Assessing the place of citizen science in modern research

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New analysis presents recommendations for EU-funded research projects on how citizen science can be deployed to ensure the best possible outcomes for both research and public engagement.

In recent years, numerous fields of research have seen an explosion in the volume and complexity of their scientific data. To keep pace with these changes, EU-funded research projects are increasingly crowdsourcing their data through citizen science projects, which allow the public to engage directly with their research.

Through a detailed analysis published in *EPJ Plus*, Stephen Serjeant and colleagues at The Open University present new recommendations for how citizen science should be deployed to ensure the best possible outcome for research. The team's insights could help researchers to better understand the potential impacts of this new way of doing science.

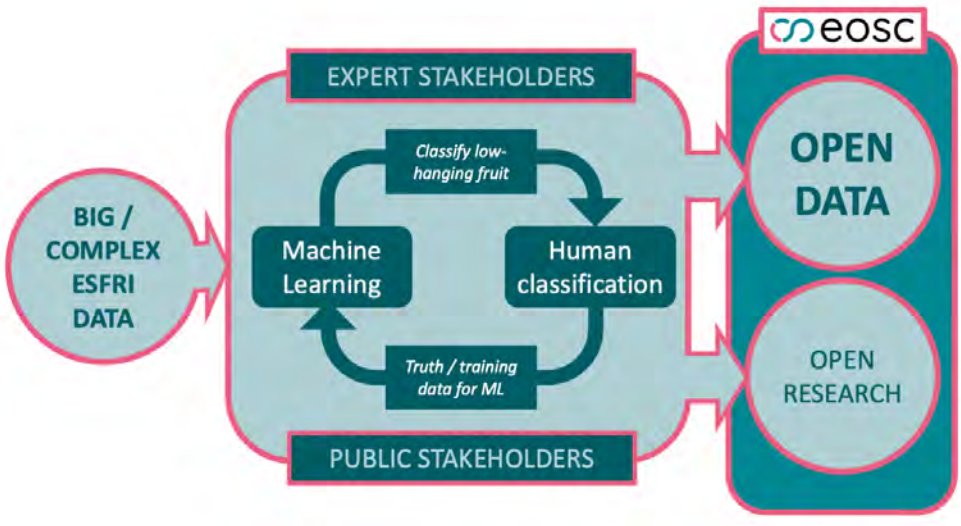
Traditionally, most major EU-funded research projects have included efforts to communicate their work to the public. However, there has long been concern that these efforts don't provide any opportunities for the science-interested public to engage directly with research or contribute to it.

As research projects became larger and more complex, this picture started to change radically. Through citizen science projects, researchers are now crowdsourcing their data to public volunteers interested in their work, who are still far better suited for many classification tasks than machine learning algorithms. Today, the approach is applied across fields as diverse as genomics, social sciences, and astronomical imaging.

In their study, Serjeant's team summarize the use of citizen science in several projects funded by the EU's Horizon programme, which collectively engaged hundreds of thousands of volunteers. Their analysis shows that these programmes had a wide-ranging, diverse and deep scientific impact.

Altogether, the researchers present valuable recommendations for how citizen science should be deployed in future projects in physical science. They also clarify that if public engagement or outreach is the primary goal of a project, citizen science may not always be the best approach: instead, they suggest that other, more targeted approaches could be more effective.

This article is part of the EPJ Plus Focus Point Issue: Citizen science for physics: From Education and Outreach to Crowdsourcing Fundamental Research (https://link.springer.com/journal/13360/topicalCollection/AC_927f4eee5a9c5e7767a71aef4314ff79 which is intended as both a review and advancement of current and future such activities in the field of core physics and related disciplines. In particular, this article collection wishes to thoroughly explore - and act as incentive to foster - the contribution of citizen science to advancing science and how to design ongoing and future research projects to this aim. The potential value of such projects in terms of increasing scientific awareness among the general public would be a valuable complementary aspect. Further details about this Focus Point and how to contribute can be found here: https://epjplus.epj.org/epjplus-open-calls-for-papers/2284-epjplus-focus-point-issue-citizen-science-for-physics. ■



▼ Schematic PERT diagram showing selected workflows of big/complex data from the European Strategic Forum for Research Infrastructures (ESFRIs), and the external context of the European Open Science Cloud (EOSC). This illustrative workflow shows the virtuous circle between human and machine learning.

Reference

[1] S. Serjeant, J. Pearson, H. Dickinson *et al.* Citizen science in European research infrastructures, *Eur. Phys. J. Plus* **139**, 418 (2024). https://doi.org/10.1140/epjp/s13360-024-05223-x