

The Gendered Nature of Authorship in Music Psychology

Introduction

In recent years, meta-scientific research has increasingly been taken up by music psychology, examining how Western, Educated, Industrialized, Rich and Democratic (WEIRD, [Jakubowski et al., 2025](#)) and transparent ([Eerola, 2024](#)) the discipline is. In the current article, we examine a particular indicator of equity within the field: gender equality in authorship.

Authorship visibility is critical for academic career progression, as it influences recognition, funding, and advancement opportunities. Disparities in gender distribution may signal structural barriers and disciplinary cultures that constrain the diversity of contributors and hinder optimal knowledge production ([Ni et al., 2021](#)). Previous studies across various disciplines—including psychology—have consistently revealed persistent gender inequalities in authorship, though the extent of these disparities varies by field ([González-Alvarez & Sos-Peña, 2020](#); [Rock et al., 2021](#); [Shah et al., 2021](#); [Son & Bell, 2022](#)). To support a more inclusive and sustainable academic community, it is essential to establish a better understanding of gender representation in more localised subfield; in this case, in the field of music psychology.

Academia across all disciplines suffers various equity issues, impacting productivity, innovation, and job satisfaction in the workplace, which—in turn—hugely impact academic progress, leadership opportunities, and visibility throughout a career ([Allen et al., 2021](#)).

Although there are several issues, this paper focuses on one particular issue: gender inequity.

Although we recognise that gender is a multidimensional social construct, for the purposes of the current paper, and because non-binary authorship generally is less than 0.1% ([Son & Bell, 2022](#)), we remain consistent and comparable gender and authorship research ([González-Alvarez & Sos-Peña, 2020](#); [Ni et al., 2021](#); [Rock et al., 2021](#); [Shah et al., 2021](#); [Son & Bell, 2022](#); [Wais, 2006](#)) and generally adopt a binary (woman-man) classification. In disciplines overall, women are more at a disadvantage than men, with evidence suggesting that women are less present in positions of

power. For instance, in the UK in 2016-17, 24.6% of professors were women ([Bhopal & Henderson, 2021](#)) when compared to the 44% of all grades in the UK academia ([Harris et al., 2025](#)). A similar situation holds for Italy (24% female professors, [Filandri & Pasqua, 2021](#)), and to greater extent for the United States (14%, [Spoon et al., 2023](#)). A substantial pay gap exists between men and women in academia; for example, a woman-man wage ratio was 0.85 in 2020 in the United Kingdom ([Quadlin et al., 2023](#)). In a “publish or perish” culture of science and academia ([Kiai, 2019](#)), one crucial aspect to focus on is authorship. The number and quality (e.g., journal reputation) of authorships an individual has garnered can determine crucial career development such as grant funding and future (permanent) positions.

Research across several scientific disciplines show that women tend to be less represented as authors compared to men ([Banks et al., 2025](#); [Son & Bell, 2022](#)). As the topics, approaches, and methods attract differential interest from men and women, it is important to recognise that fields of scholarship and academic disciplines vary considerably in terms of gender distribution ([Huang et al., 2020](#)). When investigating the gender composition of publications, a large survey of authors by González-Alvarez and Sos-Peña ([2020](#)) showed that the hard sciences (N = 119,592) had the lowest prevalence of women (14.8%), whereas in the biological and social sciences (N = 262,122) the proportion of woman authors was substantially higher (43.3%), but not equal. In psychology, which is perhaps the closest benchmark for the present focus on music psychology, woman authors accounted for 45.2% of the sample (N = 90,067). Encouragingly, studies looking at various year ranges between 1960 until 2024 show a general trend that the ratio of women to men in authorships is improving ([González-Alvarez & Sos-Peña, 2020](#); [Ioannidis et al., 2023](#); [Jemielniak & Wilamowski, 2025](#); [Sánchez-Jiménez et al., 2024](#)). However, there is evidence that this improvement is plateauing ([Jemielniak & Wilamowski, 2025](#)). Further, there are differences in terms of authorship position. Authorship position is important as it typically reflects career positions: primary contribution is typically associated with the primary

contributor, which often are graduate students or postdocs, while last authorship is often held by senior researchers with established reputations ([Tschardt et al., 2007](#)). Although women are more likely to be the first author, women are still generally unfairly underrepresented as the last author ([Brück, 2023](#); [González-Alvarez & Sos-Peña, 2020](#); [Rock et al., 2021](#); [Shah et al., 2021](#)).

HERE

Past studies have explored the gender distribution according to geographical regions and in relationship to country demographics. In one study, men out-numbered women more in high-income compared to low-income countries ([Ioannidis et al., 2023](#)). However, there are also some unexpected trends: while female representation is lowest in Latin America, Caribbean (in physics journals, [Son & Bell, 2022](#)) and in South Korea, Japan, and Austria (in medical journals, [Brück, 2023](#)), women were most highly represented in India and Africa ([Brück, 2023](#); [Son & Bell, 2022](#)).

Interestingly, while national indicators of gender equity are positively correlated with women's academic success ([Chan & Torgler, 2020](#)), this does not seem to be as clearly reflected in authorships. Scientific output from women is not only lower in countries ranked in the lowest quartile for human development and gender equity, but better equality seemed to occur in high and medium-developed countries ([Sugimoto et al., 2015](#)). Another recent paper shows that authorship rates between men and women are most balanced in countries with low to intermediate Human Development Index ([Sánchez-Jiménez et al., 2024](#)). Overall, while the socioeconomic status of certain countries might be a reason for unbalanced female authorship ([Ioannidis et al., 2023](#)), human development might not fully explain such differences ([Brück, 2023](#); [Sánchez-Jiménez et al., 2024](#); [Son & Bell, 2022](#)), and further research is required to better understand the trends.

Another aspect that differs between distribution of gender in authorship is the research methodologies. Women are less likely to publish quantitative and experimental studies than qualitative work ([Ashmos Plowman & Smith, 2011](#); [Nunkoo et al., 2020](#); [Sebo et al., 2020](#);

[Thelwall et al., 2019](#); [C. Zhang et al., 2023](#)), perhaps as they demonstrate the better relational skill involved in qualitative studies, like prolonged relationships and emotional ties with research participants ([Sebo et al., 2020](#)). When assessing fictive research abstracts—one with quantitative and one with a qualitative design—scientific quality of the qualitative abstract was ranked more trustworthy and accurate when assigned to a female author ([Johansson et al., 2002](#)), showing further evidence that of female stereotypes.

Research also shows there that topics may vary by gender as shown by article keyword usage. In one analysis of article keywords of medical journals, articles authored by women were predominantly associated with keywords on healthcare-related themes like patient involvement, insurance, and quality-of-care, while articles authored by men were associated with keywords associated with higher publication citations, such as ‘phase II-III trials’, ‘anti-body based therapy’ males ([Brück, 2023](#)). Similarly, in computational linguistics, women are more likely to publish on speech, social, and conversational topics than men; men are more likely to publish on formal mathematical, syntax, and semantic approaches ([Vogel & Jurafsky, 2012](#)). These trends could be explained by evidence that research by women often conduct research on societal progress, while research by men is aimed more at scientific progress ([L. Zhang et al., 2021](#)). Overall, research shows that women tend to produce qualitative research on social and societal topics, while men use more quantitative methods on theoretical and analytical topics.

Aims

To improve academic equity issues, it is worthwhile focusing on subdiscipline to provide more ‘localised’ support to improve the equity in field. Correspondingly, the aim of the current paper was to look within our own field of music psychology. This builds on past efforts in the music psychology field that have provided a current overview as well as future directions and improvements for: a) publications ([Anglada-Tort & Sanfilippo, 2019](#)), b) participant samples and stimuli for better generalization of findings ([Jakubowski et al., 2025](#)), and c) current practices

and implementation of Open Science practices (e.g., preregistrations, sharing research materials, data, and analysis scripts, [Eerola, 2024](#)). Our aim was to determine gender distribution in the specialist journals of music psychology. More specifically, we want to identify the proportion of different types of authorships (single, first, coauthors, and last authorships) for men and women in the published papers in the last 25 years and to explore specific patterns in the authorship distributions across countries, topics of the studies, or temporal trends. By giving a current overview of gender patterns in authorship in the field of music psychology, we hope this stimulates further discussion of identifying and implementing methods to combat such inequities for future generations.

Methods

Materials and analyses

We retrieved bibliographic information for all articles published between 2000 and June 2025 from five specialist journals, resulting in 3,373 unique articles: *Musicae Scientiae* (N = 639), *Psychology of Music* (N = 1,231), *Music Perception* (N = 675), *Journal of New Music Research* (N = 563), and *Music & Science* (N = 265). These journals have also been used in previous meta-science studies to characterise research practices in music psychology ([Jakubowski et al., 2025](#)). Author affiliations were extracted automatically and converted into country-level data. However, these were not manually verified for each entry, as affiliations are not always clearly matched to individual authors due to variations in reporting conventions, such as multiple or partial affiliations.

In total, the dataset included 9066 authors, of whom 5312 were unique. Author affiliations spanned 63 countries. We also extracted citation counts and Open Access status from Scopus. Information on joint first authorship was not available in the data.

Gender attribution was initially based on given names. As mentioned in the introduction, we recognise that treating gender as a binary category is inherently problematic. Gender is a complex and multidimensional social construct. However, consistent with prior meta-science

research on gender and authorship ([González-Alvarez & Sos-Peña, 2020](#); [Ni et al., 2021](#); [Rock et al., 2021](#); [Shah et al., 2021](#); [Son & Bell, 2022](#); [Wais, 2006](#)) and the fact that non-binary authorship generally is less than 0.1% ([Son & Bell, 2022](#)), although this is not necessarily the true picture of the non-binary authorship situation, we nevertheless adopt a binary classification—male and female—for analytical purposes and assume that given names allow for a reasonable, though imperfect, attribution of gender. We used the *genderize API* ([Wais, 2006](#)), which predicts gender from given names and can be supplemented with country information derived from author affiliations to improve accuracy. This method resolved the gender of 89.3% of authors with a probability greater than 0.90. Only 89 names had a low attribution probability (< 0.55). Unattributed cases were then checked manually, resulting in 185 manual corrections. After this process, 32 names remained ambiguous and 27 were unknown—some likely due to data entry in Scopus such as erroneous switch between given names and surnames. Some errors likely also stemmed from initials for given names, although we recognise that certain authors might prefer to use initials for publications to avoid clear gender bias. Nonetheless, these 59 cases of these errors were excluded from the dataset. It is likely that due to challenge of attributing gender accurately not all the gender attributions are correct. Although *genderize.io* has been shown to achieve 96.6% accuracy in a diverse multinational test database without using a country of origin information – 98% with the information included – it also underperforms (82% accuracy) in Asian names ([VanHelene et al., 2024](#)). However, the error rates of these processes have been previously been shown to be non-biased, i.e. showing similar number of mistakes for both genders ([Sebo, 2021](#); [Thelwall et al., 2019](#); [VanHelene et al., 2024](#)).

We carried out manual corrections of the gender attributions where we were familiar with the author or the database had the full given name coded with initials, or the second name used as the given name. This led to 53 corrections. For the purpose of the current study, we inferred authors based on outward gender presentation, though we acknowledge that for future studies,

which are not database driven, a more accurate attribution would be to explicitly ask confirmation of such inferences.

We defined four types of authorship positions: single authorship, first authorship (which does not include papers with a single author), coauthorship, and last authorship. Coauthorship includes all positions other than first and last. These positions carry different academic prestige: first authorship is typically associated with the primary contributor, while last authorship is often held by senior researchers with established reputations ([Tschardt et al., 2007](#)). We note that there might be some ambiguity for two-author papers, where the second author could be either someone who contributed less significantly than the publication or a more senior researcher. For the scope of the current paper, as it is difficult from names alone to attribute career seniority and it is more common for last authors to be senior, we assume that last position is the more senior position.

For the analyses, we analysed gender disparities in authorship by comparing the frequency of these authorship types between man and woman authors. Our analysis focused on the proportion of woman authors and utilised odds ratios (ORs) to compare the likelihood of occupying each authorship position by gender.

Results

Among all authors ($N = 9066$), 40.2% ($N = 3647$) were identified as female. To account for the unequal number of male and female authors across the dataset, we used odds ratios (ORs) to compare the relative likelihood of females occupying different authorship positions. We first investigate the authorship types across gender and then examine the author order and the overall number of coauthors in more detail.

Authorship positions

A summary of the authorship types and positions are given in Table 1. While the single-authored papers are in minority (8.6%) in this sample, there does not seem to be a significant difference between men and women authoring such articles ($p = .21$); 38.05% of single-authored

papers are authored by women with an odds ratio of 0.90 [95% 0.78-1.05] suggesting no clear gender difference despite the figures leaning towards higher frequency of male authors. The overall OR for women as first authors was 1.41 [95% CI: 1.28–1.54], indicating that the odds of first authorship are 41% higher for females compared to the male authors (Fisher's exact test $p < .001$). For coauthorship positions, the OR was 1.00 [0.91–1.09], suggesting no substantial gender difference ($p = .96$). In contrast, the odds ratio for women being as the last authors was 0.73 [0.67–0.81], indicating that the odds of last authorship are 27% lower for women compared to men, which was a significant difference ($p < .001$).

Table 1

Summary of authorship types across gender

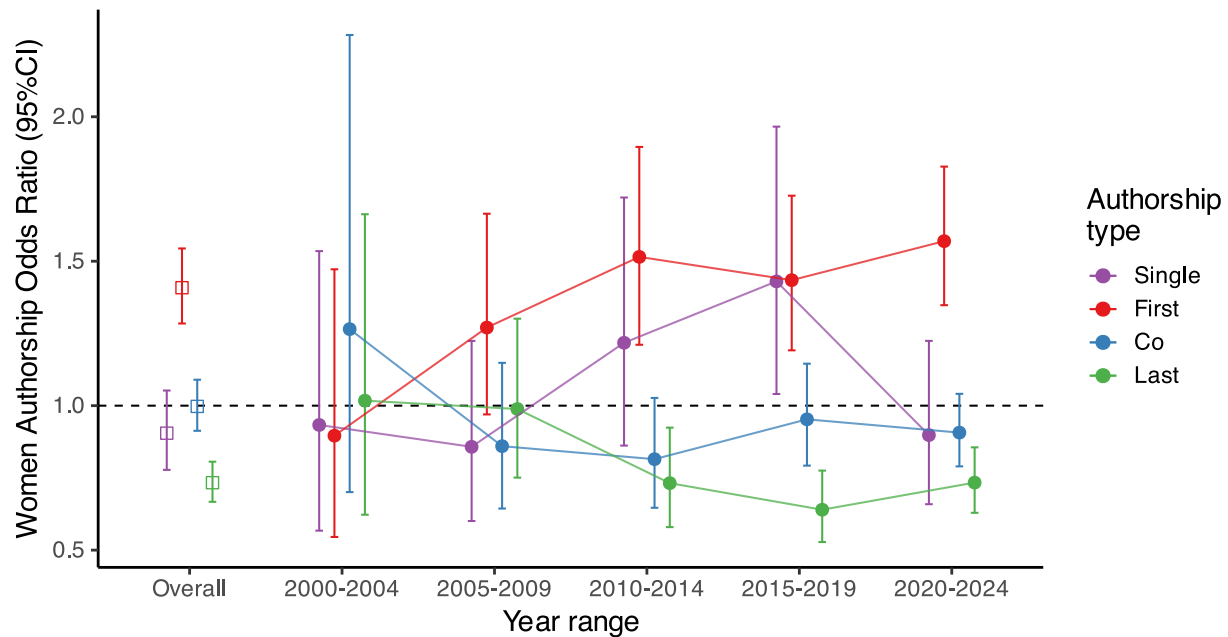
Author Type	Female	Male	Female %	OR	OR (CI lower)	OR (CI higher)
Single	296	482	38.05	0.90	0.78	1.05
First	1198	1397	46.17	1.41	1.28	1.54
Co-author	1245	1853	40.19	1.00	0.91	1.09
Last	908	1687	34.99	0.73	0.67	0.81
All	3647	5419	40.23	NA	NA	NA

To illustrate the trends across time in the authorship positions across the gender, we looked at 5-year-windows of the authorship types across gender, shown in Figure 1. The overall numbers across the whole data are illustrated in the first column of the graph and the remaining five columns portray the chronology in 5-year windows. The higher odds for female authors at first author position seems to be established in 2010 onwards. Female first author position exhibits a positive 5-year growth rate of +11.1%. The coauthor positions for female authors are relative stable at the odds around 1, indicating relatively equal odds between female and male authors. However, the last author positions have become relatively more rare after 2010, showing statistically significantly lower odds ratios from 2010 onwards and negative 5-year growth rate

(-9.5%). The odds ratio for female single authored papers hovers around 1.0, showing no meaningful trend across the time.

Figure 1

Authorship types across time



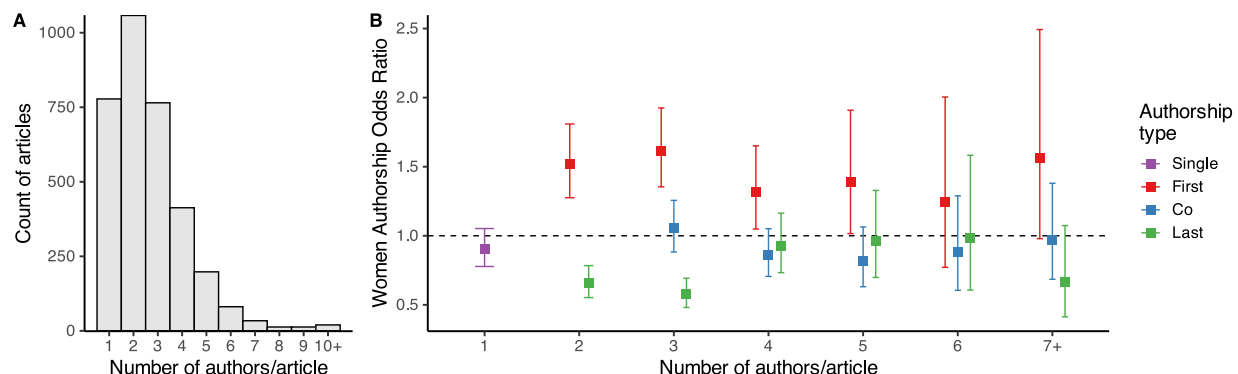
The variation of the number of authors across the papers is considerable. Here we have the maximum of 34 authors in a paper and a median of 2 ($M=2.69$, $SD=1.77$). Previous research has calculated the collaboration index across gender ([González-Alvarez & Sos-Peña, 2020](#)), suggesting that male authors tend to have larger number of coauthors ($M = 1.5$) than female ($M = 1.34$) in psychology. Here the average author numbers for male and female authors (disregarding authorship positions) indicate similar difference, higher mean author numbers for males ($M = 1.96$, $[1.91-2.01]$) than for females ($M = 1.71$, $[1.66-1.76]$), $t(4640.58) = 7.21$, $p < .001$, Cohen's $d = -0.21$, 95% CI $[-0.26, -0.15]$. This analysis, however, does not allow us to distinguish the authorship roles in the counts.

To illustrate how the actual number of authors in a paper impacts female first author likelihood, we calculated the odds ratios across the number of authors in paper, pooling the

papers with 7 or more authors together ($N=749$, 8.3%). We added the single-authored papers to the plot to indicate the odds of being female to be single authors compared to all studies with multiple authors. The results are shown in Figure 2. We can observe that while women authors are not more likely to be single authors than men, they tend to be more likely to be first authors than men in papers with 2 or 3 authors; the odds ratios for first authorship position for women authors for papers with 2 authors is 1.55 [1.30-1.85], and for 3 authors the odds ratio is 1.61 [1.35-1.92], both significantly different from equal proportion. The last authorship positions for women authors are consequently lower, odds ratio of 0.65 [0.54–0.77] for 2 authors and 0.59 [0.49–0.71] for 3 authors, both also significant at $p < .001$ level. At four and five authors, the higher odds ratio for women is still evident (OR of 1.37 both both), but the last authorship positions are no longer rare for papers with 4 and 5 authors (OR 0.90 and 0.95, respectively). At six authors and above, the odds ratios indicate the same trend (higher ratio for first author, lower for last) although due to lower number of observations, these are no longer significantly different.

Figure 2

A) Number of authors and B) women odds ratio for authorship types across the number of authors



For comparison, the closest disciplinary benchmark comes from psychology, where González-Alvarez and Sos-Peña (2020) analysed the gender distribution of 74,413 authors

publishing in psychology journals in 2009. Women accounted for 45.2% of the sample, indicating near gender parity overall. However, substantial variation was observed across sub-disciplines: developmental psychology (57.0%) and educational psychology (53.8%) showed higher proportions of female authors, whereas biological psychology (39.4%), experimental psychology (37.5%), and mathematical psychology (25.8%) showed lower representation. Across the full dataset, women were slightly overrepresented in first authorship positions (OR = 1.10) but underrepresented in last authorship positions (OR = 0.86). This pattern resembles the trends identified in the present study.

To explore whether men and women authors transition different degrees to last authorship during their career, we analysed authors with at least four publications over a time span of at least seven years (213 in total). We compared the most common authorship position during the first and last halves of their careers. During the early part of the career, the odds ratio for women being last authors was 0.64 [0.34, 1.21] and during the later part 0.68 [0.39, 1.18]. Comparing the early and late halves of the careers for men and women, there was a trend for a difference in the transition, but it was not statistically significant ($\chi^2(1)=3.36, p = 0.067$).

Citations and Open Access

One potential difference established in previous bibliometric analyses of gendered authorship is citations ([Chatterjee & Werner, 2021](#); [West et al., 2013](#)). Here we tested whether the citations – as indexed by Scopus – show differences across gender. The median citation for studies with women lead authors is 10 [9–11], and for men, the numbers are identical (Md=10 [9–11]) and the difference is not statistically significant ($\chi^2(1)=2.14, p = 0.144$) using rank-based Wilcoxon test. The same comparison of citations for studies with last authors yields similar results 9.5 [8–11], and for men, the numbers are similar (Md=11 [10–12]). Again, the difference is not statistically significant ($\chi^2(1)=2.04, p = 0.153$). If we assume that we can weight in the gender contribution of all authors in a publication to its citation count, we observe a minor

difference, where median citations for women authors is 9 [9–10], and for men, the central measure are statistically significantly higher ($Md=10$ [9–10], $\chi^2(1)=16.05$, $p < 0.0001$). For reference, prior study of citation patterns across gender in psychology has reported a small effect favoring men ($M = 16.57$) over women ($M = 15.90$) ([González-Alvarez & Sos-Peña, 2020](#)).

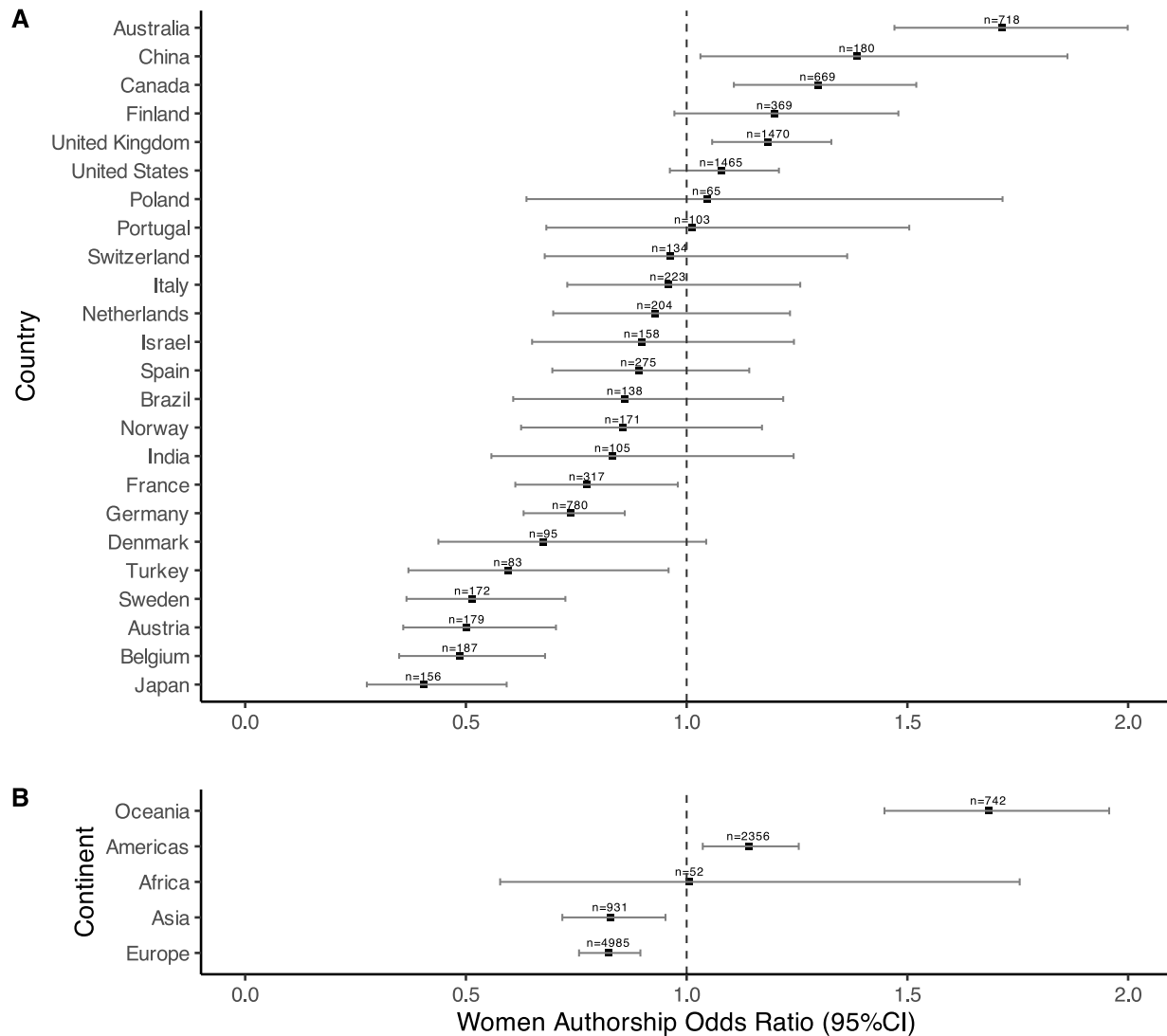
We also explored whether the open access status of the articles is associated with gender. Out of 3373 articles, 32.2% are Open Access in this sample, as indexed by Scopus. For first-authored articles, odds ratio of Open Access for women is 1.49 [1.29–1.73], suggesting nearly 50% higher odds associated with publishing open access by women as compared to men. If we observe only the last authorship status of the publications, the difference vanishes with the odds ratio indistinguishable from even division (1.00 and the confidence interval), $OR = 0.86$ [0.72–1.02].

Geographical differences

Past studies have identified consistent geographical patterns in woman authorship. For example, a large-scale analysis of psychology publications found that 46.5% of authorships were by women, with European countries showing a lower average proportion of 42.8% ([González-Alvarez & Sos-Peña, 2020](#)). To examine geographical differences more closely, we calculated the odds of woman authorship by the countries that have published at least 60 publications in the sample, as shown in Figure 3.

Figure 3

Women author odds ratio across the prolific countries publishing music psychology (with more than sixty publications).



Panel A in Figure 3 shows a small number of countries, such as Australia, China, and Canada, with a high odds ratio for woman authorship. At the other end of the spectrum, Japan, Belgium, Austria, Sweden, and Turkey all have significantly lower odds ratios for women authors. There is no simple rationale immediately apparent (e.g., country size, membership in a particular political bloc, gender equality index, or domination of articles by a single eminent scholar from one country) that would explain these differences, but this representation provides

some starting points for discussion and may highlight the impact of academic career structures and principles implemented in these countries. Panel B shows data aggregated by continent, though we note that the representation is markedly different between continents. Africa has meagre representation of only 52 authors, Oceania consists only of Australia and New Zealand, and the Americas are represented almost entirely by the US and Canada. While this level of presentation may be too coarse for detailed analysis, it does offer a broad summary of the current situation. Overall, Oceania and the Americas have higher female author representation, while Asia and Europe have more a male representation.

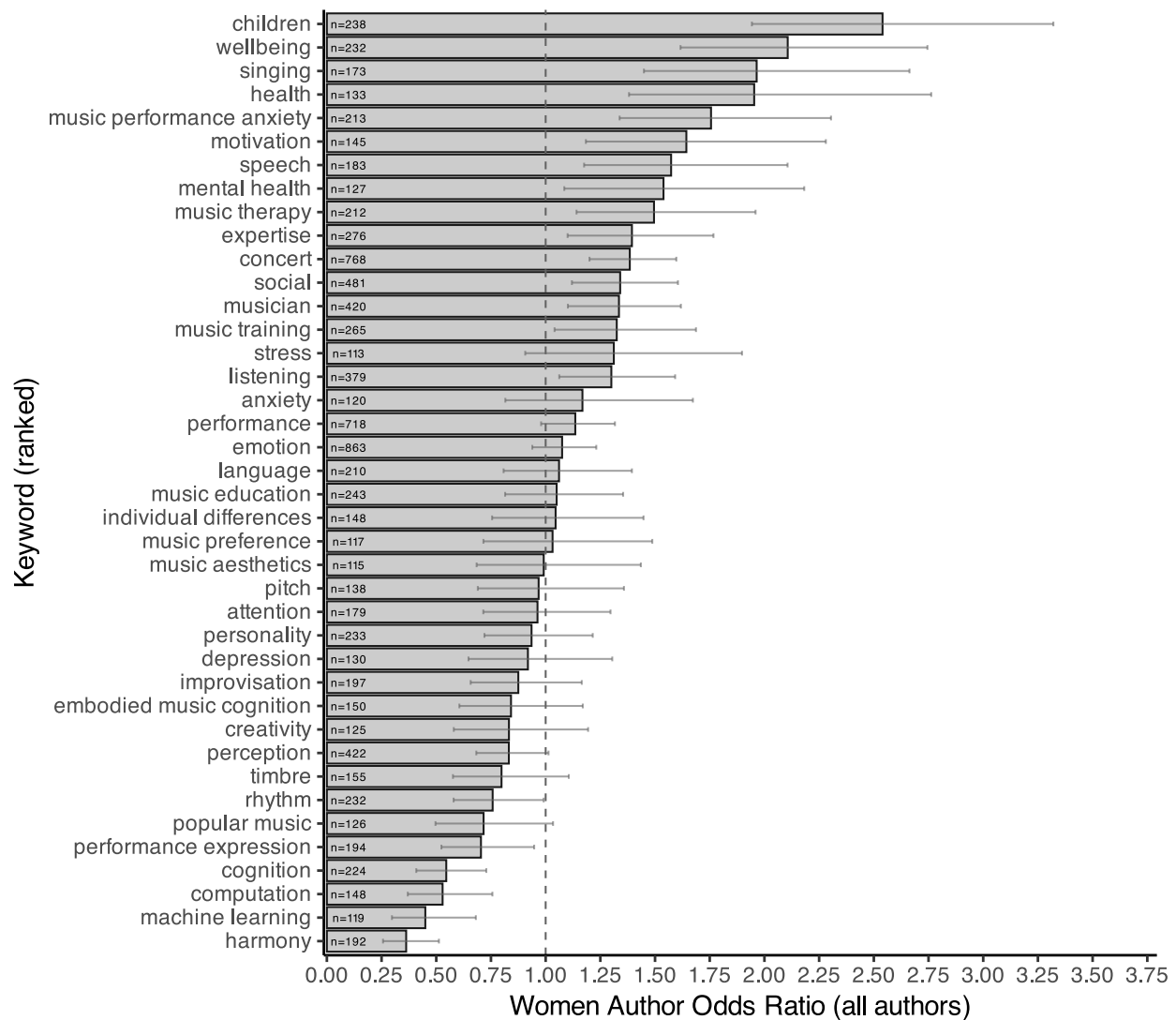
Gendered topics through analysis of keywords

To explore the potential differences within topics of choice between men and women, we analysed the keywords in the articles (41,438 in total, 5,960 unique). To reduce variant keywords, we manually simplified the variants (e.g., “arts in health”, “healthy music use”, “health musicking” were converted to “music health” and “music cognition” to “cognition” and “music perception” to “perception”) and eliminated single use of the term “music”. We aggregated the counts of keywords across all authors in the articles. Figure 4 shows the odds ratios for female authors to be associated (in any author position) with the 40 most frequently used keywords. The keywords signifying related to children, development, emotion regulation, well-being, music performance anxiety, motivation, expertise, music listening, mental health, and music therapy show significantly higher odds ratios ($OR \geq 1.50$) for women in comparison to overall gender ratios in the data. At the opposite end of this continuum, topics such as music analysis, harmony, machine learning, computation, cognition, and performance expression show the opposite trend, suggesting that the articles with these keywords tend to have overall more prevalent authorships by men (women $OR \leq 0.75$). There is much nuance and detail in the data that would warrant separate analyses; however, the purpose here is simply to provide reference

points for comparing gender distributions of authorship with other disciplines, where thematic analyses have already been conducted (e.g., in sub-disciplines of psychology).

Figure 4

Women author odds ratio across 40 most frequent keywords in all articles as aggregated across all authors.



Discussion

A crucial marker of scholarly success in academia is authorship, which strongly influences career progression, recognition, funding, and advancement opportunities. However, there are several inequities within academic authorship, where women are often

underrepresented. As male-female authorship representations differ across different academic disciplines, the goal of the current paper was to provide a snapshot of authorship prevalence and roles across gender in the field of music psychology. An analysis of papers from five core music psychology journals across 25 years revealed that, overall, women represented 40.2% of authors. This proportion is higher than in musicology (34.8% in Eerola ([in prep.](#))), in psychology more broadly (33.2% in [Huang et al., 2020](#); 36.2% in [González-Alvarez & Sos-Peña, 2020](#)), and also much higher than in other STEM subjects of math, physics and computer science (15% in [Huang et al., 2020](#)) and topics such as astronomy and bioscience (17.8% in [Son & Bell, 2022](#)). Although our current findings suggests that the field of music psychology is doing better in fostering gender equity than some other fields, the distribution of authors by gender remains nonetheless unequal. In exploring the nuances behind this, we further analysed differences between authorship role, number of citations, geography, and article keywords.

In terms of authorship roles, notable authorship differences emerge. Women are more likely than men to appear as first authors, a trend that has become characteristic of the field only in the past 15 years. This is in line with previous research showing that woman authorship representation is increasing ([González-Alvarez & Sos-Peña, 2020](#); [Ioannidis et al., 2023](#); [Jemielniak & Wilamowski, 2025](#); [Sánchez-Jiménez et al., 2024](#)). In contrast, we found that women remain underrepresented in the last authorship position, and this trend has not changed substantially over the last 15 years. Interestingly, this changes depending on the number of authors on a paper overall, perhaps suggesting a greater ambiguity for the last author role for papers with fewer authors. Nonetheless, this lower representation of woman as last authors is similar to the situation in medicine ([Brück, 2023](#); [Shah et al., 2021](#)), psychology ([González-Alvarez & Sos-Peña, 2020](#)), and biology ([Rock et al., 2021](#)). Although last authorship in the social sciences is not necessarily universally defined, it is nonetheless increasingly associated with seniority, supervisory responsibility, or principal investigator status ([Drivas, 2024](#)).

Therefore, this underrepresentation suggests that women are less likely to occupy leadership roles such as lab heads or holders of substantial research resources. This pattern is consistent with broader evidence showing that women remain underrepresented in senior academic positions, including professorial appointments (Bakker & Jacobs, 2016), invitations to contribute to journals, and authorship in high-prestige outlets (Holman et al., 2018). Related analyses from science and medicine further show that women are more often associated with conducting experiments, whereas men are disproportionately represented in authorship roles linked to leadership and oversight (Macaluso et al., 2016). This pattern is also consistent with finding that women are more likely to drop away from academic careers with increasing seniority (González-Alvarez & Sos-Peña, 2020; Sánchez-Jiménez et al., 2024). Indeed, this gender gap could come from parenthood and parental leave, which account for about ~40% of gender gap in career advancement (Nielsen et al., 2024). Fortunately, there are strides to improve the current situation, with opinion papers discussing ways to improve reporting of intellectual credit (Banks et al., 2025) as well as creating equitable environments in academic science (Martínez-Menéndez et al., 2024). In particular, one crucial aspect that has been highlighted to is the need for more mentorship programs for (junior) women to senior positions. Indeed, mentorship programs can encourage mentees to remain in academia (Gardiner et al., 2007). We note that within the broader music psychology community, there are already mentorship programs in place: for example, Women in Music Information Retrieval WIMIR (<https://wimir.wordpress.com/>) and the Society for Music Perception and Cognition (SMPC) has resources for trainees and a Mentorship committee (<https://www.musicperception.org/committees>) and often holds mentor-mentee meetings at conferences. Although these measures have been implemented for some years, it might still take some time for the effect to be reflected in authorship roles.

There were no substantial gender differences in the citation patterns. However, one notable observation is that first-authored articles by women were significantly more likely to be

published open access, with an odds ratio of 1.49, a result that warrants further exploration. This effect does not appear to be tied to specific journals. Although the odds ratio for women publishing open access is highest in *Music and Science*, the broader trend suggests a temporal shift: since around 2010, women have increasingly overtaken men in publishing open access. The data does not provide any direct reasons for this, although the legislation in few of the European nations (United Kingdom, EU) require open access publishing and when women have higher odds ratio for being first authors the high number of women represented in publications these countries. While past surveys among, for instance, UK academics have not indicated substantial differences in experiences with open access (Zhu, 2017), financial and other inequalities in emerging countries have been suggested to limit women's capacity to publish in open access journals (Vuong et al., 2021). The idea that publishing in a more open and transparent way benefit society in general (Peršić & Straza, 2023), and this fits with the general idea that women researchers value research on societal progress (L. Zhang et al., 2021). However, nothing in the extant literature would point to the reverse pattern, which requires further investigation about the reasons for adopting open access publishing models.

In terms of geographic and cultural factors, our summaries of gender patterns across continents and countries indicate clear cross-national variation, supporting the idea that certain inequities may stem from national cultural factors (Brück, 2023). Large Commonwealth nations, namely Australia, Canada, and the United Kingdom, seem to provide an academic climate more supportive of women in research, as reflected in the relatively high odds ratios of women appearing as authors (in any authorship position) in music psychology. This pattern, however, is not universal across all countries examined (Chan & Torgler, 2020). Prior work shows that women's research success can be positively correlated with national indicators of gender equity (Chan & Torgler, 2020) or are related to countries with intermediate Human Development Index (Sánchez-Jiménez et al., 2024; Sugimoto et al., 2015). This discrepancy between author

representation could likely to be related to a career length, which strongly correlates with overall productivity. Women exhibit higher dropout rates than men, particularly during the 5–10 years following their first publication ([Huang et al., 2020](#)), but policies geared towards equity and support for career breaks and caring responsibilities may well contribute towards the observed country-specific differences. Nevertheless, prior analyses demonstrate that even when women constitute a smaller share of researchers within a discipline or country, their contributions are often more impactful than those of their male colleagues ([Chan & Torgler, 2020](#)). When examining countries where women have significantly lower odds of authorship compared to men (Japan, Belgium, Austria, Sweden, and Turkey), it is not straightforward to conclude that the lower proportion of female author is related gender equality rankings. The notable exception is Turkey, which is positioned lower according to the Gender Inequality Index ([United Nations Development Programme, 2025](#)).

The keyword analysis of the articles indicated thematic differences in the topics studied by women and men. Research areas related to children, well-being, health, and mental health were more frequently associated with women. This pattern is consistent with observations in psychology more broadly, where women are more strongly represented in sub-disciplines that focus on (health)care and nurturing ([Brück, 2023](#); [González-Alvarez & Sos-Peña, 2020](#)). The higher likelihood of women studying topics related to singing may be connected to prevailing gender stereotypes, or to the early negative perceptions of singing among boys ([Warzecha, 2013](#)) and men ([Palkki, 2015](#)). In contrast, topics related to cognition and computation were more often associated with men, which reflects a wider trend in psychology ([González-Alvarez & Sos-Peña, 2020](#)). In a similar trend in computational linguistics, woman are more likely to publish on speech, social and conversational topics than males, who are more likely to publish in formal mathematical, syntax, and semantic approaches ([Vogel & Jurafsky, 2012](#)). The difference that female prefer ‘caring’ topics over male authors fits with the general idea that female researchers

value research on societal progress, while males prefer research aimed at scientific progress (L. Zhang et al., 2021). This fits with another potential explanation for the disparity between authorship, namely that women faculty lean word and perform more university, campus, and departmental services than men in general (Guarino & Borden, 2017). Performing such services to universities are time away from other work on acquiring funding and leading research, which would aggregate over time to time away from publishing research. It is nonetheless important that services be completed; in some cases it could be there is more encouragement for men to take on these kinds of roles, but also it could be that success in academia could also be more societally defined as not only publications (Kiai, 2019), but as celebrating achievements that support internal, local, and community services in a broader sense.

There are certain limitations of the current research. First, the gender of the authors are not part of the database - gender was inferred based on author name using *genderize API* (Wais, 2006). Nonetheless, we maintain that the current conclusions may still hold as both authors checked whether any of the gender attribution of major names needed fixing (see accompanying code). Additionally, gender attribution error was relatively small (only 89 had low (< 0.55) attribution probability, while 89.3% had high (> 0.90) attribution probability), so it is unlikely that the remaining names would significantly change the main conclusions. A second limitation is treating gender as a binary category. While we recognise that gender is a complex and multidimensional social construct, we used a binary male-female classification consistent with prior meta-science research on gender and authorship (González-Alvarez & Sos-Peña, 2020; Ni et al., 2021; Rock et al., 2021; Shah et al., 2021; Son & Bell, 2022; Wais, 2006) and because generally the number of non-binary authors is currently relatively low (0.01% in Son & Bell, 2022). Nonetheless, future research should also move towards using more inclusive, non-binary information. The third - and main - limitation is that such bibliometric research indicates the symptoms of academia issues, but not necessarily the causes. While we speculate on certain

reasons for the current state of affairs as discussed, other kinds of research such as qualitative and longitudinal research would further elucidate the key problems, and where areas for improvements could be made to promote better equity in academia.

Conclusions

The analysis of gender distributions in the five most prominent music psychology journals over the last 25 years presented a rich and evolving history of gender distribution in various authorship roles. While overall women hold smaller number of authorship overall (40.2%), they are significantly more likely to hold first author positions in coauthored publications but significantly less likely likely to hold last author positions than men. For solo publications and being a coauthor, there were no significant gender differences.

There was a small but significant effect of gender on citations that favoured men when the citations were aggregated to include all authors in the papers. There were no differences, however, in citations for women first or last authors. The aggregated results are in line with previous findings in psychology that favored men ([González-Alvarez & Sos-Peña, 2020](#)). While the present analysis cannot determine the underlying causes of the observed trends, we can point to potential factors that may help explain why this discipline appears to be more equitably distributed by gender for the first authors than, for example, the field of general psychology. Women role models (past and present) exist in music psychology; many of the founding members of the societies have been women (e.g., Diana Deutsch for ICMPC in 1989, Irène Deliège for ESCOM in 1991, and similarly many founding editors of the journals have been women (e.g., Diana Deutsch for *Music Perception* 1983-1995, and Irène Deliège for *Musicae Scientiae* 1997-2009). Others have also pioneering certain aspects in the music psychology field, such as music and developmental (Laurel Trainor, Sandra Trehub), musical movement and performance (Jane Davidson, Caroline Palmer), and general music perception (Carol Krumhansl). However, this does not fully explain the rise of women first authors over the past 15

years, nor is it consistent with the reverse pattern observed in the last authorship position. A cautious interpretation is that the increase in first authorship may signal the discipline becoming more gender-balanced, but this shift has not yet extended to last authorship positions, which still reflect either career longevity or barriers to women attaining senior academic positions.

While we present analysis of gender of the authorships across the discipline-specific journal in a relatively simple manner here, there would be more elaborate ways of obtaining insights into the gendered career progression in music psychology; for instance, future work with the same data could analyse the precarity of career options as judged from the years of authorship attributions (see [Lundine et al., 2018](#)). One could also analyse the last author positions in more detail using direct contacts to the authors (interviews and surveys) and try to identify the factors contributing to the barriers experienced by women to take up senior author positions. We also note that equity might not necessarily come from 50-50 representation in authors necessarily; there would be slight variations around this number, and perhaps there are also other ways to better define equity in the workplace that capture more equal opportunities in the workplace.

Current findings from authorship counts in music psychology present a more optimistic outlook of women authors in comparison with the prevalence of women academics or professors in academia in general ([Bhopal & Henderson, 2021](#); [Filandri & Pasqua, 2021](#); [Harris et al., 2025](#)). While the results are broadly comparable to psychology as a whole, musicology and its closely related disciplines such as music theory, popular music studies, and ethnomusicology tend to show less balanced gender representation in overall authorship. Gender, however, is only one dimension of equity; racial, ethnic, geographical, institutional, and other inequalities and their intersections also merit attention in music psychology. Although women have a lower representation in terms of absolute authorship counts in specialist music psychology journals, even a simple tally of contributions can help open discussion and provide evidence of progress

toward greater inclusion and equality. To interpret these patterns more fully, one must examine how music psychology operates through its journals, conferences, training programmes, and curricula, as well as how the discipline presents itself both in countries with a long-standing tradition in the field and in regions where it has yet to become firmly established.

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Study data, analysis scripts and supporting information is available at GitHub, https://anonymous.4open.science/status/gender_in_music_psych-C6FE.

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