

Peer Review Report

Review Report on "you just look at rocks, and have beards" Perceptions of geology from the UK: a qualitative analysis from an online survey

Original Research, Earth Sci. Syst. Soc.

Reviewer: Iain Stewart

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EVALUATION

Q 1 Please summarize the main findings of the study.

The paper draws 'data-informed insights' from an extensive online study of geologists and non-geologists to try to elucidate some of the reasons underpinning the decline in student recruitment to university geology courses in the UK. Based on the open-question responses from contributors, they offer a commentary on key themes and emergent issues, drawing on wider academic literature from the UK and abroad. Those themes centre on the lack of a clear definition of geology (even amongst practitioners), the negative perception of the discipline ('boring'), the apparent negative association with vocational heartland of the extractive industry, and the poor EDI profile of a largely 'male, pale and stale' community. Despite the UK focus, some of these issues will no doubt be resonant with geologists elsewhere, especially in similar advanced economy countries where student recruitment declines have been reported (i.e. less so in developing nations where these trends and associations do not seem to be so apparent)

Q 2 Please highlight the limitations and strengths.

The main strength of the paper is it offers a comprehensive narrative that ties together a number of issues that have emerged amongst the academic geology community in the UK (and elsewhere) over recent years but which has remained firmly anecdotal and often viewed through distinct sectoral lenses (e.g. oil & gas, mining, etc). It is an accessible and enjoyable read, and surfaces many issues that academic geologists will be uncomfortably familiar with. In that sense, I think it will be widely read and, hopefully, cited.

The narrative-led approach adopted here makes for a generally accessible read, but it would have been great to see some of the headlines and highlights brought out in a more visual way. Perhaps the team could consider a few infographic type diagrams, or other creative visual ways, to convey the main points. Otherwise, I feel that much of the interesting detail – the flesh on the bones of the analysis – will be lost in the general themes, which are generally fairly well (if reluctantly) grasped by many in the discipline. Some visualisations will, I'm sure, be what other papers pick up and use in disseminating the findings of this work more widely and internationally.

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 text refers to 'data analysis' and providing a 'dataset', but in fact it is a data-informed commentary. On balance, I think the approach taken – a narrative that sets out the nuances of the responses – is better and more appropriate than presenting a bewildering array of metrics in a more quantitative approach.

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?

Yes.

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

Yes.

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

First, my apologies for the delay in getting this back. I've been dipping in and out of this paper repeatedly over the last few weeks, always finding something in it and musing a lot on its implications. I feel it is an important paper to really get to grips with, and should stimulate widespread discussion in the geoscience community, so it is important that it is widely read by students and professional geoscientists (academic and industry).

That said, although the content is thought-provoking it is not an especially 'easy read'. The commentary is packed with insights and is tightly written, so sections often need to be read several times for the key headline points to come out. It would have been great if the authors could have used some graphical means by which these headline messages might be visualised (I'd love to see a cartoonist let loose on the material). If there was a summary infographic that conveyed the main takeaways then I'm sure it would be well shared and used by the geological community.

The authors have been very kind to cite some of my recent work, but I think there is an interesting connection between the arguments posed here and my paper "Stewart, I.S. and Hurth, V., 2021. Selling planet Earth: re-purposing geoscience communications. Geological Society, London, Special Publications, 508(1), pp.265–283." Hopefully this isn't simply a please for a cheap citation, but rather it echoes the Concluding remarks about the need to rethink how we market geology and the need to shift to a more people-centred, participatory and inclusive approach advanced by the authors. I've attached it (it's no OA), but I leave it entirely up to the authors about whether it is useful to mention.

A couple of more minor points:

line 42 "concerns from academic and industry geoscience communities"

Mirsky 2019 is not in the refs, and a couple of the references are over 10 years old. So, is this making a point about long-term decline or highlighting a more recent crisis?

Another useful reference might be:

Wadsworth, F., Llewellyn, E., Brown, R. & Aplin, A. 2020. Earth sciences face a crisis of sustainability. Times Higher Education; <https://www.timeshighereducation.com/opinion/earth-sciences-face-crisis-sustainability>

line 43 "Geology and geoscience courses have been reduced or removed from a range"

Another useful reference might be: Selway, K. 2021. Australia badly needs earth science skills, but universities are cutting the supply. The Conversation, 26 July.

In summary, I really enjoyed this paper and will keep reading it and delving into it. It deserves a broad readership, so any way to make it more accessible would be very valuable. I leave it up to the authors whether they feel they could visualise or graphically present the key messages in a more easy-to-consume way; this should not hold it back - it could be published as is.

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 checked="" 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 checked="" 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 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"/>