RESPONSE TO REFEREE 1

1. Sampling and scope

The focus-group sample comprises 19 participants, of whom 15 are employed on temporary contracts and the majority are postdoctoral researchers. This composition should be more explicitly acknowledged when interpreting the findings. In particular, it may be difficult to separate experiences associated specifically with gender from those associated with early-career academic precarity. A dedicated limitations section addressing sample composition, geographical scope and transferability would strengthen the manuscript.

A Limitations section has been included explicitly acknowledging the implications of the make-up of the focus group composition for the findings.

2. Research population

At line 73, the research question refers specifically to "young women", whereas the title and wider manuscript concern women generally. Unless age is an explicit component of the sampling and analysis, "young" should be removed or justified.

The focus is on women, 'young' has been removed.

3. Recruitment and potential self-selection

Participants were recruited through institutional contacts. The authors should acknowledge the potential for self-selection, particularly as individuals with stronger experiences of precarity, discrimination or dissatisfaction may have been more likely to participate.

The potential for self-selection has been made explicit in the Limitations section, noting that individuals with stronger experiences of precarity, discrimination or dissatisfaction may have been more likely to participate.

4. Greater methodological detail is needed

The manuscript would benefit from inclusion of the focus-group questions/topic guide, together with information on the number and size of focus groups, duration, format, facilitation, recording/transcription and how the exploratory survey and workshop(s) informed subsequent data collection. This would allow readers to better assess how the findings and themes emerged.

Additional information on the number, size and duration of focus groups is included in Table 2 (starts at Line 104). The focus-group questions are included at the end of the manuscript, under the Data Availability heading.

The survey, workshop and focus group relationship is discussed in detail under heading (6) below.

5. Thematic analysis

More detail should be provided on the analytical process, including whether coding was undertaken by one or both authors and how themes were developed and refined. The manuscript describes the analysis as inductive while also explaining that it was informed by a

feminist/critical framework, the concept of attractiveness and the authors' own experiences. Clarifying the analytical approach would strengthen methodological transparency.

The breakdown of author contributions now notes that the coding was completed by one author and a sentence noting the same has been included in the text (line 182). Table 5 (originally Table 3) has been updated to illustrate the overall thematic struture of the analysis.

The use of the word 'inductive' to describe the coding process for the focus groups has been removed as it was inaccurate. The analytical approach is more clearly illustrated in Table 5 and more clearly explained in the text in Section 4.1.

6. Survey, workshop and focus-group relationship

The study draws on an exploratory survey (n=58), workshop (n=10) and subsequent focus groups. It would be useful to clarify the analytical status of each stage and more clearly explain how findings from one informed the next.

The authors have included a new section, 4.1, to explicitly discus the relationship between the survey, the workshop and the focus group. This is supported by the inclusion of Table 5, which offers a visual representation of how the survey insights fed into the workshop discussion and subsequently influenced the focus group prompts.

7. Word-cloud analysis

The use of word frequency/word clouds requires further justification. Absence or frequency of individual words does not necessarily correspond to the importance of the underlying concept. Language, cultural context and social norms may also influence how participants articulate similar experiences or concepts, particularly across different national contexts. This should be acknowledged when interpreting and comparing word frequencies. Furthermore, different minimum-word-frequency thresholds are used across groups, potentially limiting direct comparison. Simple frequency information and/or further explanation of the analytical rationale would improve these figures.

The authors spent a good deal of time considering whether the word clouds obscured rather than clarified the relationship between the initial survey results, workshop and subsequent focus groups. In the end, they decided to remove the word clouds and replace them with Section 4.1, which offers a fuller explanation of the relationship between the survey responses, the workshop and final focus group prompts.

8. Evidence supporting themes

Without compromising participant confidentiality, the manuscript could provide a clearer indication of the prevalence and distribution of major themes. For example, whether an experience was raised across focus groups, predominantly by temporary staff, mothers/non-mothers, or participants within one national context. Additional illustrative quotations may also be useful where substantial conclusions are drawn from limited examples.

The analytical significance of a theme was not determined by the number of participants who identified it, and we have therefore not quantified the prevalence or distribution of

themes across demographic subgroups. Instead, themes were developed and refined according to their relevance to the research question and the patterns of meaning identified across participants' accounts. Undertaking subgroup comparisons at this stage would require re-analysis of the data using a different analytical logic and is beyond the scope of the current paper.

9. Intersectionality

The manuscript would benefit from explicit acknowledgement that other dimensions of intersectionality—including race/ethnicity, disability, socioeconomic background, nationality/migration status and sexual orientation—cannot be examined from the reported dataset. This is particularly relevant where the discussion recognises geoscience as historically associated with white, able-bodied masculinity.

As noted, the discussion recognises previous research identifying geoscience fieldwork as historically associated with white, able-bodied masculinity, rather than presenting evidence on racialised or ableist experiences. The absence of other dimensions of intersectionality is acknowledged in the Limitations section.

10. Ireland/Germany comparison

As participants were recruited across Ireland and Germany, it would be useful to clarify whether national context is analytically significant. Differences in academic employment structures, childcare, parental leave and cultural expectations may influence participants' experiences. If comparative analysis is outside the study's scope, this should be acknowledged.

Participant were recruited in Germany and Ireland as a function of network/convenience sampling as opposed to purposive sampling for comparative analysis. This has been acknowledged in Line 101.

11. Exclusivity of motherhood lens

The manuscript gives considerable attention to children and caregiving, appropriately reflecting the data, but 10 of the 19 participants did not have children. It would be interesting to consider whether participants without children also rejected expectations of perpetual availability in favour of relationships, geographical stability, leisure or simply a sustainable life outside work. This could broaden the concept of "attractiveness" beyond motherhood.

We agree that the concept of attractiveness extends beyond motherhood, as reflected in Table 5. However, the analysis was not designed to compare participants with and without children, and participants were not recruited or grouped on this basis. Examining whether these concerns were expressed differently according to parental status would therefore require a retrospective subgroup analysis using a different analytical logic that is bneyond the scope of the current paper. We do acknowledge explicitly from Lines 383 to 385), that the maternal wall is not only a lived constraint but potentially an anticipated one that affects the attractiveness of geosciences for women prior to entering motherhood themselves.

12. Financial considerations

Financial disparity does not emerge strongly as a theme outside issues associated with maternity, temporary contracts and part-time work. It would be useful to clarify whether remuneration, gender pay disparities or financial security arose more clearly in the data and, if not, whether this absence is itself noteworthy.

> *Financial disparity did not emerge in the survey, the workshop or the focus groups. As remuneration and gender pay disparities did not emerge from participants' accounts, we have not commented on them as an additional dimension of the analysis.*

13. Positive experiences and solutions

Much of the analysis understandably focuses on barriers. However, given that the central concept is attractiveness, were participants also asked what makes academia attractive, what encourages them to remain, or what positive practices they have experienced? Examples of supportive supervisors, departments, allies, institutional interventions or effective equality initiatives could provide valuable evidence for the recommendations of best practice.

> *Participants were explicitly asked whether the academic lifestyles discussed appealed to them, what made those lifestyles unattractive, and what changes would make academic careers more attractive to women. While some positive dimensions emerged, participants' accounts overwhelmingly focused on the conditions that diminished academic attractiveness. We have retained this emphasis because it reflects the data rather than seeking to create an artificial balance between positive and negative experiences. Where participants identified positive dimensions or supportive practices, these are reported within the relevant themes.*

14.Gender-equality labour

The finding that women undertake mentoring, outreach and equality work that is largely unrewarded is important. It may be valuable to explore whether participants also described women supporting other women, effective allyship, or conversely resistance to women's advancement, subject to data availability. This could provide additional nuance to the discussion of who carries responsibility for institutional change.

> *Participants did describe women supporting other women, particularly through mentoring, outreach and involvement in gender equality initiatives. This is noted in the manuscript (line 462), with the subsequent discussion highlighting the tension inherent in this work: participants undertook it partly to improve geosciences for subsequent generations of women, while also describing it as largely invisible and unrewarded within prevailing measures of academic success. The focus of the analysis is therefore on the gendered allocation and consequences of this labour rather than on evaluating forms of allyship or resistance to women's advancement, which were not a specific focus of the study.*

15. Strength of conclusions

Some conclusions move from participants' accounts to broader statements about women in geosciences. Given the qualitative design and composition of the sample, wording should consistently distinguish between what participants in this study perceived/experienced and what can be concluded about women in geosciences more generally.

We have revised the Conclusion to distinguish more clearly between participants' perceptions and the broader structural arguments developed through our analysis. Claims about academic careers in geosciences have been qualified to reflect participants' experiences, and the recommendations have been more closely aligned with the findings, particularly regarding precarious employment, geographical mobility, care responsibilities and expectations of academic success.

16. Ethical approval

The manuscript states that formal institutional ethical approval was not sought because the study was considered low risk. Given that participants discuss potentially sensitive experiences including discrimination, sexism, pregnancy and employment insecurity within relatively small professional communities, clarification of the institutional basis for this exemption/determination would be helpful.

We would like to clarify that the manuscript does not state that formal ethical approval was not sought because the study was considered low risk. Nor do we state that the project received an institutional exemption or determination on this basis. Rather, as outlined in the ethics statement, formal review by the University's Research Ethics Committee was not sought because the project originated as a funded outreach initiative rather than as a prospectively designed research study. It subsequently evolved into research and publication.

We recognise that, as the project evolved, the focus-group discussions included potentially sensitive material, particularly participants' accounts of discrimination, sexism, pregnancy and employment insecurity. The ethics statement explicitly acknowledges this and explains that these data were treated as potentially sensitive throughout the project. It also details the measures taken to protect participants and third parties, including voluntary participation, recognition of the limits of confidentiality within focus groups, anonymisation of transcripts and quotations, removal or generalisation of potentially identifying information, secure data storage, and measures to minimise deductive identification within relatively small professional communities.

We therefore hope that the existing ethics statement provides the requested clarification regarding both the circumstances under which formal ethical review was not sought and the ethical safeguards applied as the project evolved.

17. Broader theoretical context

Claudia Goldin's work on "greedy work" may provide a useful wider labour-market framework for the findings around perpetual availability, productivity and inflexible working expectations. This could help situate academia within a broader structural problem rather than treating these conditions as unique to the sector. The manuscript already draws on the related concept of the "greedy institution."

We make explicit referene to Goldin's (2021) research on 'greedy work' (Line 230) to situate the structural issues within academia and geosciences more broadly.

18. Representation versus retention

Work by Professor Michelle Ryan and colleagues, including research associated with the Global Institute for Women's Leadership, may also strengthen the discussion around why increasing numerical representation does not necessarily result in inclusion, retention or sustainable progression. This appears particularly relevant to the manuscript's attempt to move beyond the “leaky pipeline” model.

Ryan’s (2023) paper was very useful and has been incorporated in the introduction (Line 28), discussion of results (Line 279, Line 419) and discussion of intersectionality in the Limitations section (Line 498).

Minor editorial points

- Full stop required on line 23.
- Should “illustrates” be past tense on line 43?
- Review wording/formatting on line 48.

These have been remedied.