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# Why a new global vision is needed for equality diversity and inclusivity in the geosciences

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## Abstract

Equality, Diversity and Inclusivity (hereafter EDI) are ranking high in the agenda of scientific associations and researchers. At a global level, EDI is recognized as a propeller for scientific development. In the past 15 years, EDI was promoted in geosciences with several initiatives that adopted a broad vision, thus addressing several forms of diversity: gender, geographical, ethnic, career stage, and many others. These developments followed the enthusiastic initiative of scientists that joined into groups and task forces of scientific associations, under an international enthusiasm and excitement. However, alongside with the positive and impressive results achieved, EDI was challenged with questions and criticism, essentially related to reconciling equality with the preservation of diversity: how to ensure equality of opportunities while avoiding to suppress diversity, and in particular cultural and scientific diversity? The latter compelling question should stimulate an open discussion on how to move forward, for the benefit of the global diversity of people and research visions. This contribution is an attempt to articulate the discussion on scientific and transparent grounds, by assuming that any form of diversity that is legally, enthusiastically and ethically expressed is a valuable contribution to resolve the key barriers to EDI improvements, the global challenges of geosciences and seeking a peaceful future.

## Equality, Diversity, Inclusivity mean excitement, creativity, efficiency

- **A rigorous quantitative analysis** of the benefit provided by EDI in science is presented by Koning et al. (2021), who found that **“Reducing the barriers that disadvantaged groups face when working and inventing has accounted for a nontrivial share of economic growth over the past century”**.
- They refer to Hsie et al. (2021) who studied the effect on aggregate productivity – in terms of gross domestic product – of the evolution in the occupational distribution in the United States between 1960 and 2010, and conclude: **“Our baseline calculations suggest that falling barriers explain roughly 40% of aggregate growth in market GDP per person”**. This is not surprising, according to Koning et al. (2021) who note that **“...a lack of representation among inventors translates into a lack of breadth in inventions”**.
- From McKinsey: **“It’s not just gender. Companies in the top-quartile for ethnic/cultural diversity on executive teams were 33% more likely to have industry-leading profitability. That this relationship continues to be strong suggests that inclusion of highly diverse individuals – and the myriad ways in which diversity exists beyond gender (e.g., LGBTQ+, age/generation, international experience) – can be a key differentiator among companies.”**



## Challenges for EDI

- However, alongside with the positive and impressive results achieved, **EDI was subjected to challenging questions**.
- The EDI movement addresses fundamental questions related to human rights.
- In the context of science, it advocates for **rethinking** the structure of scientific associations, the organization of meetings, and the concepts and methods used to assess scientific merit and recruit researchers and academics.
- As with any initiative that **challenges conventional attitudes**, the push for EDI has raised concerns among some members of the public and the scientific community.
- This reaction reflects a well-documented psychological phenomenon known as **"resistance to change"** (see, for example, Warrick, 2023).
- **Those who resist change are often less involved in decision-making and perceive themselves as having less power. Indeed, In some cases, the EDI movement has even faced a lack of support from the very groups it aims to benefit.**
- Challenges are essentially related to reconciling **equality with diversity**: how to ensure equality of opportunities (or equity) while still preserving **global diversity**, and in particular **cultural diversity**?
- Of course, seeking equality should not imply imposing a unified global culture.

## Criticism to EDI

- One of the arguments that was raised is that diversity, equality and inclusivity **has become ideological**, namely, rigid in its adherence to a doctrine and resistant to evidence-based belief-updating .
- EDI is sometimes considered responsible for the introduction of the so-called **positive bias**, namely, a bias against categories that have been previously favoured. Other concerns have evolved around the meaning of **gender difference**.
- Indeed, the effort to recognise any individual gender identity has expanded the number of recognised genders, therefore **introducing ambiguity in the concepts of equality and diversity**.
- Another reason of concerns is given by actions that – in turn – were considered limiting the human rights. Examples are the cases **engaging issues of free speech**, where speakers were uninvited or impeded to talk.
- In particular in science, it has been a reason of concern the attitude of resisting to **diversity of opinions**, a focal issue for the evolution of EDI.

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