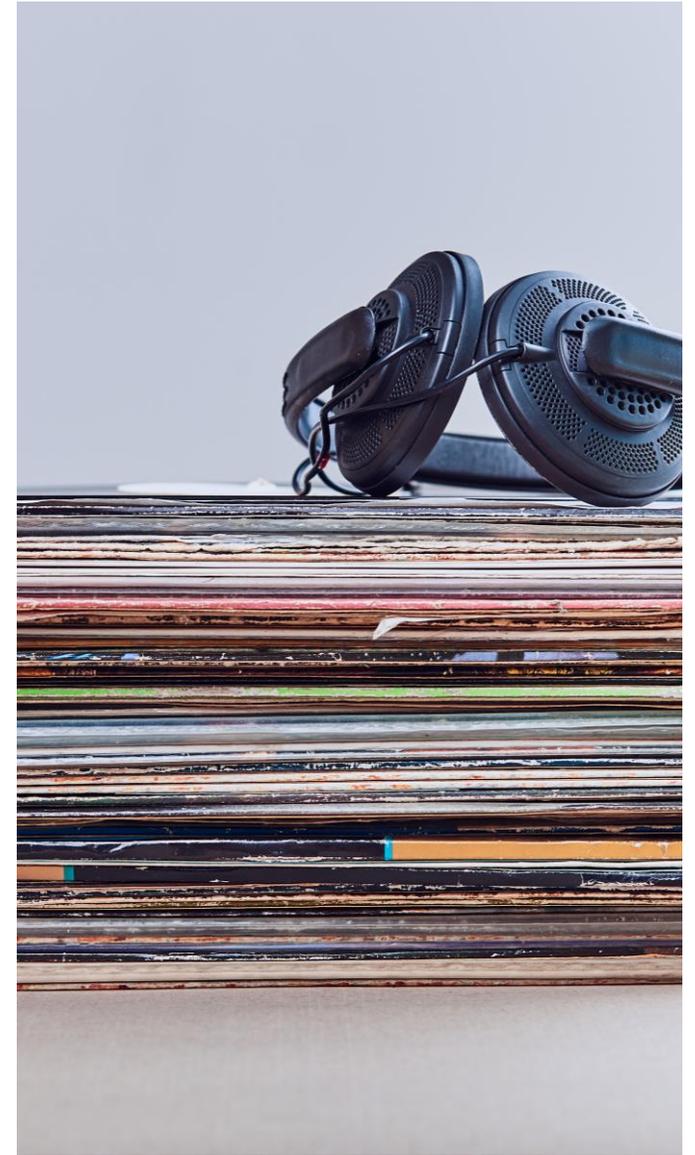
Music recommendation as a multi-stakeholder system

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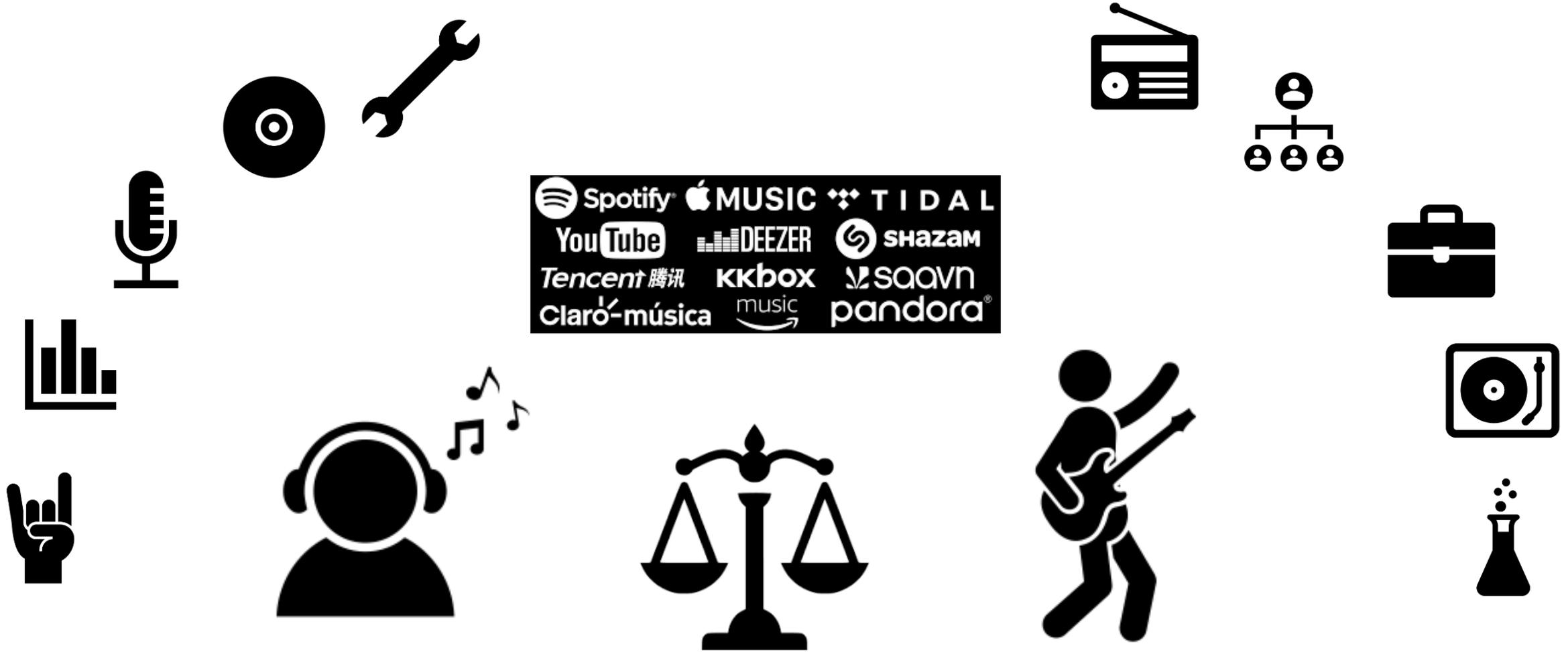
Music recommendation as a multi-stakeholder system

Fair, Accountable, and Transparent (FAccT) Recommender Systems

- **Fairness:** Human judgement value over system[1]

- **Accountability:** Holding the responsibility for the decisions made[2]

- **Transparency:** Insight into the inner workings of a system[3]

[1] Ekstrand, M. D., Das, A., Burke, R., & Diaz, F. (2022). Fairness in recommender systems. In Recommender Systems Handbook , 3rd ed.
[2] Lepri, B., Oliver, N., Letouzé, E., Pentland, A., & Vinck, P. (2018). Fair, transparent, and accountable algorithmic decision-making processes: The premise, the proposed solutions, and the open challenges. Philosophy & Technology, 31, 611-627.
[3] Tintarev, N., & Masthoff, J. (2010). Designing and evaluating explanations for recommender systems. In Recommender systems handbook

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What is the perspective of music industry professionals on:

• The **role of music streaming services** and embedded MRSs **in their jobs**? (RQ1)

• **Fairness, diversity, transparency, and control** of music streaming services and embedded MRSs **for artists**, and accountability for streaming services on those topics? (RQ2)

• **Variety, transparency, and control** **for users** in music streaming services and embedded MRSs? (RQ3)

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Methods

Music industry perspective on fairness

- Collected data through a questionnaire at Eurosonic Noorderslag (a main EU music industry conference)

- Questions from three points of view:

1. Participant's own role within the music industry (RQ1)

2. Artists (RQ2)

3. Consumers (RQ3)

Questionnaire and Analysis

- Topics of questions were inspired by studies on:
  - Artists' perception of MRS FAccT, control, and diversity,
  - Artists' playlisting strategies and
  - Users' perceptions of FAccT in RS.

- Mostly 5-point Likert scale (strongly disagree – strongly agree)

- Descriptive statistics to report averages on participant agreement rates

- Mann-Whitney U test to compare independent groups

Participant demographics (N=35)

Table 1. Participants' demographics. Percentages of the total number of respondents are reported in parentheses.

Gender (%)	Men	Women	*unknown*					
	22 (62.9)	12 (34.3)	1 (2.9)					
Age (%)	18-25	26-35	36-45	46-55	56-65	*unknown*		
	5 (14.3)	9 (25.7)	9 (25.7)	7 (20)	4 (11.4)	1 (2.9)		
Nationality (%)	Dutch	Greek	Bulgarian	Irish	French	German	*unknown*	
	16 (45.7)	2 (5.7)	1 (2.9)	1 (2.9)	1 (2.9)	1 (2.9)	13 (37.1)	
Role (%)	Education	Technology	Event Production	Booking	Artist	Research	Marketing/PR	Other
	10 (28.6)	7 (20)	6 (17.1)	5 (14.3)	5 (14.3)	4 (11.4)	4 (11.4)	6 (17.1)
Years active (%)[a]	1-5	6-10	10-15	16-20	>25	Not app.	*unknown*	
	9 (25.7)	4 (11.4)	5 (14.3)	2 (5.7)	6 (17.1)	8 (22.9)	1 (2.9)	

Results

RQ1: Participants' own role within music industry

77% of participants use streaming services regularly for their work

Transparency

- Slight uncertainty on how music recommender systems work (M=2.83, SD=1.10).

- Feel that streaming services inform them slightly insufficiently for them to make strategic decisions (M=2.50, SD=1.19).

- Music providers rated contact with streaming service representatives <u>significantly</u> more important compared to other participants ($Mrank$=25.25 vs. 15.85; p=.022).

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RQ2: Artists

Transparency towards artists

- Slightly unclear for which reason(s), when, and to whom an artist's music is recommended (M=2.65, SD=1.17). General agreement that it should be made clearer (M=4.28, SD=.77).
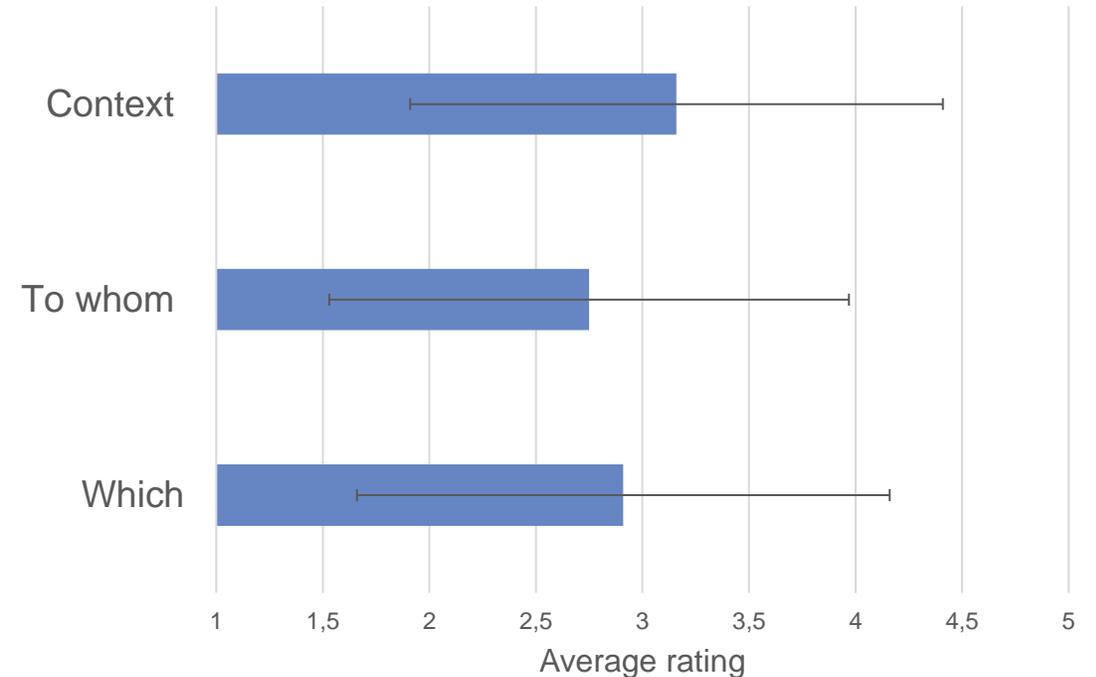
Control for artists

- Generally neutral about artists' control over the recommendation of their music

Contacting streaming services

- Slightly difficult to reach out (M=2.29, SD=1.22).

"If you are big, you have a listening ear"

Control over recommendations

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RQ2: Artists

Fairness

- Unsure of good means to increase diversity and inclusion, and address (historical) imbalances. Some suggested quotas, others did not consider those viable:

"It should be about the quality"

Responsibility

- Streaming services have a responsibility to improve diversity and inclusion (*M*=4.23, *SD*=1.12).
  - ➢ Music providers rated this responsibility significantly lower compared to participants in a non-providing role (*Mrank*=13.8 vs.19.2; *p*=.019).

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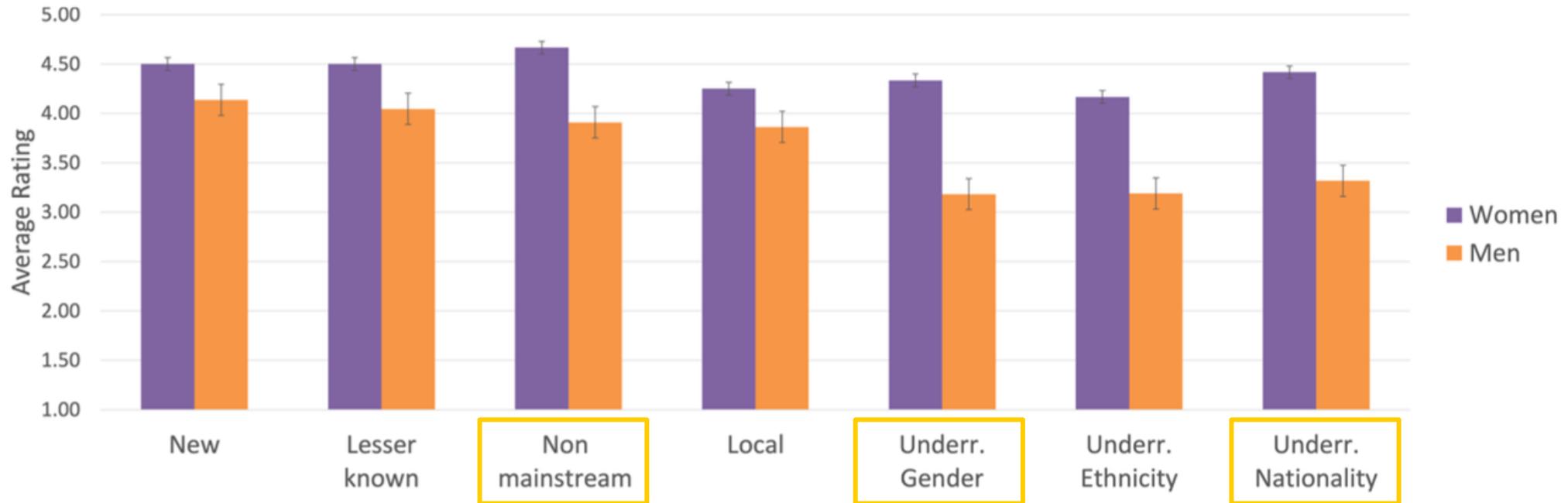# RQ2: Artists - differences between participants' gender groups

Fig. 2. Avg. agreement (1=Strongly Disagree; 5=Strongly Agree) per gender on whether streaming services should increase diversity and inclusion by including more *New* artists, *Lesser known* artists, artists making *Non-mainstream* music, artists from the users' *Local* area, artists from an *Underrepresented Gender*, an *Underrepresented Ethnicity*, and *Underrepresented Nationality*.
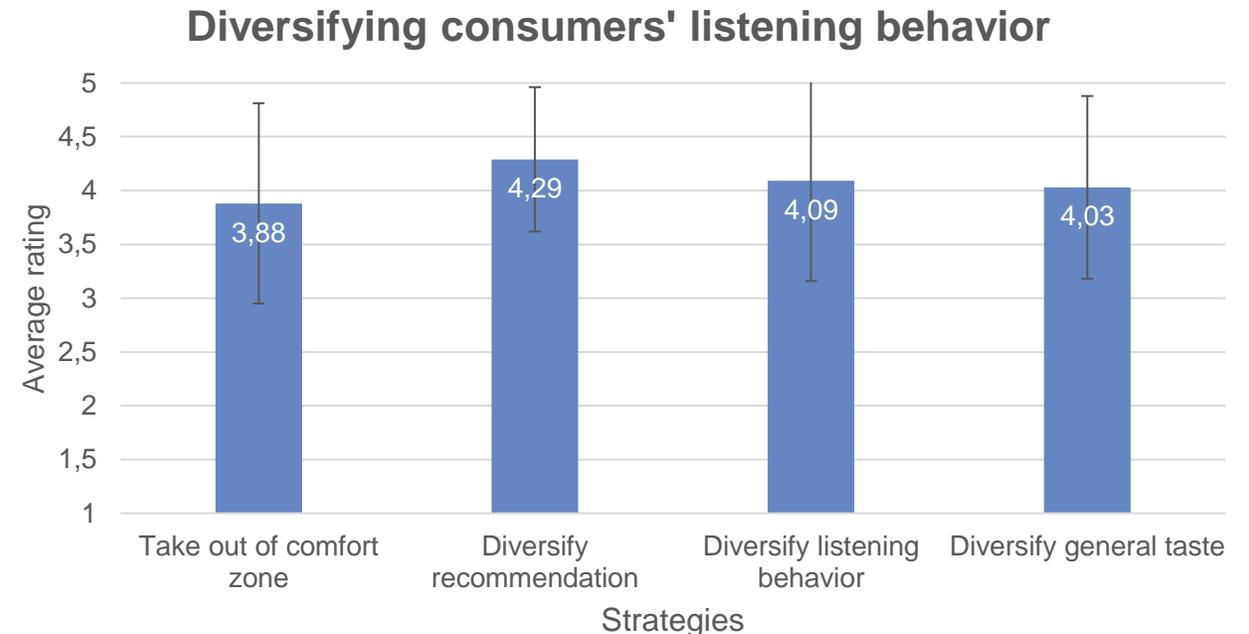
RQ3: Consumers

Variety
- Streaming services should play a significant role in diversifying consumers' listening behaviour

Transparency towards consumers
- Slightly unclear why specific music is recommended (M = 2.79, SD = 1.37) ; should be made clearer (M = 4.38, SD = .54)

Control for consumers
- Neutral about users' control over their recommendations (M = 3.0, SD = 1.26)

- Music providers were <u>significantly</u> less satisfied with user influence on personalized playlists (*Mrank* = 10.21 vs. 19.39, p = .027)

Diversifying consumers' listening behavior

(Bar chart: Average rating by Strategies)
- Take out of comfort zone: 3,88
- Diversify recommendation: 4,29
- Diversify listening behavior: 4,09
- Diversify general taste: 4,03

Key takeaways

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1. Music industry professionals desire that ==more insight into how music recommender systems work== is given, to both consumers and artists.

2. Music industry professionals generally suggest ==increasing control for artists== over their item's recommendations and ==control for users== over their recommendations.

3. Most music industry professionals feel that music streaming services ==impact diversity and inclusion== in the music industry, and have a ==responsibility== in countering (historical) imbalances

4. Using ==fairness-enhancing interventions==, such as reranking and implementing quotas, is supported by music industry professionals in various degrees. Support highly differs per application area.

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Thank you

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Link to raw data

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