

Peer Review Report

Review Report on Geoscience Job Advertisements as a Barrier to Employment for People with Disabilities

Original Research, Earth Sci. Syst. Soc.

Reviewer: Melanie Finch

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EVALUATION

Q 1 Please summarize the main findings of the study.

The main findings were that of 2500 US entry-level geoscience job ads 44% did not include Equal Opportunity Employer statements, 18% mentioned accommodations for people with a disability and 19% listed physical abilities that matched the requirements of the job. The authors suggest this would discourage people with disabilities from applying for geoscience jobs and entering the field of geoscience. They suggest the modifications that could be made to job ads to make them more inclusive.

Q 2 Please highlight the limitations and strengths.

As student numbers in geoscience decline worldwide it has never been more important to critically evaluate the inclusivity of the discipline and the changes that could be made to increase student numbers. This paper provides clear evidence of one such area for improvement and provides practical advice on increasing inclusivity. Another strength is the large number of job ads analysed. A limitation is that a causal link between job ad inclusivity and feelings of inclusion for people with disabilities is speculated but not demonstrated. This could have been achieved by asking people with a disability vs control to rate the likelihood of applying for jobs when shown job ads with different levels of inclusivity. Combined with the study they already did, this would have been a more powerful paper. However, as it is the paper is important for geoscience and the science seems sound.

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 data collection method requires manual coding, which is potentially quite subjective. For the detail of the coding method the reader is directed to Shafer et al (2023), but since this is the major method by which the data was collected, further description within the methods section of this paper should be provided. The summary could be brief and the reader directed to the other study for more detail. The brief description should include a description of who coded the ads, the criteria/descriptors used, and how many people coded each ad (to measure reliability of the coding method). There also need to be a description of how it was determined that the coding method was reliable and valid including statistics on inter-rater reliability. I note that in Shafer et al 2023 there was some automated coding. It is unclear whether automated coding was also used in the current study,

The data analysis method is just a simple calculation of the proportion of job ads for each occupation that request physical abilities. There is not much else that can be done with these data in terms of statistics, but the results in table 4 could be graphed, which would allow the reader to more easily compare between occupations. Papers such as this can receive social media attention by those who work in the geoscience EDI space, so it is good to give a punchy, informative figure for increasing the effectiveness of science communication and awareness of the paper and its findings.

I find figure 1 to be confusing and overly complicated. I don't think it adds anything to the story and I suggest to delete it.

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?

No.

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):

As student numbers in geoscience decline worldwide it has never been more important to critically evaluate the inclusivity of the discipline and the changes that could be made to increase student numbers. This paper provides clear evidence of one such area for improvement and provides practical advice on increasing inclusivity. They analyse a large number of job ads, so the results should be representative of job ads in the sector in the US.

This study finds that of 2500 US entry-level geoscience job ads, 44% did not include Equal Opportunity Employer statements, 18% mentioned accommodations for people with a disability and 19% listed physical abilities that matched the requirements of the job. The authors suggest this would discourage people with disabilities from applying for geoscience jobs and entering the field of geoscience. They suggest the modifications that could be made to job ads to make them more inclusive.

One limitation of this study is that a causal link between job ad inclusivity and feelings of inclusion for people with disabilities is speculated but not demonstrated. This could have been achieved by asking people with a disability vs control to rate the likelihood of applying for jobs when shown job ads with different levels of inclusivity. Combined with the study they already did, this would have made for a more powerful paper. However, that is probably considered to be beyond the scope of the present study and as it is now, the paper is important and should be read by the geoscience community.

The data collection method requires manual coding, which is potentially quite subjective. For the detail of the coding method the reader is directed to Shafer et al (2023), but since this is the major method by which the data was collected, further description within the methods section of this paper should be provided. The summary could be brief and the reader directed to the other study for more detail. The brief description should include a description of who coded the ads, the criteria/descriptors used, and how many people coded each ad (to measure reliability of the coding method). There also needs to be a description of how it was

determined that the coding method was reliable and valid, including statistics on inter-rater reliability. It is evident that the method in Shafer et al 2023 and this paper were not identical – different code categories were used and it is unclear whether or not the current study employed automated coding as in Shafer et al 2023. That is part of the reason why it is important to have a clear method in this paper.

The data analysis method is just a simple calculation of the proportion of job ads for each occupation that request physical abilities. There is not much else that can be done with these data in terms of statistics, but the results in table 4 could be graphed, which would allow the reader to more easily compare between occupations.

I find figure 1 to be confusing and overly complicated. I don't think it adds anything to the story and I suggest to delete it. If the authors choose to keep it, I suggest they explain what it shows in greater detail.

On L 177 there is a typo "but the language used but the language"

Otherwise, the paper is good and will make an important contribution to the community.

All the best,

Melanie Finch

QUALITY ASSESSMENT

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