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: Kirstin Lemon
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EVALUATION

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

The main findings of the study are that amongst a number of geologists and non-geologists, their perceptions of the subject differ from being seen as old-fashioned, boring and environmentally damaging, to being seen as a broad, interdisciplinary subject with lots of job opportunities. Geology is also seen to have numerous barriers to prospective students including significant diversity and inclusivity barriers, particularly surrounding ethnicity. The study outlines the need to develop and better communicate geology as an interdisciplinary subject and the role that it plays in addressing key society challenges, and to improve diversity and inclusion at all levels.

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

The study provided a good overview of the current perceptions of geology. It also highlights a number of the barriers to people studying geology or to pursuing a career in geology. However, there seems to be a bias towards ethnicity as a barrier. There is some discussion on gender as a barrier and whilst there is mention of economic barriers, there is no further exploration on social / economic deprivation. In general, there is a lack of detail throughout and the thread of the 'argument' is hard to follow in some cases.

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 methods used are outlined but there is a recognition that the selection of participants was limited and had a bias towards geologists. It is hard therefore to accept that the results of this study are an accurate reflection of the perception of geology by non-geologists. In addition, the study claims to have been carried out across the UK. There is no evidence of this (although it may have happened) so it would be useful to be able to support this statement.

There was also a recognition that the ethnic diversity of participants was low. Given the assumption that people from ethnic minority backgrounds were less likely to respond to surveys, this sector should have been specifically targeted (as should others of perceived minorities within the field of geology).

In the results / interpretation section, there was a lack of detail on what the responses actually were. This should have been included in some format to provide evidence of the statements being made.

On a number of occasions, the comparison was made between vocational subjects and their ability to recruit students despite the subject not being taught in schools. The examples of nursing and forensic science were the ones used which I felt was unfair as they are both well known. Although they should be included, it would be useful to have a couple of examples from other vocational subjects not taught at schools. This could include something like forestry, or food technology.

Finally, on several occasions there was reference to geology as subject only developing as a result of colonialism. I felt that this was a point that was over-emphasized. There was no mention to it developing as a

result of the Industrial Revolution which is probably more accurate (although colonialism undoubtedly acted as a catalyst for further development of the science) so it was not as balanced as it should have been.

Q 4 Check List

Is the English language of sufficient quality?
Yes.

Is the quality of the figures and tables satisfactory?
Not Applicable.

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)
No.

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?
Not Applicable.

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

Overall, this study presented a general overview of the perceptions of geology by geologists in the UK, and to a lesser degree, from non-geologists. It outlined the main barriers to studying geology and becoming a geologists although there was a strong emphasis on ethnicity, despite there being a recognition that gender and economic status / social deprivation were also barriers.

The conclusion that geologists are perceived as 'just studying rocks' was interesting and despite being an assumption that most of us would make, this study provides the evidence to support this. The other interesting conclusion was the fact that most geologists themselves have difficulty in communicating what geology / geoscience is, probably as a result of the subject being so broad.

The methods used in the research study were perhaps not as robust as they could have been. Whilst nearly 500 survey respondents is sufficient, there was a recognition that these were skewed towards geologists as this was the pool of respondents that the authors targeted given their contact lists. There was also a recognition that under-represented groups were missing and this should have been covered as part of the research design process. It is not clear who the surveys were sent to, including the organisation and the geographical location.

The results and interpretation were not presented as well as they could have been and would have been complemented and enhanced by the use of tables / figures. The full results of the survey were not available to accurately assess.

The overall results of the study were interesting and the inclusion of information on how geology as a subjects should be reconfigured, especially surrounding its application for public good, and could be used as a starting point for further more detailed study and are useful in identifying some of the issues in the recruitment of future geology students.

QUALITY ASSESSMENT

Q 6	Originality	
Q 7	Rigor	
Q 8	Significance to the field	
Q 9	Interest to a general audience	
Q 10	Quality of the writing	
Q 11	Overall quality of the study