A JOURNAL BY SISSA MEDIALAB

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PRACTICE INSIGHTS

Understanding methodological innovation in participatory research: insights from participatory EU-funded projects

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Abstract

In this practice insight, we explore the intersection between creativity and sustainability in methodological development within participatory research with all its inherent complexities and tensions. We reflect on the challenges of identifying methodological innovation in participatory methods, emphasizing the gradual and cumulative nature of this process. We highlight the crucial role of reflexivity in methodological development and examine the socio-political, epistemic and institutional contexts that influence participatory research trajectories. By analysing the tension between methodological innovation and conservatism, this practice insight sheds light on the complex dynamics within participatory projects and calls for a nuanced understanding of methodological development.

Keywords

Citizen science; Public engagement with science and technology

Received: 8th March 2024
Accepted: 6th September 2024
Published: 7th October 2024

1 ▪ Introduction

The role of science in society is changing, and knowledge has become increasingly central in many spheres of our lives. These changes also encompass how knowledge is produced, and openness has been more frequently incorporated as a cornerstone in scientific methodologies. That openness has manifested as not only sharing of data and results that are produced through scientific investigations, but also by involving non-academic actors in the very process of doing science. Indeed, participatory methods actively involve non-academic stakeholders in one or more stages of the research process, where collaboration, co-creation of knowledge and shared decision making is prioritized to ensure research is inclusive, democratic, and societally relevant.

Historically, participatory research methods have been developed as a way to democratize knowledge production. While they were a tool for marginalized researchers and communities to conduct undone science [Frickel et al., 2010], participatory methods such as citizen science and community-based participatory research have been taken up by research-performing institutions, research funders and governmental organizations. Being understood as a tool for ensuring societal relevance and responsiveness in scientific knowledge production, participatory methods were met with rising recognition [Science Europe, 2018; Heigl, Kieslinger, Paul, Uhlik & Dörler, 2019].

As we go through a confidence crisis in science [Jasanoff & Simmet, 2017], participatory methods have been advocated as a means to regain legitimacy of scientific research in the eyes of the general public [Michali & Eleftherakis, 2022]. It is particularly under the background of this crisis of trust in science that the IANUS project (Inspiring and Anchoring Trust in Science) was born. The IANUS project aims to strengthen warranted trust in science, research, and innovation. The project examines and develops science communication and participatory methods to open up science with the goal of fostering a relationship of trust between science and society at large. With that goal in mind, IANUS aspires to identify and map pioneering public engagement practices and activities. Doing so, the project highlights four areas of focus within public engagement methodologies: digital approaches to public engagement; inclusion of underserved audiences; cultivation of appropriate skepticism; and emotional responses to contrary personal perspectives.

Participatory research methods have emerged as powerful approaches for promoting collaboration, empowerment, and the co-creation of knowledge within the social sciences. However, the journey of methodological development within participatory research is fraught with tensions and complexities. In this practice insight, we engage in a reflexive exploration of the intersection between creativity and sustainability in the context of participatory research method development. Drawing on a rich dataset of 15 EU-funded projects that developed and employed participatory methods, we delve into the nuances of methodological choices, interrogating the underlying dynamics and implications for both research practice and theory. We reflect on what methodological innovation and methodological conservatism entail and whether it is always necessary to advance scientific progress.

Central to our reflexive analysis is an exploration of the broader socio-political, epistemic and institutional contexts that shape methodological trajectories within participatory research. We examine the role of research structures and epistemic communities in shaping methodological norms and standards. In addition, we consider the influence of institutional

structures and funding mechanisms on methodological choices, highlighting the importance of creating enabling environments that support both creativity and sustainability in research endeavours.

2 · Understanding methodological innovation in participatory projects

Our project started from a viewpoint that methodological innovation is beneficial and necessary for the advancement of (trust in) science. We understand methodological innovation as the development and implementation of new or significantly improved research methods that offer novel approaches to data collection, analysis, and interpretation in participatory research. The objective of these innovations is to enhance the effectiveness, relevance, and inclusivity of research practices by addressing emerging challenges and opportunities.

We presumed that, particularly for methods that signalled a paradigm shift such as participatory research — where the view about where expertise lies and the role of scientists in producing knowledge is renegotiated [Blok, 2023; Ten Holter, 2022] — methodological innovation was crucial and would be clearly identifiable in the research projects that we analysed. Yet, we found that pinpointing when methodological innovation happens and what characterizes a novel method, is challenging: it is a gradual and cumulative process, particularly when it relates to participatory methodologies. Methodological innovation can present itself as the extension of existing methods, a technological innovation in the context of applying an already existing method, or the use of established methods across disciplinary boundaries [Xenitidou & Gilbert, 2009].

As Hesse-Biber and Leavy [2008] argue, new methods emerge when existing methods are not adequate to answer new research questions that come about as a result of social, political, and technological changes. These emerging methods, which are characterized by the transgression of paradigmatic boundaries of their specific research fields, are preceded by a revision of the epistemological foundations that underlie traditional methods. This reflexive process of renegotiating what counts as knowledge and who gets to produce it creates a 'methods gap', where authors embody a conflicting position as both insider and outsider. In other words, to pursue methodological innovation, researchers need to both maintain the validity of their methods in order to preserve the legitimacy of their work in the eyes of the scientific community and also be open to questioning the ontological, epistemological, and methodological foundations of their research field and their own work.

This is particularly relevant for participatory methodologies, which originated from the needs of researchers working with marginalized communities outside the traditional research institutional structures [Hall & Tandon, 2017]. In the past decades, participatory approaches have been integrated into mainstream research, and have been explicitly encouraged in European and national funding instruments [Gerber et al., 2020] and incorporated into research practices in research-performing institutions. Institutionalization of participatory approaches, and more recently citizen science, use demarcation of what is and is not legitimate when using such a research approach. Through that demarcation, innovative methods are sidelined and excluded from institutional support, and therefore discouraged from being further pursued by researchers [Mahr, 2023]. At the same time, because of that

very institutional support for research that is more connected to societal needs — which is often operationalized through participatory methods — researchers are encouraged to adopt more experimental approaches in their work and are rewarded when their efforts towards publicly engaged research yield outputs that would be considered impactful by institutional measures [Freitag & Pfeffer, 2013; Wróblewska, Balaban, Derrick & Benneworth, 2024].

3 ▪ Methods and results

We screened the CORDIS platform for projects that used participatory methods or participation, and that were funded through Horizon 2020 or Horizon Europe (n = 30). Following, we selected the projects that had the aim to produce knowledge through participatory research — particularly in the domain of STI (Science, Technology and Innovation) issues. The projects had to either employ participatory methods or develop participatory approaches. We excluded projects that did not have any results published in the CORDIS platform. This yielded 15 projects eligible for the analysis (listed in Table 1).

With the project documents (like deliverables, reports, white papers, etc.) from each selected project, we built a corpus and conducted a qualitative analysis through a grounded theory approach — using open coding, axial coding and selective coding [Glaser & Strauss, 2017].

Table 1. Projects included in the analysis.

Acronym	*Title of the project*
SciShops.eu	Enhancing the Responsible and Sustainable Expansion of the Science Shops Ecosystem in Europe
InSPIRES	Ingenious Science shops to promote Participatory Innovation, Research and Equity in Science.
CoAct	Co-designing Citizen Social Science for Collective Action
CitieS-Health	Citizen Science for Urban Environment and Health
TRANSFORM	Territories as Responsive and Accountable Networks of S3 through new Forms of Open and Responsible decision-Making
WYRED	netWorked Youth Research for Empowerment in the Digital society
PEPPER	Positive Environment in Public Participation and Engagement for Responsible Research and Innovation
ACElab	Alpine Community Economies Lab: bringing together multi-level stakeholders to co-produce sustainable alpine futures in the light of economic globalisation and climate change
NEXUS-DRR	Building resilience in the face of nexus threats: local knowledge and social practices of Brazilian youth
ReProCounters	'Reciprocal Encounters' — Young Adults Leaving Care
ENJOI	ENgagement and JOurnalism Innovation for Outstanding Open Science Communication
DIVERSify	Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability
AMASS	Acting on the Margins: Arts as Social Sculpture
HEY BABY	Helping Empower Youth Brought up in Adversity with their Babies and Young children
PSYCHOCONTEXT	Contextualising psychosocial wellbeing and mental health within sociocultural dynamics

Our coding process started with the broad goal of understanding how participatory methodologies were used and described in project documents. We focused particularly on claims of methodological innovation and what they entailed for the reported methodology in each project. Within the wide theme of methodological innovation, we searched for descriptions related to the four focuses of the IANUS project: digital approaches to public engagement; inclusion of underserved audiences; cultivation of appropriate scepticism; and emotional responses to contrary personal perspectives.

However, throughout our coding process, we did not find concrete claims of methodological innovation in any of the projects analysed. Rather, existing methods were creatively tinkered in the projects to address the needs of the respective project focus, suggesting a tension between methodological innovation and methodological conservatism. Methodological conservatism refers to the tendency to adhere to established research methods and practices, avoiding significant deviations or innovations. This approach prioritizes the reliability, validity, and legitimacy of tried-and-tested methods over the potential risks and uncertainties associated with novel approaches. We argue, therefore, that the existing participatory approaches are used as methodological toolboxes.

Instead of trying to understand how methodological innovation was used in the context of the aforementioned focuses of IANUS, we shifted our attention to how and why researchers tinkered with participatory methods to suit their projects. Two key categories emerged from this analysis: 1) creativity in participatory method development, as well as in combining and employing existing participatory methods; 2) sustainability of the participatory processes conducted during the process, where these processes would extend beyond the duration of the project, addressing 'the needs and aspirations of the present without compromising the ability to meet those of the future' [Brundtland, 1987].

3.1 ▪ *Creativity in participatory method development*

The projects that we analysed used existing participatory methods and combined features of these methods to suit their own research questions and contexts, revealing a diverse landscape of creativity within participatory research method development. Yet, we were not able to identify emerging methods that strayed far off of already established approaches to participation (e.g. co-creation labs, science shops). While projects were creative on how they executed co-creation activities, the epistemological bases of the developed methodologies remained closely related to the approaches from which they initially evolved. For example, the TRANSFORM project implemented gamified approaches to operationalized co-creation methods, where they designed a game to allow citizen scientists to reflect on fictitious scenarios regarding waste management and were awarded a reduction in municipal waste taxes depending on their performance in the game. Alternatively, the ACElab project, which aimed to co-create local futures with Alpine communities in Northern Italy, brought together designers, artists and local communities to co-create artistic representations of possible futures.

Instead, we identified a predominant approach to creative methodological development that takes the form of 'tinkering' with established methods rather than radical departures. We argue that this tendency towards incremental innovation is shaped by a variety of factors, including the pressure to produce tangible results within project timeframes, the competitive nature of funding programmes, and the desire to conform to prevailing methodological

trends. Despite the constraints imposed by these factors, our analysis highlights the importance of creative reflexivity in methodological development, whereby researchers critically engage with the needs, challenges and epistemic orientations of their projects. This reflexive creativity enables researchers to iteratively refine and tailor participatory methods to the specific contexts and goals of their research, thereby enhancing both the relevance and effectiveness of their approaches.

3.2 ▪ *Sustainability of the participatory processes*

The sustainability of participatory processes is a central concern that permeates methodological development within participatory research. Creating self-sustaining communities of practice or long-lasting infrastructures to facilitate bottom-up initiatives were priorities frequently highlighted in the projects we analysed. In the ACELab project, for example, they emphasize that by "creating spaces of collective, radical and hopeful imagination in the everyday, we exponentially strengthen the possibilities [...] to uncover multiple resources that can be mobilised for transformative action".

Our analysis suggests that the perceived 'conservatism' in methodological choices is not only a reflection of risk aversion or inertia, but rather a strategic response to promote sustainability. By building on existing participatory practices, projects increase the likelihood of adoption and integration within institutional structures and research communities. Moreover, this reliance on familiar methods facilitates capacity-building efforts and ensures continuity beyond the lifespan of individual projects. One example is the Scienceshops.eu project, which leveraged already existing science shops throughout Europe to expand the science shops network and promote the development of similar initiatives in other Universities and research institutes.

However, we also caution against the potential pitfalls of excessive conservatism, which can stifle innovation and limit the transformative potential of participatory research. Instead, methodological conservatism may inhibit necessary reflection on ethical and epistemological issues that emerge when applying participatory approaches to specific contexts. Embracing the iterative and adaptive character of participatory methods, where methods are tinkered to fit a specific context and research question, ensures the resilience of these methodologies in an institutional setting. Thus, while the pursuit of sustainability is paramount, it must be balanced with a commitment to ongoing experimentation, learning and adaptation.

4 ▪ The methodological innovation imperative in participatory research

The tension between methodological innovation and conservatism seemed to underlie most claims for methodological innovation in the projects we analysed. Methodological innovation in participatory processes runs into the issue that participatory methods are often seen as less scientific than other approaches [Wuehr, Pfeiffer & Schuett, 2015], and researchers seeking to develop new participatory methods might feel pressure to not steer away from established methods to preserve the legitimacy of their research within the scientific community. Yet, participatory methods are inherently situated [Genat, 2009] and cannot be used without being adapted and tinkered to serve the specific research question and

geographical, social, and political context in which they are applied [Pernarella & Koed Madsen, 2023] and taking risks in that methodological tinkering may be necessary to ensure the methods fit the question and the context in which they are being employed [Mahr & Strasser, 2021].

Such tinkering takes time and can be an uncertain process, where several iterations of the methodology might be necessary to yield the desired results. Therefore, participatory methods require some time to adapt to local context and tend to be slower when obtaining results. Because of that, they can be a risky choice as methodologies for project-based funded research. Especially when investigating complex topics — as is the case with any theme that relates to current societal challenges — that carry a great deal of uncertainty into the research, careful reflection and iterative methodological development is necessary, creating a fertile ground for methodological innovation [Jewitt, Barker & Golmohammadi, 2023].

However, these European funded projects, such as the ones we analysed in this practice insight, are often funded for a small window of time (in IANUS's case, for example, three years), and this time might not be enough to tinker the methodologies, cycle through the participation phases and obtain the results in a way that is true to participatory approaches. Competitive funding for research can dampen creativity and homogenize approaches in research, encouraging researchers to stick to widely accepted theoretical and methodological frameworks to ensure their research is funded [Geuna & Martin, 2003]. Additionally, the lack of flexibility when conducting project-based research and the pressure to produce pre-determined deliverables in a fixed and strict timeline can also drive researchers towards methodological conservatism and away from the complexities of methodological development [Azoulay, Graff Zivin & Manso, 2011].

At the same time, novelty both in content and methodological approaches is rewarded in competitive funding schemes. Projects with 'cutting-edge' approaches are more likely to receive funding [Bloch et al., 2014] and in certain fields methodological innovation is considered a cornerstone in a researcher's career [Wiles, Bengry-Howell, Crow & Nind, 2013], creating incentives for researchers to coin new methods and research approaches. Especially with the mainstreaming of participatory approaches and the shift of research ecosystems towards 'post-normal science' [Peters & Besley, 2019], development of methods that incorporate creative ways of producing knowledge and seemingly advancing the paradigmatic shift are encouraged.

Besides funding structures in academic research, other institutional systems fuel that tension between methodological conservatism and innovation. Nind, Wiles, Bengry-Howell and Crow [2013] describe how researchers negotiate their needs for being ethical and methodologically innovative, and how that negotiation is shaped by institutional ethical reviews. Methodological innovation is sometimes understood by not necessarily how one adapts or applies existing methods, but also how one reflects on the assumptions behind the methods and their application. For example, by questioning how an existing method deals with issues of expertise and epistemic inclusion — which is an epistemological but also an ethical question — a researcher can engage in methodological 'tinkering' to address the ethical limitations in such a method. In that sense, the desire of being ethical inevitably pushes methodological innovation forward. On the other hand, institutional ethical review mechanisms control what methods are legitimate and ethically appropriate, which then discourages out-of-the box thinking when it comes to methodological development.

5 ▪ Concluding thoughts

In this practice insight, we reflect on the tension that we identified between methodological innovation and methodological conservatism in projects using participatory research methods. This "conservative" approach to methodological development adopted by the projects we analysed could be the result of conflicting expectations that arise due to short-term, project-based funding: on the one hand, the competition inherent to European funding schemes pushes researchers to strive for novelty and innovation in their methodologies in an effort to differentiate themselves from other projects. On the other hand, because of that competitiveness, these researchers tend to adopt low-risk methodological innovations, sticking to established methods for participation, such as co-creation workshops, that are likely to yield desirable results under the time constraints of the project. However, this creative tinkering of and with the methods, so we argue, illustrates a creative response to and approach of ensuring the used methodology is fit to a project's needs, but also fitting the current trends in funding as well as the Zeitgeist methodologically.

It is important to note that we do not consider the preference towards tinkering with existing methods rather than developing completely new participatory approaches a sign of epistemological and methodological stagnation. Participatory methods are inherently situated and further developing and adapting to a specific context requires creativity and long-term thinking to ensure their sustainability. By choosing to employ participatory research methodology, researchers are required to engage in a reflexive process that involves questioning onto-epistemological assumptions of those very methods and can therefore engage in some sort of methodological innovation even when not explicitly doing so.

While our analysis can serve as a starting point for reflection about participatory research conducted inside research-performing organizations, we understand that this tension that we found in the projects we analysed may present itself differently in participatory initiatives conducted in different contexts. Xenitidou and Gilbert [2009] observed that methodological innovation often occurs as a result of 'institutional transgression', where academic and non-academic research contexts blend together to address research problems thus creating 'contact methodological zones'. This suggests that our analysis of methodological innovation using European projects as our sample might not capture the most fertile settings for methodological innovation.

Nonetheless, our findings invite us to rethink what methodological innovation entails in participatory research, moving away from the dichotomy between innovation and conservatism. Based on our findings, we provide recommendations of possible pathways to strengthen methodological development in participatory research while balancing creativity and sustainability of participatory initiatives (Table 2). While institutional efforts towards incentivizing creativity in methodological development are in place, project-based funding structures require researchers to be cautious when developing novel methodologies. Thus, creative tinkering of existing methodologies emerges as a strategic way to innovate under these constraints. Furthermore, our research highlights the necessity for reflexivity in methodological development, emphasizing the need for researchers to critically engage with the evolving socio-political, epistemic, and institutional contexts of participatory research.

Table 2. Key recommendations for strengthening methodological development in participatory research.

Recommendation	*Description*
Foster interdisciplinary collaborations	Foster interdisciplinary collaborations to integrate diverse perspectives and expertise in the development of participatory methods. This can lead to more innovative and holistic approaches to solving complex societal problems.
Develop flexible funding mechanisms	Advocate for flexible funding mechanisms that allow for iterative methodological development and adaptation. Funders should recognize the time required for truly participatory processes and provide support that respects these timelines.
Emphasize reflexivity and ethical considerations	Encourage researchers to engage in reflexive practices that critically examine their own biases, assumptions, and the ethical implications of their methods. This can enhance the legitimacy and inclusiveness of participatory research.
Improve training and capacity building	Provide training and capacity-building opportunities for researchers and stakeholders in participatory methods. This includes workshops, online courses, and mentoring programs to develop skills in designing and implementing participatory research.
Document and share best practices	Create repositories of best practices and case studies that document successful participatory methods and their outcomes. Sharing these resources can help other researchers and practitioners adopt and adapt effective approaches.
Promote institutional support and recognition	Advocate for greater institutional support and recognition of participatory methods within organizations that conduct research. This includes integrating participatory approaches into institutional research agendas and evaluation criteria.
Balance innovation and practicality	Promote a balance between methodological innovation and practical applicability. Researchers should strive for creative solutions that are feasible and realistically implementable within the constraints of their projects.
Evaluate impact beyond academia	Develop metrics to assess the impact of participatory research beyond academic outcomes. This includes assessing social, environmental, and policy impacts to demonstrate the broader value of participatory methods.

Acknowledgments

This publication was funded through the IANUS (“Inspiring and Anchoring Trust in Science”) grant, funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

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How to cite

Barbosa Mendes, A., Bruns, C., Mahr, D. and Driessen, S. (2024). 'Understanding methodological innovation in participatory research: insights from participatory EU-funded projects'. *JCOM* 23(06), N03. https://doi.org/10.22323/2.23060803.

ISSN 1824-2049. Published by SISSA Medialab. jcom.sissa.it