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The sound of fairness: AI and recommender systems in the European music industry

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Recommender systems (RS) play a central role in structuring visibility in music platforms. In this context, fairness has emerged as a key normative concept guiding the discussions in the music governance. However, there is a gap in understanding the meaning of fairness in the light of RS. This article adds to this gap by examining how European music professionals conceptualize fairness in relation to RS and Artificial Intelligence (AI). Drawing on 22 semi-structured interviews and a survey of 360 respondents, the study adopts a qualitative grounded approach informed by insights from discursive institutionalism. The findings show that transparency emerges as the central dimension of fairness. Opacity is perceived as reinforcing platform power, shaping visibility and monetization, and impacting cultural diversity. AI is viewed as intensifying these dynamics, through opaque training practices and the promotion of AI-generated content. While there is broad support for strengthening transparency, there is less consensus regarding how to promote cultural diversity. By foregrounding professional perspectives, the study conceptualizes fairness as a negotiated and context-dependent construct, contributing to a socially grounded understanding of algorithmic governance in digital music platforms.

KEYWORDS

artificial intelligence, fairness, media governance, music streaming platforms, recommender systems

Introduction

Recommender systems (RS) have become a central issue in contemporary debates on media and platform governance. As algorithmic curation mediates access to content, visibility, and value creation across the creative industries, questions about accountability, transparency, and fairness have gained unprecedented prominence. Within the music industry, these concerns are particularly acute. Music streaming services (MSS), such as Spotify and Deezer, and User-generated content (UGC) platforms, such as TikTok and YouTube, rely on RS to filter and promote content, making these systems decisive in shaping professional opportunities, audience reach, and remuneration (Maasø and Spilker, 2022; Schedl et al., 2018; Webster, 2023).

The RS influence how the content is promoted to consumers in different ways, since it also has an impact on the curated playlists (Bonini and Gandini, 2019). Content curation plays a crucial role in the business models of MSS (Prey, 2020), which operate through an “algotorial” logic – a hybrid of algorithmic assessment and editorial curation that jointly determines exposure (Bonini and Gandini, 2019; Freeman et al., 2022). While such systems promise personalization and efficiency, their operation remains opaque (Eriksson et al., 2019). Recommendations are often perceived as gatekeeping tools that

favor already prominent artists, reproducing visibility hierarchies and, consequently, inequities in remuneration (Hesmondhalgh et al., 2023; Negus, 2019).

Professionals and policymakers alike have expressed concern that the opacity surrounding how content is ranked, recommended, or monetized undermines fair participation in digital markets and weakens trust among stakeholders (Dinnissen and Bauer, 2022; Morris and Powers, 2015). These issues are becoming even more complex with the rapid integration of Artificial Intelligence (AI) technologies including Generative AI, raising further questions about bias, accountability, and concentration of power. As highlighted by Henry et al. (2024), the growing automation of cultural mediation through opaque algorithmic processes intensifies existing asymmetries.

Amid this growing attention, fairness has emerged as a key normative concept guiding the discussion of RS and algorithmic governance in the creative industries. However, most research to date has examined RS through a technical or computer-science lens, focusing on the calculation of algorithm fairness (Danks and London, 2017; Molina and Loiseau, 2022). An emerging body of scholarship has started to challenge this limitation by introducing stakeholder perspectives into the study of algorithmic fairness. Notably, Ferraro et al. (2021) examined how artists conceptualize fairness in music platforms, highlighting how creators link fairness to transparency, recognition, and control. Dinnissen and Bauer (2023) advanced this discussion by analyzing platform fairness from the perspective of item providers and advocates for multi-stakeholder perspective to bridge the gap between computational design and professional expectations. Despite these contributions, research remains fragmented. Most studies are conducted within national contexts, focusing on one or two stakeholder categories and rarely consider the diversity of professional roles. As previous research calls there is a gap in understanding the normative dimension of fairness (Deldjoo et al., 2024; Dinnissen and Bauer, 2022).

Addressing this gap, this article investigates how European music professionals from multiple categories - artists, record labels, MSS, collective management organizations (CMOs), music business experts, and independent researchers - understand fairness in relation to RS and AI-driven practices in the music platforms. By adopting a bottom-up, ideational perspective, the article addresses three research questions: How do music professionals perceive the role of RS and AI in shaping fairness within the music streaming ecosystem? Which ideas and values underpin stakeholders' understandings of fairness in relation to RS and AI? And what policy ideas do stakeholders advance to address the perceived challenges related to fairness?

The article is structured as follows. It firstly reviews existing research on fairness in the music industry and in RS. Secondly, it presents the conceptual basis, grounded in discursive institutionalism and a mixed-methods approach, for analyzing how professionals construct meanings of fairness in relation to RS and AI technologies in the music industry. The findings section presents the key ideas and narratives through which music professionals articulate fairness in relation to the RS, outlining the perceived problems, proposed policy solutions, and underlying normative values that shape these understandings.

The second part examines professionals' perceptions of AI technologies, including GenAI, highlighting how the latter is viewed as a potential amplifier of these existing imbalances, complicating questions of transparency and remuneration in the industry. The findings reveal that transparency constitutes a central dimension of fairness in discussions surrounding RS and AI, as music professionals perceive opacity as affecting key elements, such as remuneration, cultural diversity, and power relations within the music industry. The lack of transparency and limited understanding of how RS operate is perceived as creating opportunities for dominant actors to advance their economic interests, while AI technologies are perceived as intensifying these concerns.

The study also highlights the different rationalities and values that stakeholders mobilise to make sense of fairness, revealing competing narratives. Moreover, the article reveals that debates surrounding fairness in RS cannot be understood in isolation and are connected with other tensions within the music industry, including power asymmetries and contractual opacity.

The conclusion summarizes the study's contributions and discusses its implications for the cultural and music governance in the light of platforms.

Fairness, RS, and AI in platformized music ecosystem

RS have become essential to the operation and governance of platforms, such as MSS and UGC, influencing what content is made visible to users and, consequently, how value circulates across the music ecosystem. Designed to personalize user experience through algorithmic curation, RS influence how artists gain exposure, how audiences discover music, and how revenues are generated and allocated (Aguiar and Waldfogel, 2018; Prey, 2020). In this sense, RS are not merely technical tools but infrastructural mechanisms embedded in broader economic and institutional arrangements. This article approaches fairness as a normative and contested concept. It does not adopt a predefined definition of fairness but instead examines inductively how stakeholders define and operationalize it through their evaluations of how RS shape visibility, opportunities, and value across the music ecosystem, rather than treating fairness as an objectively measurable property of algorithmic systems. Contemporary debates about fairness in the music industry focus on how RS functions, whose interests they prioritize, and whether they reproduce or mitigate existing structural imbalances.

A substantial body of research highlights fairness-related concerns associated with RS. One recurring issue is the tendency of these systems to favor already popular or mainstream content, thereby marginalizing lesser-known or independent artists (Abdollahpouri et al., 2020b; Bonini and Gandini, 2019). This popularity bias has been shown to reinforce visibility hierarchies and constrain diversity, particularly within curated playlists that operate as gatekeeping mechanisms (Freeman et al., 2022; Negus, 2019).

These dynamics extend beyond automated recommendations to the broader role of playlists, which have become a defining feature of MSS. Content curation is central to the streaming

business model (Prey, 2020), relying on computational systems that interact with editorial decision-making. Editorial playlists and algorithmic recommendations are not discrete domains; instead, they operate in hybrid configurations where human and automated forms of selection mutually reinforce each other (Bonini and Gandini, 2019; Freeman et al., 2022). Therefore, playlist inclusion and algorithmic visibility function as powerful mechanisms of exposure. Recommendations are frequently perceived as gatekeeping devices that privilege established artists, contributing to disparities in visibility and, ultimately, remuneration (Negus, 2019; Prey, 2020).

A further strand of scholarship emphasizes the opacity surrounding the design and operation of RS. Studies document limited transparency regarding how metadata, behavioral data, and editorial inputs are combined to generate personalized outputs (Brereton et al., 2020; Dinnessen and Bauer, 2023). This opacity constrains accountability and reduces the capacity of artists and rights holders to understand or contest how their content is ranked, recommended, and monetized (Siles et al., 2022). The concentration of data and decision-making power within a few dominant platforms contributes to a systemic imbalance that undermines fair participation and remuneration (Hesmondhalgh et al., 2023).

AI technologies, whether embedded in recommendation infrastructures or deployed for generative purposes, raise growing concerns regarding transparency and accountability within music platforms (Henry et al., 2024; Senftleben, 2023). GenAI depend on the large-scale ingestion of musical works raising significant copyright and intellectual property issues, especially when protected works are incorporated into training processes without clear licensing arrangements. The difficulty of identifying which works have been used to train specific models complicates the ability of rightsholders to assess whether their content has been appropriated, transformed, or monetized (Drott, 2021).

While disciplines have sought to define and operationalize fairness in RS through formal criteria such as statistical parity or individual fairness (Danks and London, 2017; Molina and Loiseau, 2022), these approaches tend to abstract fairness from its institutional and cultural context. They rarely engage with the normative dimensions of fairness as articulated by stakeholders embedded in specific sectors. As Deldjoo et al. (2024) observe, underlying normative claims and what constitutes a fair recommendation in a given application context are insufficiently examined. Scholars have therefore called for frameworks that foreground stakeholder perspectives and examine how fairness is understood (Dinnessen and Bauer, 2022).

Existing research that adopts this perspective has primarily focused on artists. These studies show that fairness in RS are associated with transparency and greater control over how content is recommended (Dinnessen and Bauer, 2023; Ferraro et al., 2021). Another key dimension concerns the expectation that RS should support diversity. However, there is less consensus regarding the adoption of quotas or similar regulatory instruments to achieve this objective (Dinnessen and Bauer, 2023; Ferraro et al., 2021). More recent work has expanded this discussion beyond artists by incorporating the perspectives of music industry professionals, highlighting concerns regarding the lack of transparency and control on RS and expressed

support for increasing diversity in recommendations (Dinnessen et al., 2023).

This article contributes to the growing literature on the normative dimensions of fairness. Recent research indicates how fairness is associated with redistribution of value, balance of power and equality of opportunity (Fernandes and Vlassis, 2026). This article further explores the normative dimension of fairness according to music professionals in relation to RS and AI. It explores the competing narratives that underpin understandings of fairness and shape expectations regarding the governance of digital music platforms. In doing so, it expands existing research on music professionals' perceptions of fairness by moving beyond the question of what stakeholders consider fair to examine how they define and justify for these positions. This approach makes possible to reveal how debates surrounding fairness in RS are connected to other tensions in the industry.

Given that fairness is recognized as a socially constructed and context-dependent concept (Ekstrand et al., 2021), and that recommendation environments involve competing stakeholder interests (Abdollahpouri et al., 2020a; Naghiaei et al., 2022), it is essential to move beyond a single stakeholder category. A more comprehensive understanding requires examining how different professional roles within the music industry conceptualize fairness in relation to RS. This article addresses this gap by examining how European music professionals articulate, contest, and negotiate fairness on music platforms.

Materials and methods

Understanding how professionals perceive fairness in the context of RS and AI is central to navigate the evolving dynamics of the music industry under platformization. These systems do not merely mediate access to music; they actively shape how value, visibility, and recognition are distributed within the industry. As such, questions of fairness are neither abstract nor technical. They are embedded in institutional practices, professional roles, and power asymmetries that structure how the digital music economy functions. Investigating how fairness is understood and articulated by different professional groups is essential for examining the challenges of platform governance.

To analyze these understandings, this research adopts a qualitative and pragmatic framework, drawing on grounded theory principles (Charmaz, 2006). It focuses on how music professionals construct meaning around fairness in relation to RS and AI. In this sense, fairness is not approached as a static or universally agreed-upon principle but as a dynamic concept that is negotiated among diverse stakeholders with competing priorities (Vlassis and De Beukelaer, 2019; Saurugger, 2016).

The analysis is informed by discursive institutionalism (Schmidt, 2008; 2010), which offers a valuable lens to understand how ideas and discourses shape institutional arrangements and practices. A central dimension of this approach lies in unpacking the ideas mobilized by actors with different interests. Discursive institutionalism (DI) identifies three levels at which ideas operate: policy ideas (the specific proposals or solutions put forward), programmatic ideas (the

broader logics or paradigms guiding action, such as efficiency or equity), and philosophical ideas (the normative and cultural assumptions that underpin actors' worldviews). These layers are useful for examining how fairness is constructed differently by various stakeholders.

This article focuses on the three levels of the ideational dimension, analyzing professionals' discourse on how RS and AI are impacting fairness in the digital music economy. It pays attention to how these systems are understood to affect exposure, remuneration, and diversity, the key areas in which fairness concerns are often concentrated. This approach underscores that addressing fairness in RS and AI requires not only technical or legal interventions, but also attention to the meanings through which industry actors interpret these technologies, since these interpretations shape how governance challenges are defined and which policy responses are considered legitimate.

In order to investigate how professionals in the European music industry understand fairness in relation to RS and AI, this study draws on a qualitative dataset comprising 22 semi-structured interviews complemented by a European survey ($n = 360$). The dataset forms part of a broader study examining the normative dimensions of fairness in the music industry in light of platforms (Fernandes and Vlassis, 2026). While the previous study investigated how music professionals understand fairness in the context of music platforms more broadly, this article focuses specifically on perceptions of RS and AI, examining how stakeholders define, operationalize, and justify fairness in relation to these technologies. The interviews were conducted between December 2023 and June 2024, both online and in person, in English, with an average duration of one hour, with music professionals occupying a range of roles across the industry. Interviewees were selected based on their relevance and using a snowball sampling. The interview design encouraged participants to reflect on how they understood fairness in relation to RS and AI technologies, including GenAI, the challenges they associated with these technologies, and the solutions they considered necessary to address them. Therefore, no definition of concepts was provided to interviewees, since we are interested in how they define and articulate ideas to sustain their perceptions.

The majority of interviewees represented European-level professional associations and sectoral organizations, providing perspectives informed by their engagement with, and representation of, diverse actors across the music industry. The sample was organized into six professional categories, as presented in Table 1. These included artists (representatives of

authors, composers, songwriters, performers, and music networks); record labels (both major and independent); collective management organizations responsible for the administration and distribution of royalties; senior professionals currently or formerly employed by music streaming services or UGC platforms; music business experts (including consultants, lawyers, and professionals specializing in areas such as export strategies and intellectual property management); and independent researchers based in academic institutions. While the majority of interviewees were based in Europe, two participants from the United States were included due to their recognized expertise and long-standing involvement in the global music industry. In addition, three independent researchers were interviewed to complement the industry perspectives with specialized knowledge. All interviewees occupied positions that afforded them a strategic overview of the transformations associated with music platforms.

In addition to the interviews, the study draws on a survey conducted between April and September 2024, designed to capture broader perceptions of fairness in music platforms among professionals across the European music industry. The survey was distributed through professional networks, mailing lists, and targeted outreach to industry organizations, and was made available in six languages: English, German, French, Italian, Spanish, and Greek. A total of 360 valid responses were collected and managed through Qualtrics. Participants represented a wide spectrum of roles within the music industry, including artists, producers, managers, record label representatives, professionals from collective management organizations, streaming platform employees, and consultants.

The survey captured a diverse group of professionals from across the European music industry. Respondents were based in 19 European countries, with the largest shares coming from Germany (15.5%), Austria (13.6%), Italy (9.1%), Spain (8.3%), Sweden (7.7%), France (7.2%), Denmark (6.6%), Belgium (6.3%), and the Netherlands (6.1%). The sample included 71.3% male and 26.1% female respondents, reflecting gender imbalances previously documented in the sector (Brereton et al., 2020). Approximately one-third of respondents were under 45 years old, while a similar proportion were over 55, providing perspectives from professionals at different career stages. In a multiple-choice question related to professional roles, the most frequently reported categories were composers, authors, and songwriters (67%), followed by music business experts (50%) and performers (43%). The category of music business experts included professionals working in areas such as legal services, music publishing, collective management organisations, and other specialised activities within the music ecosystem. The survey complements the interview material by mapping broad professional attitudes and highlighting recurring concerns and tensions across the ecosystem.

The data were analyzed using a qualitative document analysis framework outlined in this section. Interview transcripts were coded using NVivo software. The analysis combined deductive and inductive elements. The deductive component focused on identifying policy, programmatic, and philosophical ideas mobilised by music professionals when discussing fairness in relation to RS and AI. At the same time, an inductive coding process was used to identify recurring themes, stakeholder-

TABLE 1 Overview of interviewees.

Category	Number of Interviews
Artists	7
Record Label	5
Collective management organisations (CMO)	2
Music streaming services (MSS)	2
Music business experts (MBE)	3
Independent researcher (IR)	3

specific concerns, and how different ideas were combined into broader narratives and concerns in the music industry.

Results

A central claim articulated by music professionals concerns the lack of transparency in RS. Across stakeholder categories, opacity was the element most reinforced in the interviews and emerged as a central point of criticism, as it is perceived as affecting other elements such as cultural diversity and artists' remuneration.

As the survey results indicated (Figure 1), RS are perceived negatively in this regard: 81,9% of respondents ($n = 264$) consider them 'not at all' transparent, while only 1,8% perceived them as 'very' transparent. This pattern is reflected in the low mean transparency score ($M = 1.20$, $SD = 0.45$), indicating agreement regarding the opacity of RS. These findings resonate with previous research highlighting transparency as a core dimension of fairness in relation to RS in the music platforms (Dinnissen and Bauer, 2023; Ferraro et al., 2021).

Professionals elaborated on how opacity in RS creates conditions in which MSS and UGC platforms can promote certain artists at the expense of others. A recurring concern was that RS amplify already established artists, reinforcing existing hierarchies rather than expanding opportunities for emerging or independent musicians, as illustrated by a music professional "generally speaking, the whole idea of recommendation engines is more likely to recommend things that are popular and popularity in the case of the music business is really governed a lot by success, financial success" (MBE 2). This perception aligns with discussions of popularity bias in algorithmic systems, whereby recommendation models disproportionately favor mainstream content (Abdollahpour et al., 2020b).

At the same time, professionals highlighted that RS restrict the visibility of niche artists and creators from less dominant regions. Geographic clustering in recommendations is described as a

particular limitation. As one artist explained: "The suggested artists that appear when you listen to a Belgian artist only have nationality in common; there is no accurate recommendation related to creative aspects" (Artist 3). This point illustrates a perceived reduction in artists' visibility to local markets, restricting their global reach and impacting cultural diversity, as elaborated by an Artist representative: "So at the end you only have, let's say, mainstream music, and this is a real danger to the diversity that a streaming platform should bring. And if we put zoom on more geographical, local level of musicians, creators, bands from especially non-European ones, they have a strong feeling that, like the big players, don't really allow them to emerge" (Artist 7). Such concerns echo findings in the literature showing that geographic imbalances in recommendation datasets can produce disparate impacts, often favoring artists from commercially dominant regions (Gómez et al., 2021). Similarly, research indicated that self-published or indie label artists are frequently grouped with artists from their own country, irrespective of genre, thereby limiting exposure beyond national contexts (Dinnissen and Bauer, 2023; Tofalvy and Koltai, 2023).

Together with RS, platform-curated playlists are perceived as playing a central role in structuring contemporary listening practices. Professionals describe them as important intermediaries with audiences, as a record label put it "getting access to a playlist is the modern equivalent to getting on radio, but now there's just one radio for the world" (record label 1). In this sense, playlists are perceived as powerful gatekeeping devices embedded in broader platform logics. The survey findings reinforce this perception (Figure 2). When asked whether platform-curated playlists foster passive listening ($n = 256$, $M = 2.96$, $SD = 0.90$) 38,6% described the experience as 'very' passive and 32% as 'extremely' passive, while 22,6% selected 'slightly' passive, which indicated the perceived impact of RS or playlist, since the consumer is not actively selecting the music. Yet when asked whether passive listening reduces opportunities for musical discovery ($n = 253$, $M = 2.98$, $SD = 1.01$) 38,3%

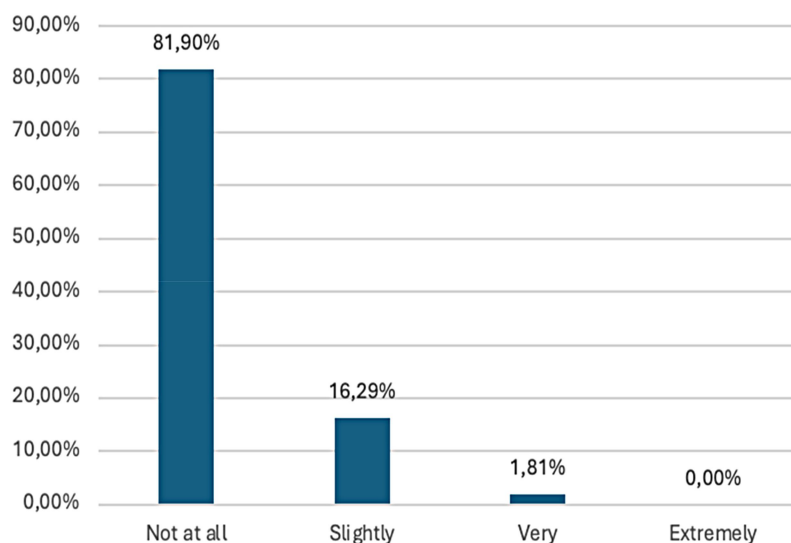
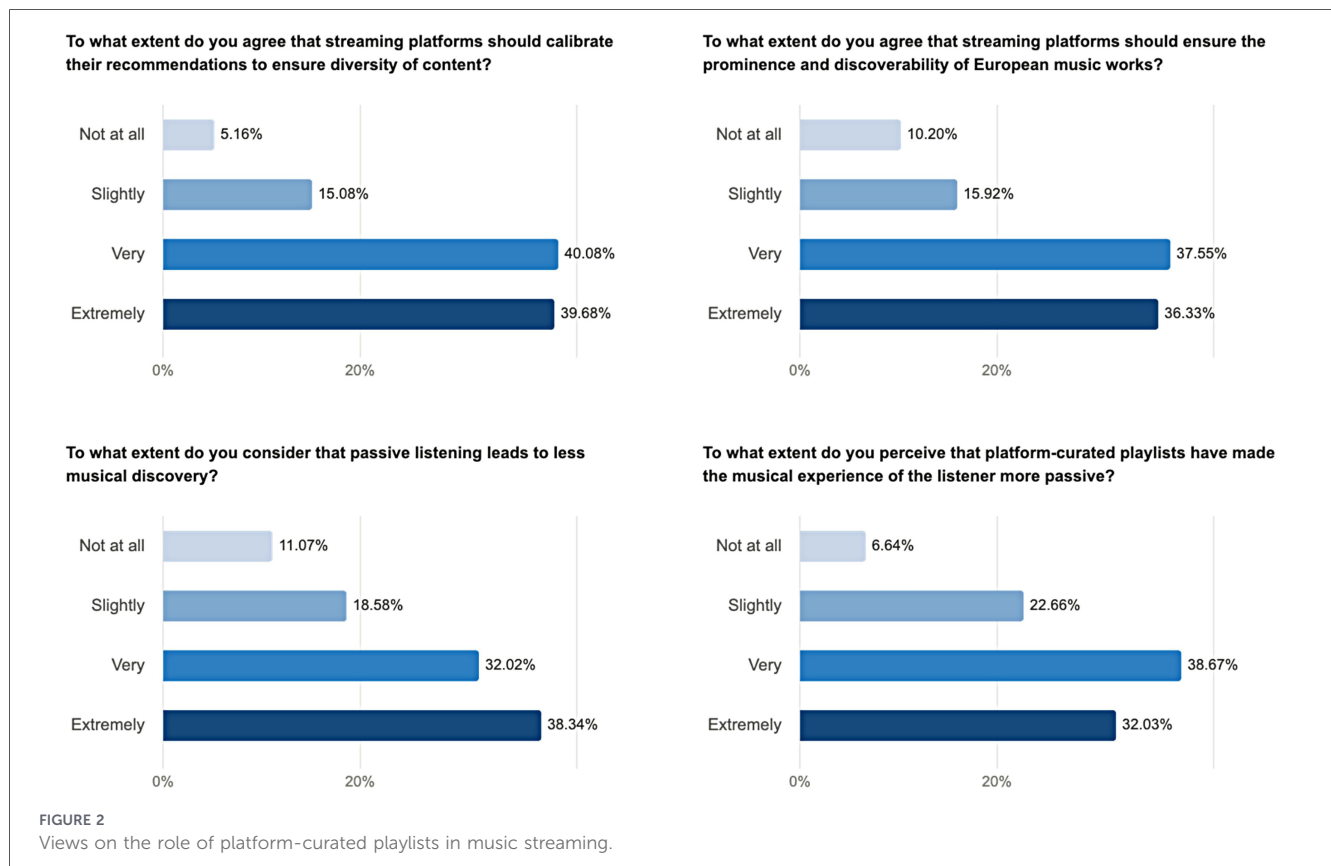


FIGURE 1
Perception of the level of transparency in recommender systems.



answered ‘extremely’, 32% ‘very’, and 18,5% ‘slightly’. These results suggested a widely shared perception that playlist-driven consumption narrows exposure to niche, emerging, or less commercially dominant artists. Passive listening has been linked to reinforcing the prominence of tracks already prioritized by platforms, thereby consolidating visibility hierarchies rather than expanding discovery (Eriksson et al., 2019). The findings align with previous research indicating that artists perceive streaming environments as reducing active exploration and reinforcing mainstream dominance (Dinnissen and Bauer, 2023).

Concerns about diversity further strengthen this interpretation. Among respondents ($n = 252$), there was agreement that recommendations should promote diverse content ($M = 3.14$, $SD = 0.86$), with 79,8% agreeing ‘very much’ or ‘extremely’ that recommendations should be diverse. Similarly, respondents expressed support for enhancing the prominence of European repertoire on streaming platforms ($n = 245$; $M = 3.00$, $SD = 0.96$), with 73.9% agreeing ‘very’ or ‘extremely’ that European works should receive greater visibility. This indicated that the perceived effects of playlists and RS are not confined to individual remuneration but relate to concerns on its impact on cultural diversity.

A second major concern relates to how platforms might capitalize on the opacity of RS. Two main examples were discussed. First, the programmatic services offered by MSS and UGC platforms aim to increase artist visibility. One example frequently mentioned is Spotify’s promotional program, which allows artists to increase their chances of recommendation in exchange for accepting a reduced royalty rate. Several interviewees likened this model to a contemporary form of

payola (CMO 1, 2; Artist 4, 6, Record label 4, IR 1). As one Artist representative explained: “they (MSS) do include some services that are comparable to payola. That means if you want to appear first, you pay the platform and you give money to the platform to benefit from more visibility. So that’s another way for the platform to make money at the expense of others” (Artist 4). Moreover, a record label representative argued that recommendation logics are increasingly shaped by business incentives rather than listener needs (Record Label 3). The underlying concern is that RS, far from being neutral mediators, become instruments through which platforms extract additional value from creators.

A second example on how platforms can capitalize on the opacity of RS is by prioritizing content that is economically advantageous to them (Artists 3, Artists 4, MSS 2, Record label 4, IR 1). Many professionals perceived that the RS are shaped by economic interest rather than users’ preferences:

“in order to understand whether the economic reality might push towards these companies, programming their algorithms in such a way to make more money for them, we need to understand whether it would actually change anything for them. Because there are a lot of conspiracy theories about it, and they’re doing this on purpose. But in the end, if there’s no economic benefit for them, there is literally no interest for them to do this on purpose” (Artist 3).

In particular, some interviewees, including a professional formerly working on UGC, pointed to the possibility of

platforms establishing catalogue deals with record labels (Artist 2, 3, MSS 2). If platforms maintain licensing agreements that include minimum guarantees with major record labels, they may have financial incentives to prioritize the promotion of those catalogues until contractual thresholds are met. Although such practices are not publicly verifiable due to the opacity of RS and the contract between MSS and record labels, professionals perceived them as structurally plausible within the current platform economy.

On the other hand, record labels expressed concern that the promotional services offered by MSS and UGC platforms to self-released artists could create a conflict of interest. If platforms offer paid promotional tools to independent artists while controlling RS and playlist inclusion, they may be structurally incentivized to prioritize content aligned with their own commercial strategies. Record label representatives interpreted this development as a form of vertical integration. By acting simultaneously as distributor, curator, and promoter within their own ecosystems, platforms occupy multiple positions across the value chain.

Central to these concerns is the asymmetry of data access. Platforms retain exclusive control over extensive listener data, enabling them to shape recommendation logics based on insights unavailable to other stakeholders. As one record label representative observed: “Because they know a lot more data about their listeners than we do and what they think is going to be most attractive to their consumers, ultimately they determine which playlists it will get put onto.” (Record label 2). This statement underscores the imbalance between platforms and industry actors who lack visibility into the criteria governing exposure. Opacity, therefore, functions not only as a technical characteristic but as a source of structural power. Control over data, RS, and playlist placement enable platforms to determine the allocation of attention within the platform.

Policy solutions

The lack of transparency in RS is perceived as the central problem and as having a direct impact on remuneration and diversity. The proposed policy solutions emerging from the participants focused on two main aspects: increasing transparency and strengthening support for cultural diversity.

Across professional categories, with the notable exception of MSS, greater transparency in RS is framed as the foundational condition for fairness. Professionals repeatedly emphasized that without insight into how RS operate, it is impossible to assess whether outcomes are fair. As one artist stated succinctly: “If you don’t get transparency on how [these systems] work, it’s very hard to say if they are fair” (Artist 2). On the other hand, MSS argue that RS constitute proprietary technologies and a key element of competitive differentiation (Ranaivoson et al., 2023). Disclosing the inner workings of these systems, they claim, could undermine their business model and facilitate manipulation. As one representative explained:

It’s not easy to explain how algorithms work and how they sort of change during the day. But maybe the lack of understanding

of that can give the impression that it is a lack of transparency. But again, the more transparency you provide into our algorithm, the more information you’re giving to your consumers or the more information you can give for people to game the system as well. So you have to find the right balance. (MSS 1)

Other stakeholders contested this framing, arguing that meaningful transparency does not require disclosing source code or algorithmic formulas. Rather, they proposed greater clarity regarding the criteria influencing playlist inclusion, ranking dynamics, and promotional weighting. According to this view, structured disclosure of influencing factors, without revealing operational specifics, could enhance accountability while preserving commercial confidentiality. An independent researcher (IR 2) further suggested that transparency requirements would be less disruptive if applied uniformly across platforms. If all streaming services were required to disclose certain categories of information about their RS, competitive disadvantages would be mitigated.

Survey findings reflect both support for RS transparency and a recognition of its limits (Figure 3). Overall, respondents expressed a moderate level of agreement that better access to data on how RS operate would improve fairness ($n = 256$, $M = 2.55$, $SD = 0.99$). While 31% of respondents believed that better access to data about RS would improve fairness ‘slightly’, 31% selected ‘very much’, and 20% indicated ‘extremely’, indicating strong confidence in transparency as a solution. At the same time, 16.8% felt it would make ‘no difference’. This ambivalence suggests that although professionals view transparency as necessary, they do not consider it sufficient.

The second policy solution that emerged in the data is the promotion of cultural diversity, as also indicated in the survey (Figure 2). However, there is less consensus here. Some stakeholders questioned whether private companies such as streaming services should bear responsibility for promoting cultural diversity (Artist 1; CMO 2). Others emphasized consumer freedom, arguing that listening choices should not be shaped by public intervention. As one record label representative stated, “I almost find it offensive, the notion of local content requirements, because there’s a pejorative sort of value that somehow I ought to be listening” (Record Label 2). MSS similarly maintain that their RS are designed to reflect user preferences, positioning diversity mandates as potentially conflicting with personalized recommendation logics.

Despite these disagreements, the majority of professionals acknowledged the importance of fostering diversity within platforms. Yet there is no clear consensus on how to operationalize it. The implementation of quotas on music catalogues and playlists divided opinions among professionals, reinforcing previous findings (Dinnissen and Bauer, 2023; Ferraro et al., 2021). The survey results further illustrate this ambivalence. While the majority of respondents (67.5%, $M = 0.68$, $SD = 0.47$) expressed support for introducing quotas for European content (Figure 4), this measure generated more skepticism than other policy proposals included in the survey, indicating uncertainty about their practical effectiveness.

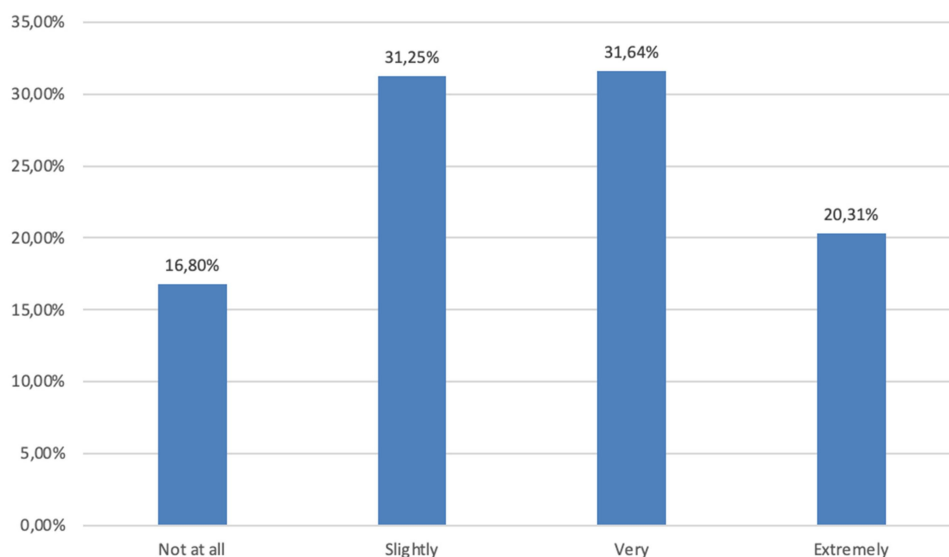


FIGURE 3
Perception of whether transparency can enhance fairness.

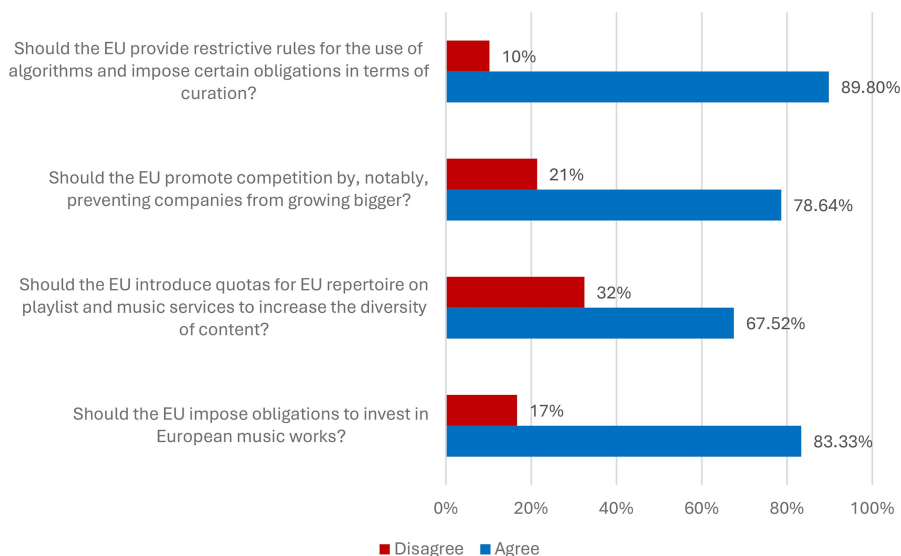


FIGURE 4
Views on the need for stronger EU regulation.

By contrast, stronger support was observed for the introduction of stricter rules governing algorithms and content curation practices (89.8%, $M = 0.90$, $SD = 0.30$), followed by obligations for platforms to invest in European musical works (83.3%, $M = 0.83$, $SD = 0.37$) and measures to prevent further monopolization in the industry (78.6%, $M = 0.79$, $SD = 0.41$).

One key challenge repeatedly identified is definitional ambiguity. As one music business expert noted, there is no agreed-upon understanding of what diversity means in the context of music recommendations (MBE 1). Diversity may refer to genre variety, geographic representation, gender balance, the inclusion of independent vs. major-label artists, or linguistic

plurality. Without conceptual clarity, regulatory intervention remains difficult to design and assess (Deldjoo et al., 2024). An independent researcher (IR 2) further stressed the need to define diversity and develop measurable indicators, arguing that this requires broader societal debate rather than solely industry-driven solutions. Several respondents called for additional empirical research to examine which content is being promoted through RS. In this debate, there is broad support for establishing a European Music Observatory (artists 1, artists 3, CMO 1, MBE 1) to collect and share this data.

Beyond output measures, some interviewees pointed to structural issues in the design of the RS itself. Concerns were

raised about unconscious bias embedded in algorithmic systems and, importantly, about the composition of the teams developing them. As one representative observed: “What’s the diversity of the team that is developing those algorithms? If they’re all white, male American developers, that may have an impact. Without diversity in those who develop the tools, it’s difficult to imagine that the tool itself might produce a particularly diverse outcome.” (Record label 1).

GenAI as an intensifier of challenges

The tensions identified in the RS debate are perceived to deepen with the advancement of generative AI. The central problem perceived remains transparency. Professionals argued that AI systems introduce an additional layer of complexity to already opaque RS, making it even more difficult to understand how content is generated, prioritized, and monetized. In this sense, GenAI is viewed as amplifying the accountability challenges previously associated with RS.

A primary concern relates to the material used to train GenAI systems. Across stakeholder categories, there was broad agreement that copyrighted works used for training purposes should be licensed and compensated. However, the lack of transparency regarding training datasets was perceived as a major obstacle. Interviewees emphasized that without clarity about what content has been used to train AI models, rightsholders cannot effectively claim remuneration or negotiate licensing agreements (CMO 1; MBE 2). As one record label representative noted, significant amounts of material may already have been incorporated into training systems in ways that are difficult to trace or regulate (Record label 1). Transparency is therefore framed as a prerequisite not only for fairness in the recommendations, but also for protecting intellectual property rights.

Professionals among all categories expressed a strong sense of distrust towards GenAI companies, perceiving opacity itself as a strategic asset. As one interviewee summarized: “You know that these people have plenty of money; they built it the way they want it to be. So, if it’s functioning in a way that excludes the ability to pay for copyrighted material, that’s not a defect. That’s a feature” (MBE 2).

A second concern regarding GenAI is its potential to be economically advantageous to platforms and record labels. AI-generated music may reduce production and licensing costs, as fully AI generated tracks do not require traditional royalty payments. If such content is promoted through RS, platforms, MSS, and UGC, it could increase monetization while reducing remuneration for artists and rightsholders. In this sense, opacity surrounding GenAI is perceived as economically beneficial, as it limits scrutiny over how fully GenAI content is integrated and prioritized. At the same time, stakeholders raised concerns that record labels could enter agreements with AI companies to exploit artist catalogues for training purposes and generate synthetic content derived from existing repertoires. Recent industry developments indicated that such collaborations are already emerging. Universal Music Group has announced strategic agreements with GenAI developers to build licensed generative music technologies based on its catalogue, including partnerships with Udio to develop an authorised GenAI music

creation platform (Universal Music Group, 2025) and with NVIDIA to develop AI-driven tools for music creation and discovery (Universal Music Group, 2026). Similarly, Warner Music Group has entered into a partnership with the AI company Suno to develop generative music technologies trained on licensed repertoire (Warner Music Group, 2025).

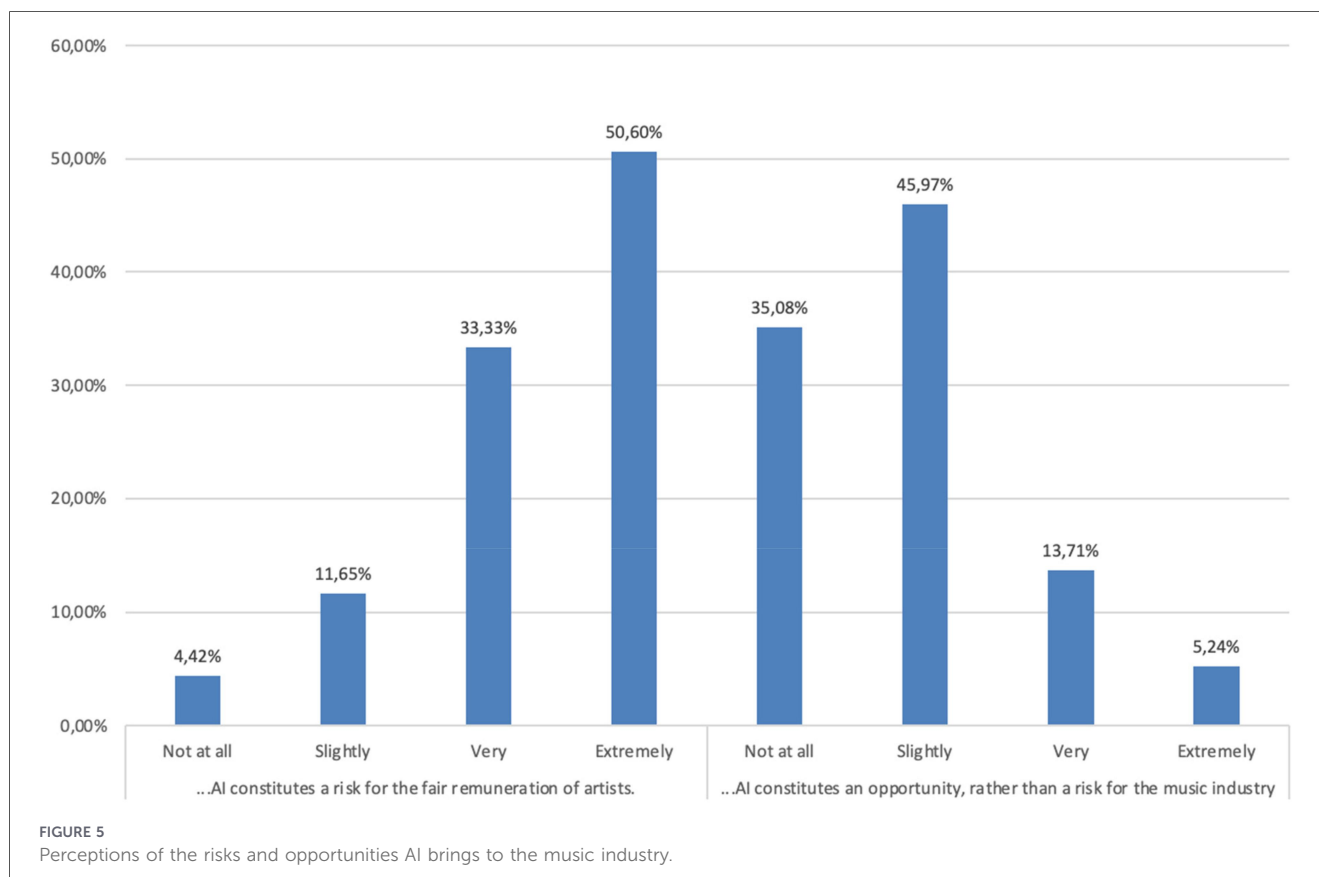
More broadly, these concerns are reflected in the survey results (Figure 5). Respondents expressed a relatively low level of agreement that AI constitutes an opportunity for the music industry ($M = 1.89$, $SD = 0.83$). Only 18,9% of respondents perceive AI technologies as a ‘very’ or ‘extremely’ significant opportunity for the music industry, while the largest group (45,9%) adopted a cautious position, considering its potential to be only ‘slight’. At the same time, 35% do not regard AI as an opportunity at all. More strikingly, 50,6% ($M = 3.30$, $SD = 0.84$) of respondents identified AI as an ‘extreme risk’ to fair remuneration, indicating widespread concern that AI-driven systems may intensify existing financial imbalances.

These findings showed that deepens the structural concerns already associated with RS. This debate is underpinned by competing philosophical ideas about the role of platforms in cultural markets. On the one hand, MSS defended a view of platforms as legitimate private organizers of cultural consumption. From this perspective, RS are proprietary business assets designed to optimize consumer satisfaction and ensure competitiveness. RS are framed as reflecting users’ preferences, and increasing transparency or regulatory intervention is seen as potentially undermining their market competitiveness. This position reflects a broader market-oriented philosophy in which consumer choice and competition serve as the primary sources of legitimacy. Record labels partially align with this market-based logic but articulated it differently. While they do not fundamentally challenge the competitive role of platforms, they advanced demands for greater transparency in RS through a consumer-oriented rationale. In their view, RS should serve listener interests rather than prioritize platforms’ commercial strategies. At the same time, they explicitly opposed regulatory measures designed to promote cultural diversity, arguing, from a consumer-centered perspective, that music circulation should be shaped by audience demand and that prescriptive interventions, such as quotas, interfere with listeners’ freedom of choice.

On the other hand, other stakeholders sustained a different philosophical premise centered on platform power. Platforms were not viewed as neutral market intermediaries but as powerful cultural infrastructures that structure visibility and impact diversity and remuneration. In this view, RS do not merely reflect demand; they actively shape listening practices and influence market outcomes. Opacity is therefore interpreted not as a by-product of technological complexity, but as a condition that consolidates structural power and limits accountability. From this perspective, fairness requires safeguards against power concentration.

Discussion and conclusion

The findings revealed that, for music professionals, transparency constitutes the central dimension of fairness in relation to RS. Opacity is perceived as a structural condition



that grants significant power to platforms, shaping the visibility of artists, and consequently remuneration and cultural diversity. Therefore, RS are not perceived as a neutral system of personalization, but as an advantage of platforms that constrain accountability and reinforce asymmetries between platforms and other key actors in the music ecosystem.

A central concern regarding the opacity of RS is how it increases platforms' power and could be used to support their economic interests. The platforms could shape the RS to boost the visibility of specific content if it is economically advantageous to them, including content associated with lower licensing costs through agreements with record labels or, AI-generated content that is not subject to the same copyright and remuneration obligations. Calls for transparency, therefore, extend beyond algorithmic explainability to encompass contractual arrangements and data asymmetries that can influence recommendation outcomes. Professionals suggest that visibility within RS may be shaped not only by user preferences but also by commercial incentives, including agreements with major record labels. At the same time, record labels express concerns that platforms may use RS to expand vertically integrated services, by offering distribution and promotional tools to self-releasing artists. Such developments are perceived as destabilizing established industry roles and further concentrating decision-making power within platforms.

The integration of GenAI is seen as intensifying these dynamics. Professionals perceived GenAI as amplifying opacity and potentially accelerating existing inequalities. There is a broad sense of mistrust toward AI companies, rooted in

concerns about training data, copyright, and the monetization of synthetic content. Professionals expressed apprehension that MSS might exploit the opacity of their RS to promote AI-generated content that is more economically advantageous to them, potentially marginalizing other artists. In the same way, GenAI is also perceived as potentially advantageous for record labels if commercial agreements with AI companies enable the production and distribution of content that does not generate remuneration for artists.

Professionals perceived the RS and the playlists as a central intermediary with consumers, shaping remuneration and visibility (Aguar and Waldfogel, 2018; Prey, 2020). At the same time, the majority of professionals argued that RS tend to reproduce and reinforce existing asymmetries within the industry. By privileging popular or commercially viable content, recommendation logics are perceived as amplifying visibility hierarchies rather than broadening exposure (Abdollahpouri et al., 2020b; Bonini and Gandini, 2019). This dynamic is seen as constraining cultural diversity.

In terms of policy ideas, the primary demand was to strengthen the transparency of RS as a means of rebalancing power relations in the industry and enhancing accountability (Fernandes and Vlassis, 2026). This emphasis on transparency reinforces previous findings highlighting its centrality to fairness debates in music platforms (Dinnissen and Bauer, 2023; Ferraro et al., 2021). The findings also highlighted the need to address business models that derive value from opacity. A recurring concern among professionals was the possibility that MSS and UGC would benefit economically from their opacity. A concrete

measure criticized by stakeholders is the promotional service that allows artists and rights holders to pay for increased visibility without clear information regarding how such practices influence recommendation outcomes. Policymakers should therefore consider introducing stricter rules to constrain governing paid promotional mechanisms. Limiting platforms' capacity to monetize visibility through opaque arrangements could reduce perceived conflicts of interest.

Alongside transparency, professionals raised concerns about cultural diversity, particularly regarding how labelling practices may restrict the visibility of artists from specific geographic regions (Dinnissen and Bauer, 2023). A practical implication is the need for MSS and UGC platforms to reassess geotagging and categorization practices that may constrain artists to national or regional recommendation clusters. Developing RS that place greater emphasis on artistic criteria could support the cross-border circulation of music and enhance exposure to a wider diversity of artists. However, unlike earlier research that identified strong support for gender diversity measures (Ferraro et al., 2021), gender did not emerge as a prominent issue in this study. This may be partly explained by the composition of the interview sample, which primarily consisted of representatives of professional associations and sectoral organizations addressing broad industry concerns and did not include organizations specifically focused on gender equality or minority representation. Furthermore, the relative absence of gender-related concerns in the interviews may itself reflect the persistent gender imbalances documented within the music industry (Brereton et al., 2020), which can shape whose voices are represented and which issues receive greater attention in sectoral discussions.

While there is strong support for strengthening cultural diversity on music platforms, there is less consensus on how to promote it. Quotas received limited support, reinforcing earlier research (Dinnissen et al., 2023; Ferraro et al., 2021), and opposition was often grounded in a consumer-centered rationale emphasizing audience autonomy. Rather than endorsing prescriptive regulatory tools, many professionals advocated clearer definitions of diversity and improved mechanisms for monitoring the outcomes of recommendations. This suggests the need for a structured, multistakeholder dialogue to develop shared definitions and assessment frameworks for cultural diversity in the music industry. Given the competing interests involved, this process should be coordinated by an independent body. Proposals such as the creation of a European Music Observatory reflect a broader call for enhanced data access and systematic evidence to inform debates on the normative question of how fairness in RS should be defined and assessed within music platforms. Conceived along the lines of the European Audiovisual Observatory, such an entity would function as an independent body responsible for collecting industry data that remains inaccessible to most stakeholders and producing studies on key developments within the music sector, including the diversity of content available and promoted on music streaming services (European Commission, 2020). Stakeholders view such initiatives as important tools for addressing existing information asymmetries.

Overall, drawing on insights from Discursive Institutionalism, the analysis examined how different actors mobilize ideas and

rationales to frame fairness, thereby revealing the normative assumptions that underpin their positions. By foregrounding these bottom-up perspectives, the study offers a socially grounded understanding of fairness in the music industry and helps unpack its normative dimensions in relation to RS (Deldjoo et al., 2024). Besides, the study has limitations that open avenues for future research. Firstly, it focuses on European music professionals, which may limit the generalization of the findings. The European music sector is characterized by specific institutional and regulatory traditions, including strong public support for cultural diversity, established collective rights management systems, and ongoing policy debates concerning platform governance and AI regulation. These contextual factors may influence how music professionals perceive fairness, the values they mobilize when discussing it, and the policy responses they consider appropriate for addressing related challenges. For instance, the prominence of concerns regarding cultural diversity, transparency, and support for regulatory intervention in this study may partly reflect a European context in which public authorities have traditionally played an active role in supporting cultural production and addressing market imbalances. Professionals operating in other contexts may prioritize different dimensions of fairness. Therefore, comparative studies across regions could provide further insights into how fairness in RS and AI is conceptualized under varying institutional conditions. Secondly, while the study foregrounds professional perspectives, it does not include consumers, whose views may further nuance the normative debate. Future research could explore from the perspective of consumers and into other geographical areas. To conclude, the study contributes to ongoing debates on fairness in RS and generative AI by foregrounding the perspectives of music professionals and focusing on the normative dimensions of fairness. Fairness in RS remains a central yet still evolving question in both academic and policy discussions. By providing empirical evidence drawn from multiple professional categories within the music industry, the study advances understanding of how fairness is interpreted and contested in practice.

Data availability statement

In accordance with the Data Management Plan of the Fair MusE project, the data supporting the findings of this study are confidential and are stored securely in the University of Liège internal repository. The data are not publicly available due to privacy and ethical considerations. The personal data has only been processed internally by research institutions from the Fair MusE consortium and more specifically by the University of Liège. The responses to the survey and the semi-structured interviews are not shared nor re-used for research purposes beyond the Fair MusE project. Requests to access the datasets should be directed to Avlassis@uliege.be.

Ethics statement

This study was conducted in accordance with the ethical standards of the University of Liège. Personal data collected

within the framework of this study is kept secure and confidential at all times, according to the General Data Protection Regulation (GDPR) EU 2016/679 on the protection of natural persons with regard to the processing of personal data and the free movement of such data and the Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data. In accordance with the Data Management Plan of the HORIZON EUROPE project Fair MusE (grant agreement No 101095088), ethical review and approval of the study's questionnaires were provided by the internal review board of the project during the Work Package 3 meeting held on 18 December 2023. All respondents provided written informed consent prior to their participation. The consent forms included comprehensive information about the study's purpose, the nature of their participation, and their chosen level of anonymity. Participants were informed of their rights, including the ability to withdraw from the study at any time without penalty. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

MF: Conceptualization, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. AV: Conceptualization, Funding acquisition, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing, Investigation.

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Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that generative AI was not used in the creation of this manuscript.

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