

## Peer Review Report

# Review Report on You can't climb a broken ladder: Examining underrepresentation of multiplydisadvantaged groups in secure and senior roles in UK geochemistry

Original Research, Earth Sci. Syst. Soc.

Reviewer: Dr Munira Raji

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### EVALUATION

#### **Q 1** Please summarize the main findings of the study.

The study shows that there is a lack of representation of gender minorities, non-heterosexual, and disabled individuals in senior leadership roles in academia. The study proposes that historical prejudice and discrimination may contribute to this underrepresentation, leading to disenchantment with academia or departure due to stress-related health issues. The study also suggests that women and economically disadvantaged groups are overrepresented in technical and laboratory support staff positions and that their career progression and aspirations should be addressed through reforms. Some suggestions for addressing these issues suggested by the authors include mentorship programs, increased representation in leadership roles, and diversity training for leaders and members of the geochemistry community.

#### **Q 2** Please highlight the limitations and strengths.

The study highlights a critical EDI issue in the UK's geochemistry field. It provides evidence for addressing the need for more diversity and inclusion in leadership roles. This study may inform initiatives to promote diversity and inclusion in the field. A total of 290 participants completed the surveys. The study may not have captured factors such as regional differences or differences in institutions, and the results may not be representative of the larger population of geochemists in the UK

#### **Q 3** Please comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

The survey method used in this study provided valuable insight into the underrepresentation of certain groups in geochemistry leadership roles. Using anonymous voluntary surveys can help promote honest responses and reduce social desirability bias. It also allows for a broad reach and is shared through multiple channels. On the other hand, there are some limitations to this approach. First, as the authors acknowledge, the voluntary nature of the survey may result in a biased sample. People who are more passionate about diversity in geochemistry may be more likely to respond, and those who do not belong to minority groups may be less likely to participate. This can lead to a misrepresentation of the diversity in the overall geochemistry community.

#### **Q 4** Check List

Is the English language of sufficient quality?

Yes.

Is the quality of the figures and tables satisfactory?

Yes.

Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes.

Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)

Yes.

If relevant, are the methods sufficiently documented to allow replication studies?

Yes.

Are the data underlying the study available in either the article, supplement, or deposited in a repository? (Sequence/expression data, protein/molecule characterizations, annotations, and taxonomy data are required to be deposited in public repositories prior to publication)

Yes.

Does the study adhere to ethical standards including ethics committee approval and consent procedure?

Not Applicable.

If relevant, have standard biosecurity and institutional safety procedures been adhered to?

Not Applicable.

**Q 5** Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List):

The study methodology is well-designed, provides valuable insights into the state of diversity in geochemistry leadership roles, and catalyses action to promote diversity. The study also highlights the importance of data-driven research in addressing social issues and provides a foundation for further research to develop solutions. The survey method is appropriate for this type of research, but the limitations mentioned above should be considered when interpreting the results. I recommend acknowledging the potential for sampling bias and limiting the generalisability of the results to the overall population of geochemists in the UK. Overall, this study provides valuable information on an important EDI issue. However, there is always room for future research to explore the role of institutional and cultural factors in shaping diversity in geochemistry leadership roles to further our understanding of diversity in geochemistry leadership roles.

#### QUALITY ASSESSMENT

<b>Q 6</b> Originality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Q 7</b> Rigor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Q 8</b> Significance to the field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Q 9</b> Interest to a general audience	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q 10</b> Quality of the writing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Q 11</b> Overall quality of the study	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>