

COST Action CA15212

Citizen Science to promote creativity,
scientific literacy, and innovation throughout Europe

STSM Report



SHORT TERM SCIENTIFIC MISSION (STSM)

Scientific Report

Citizen Social Science: Co-evaluation of citizen social science projects

by **Anna Cigarini**

COST Action CA15212

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STSM Report



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STSM Title:	Citizen Social Science: Co-evaluation of citizen social science projects
STSM start and end date:	7/1/2019 to 11/1/2019
Host	Dr. Katja Mayer
Host Institution:	Zentrum für Soziale Innovation (ZSI), Vienna, Austria



Brief Summary

Background:

Despite the vast potential of citizen science, citizens are mainly passivized into acting as mere social sensors, or data producers, but not data owners or advocates in their own right. Broadening the role and scope of citizens engagement from data production to a more systemic participation in research design, analysis, and interpretation is necessary for the creation of robust social scientific knowledge.

In this respect, we see the emerging field of Citizen Social Science (CSS), which builds on several traditions, from traditional citizen science, computational social science to participatory action research, as a valuable opportunity to critically discuss participatory approaches for meaningful engagement with the research and civic mobilization aiming at legal or political influence. We understand citizen social science as a form of participatory social research that directly involves selected communities or public spheres in the social science research process (including research design) with the aim of creating knowledge for decision making and tools to intervene and monitor decision making processes. Yet, the notion of *citizen social science*, despite its growing attractive power, still require a thorough exploration and clear formulation.

Recent debates around the sustainability of citizen engagement also point to the need of a systematic comparative framework for the evaluation and impact estimation of participatory processes. Developing guidelines for outcome assessment of open citizen science initiatives can promote and improve evidence-based policy and community-based action for tackling pressing societal challenges.

The objective of the STSM was to examine the alignment of the monitoring process of the project BiblioLab - Science in Action with an open framework for evaluating citizen science activities developed by the Centre for Social Innovation (ZSI - Vienna, Austria), and to identify a set of indicators for articulating its impact assessment.

BiblioLab - Science in Action is a citizen science project that builds on the collaboration between OpenSystems (University of Barcelona, Barcelona - Spain) and the Management of Library Services of the Barcelona Deputation (Catalunya, Spain). The objective of the project is the co-creation of a social research within three libraries of Catalunya (Spain). Throughout the project, the librarians and their communities of users, local associations and administrations, will design and run an experiment to collect data and address a specific local concern.

Key outputs:

By the end of the STSM a measurement instrument was developed to track the process and outcomes of BiblioLab - Science in Action. The STSM helped me identify and conceptually enrich three domains where the project is expected to have an impact: the scientific domain, the individual citizen domain (i.e. library users and librarians involved in the co-creation of the scientific experiments), and the impact at the level of the municipality and/or region. The resulting evaluation matrix provides the operational definitions of the evaluation criteria that we identified and ways to measure it.



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Purpose of the STSM

The objective of the STSM was to examine the alignment of the monitoring process of the project BiblioLab - Science in Action with an open framework for evaluating citizen science activities developed by the Centre for Social Innovation (ZSI - Vienna, Austria), and to identify a set of indicators for articulating its impact assessment. There is indeed a pressing demand for the establishment of accepted criteria that allow for the transparent evaluation of citizen science projects to inform its impact assessment on science, society and policy (Kieslinger et al 2018). It is thus imperative that the quality of citizen science projects is measured accurately and estimated wisely.

BiblioLab - Science in Action is a citizen science project that builds on the collaboration between OpenSystems (University of Barcelona, Barcelona - Spain) and the Management of Library Services of the Barcelona Deputation (Catalunya, Spain). The objective of the project is the co-creation of a scientific research within three libraries of Catalunya (Spain). Throughout the project, the librarians and their communities of users, local associations and administrations, will design and run an experiment to collect data and address a specific local concern. The project is part of a bigger effort aimed at redefining the role of public libraries of Barcelona Metropolitan Area into an inclusive space for active participation, knowledge production and social innovation.

Description of the work carried out during the STSM

The STSM has been primarily directed to develop a framework and specify its metrics for evaluating the process and outcomes of BiblioLab - Science in Action.

I thus discussed with key local references (Dr. Katja Mayer, Dr. Barbara Kieslinger and Dr. Dietmar Lampert, with longyear experience in citizen science and evaluation) the methodological approach and classificatory dimensions to apply for the evaluation of BiblioLab - Science in Action. I then synthesized existing quality criteria and impact indicators based on current literature and lessons learned from relevant practices worldwide on citizen science and public libraries performance. The review includes: recently developed quality criteria for citizen science projects (Heigl et al. 2018), reports of the MoRRI Project, a framework on individual learning outcomes from participation in citizen science (Phillips et al. 2018), the methodological approach of Huysmans and Oomes (2013) for measuring the social value of public libraries, and the guidelines for the co-evaluation of citizen science activities (Kieslinger et al 2018). I thus selected the criteria that aligns with the objectives of BiblioLab - Science in Action, and pinned down the final core set of indicators.

The STSM was also meant to advance in the discussion and critical analysis of the relationships and potential synergies between citizen science and the social sciences. I had the opportunity to introduce and discuss the project and related work carried out by OpenSystems (University of Barcelona, Barcelona - Spain) during the seminar "Citizen Science and Social Science" (10th of January, 2019) led by Prof. Sascha Dickel, visiting professor at the University of Vienna, within the course Citizen Science and Participation focussed on emerging modes of public engagement, the normative and epistemic implications of public involvement, and the socio-technical infrastructures of participation.



I also participated in the workshop “Citizen Social Science Workshop” (10th of January, 2019) at the University of Vienna together with Katja Mayer, Barbara Kieslinger, Sascha Dickel, Nadja Kerschhofer, and Christoph Musik. We discussed our approaches to and with citizen social science, and the principles for setting up quality criteria.

Description of the main results obtained

- By the end of the STSM a measurement instrument was developed to track the process and outcomes of BiblioLab - Science in Action. The STSM helped me identify and conceptually enrich three domains where the project is expected to have an impact: the scientific domain, the individual citizen domain (i.e. library users and librarians involved in the co-creation of the scientific experiments), and the impact at the level of the municipality and/or region. The resulting evaluation matrix provides the operational definitions of the evaluation criteria that we identified and ways to measure. It will contribute to Working Group 6 strategic priorities_Overarching - Cross-WG-Synthesis with the provision of outcome assessment measures of citizen science projects for evidence-based policy making and community-based action.
- A methodological approach was specified to allow the evaluation process be open and adapted over time with the growing experience and reflection of the participants to the project. Systematic surveys and focus group discussions among participants (librarians, users, service managers and scientists) are being implemented to define the expected outcome and how to measure it, reflecting developments and contextual changes throughout the co-creation sessions.
- The evaluation matrix is now being tested empirically, and a scientific publication about the evaluation process and outcomes is in progress.
- As for the discussion on quality criteria for citizen social science projects, some important issues were raised regarding a) ethics; b) ownership; c) privacy; d) transferability of skills; e) time frame and scale. The STSM thus contributed to the discussion and concept formulation of the notion of Citizen Social Science, which is the starting point for the writing of an EU Horizon 2020 proposal currently in preparation.

FUTURE COLLABORATIONS

Over the course of the STSM, Katja Mayer and myself planned future collaborations especially regarding the discussion about the synergies of citizen science and the social sciences. The home and host institutions are now writing a proposal for the Horizon2020 Swafs 15 call, on the basis of the work carried out during the STSM.

Bibliography

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- Huysmans F, & Oomes M (2013) Measuring the public library's societal value: A methodological research program. IFLA Journal, 39(2)