

Klimczuk, Andrzej; Butkeviciene, Egle; Kerla, Minela

Article — Published Version

Editorial: Citizen Science and Social Innovation: Mutual Relations, Barriers, Needs, and Development Factors

Frontiers in Sociology

Suggested Citation: Klimczuk, Andrzej; Butkeviciene, Egle; Kerla, Minela (2022) : Editorial: Citizen Science and Social Innovation: Mutual Relations, Barriers, Needs, and Development Factors, Frontiers in Sociology, ISSN 2297-7775, Frontiers Media SA, Lausanne, Vol. 7, <https://doi.org/10.3389/fsoc.2022.836149>

This Version is available at:

<https://hdl.handle.net/10419/249571>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>



Editorial: Citizen Science and Social Innovation: Mutual Relations, Barriers, Needs, and Development Factors

Andrzej Klimczuk^{1*}, Egle Butkeviciene² and Minela Kerla³

¹Department of Public Policy, Collegium of Socio-Economics, SGH Warsaw School of Economics, Warsaw, Poland, ²Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Kaunas, Lithuania, ³The Association of Online Educators, Sarajevo, Bosnia and Herzegovina

Keywords: citizen science, co-creation, co-production, open science, participatory research, social innovation

Editorial on the Research Topic

Citizen Science and Social Innovation: Mutual Relations, Barriers, Needs, and Development Factors

OVERVIEW

The presented Research Topic explores the potential of citizen science to contribute to the development of social innovations. It sets the ground for analysis of mutual relations between two strong and embedded in the literature concepts: citizen science and social innovation. Simultaneously, the collection opens a discussion on how these two ideas are intertwined, what are the significant barriers, and the need to use citizen science for social innovation.

As described by the Organisation for Economic Co-operation and Development and Eurostat (2018), social innovation refers to some new idea, new solution, or new design that makes a social impact in terms of conceptual, process, product, or organizational change, which aims to improve the lives of individuals and communities. This conceptual perspective lays a background for this Research Topic. It is possible to consider citizen science as social innovation. As emphasized by Butkeviciene et al. (2021), the relationship between citizen science and social innovation might be two-fold: citizen science as a novel practice might be considered as social innovation in the realm of the traditional research process, and citizen science might be treated as a vehicle to foster social innovation. These two approaches are present in theoretical debates and coherently intertwined in this collection. On the one hand, articles analyze methodological issues and the novelty of such methods as design thinking or action research. On the other hand, papers also investigate the factors such as translation specifics in citizen science, ecosystems of citizen science, or new learning environments that are supporting the development of social innovation.

The presented Research Topic includes seven articles prepared in total by 34 authors from the following countries: Australia, Austria, Czechia, Estonia, Finland, Germany, Ireland, Italy, Japan, Netherlands, Portugal, Singapore, Switzerland, and United Kingdom. Five journals were related to this Research Topic: “Frontiers in Sociology,” “Frontiers in Research Metrics and Analytics,” “Frontiers in Communication,” “Frontiers in Environmental Science,” and “Frontiers in Political Science.” This collection contains five types of articles covering: two original research articles (Goi and Tan; Heinisch), one perspective article (Roche et al.), two conceptual analysis articles (Eckhard et al.; Roche et al.), one review article (Scheibner et al.), and one methods article (Coulson et al.).

This Research Topic covers papers that critically evaluate the existing social innovations and citizen science initiatives. The articles are organized according to three themes.

OPEN ACCESS

Edited and reviewed by:

Scott Schaffer,
Western University, Canada

*Correspondence:

Andrzej Klimczuk
klimczukandrzej@gmail.com

Specialty section:

This article was submitted to
Sociological Theory,
a section of the journal
Frontiers in Sociology

Received: 15 December 2021

Accepted: 03 January 2022

Published: 10 February 2022

Citation:

Klimczuk A, Butkeviciene E and
Kerla M (2022) Editorial: Citizen
Science and Social Innovation: Mutual
Relations, Barriers, Needs, and
Development Factors.
Front. Sociol. 7:836149.
doi: 10.3389/fsoc.2022.836149

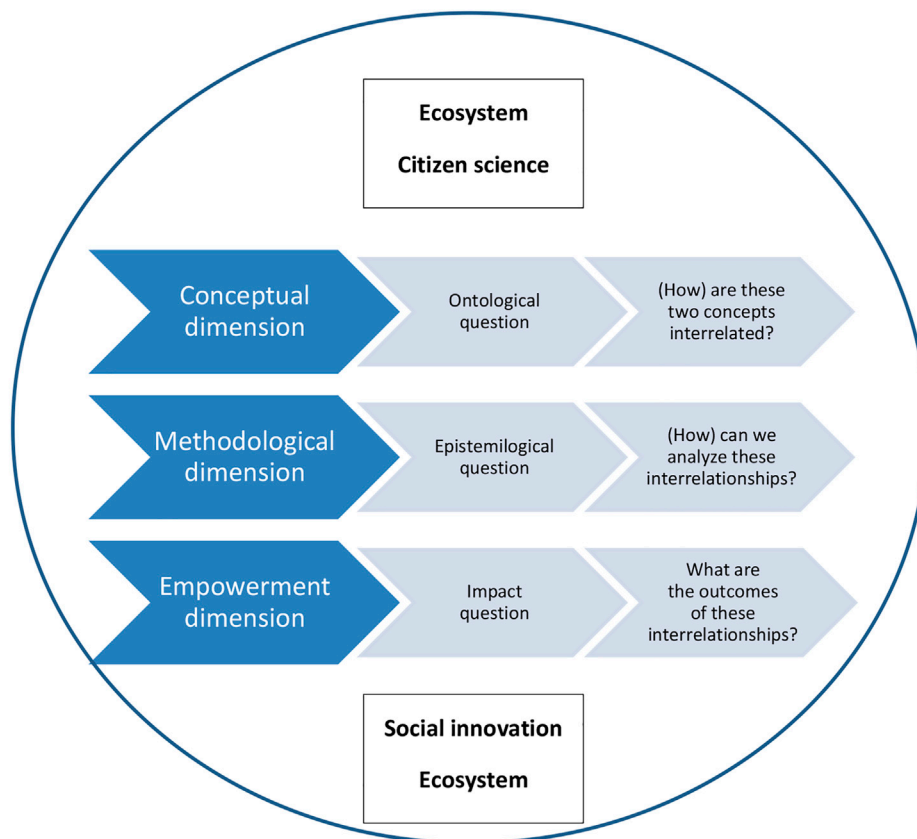


FIGURE 1 | Analytical dimensions of relation between citizen science and social innovation. Source: own elaboration.

THEME I: CONCEPTUAL RELATIONS BETWEEN CITIZEN SCIENCE AND SOCIAL INNOVATION

Until recent years few papers emphasized the relation between citizen science and social innovation. In the presented collection, the team of Eckhardt et al., in their paper, goes further and points that ecosystem of co-creation is an essential feature of citizen science and introduces a form of collaborative scientific work with society. Included results from the H2020 SISCODE project show that co-creation is located inside and between various sectors of society. The subsequent study by Heinisch presents the role of translation in citizen science to foster social innovation. It examines the role of translation and terminology used in citizen science projects and how translation can support (or impede) social innovation through citizen science activities.

THEME II: LEARNING ENVIRONMENTS FOR CITIZEN SCIENCE AND SOCIAL INNOVATION

The second part of this Research Topic contains contributions to studies focused on relations between teaching, learning, citizen

science, and their potential relation to social innovation. The study by Roche et al. identifies challenges for successful integration of citizen science into mainstream education systems that also serve as signposts for possible synergies and opportunities. Another paper by Roche et al. continues the topic with a focus on Ireland's rich history in public engagement with science. This study explores several aspects of citizen science in Ireland to assess its development and better understand potential opportunities for the field.

THEME III: METHODOLOGICAL ISSUES IN USAGE AND DEVELOPMENT OF CITIZEN SCIENCE AND SOCIAL INNOVATION

The third theme opens the area to discuss methodological issues. It starts with the article of Goi and Tan, where the authors focus on methodological issues in using citizen science for the development of social innovations, in particular focusing on design thinking is an appropriate approach to be used by the community for future projects. Next, the article of Coulson et al. discusses citizen sensing as social innovation, where authors present data from their 2-year pan-European project. Finally, the paper by Scheibner et al. tackles ethical issues with using Internet of Things devices in citizen science studies.

CONCLUSION

In this Research Topic, the editors wanted to open theoretical as well as empirically-based discussion, including examples, practices, and case studies of at least three types of relations between citizen science and social innovation: 1) domination of the citizen science features over social innovation aspects; 2) domination of the social innovation features over the citizen science aspects; and 3) the ways to achieve balance and integration between the social innovation and citizen science features. Each of these relationships highlights factors that influence the development of the primary scales of sustainability of innovations in the practice (Figure 1).

Moreover, the research results presented in the articles of this Research Topic allow the formulation of five directions for further research. These are: 1) dynamics of peer learning and organizational culture in citizen science and social innovation projects; 2) the personal capacity of social entrepreneurs, public managers, citizen scientists, and researchers; 3) design, evaluation, communication, and dissemination of results of the citizen science and social innovation initiatives; 4) digital social innovation and citizen science; and 5) co-creation and co-production processes and their impact on stakeholders (see also Schäfer and Kieslinger 2016; Anderson et al., 2020; Perelló et al., 2021). The editors hope this collection will be an inspiring introduction to studying both identified and yet unnoticed relations between citizen science and social innovation.

REFERENCES

- Anderson, A. A., Williams, E., Long, M., Carter, E., and Volckens, J. (2020). Organizationally Based Citizen Science: Considerations for Implementation. *JCOM*. 19 (3), A01–A19. doi:10.22323/2.19030201
- Butkevicienė, E., Skarlatidou, A., Balázs, B., Duží, B., Massetti, L., Tsampoulidis, I., et al. (2021). “Citizen Science Case Studies and Their Impacts on Social Innovation,” in *The Science of Citizen Science*. Editors K. Vohland, A. Land-Zandstra, L. Ceccaroni, R. Lemmens, J. Perelló, M. Ponti, et al. (Cham: Springer International Publishing), 309309–332929. doi:10.1007/978-3-030-58278-4_16
- OECD (Organisation for Economic Co-operation and Development), and Eurostat (2018). *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation*. 4th Edition. Paris: OECD Publishing. doi:10.1787/9789264304604-en
- Perelló, J., Klimczuk, A., Land-Zandstra, A., Vohland, K., Wagenknecht, K., Narraway, C., et al. (2021). “The Recent Past and Possible Futures of Citizen Science: Final Remarks,” in *The Science of Citizen Science*. Editors K. Vohland, A. Land-Zandstra, L. Ceccaroni, R. Lemmens, J. Perelló, M. Ponti, et al. (Cham: Springer International Publishing), 517517–552929. doi:10.1007/978-3-030-58278-4_26

AUTHOR CONTRIBUTIONS

The lead author of this editorial is AK. AK outlined and drafted the editorial. EB and MK contributed by reviewing and revising the editorial’s manuscript. AK, EB, and MK led editorial work on all manuscripts included in this Research Topic. All authors of the papers listed have made a substantial, direct, and intellectual contribution to the work as well as approved their papers for publication.

FUNDING

This Research Topic is inspired by editors’ involvement in the COST Action CA15212 “Citizen Science to promote creativity, scientific literacy, and innovation throughout Europe,” supported by COST (European Cooperation in Science and Technology) in years 2016–2020.

ACKNOWLEDGMENTS

We also want to thank all the authors and the reviewers who contributed to the presented article collection for their dedication as well as say thank you to the always helpful Frontiers team, who made this Research Topic possible.

Schäfer, T., and Kieslinger, B. (2016). Supporting Emerging Forms of Citizen Science: A Plea for Diversity, Creativity and Social Innovation. *JCOM*. 15 (2), Y02–Y12. doi:10.22323/2.15020402

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher’s Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Copyright © 2022 Klimczuk, Butkeviciene and Kerla. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.