

Publication status: This preprint has not been published elsewhere.

InSPIRES: Connections that Generate Innovation – A Case Study of a European Networked Project

Rita de Cássia Machado da Rocha, Roberto Rodrigues Ferreira, Leonardo de la Torre-Ávila,
María-Jesús Pinazo, Tania Cremonini de Araujo-Jorge

<https://doi.org/10.1590/SciELOPreprints.13863>

Submitted on: 2025-10-23

Posted on: 2025-10-24 (version 1)

(YYYY-MM-DD)

InSPIRES: Connections that Generate Innovation – A Case Study of a European Networked Project

Rita de Cássia Machado da Rocha¹

<https://orcid.org/0000-0002-5052-2486> IOC/Fiocruz

Roberto Rodrigues Ferreira²

<https://orcid.org/0000-0001-5010-7007> IOC/Fiocruz

Leonardo de la Torre-Ávila³

<https://orcid.org/0000-0003-4863-5905> IsGlobal

María-Jesús Pinazo⁴

<https://orcid.org/0000-0002-4237-1075> IsGlobal

Tania Araujo-Jorge⁵

<https://orcid.org/0000-0002-8233-5845> IOC/Fiocruz

ABSTRACT

InSPIRES is the acronym for the project “Ingenious Science Shops to Promote Participatory Innovation, Research, and Equity in Science”, developed with a participatory research approach, whether in their universities, research, or outreach activities. We studied the network concept that emerged from interviews with the InSPIRES project actors. We started from the links between the participants, their partnerships, and the relationships which set the tone for the functioning and interaction of a network. We aimed at discussing the conceptual understanding and sustainability of networks with the actors who were part of Project. We interviewed 10 actors, belonging to eight institutions in eight different countries, with questions based on Castells’ theory of the Network Society and Baran's approach to the different types of existing networks. We concluded that is a centralized network project and that its degree of innovation reflects the action of the same methodology in different countries, involving teaching, research and outreach activities. It created new networks, such as: the Italian Network of Science Shops and the Living Lab and the inauguration of the Ibero-American Network “Communities and Science” with the participation of partners from Argentina and Brazil, respectively the Latin American Center for Learning and Social Service and the Oswaldo Cruz Foundation.

KEYWORDS: Networks; Sustainability; Innovation; Partnerships; InSPIRES.

INTRODUCTION

The “Network Society” is a society comprised of individuals, companies, and the state, operating at local, national, and international levels, adapted to the information society, globalization, and the access to new information and communication technologies (ICTs), with

a new form of communication that is participative, active, and horizontal in format (Castells, 2018; Couto, 2014). The term "network" exists since the Greek mythology when it was associated with the human body. In the 18th century, networks were associated with the veins of an organism; in the 19th century, networks correlated with technological devices, and currently, with digital aspects and social relations, and as connections between entities (Carvalho, 2011; Siemens, 2008).

According to Castells (2013), networks are “sets of interconnected nodes,” which may include people, organizations, or systems that share goals and exchange information, resources, and actions. They are adaptable, flexible, and capable of being reconfigured according to social and technological dynamics.

Baran (1964) formulated the concept of the existence of three types of networks: (i) centralized, with a central coordinator, (ii) decentralized, with several coordinators, and (iii) distributed, where the nodes connect in different ways and may not be destroyed if a central coordinator is eliminated. We choose to talk about network types to consider emerging possibilities of innovation, in favor of the maintenance of the network even if a partner needs to leave.

InSPIRES is the acronym for the project “Ingenious Science Shops to Promote Participatory Innovation, Research, and Equity in Science”, developed with a participatory research approach, whether in their universities, research, or outreach activities. InSPIRES project was funded by the Horizon 2020 program of the European Union [GA no. 741677], was part of Living Knowledge, an international network of "Science Shops". The Science Shop model emerged in the 1970s in the Netherlands and expanded throughout Europe in the 20th century. The main idea is to involve the work of institutions and social groups to address relevant questions. Leydesdorff and Ward (2005) published a case study comparing and evaluating their interactions between academia and society. They noticed that with the advancement of the internet and the increase in information on the network, Science Shops

would be facilitators in showing results and communicating science to the public, giving visibility to actions. InSPIRES developed a platform for interaction of different actors and for showing results, the InSPIRES Open Platform [1]. It is an open database with innovation, research, and collaborative projects that register their Science Shop activities and share their experiences.

The concern in communicating the actions of Science Shops is marked by the science agenda itself, which, according to Field and Power (2001), does not guarantee that information reaches the public despite its significant impact on their lives. The public is often unaware of what studies are being conducted, their reasons, and their implications. The general public feels -uninformed, and there is difficulty in creating effective communication channels, directed to a target audience, a critical aspect of the public information system. Given the increasing amount of research, it is crucial that the population is informed clearly and coherently at all levels. The public should also consider and evaluate if the lines of research address the demands coming from the population (Field and Power, 2001).

Science Shops were included in the "Science and Society Action Plan" agenda, encouraging collaboration between projects. Additionally, the European Commission (2001) stimulates the development of a Science Shops network with a site called ISSNet ("International Science Shops Network"). Science Shops are organizations that conduct research in response to societal demands and align with RRI (Responsible Research and Innovation) and open science or transdisciplinary research. They are flexible models, with a horizontal approach that adapts to local realities (Leydesdorff & Ward, 2005; Mulder et al., 2006; Steinhaus, 2014). As stated by Gresle et al (2021), during this process "stakeholders jointly identify and prioritize research questions and jointly execute projects until the research results can be channelled back to the community. (...) . Even though each Science Shop will tend to adopt a different model, one step in the operational process that is completed by all is the devolution of their research results to societal actors" Science Shops translate RRI policies into research practices and

connections with researchers, students, and society (Tassone et al., 2018). European projects operate as follows: first, the organization and generation of a consortium, linking institutions that will work as partners and organizing a group; then the group decides which of these institutions will have the coordination role. In the context of InSPIRES project, the overall coordination was assumed by ISGlobal, which had a principal researcher in the investigation as the coordinator partner. By the end, other partner institutions were invited.

In this article we aimed at showing the understanding of the actors involved in the InSPIRES Project about the functioning of this research network, how each one sees themselves in the network, what concept represents them, and what type of network they believe they are working in. We also searched on the visibility and communication between these actors. We interviewed each partner institution in the project with questions based on Castells' (2018) theory of Network Society and Baran's (1964) discussion on the different types of existing networks.

METHODOLOGY

We developed a semi-structured script for the interviews based on Marconi & Lakatos framework (Marconi & Lakatos, 2011). This approach allowed flexibility in the interview process without adhering to closed questions with simple, quantifiable answers. A preliminary consultation of dates was conducted, and the interviews were subsequently carried out through a communication platform. The semi-structured interview was composed of three axes: (i) profile and motivations, (ii) network society and sustainability, (iii) what they understood by science and art. Here, we will focus on axes 1 and 2, the motivations of the actors, their understanding of networks, and sustainability. Axes 3 will be addressed in future work.

This research was integrated into the final questionnaire of the InSPIRES Project, Deliverable 7.1 InSPIRES (https://inspire-europe.org/files/2025/05/D7.1_Plan-to-implement-actions-for-Coordination-of-INSPIRE_v2.1_28.02.2025_EU.pdf). All stages of the research

and training followed the ethical guidelines established by Brazilian legislation, with approval from the Research Ethics Committee of the Oswaldo Cruz Institute, under the corresponding CAAE number 15584119.4.0000.5248.

We interviewed 10 actors: coordinators from each country (Tunisia, Bolivia, the Netherlands, Hungary, Spain, and France (Lyon and Paris), along with one from Barcelona Institute for Global Health (ISGlobal) and Private Foundation for AIDS Research (IrsiCaixa, Spain). Participants gave their consent via video and ethical consent of the project for the use of data for research purposes, which was made available to the public on the InSPIRES website, Deliverable 1.2 and 8.2: The Final Report on the Ethical Framework and Procedures (<https://www.isglobal.org/-/inspires>).

The questionnaire was sent by email in advance to the actors from the involved institutions: ISGlobal-Hospital Clinic, IrsiCaixa, Institut Pasteur de Tunis (ITP), Environmental Social Science Research Group, Hungary (ESSRG), University of Florence (UNIFI), University of Lyon, Institute for Research in Innovation and Health Communication and Life Sciences (VU), Science and Applied Studies in Health and Environment Development (CEADES).

Interviews were scheduled on the communication platform, conducted mainly in English (Spanish and Portuguese were used in one interview each), recorded for subsequent literal transcription using the software Transcribe (<https://transcribe.wreally.com/>), followed by a second listening to the recording to ensure the accuracy of the transcribed text. To analyze all texts similarly, we translated them into Portuguese using the software ([deepl.com/translator](https://www.deepl.com/translator)), reviewed by the first author based on her knowledge of English and Spanish.

The collected data were analyzed using Content Analysis (Bardin, 2011), a quantitative and qualitative tool that seeks to interpret and understand the meanings of content. It consisted of four phases: pre-analysis, floating reading of the material and assumptions, exploration of the material, selection, and categorization. The analysis was used in the direct speeches of the

interviewees. To ensure anonymity in the research, the results will designate the participants' statements as P1 to P10 (P = participant). We also used the word cloud generation methodology to identify the most recurring and converging mentions in the dialogues regarding the motivation to be in the project.

RESULTS AND DISCUSSION

Profile and motivation of the interviewees

The interviewed actors have diverse profiles: communication manager, physicists, journalist, project manager, anthropologist, and professors. Among the 10 actors interviewed, two conducted outreach activities linked to the community, three conducted both outreach and research, and five were involved in teaching, research, and outreach. All of them were interested in work involving the community in investigative processes, as expressed in the word cloud with the phrase "civil society" shown in Figure 1. This figure presents the word cloud of motivations for taking part at the InSPIRES project. Besides the central theme related to civil society, other prominent themes included learning, community research, and science communication.



Figure 1: Motivations of the InSPIRES Project Stakeholders.

Source: Interviews conducted with the stakeholders, transcribed and processed using WordArt software.

Network concept and scientific sustainability of the proposal

The concept of network was studied and the interviewees converged with the concept of Allegretti et. al (2012): connections, formation of a group with common interests. Concerning the type of network, all the interviewees said that the coordinator was important in helping with the strategic and project management process. For Baran (1962), a centralized network arises when connections are centralized by a focus coordinator. However, although the interviewees identified a central organizer of the project, they reported developing projects all over the network nodes with the same methodology that was adjusted according to social demands. Given that the network was identified as a centralized nature, due to the very format of an European project, we realized the relevance of this central figure as a driving role in the process and in the functioning of a structure, where they seek links with regard to the methodology developed and sources of future funding (Weber, 2001; Caregnato et al. 2016; Leite, Caregnato and Miorondo, 2018).

Communication among partners and Science Communication: an emerging subject

E-mail communication between partners was reported as the main tool, even taking place in training sessions such as workshops and events, which are considered strong points for learning. P1's highlighted that it was interesting because he didn't know about the RRI methodology, but as a result of the interaction and an invitation from a member of the network, he ended up joining the European project.

Based on the interviews, we carried out a content analysis (Bardin, 2011) on the concept of the network and found that 4 out of 10 understood it as a connection, the creation of links, 4

as a search for interested people and 2 as a sense of being in a community, as shown in Chart 1:

Chart 1: Categorization of answers to the question: What is a network?

What is a network?	Connection	“Networking is the connection between people, being able to create links and make this sustainable (P1)”.
	Meeting	“a way of meeting people, exchanging knowledge, experiences where people can collaborate on different subjects and specialties, sharing missions, visions and values”. (P2) “Being united, even if in different fields, but with a common goal” (P4).
	Community	Being in a community where everyone can work together, get to know each other (P3)

P1 began its speech by pointing out the relevance of the connection between people, as he got to know the RRI tool after meeting a member of the InSPIRES project. This connection generated the invitation to take part in the European project and to collaborate with civil society in different ways. We could then observe a situation of interaction, a term used by Nonaka, Toyama and Konno (2002) in which knowledge is shared in favor of a common project. P1's knowledge of the RRI methodology and the possibility of being included in a European project was the result of “networking”, which is the connection of these networks of relationships where there is exchange and sharing (Lébre,1999). For P1, “networking is the connection between people, the fact of being able to create links and make this sustainable, a challenge to be overcome”. The interviewee cited the participation in the Living Knowledge network with Science Shop and the network of the Pasteur Institute in France and the importance of collectively building something in common to promote a world view, saying: “...we should be more proactive in the advocacy for”.

When P1 commented on the understanding of the network and points to the connection between people, this reminded us of the intellectual links between researchers and their actions with society, the way they relate to and involve society in the research process, going beyond communicating results. Science Shops work with participatory research, with an RRI approach and all the projects developed take the lead in actions for society, which participates in the entire research cycle right through to the arrival of products.

Ziman (1979) has been a pioneer in the study of intellectual relations, to understand the production of researchers. The subject goes beyond metrics, and it is important to understand how this production is organized and how information circulates. In addition, there were formal collaborations, in projects or publications, and informal collaborations, which are the invisible ones that strengthen links, many of which were mentioned by our interviewees (Crane, 1972).

For P1, being part of a network meant knowing what was going on in that network, knowing its values, principles and having a common vision with that network, an identification to promote connected actions and co-creation among network members. For example: "... is what we are really promoting in the Science Shops process, starting with the vision and then, always in a co-creative way, defining a common vision, the strategy and common actions. (P1)". For P1, communication between actors went beyond publications and projects, which were seen as important for legitimizing work. It involved creating links between people. P1 is part of an international Network on Science, Education and Science Communication and is a member of the network of Science Shops, Living Knowledge.

Regarding whom represented a node in the network, P1 replied that it was the people within the institutions who strengthen the field. When asked about communication between members and the visibility of the network, P1 points out that e-mails, network meetings, the construction of a website, and publications on the Living Knowledge network also helped to connect the actors.

In terms of sustainability, P1 pointed out the continuation of projects together and the search for support from institutions, given that the InSPIRES project had already formed a community of people who do what they like and have the same vision.

For P2, a network was a way of meeting people, exchanging knowledge and experiences where people can collaborate on different subjects and specialties, sharing missions, visions and values.

Belonging to a network, for P2, is finding people who speak the same language and have the same interests, giving an example of being in a network with an interest in bridging the gap between science and society and always seeking horizontal dialogue, such as the networks InSPIRES and Living Knowledge are part of, as well as others such as Comenius, an education and innovation network. For Kelemen et. al (2020), networked approaches help to meet political demands more effectively.

So finding these people is important. And I think the web is a way of finding these people and getting to know them, because if you're connected to certain networks...

P2 also mentioned the importance of meeting people at face-to-face conferences as an opportunity to meet, exchange knowledge between researches, experiences and think about publications. And regarding the nodes of a network, he pointed out that they were motivated people, as key for the network, finding what motivated them and also pointed to the importance of obtaining funds for sustainability or support as institutions. Regarding the type of network, he points to a centralized one, such as a strong team to promote the visibility of actions.

For P2, being part of the InSPIRES Project and with the support of the university provides an opportunity for students to mature professionally and personally, to open their minds to dealing with complex issues in society, to develop not only academically, but also in their relationship with society.

For P3, talking about the concept of a network meant being in a community where everyone can work together, getting to know each other, thinking about how InSPIRES developed a new network and not talking about a network that is going to end, but talking about a model of thinking about problems, managing problems together, teaching, uniformed training, a model of society, with an understanding of problems and cultural limits. The quality and political defense of a unified network is important for pressure at governmental and support activity levels.

One of the problems is the creation of too many networks and the difficulty of researchers' time to work in multiple networks. It was very important within the network to feel good working in. Communication was quite open, and each participant could speak freely.

As for whether something loose in the content relationship is a fair share in transparency, as we say in Tunisia, we will see memories of this man who somehow convinced us that our work was very important. Not just the explanation of a situation that is important.

P3 points out a challenge in universities, which is scientific research in all processes, innovation in participation:

Science is still well established in universities. But to ask them to be totally innovative, in transformative ways that open up participation throughout the process, it's still difficult for you, in your institutions, to make such an important change.

For P3, meetings between professionals, students and society were important in order to make connections and work together on a common project with the development of local networks of researchers.

For P4, a network meant being part of something, a more human emotion, being united, even if in different fields, but with a common goal and feeling stronger. The network made possible to expand ideas, as exemplified by seminars with the public, being able to learn about needs and strengthen personal and institutional commitments in order to develop new relationships.

P4 also pointed out the importance of having listening spaces between the networks and the search for funding projects to support them. And regarding the network typology, P4

believed that there was needed to have a central coordinator, thus being centralized, but in a democratic way, so that everyone can contribute by their opinion in different situations. And the nodes are the people who represent groups, institutions and the community. In P4 opinion, the way to give visibility to such structure was through the website and webinars. In terms of sustainability, he pointed out that the network can be a channel for receiving funding, as well as each actor of the network in their own institutions.

What P4 commented was mentioned in InSPIRES Deliverable 2.1, where networks are a form of learning, but can also be a point for funding, is where you find people who are engaged with the same problems and interests (BAJMÓCY, PATAKI, HORVÁTH AND BALÁZS, 2018).

For P5, the concept of a network was to be engaged with a group of people on the same or different paths, but pursuing the same interest of cooperation, of becoming strong in the collective. An example is the Science Cafés and Living Knowledge network, which provided all the necessary methodological tools for network members, as well as the Biodiversity and Ecosystem Research Network, Ethernet.

P5 emphasized the importance of training processes among the members of a network, focusing on quality and adding an example of his work in active scientific networks of social entrepreneurship, with coworking spaces in his workplace. P5 is a founding member of the Citizen Science Association and the Society for Ecological Economics. And some types of networks require a fee to become a member.

Open societies focus on the participation of society in building and making decisions, adopting horizontal strategies. This gives rise to the concept of citizen science, which is the search for public health solutions for the population, based on the generation of scientific knowledge with participatory and democratic inclusion in all processes (GERSHENFELD, 2012; LEE, 2007).

For P6, networking meant looking for people with the same goals, interests, sensitivities and perspectives. As an example, ISGlobal and the work of a multidisciplinary team of technologists, doctors, researchers and patients to improve care and the information system. For P6, the nodes of a network are people and institutions with a central coordinator to draw up strategies, but with freedom for actions within the team, and this is configured as a type of decentralized network.

And in terms of funding, to get it, to look for it as a network. An example of this is the Patient Experience Network, made up of hospitals and companies. This is a type of network, as mentioned by P5, which has a cost for members, but provides training for members through meetings and symposiums. It's also an example of seeking to create projects with more participatory dynamics and co-creation, meeting the needs of the population and with actors they already know, a criterion for tie-breaking projects at European level because they include citizenship. One example cited by P6 regarding the dynamic of scientific journals was the case of British Medical Journal, which has expert patients as part of their editorial board. The reflection point was the lack of time that researchers have to read articles and keep updated with the metrics and evaluations that are requested differently in each country.

P7 conceptualized a network with the example of InSPIRES, saying that it was a project that worked in network, but that it is not a network, as P6 also says. But working together to develop the project in collaboration and discussions involving stakeholders is a network approach, with work with from France, Spain and Mexico. Another example is working with the Italian Science Shop Network:

The Italian Science Shop Network is like a baby to me. We all wanted to create a real network and collaborate to improve it. It's a difficult moment because we've only met face to face twice. [The network was officially launched just before the pandemic]. I think we need to stick together (INSPIRES, DELIVERABLE 7.1, p.15).

For P7, a network was about people working together with a common interest, having a sense of community, such as the construction of the Italian network of Science Shops, which

is sustained by the actions of 70 universities. He also pointed to the relevance of conferences and meetings as an important point of communication between actors, to strengthen ties and contacts.

When asked about the type of network, he said that it should work in a centralized way, with a coordinator to organize ideas and make clear the contribution of each partner and the collective itself. The visibility of the actions came from social media, events, articles, science cafés, and also the relationships between people.

“...Clearly, it is shaped by the relationship between people. If we think about social networks, which can be mediated by the tool that is also used for networking. So, for example, it's clearly different whether you participate in a forum, in a discussion with everyone else, or if you send individual messages with a restricted group of people and so on... The destruction of the network depends very much on how you choose the type of communication you choose”.

With regard to the sustainability of a project, P7 points out that it is important to maintain efforts to work together on projects, publications, workshops and to recognize each other as partners, as well as seeking support from universities, researchers and the public's engagement.

For P8, a network is about establishing relationships, a field of learning, on a cognitive and emotional level, being with a group of people who have an alignment of values and beliefs in what they do and in the search for learning together. P8 gave an example of an informal network with a supermarket cashier: if you make friends at work, you won't talk about the supermarket, you'll talk about your hobbies, what you like, what you want to learn, but if the supermarket is part of your interest, then it changes.

Networking facilitates spaces, with conferences where you can meet peers and exchange knowledge and reflections. Examples include the Living Knowledge network and the Network of museums in Europe.

With regard to the typology of networks, most believe that they are centralized, but try to be decentralized as well, with the nodes being the people representing their institutions. P8 says: “...It is the people and the organizations that make the success of a network possible”.

P8 highlights the issue of the flexibility of a network, when there are ruptures or new additions to a network, and we see this with Deleuze and Guattari in the flexibility of a network structure.

With regard to visibility, before communicating, for P8, it is important to think about who to communicate with in order to achieve success in activities, such as events. And with regard to sustainability, he cites an example in the formation of new networks, such as Living Lab, which initially emerged from the partnership of two institutions and which, for P8, is an example of success because it is an example of the emergence of innovation and the search for local funding, as well as having other forms such as internal calls for network members.

For P9, the network was a meeting point for actors social, a fabric that connects people with a common interest and objectives, who need valid information as nourishment for the network. The sense of belonging is to keep communication alive between members. With regard to the nodes of a network, he agrees that they are people and institutions, believing in the decentralized network typology.

And for P10, a network is a set of formal and informal relationships that articulate a system, saying that the informal ones are something invisible that creates realities. He comments that the formal networks are one thing, from an institutional point of view, and the informal ones are the ones that really create realities, relationships, empathy, the emotional inside and that make things work because of the relationship of trust and complicity, links between the actors, something important also mentioned by P4, P6 and P8.

When the interviewees point to relationships, we can think of social capital, also highlighted by Putnam (1993), which points to the quality of social organization based on its elements of networks of trust, norms and reciprocity, thus facilitating cooperation and

engagement. An example of this is the Living Lab, a network of spaces for the co-creation of non-existent networks through the relationship of other people involved and actors who didn't know each other and start to link up, which makes for sustainability when the project ends.

According to InSPIRES Deliverable 7.1, the Living Lab arises from the experience of two Spanish partners within the InSPIRES Project, with an agreement signed by Barcelona City Council and La Caixa Banking Foundation, thus creating CaixaResearch Living Lab, considered by P10 as a co-creation space involving various actors.

In 2018, the Barcelona City Council, in collaboration with La Caixa Foundation and two health research institutes — the Barcelona Institute for Global Health (ISGlobal) and IRSI Caixa — established the Barcelona Caixa Research Living Lab (BCLL). The Lab was created as a scientific intermediation structure aimed at addressing various health research challenges in Barcelona. Its leading institutions formed a steering committee that defined research areas for each centre, based on both the social needs and health challenges identified by the City Council and the existing expertise of the research institutes. While community involvement in health service development and research has been growing, BCLL also seeks to address the common pattern of exclusion of vulnerable communities from such processes (Giménez L. *et.al*, 2024).

For P10, this is a network, an articulation of relationships between different spaces. There are several parallel and disconnected networks between them, and with each challenge a network is created with central institutions in charge such as: the town hall, Irsi Caixa, ISGlobal and La Caixa. In the case of the work with Chagas, a co-creation space is being created based on an existing network such as the Pasa la Voz projects developed at the Hospital Clinic-ISGlobal, and the relationships with actors have served to constitute this space. Chagas was a neglected parasitic disease endemic to Latin America, with relevance linked to mobility in areas traditionally considered non-endemic (Paho, 2020). The nodes are the institutions and the

network typology is centralized while in the co-creation space, but the result can be different formats, products or networks

About this process, P10 points out that it is:

In the process of co-creation, I am the promoter and facilitator, I provoke things to happen, I can invite and facilitate relationships to happen, but the protagonists are the actors who make sense. I have a table, we get together and build something together, meaning is built together, with a degree of belonging. Co-creation means trusting in the outcome and emergence of ideas, without controlling them. It means letting go of control.

One of the challenges is to explain how to do it, how to communicate the actions and give them visibility. And for funding and sustainability, with the connections formed throughout the process of activities, new paths can already be built with creativity.

After the interviews, we concluded that InSPIRES was a network-based project with the same methodology developed in a centralized manner by each participating institution, as it is characterized as a structured action with defined objectives (Jesus and Jackson, 2014).

CONCLUSION

The interviews conducted with 10 actors involved in the InSPIRES project demonstrated the potential of collaborative networks in promoting citizen science, participatory research, in this case under the umbrella of the Science Shop methodology.

. The diversity of participants' profiles and their motivations — centered on engagement with civil society, knowledge sharing, and science communication — highlight the project's transdisciplinary and participatory approach.

The concept of network explored was associated with ideas of connection, encounters, and belonging, reflecting not only formal organizational structures but also the informal ties of trust and collaboration that sustain actions over time. Although the network displays centralized characteristics — as is typical of European project coordination models, he statements point to horizontal practices, listening spaces, and co-creation processes that enhance the participation of various actors.

The sustainability of the project is directly linked to the articulation between institutional and community actors, the pursuit of funding, and the strengthening of interpersonal and professional ties. The networks built within InSPIRES are configured as spaces of social and scientific innovation, in which common goals, collaborative practices, and openness to diverse forms of knowledge are intertwined.

Thus, InSPIRES stands out as an example of a hybrid knowledge network, where centralized coordination coexists with horizontal practices of participation, training, and co-production. This experience reinforces the importance of networks as relational infrastructures capable of generating social innovation, producing science in dialogue with territories, and sustaining actions beyond funding cycles.

All the actors interviewed emphasized the importance of events and workshops as moments for networking, moments for exchanging knowledge, mutual help between collectives and possibilities for starting new projects and learning new methodologies (ZANINELLI, 2008; NAPRÁTICA, 2019).

With regard to the visibility of the actions, the actors highlight events, emails, social media and so we make a connection with the YouTube channel created for the Science, Art and Citizenship Symposiums in 2017 (DA ROCHA et. al, 2021).

The channel begins as a repository of actions and becomes a point of connection between the actors of the Science, Art and Citizenship Network and, in addition, a meeting place for new possibilities, a point for thinking about strengthening an area, as well as new partnerships that can be linked, such as Laser Talks Rio. Here we have the possibility of inaugurating Laser Talks Barcelona with the actors of each InSPIRES project, to showcase the products generated over these four years, but also to provide a means of new partnerships and project sustainability.

After the interviews, we concluded that InSPIRES was a network-based project with the same methodology developed in a centralized manner by each participating institution, as it is characterized as a structured action with defined objectives.

REFERENCES

- Bajmócy Z, Pataki G, Horváth J and Balázs B. (2018). InSPIRES project. Deliverable 2.1. Results of the Systematic Literature Review and Analysis of the Interviews.
- CAREGNATO, Célia Elizabete; LEITE, Denise Balarine Cavalheiro; SFREDO MIORANDO, Bernardo. Pesquisadores e legitimidade científica no campo da educação. **Linhas Críticas**, Brasília, v. 22, n. 47, p. 189-209, jan./abr. 2016.
- CATARINO, Ana Isabel; EVERAERT, Gert. Deliverable 7.1: Plan to implement actions for Coordination of INSPIRE. Version 2.1. Oostende: Vlaams Instituut voor de Zee (VLIZ), 2025. 18 p. Disponível em: https://inspire-europe.org/files/2025/05/D7.1_Plan-to-implement-actions-for-Coordination-of-INSPIRE_v2.1_28.02.2025_EU.pdf
- CASTELLS, 2018. A sociedade em rede V. 1: A era da informação : economia, sociedade e cultura. São Paulo : Paz e Terra.
- DA ROCHA, Rita de Cássia Machado et al. O papel do canal “Rede Ciência, Arte e Cidadania” durante a pandemia de COVID-19: ações para fortalecimento do campo de ensino, pesquisa e extensão no Brasil. **Revista Brasileira de Ensino de Ciência e Tecnologia**, v. 14, n. 3, 2021.
- JESUS, Gilson César dos Santos de; SILVA, Jackson. Projeto em rede como inovação na gestão pública: uma proposta metodológica. *Revista do Serviço Público*, v. 65, n. 4, p. 489-510, 2014. Disponível em: <https://revista.enap.gov.br/index.php/RSP/article/view/265>.
- LEITE, Denise Balarine Cavalheiro; CAREGNATO, Célia Elizabeth; MIORANDO, Bernardo Sfredo. Efeitos multiplicadores das redes de colaboração em pesquisa. Um estudo internacional1. **Avaliação: Revista da Avaliação da Educação Superior (Campinas)**, v. 23, p. 263-286, 2018.
- LÈBRE, A; Networking: como criar, manter e usufruir de sua rede de contatos. Rio de Janeiro: Qualitymark Ed., 1999.
- Leydesdorff, L., & Ward, J. (2005). ‘Science Shops: a kaleidoscope of science–society collaborations in Europe’, *Public Understanding of Science*, 14/4: 353–372
- Mulder, H., Jørgensen, M. S., Pricope, L., Steinhaus, N., & Valentin, A. (2006). ‘Science Shops as science-society interfaces’. *Interfaces between science and society*, pp. 278–296. Greenleaf Publishing.
- NAPRÁTICA, Networking: entenda como criar uma boa rede de contatos e interagir com ela. Disponível em.
- NONAKA, I.; TOYAMA, R.; KONNO, N. SECI, ba and leadership: a unified model of dynamic knowledge creation. In: LITTLE, S.; QUINTAS, P.; RAY, T. (Ed.). *Managing knowledge an essential reader*. London: Sage, 2002.
- PUTNAM, R. 1993. *Making Democracy Work Civic Traditions in Modern Italy*. Princeton, NJ : Princeton University Press

Steinhaus, N. (2014). ““With or Without You”—The Development of Science Shops and Their Relationship to Higher Education Institutions in Europe’. *Higher Education and Community-Based Research*, pp. 71–83. Springer.

WEBER, Max. A “objetividade” do conhecimento na ciência social e na ciência política. In: WEBER, Max. **Metodologia das ciências sociais**. 4. ed. São Paulo: Cortez; Universidade Estadual de Campinas, 2001.

ZANINELLI, Denize. *Networking, Um instrumento de Marketing Pessoal*. Brasília. CONSEC, 2008.

Lee, Yanki. 2007. “Design participation tactics: Involving people in the design of their built environment”. Tesis Hong Kong Polytechnic Univ.

Gershenfeld, Neil. 2012. “How to make almost anything: The digital fabrication revolution”. *Foreign Affairs* 91(6): 42-57

DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are included within the manuscript and have not yet been published in any other repository.

AUTHOR CONTRIBUTIONS. This work is the result of a doctoral sandwich research project conducted at ISGlobal Barcelona, and all authors collaborated jointly at every stage.

CONFLICT OF INTEREST. The authors declare no conflict of interest regarding the publication of this preprint. The research was supported by CAPES.

DATA AVAILABILITY. The final considerations of this research are based on the results obtained through the activities described in the main body of the text.

FUNDING. This research was supported by CAPES.

RESEARCH ETHICS COMMITTEE OF THE OSWALDO CRUZ INSTITUTE: And All stages of the research and training followed the ethical guidelines established by Brazilian legislation, with approval from the Research Ethics Committee of the Oswaldo Cruz Institute, under the corresponding CAAE number (CAAE number 15584119.4.0000.5248).

This preprint was submitted under the following conditions:

- The authors declare that the necessary Terms of Free and Informed Consent of participants or patients in the research were obtained and are described in the manuscript, when applicable.
- The authors declare that the preparation of the manuscript followed the ethical norms of scientific communication.
- The authors declare that they are aware that they are solely responsible for the content of the preprint and that the deposit in SciELO Preprints does not mean any commitment on the part of SciELO, except its preservation and dissemination.
- The authors declare that the data, applications, and other content underlying the manuscript are referenced.
- The deposited manuscript is in PDF format.
- The authors declare that the research that originated the manuscript followed good ethical practices and that the necessary approvals from research ethics committees, when applicable, are described in the manuscript.
- The authors declare that once a manuscript is posted on the SciELO Preprints server, it can only be taken down on request to the SciELO Preprints server Editorial Secretariat, who will post a retraction notice in its place.
- The authors agree that the approved manuscript will be made available under a [Creative Commons CC-BY](#) license.
- The submitting author declares that the contributions of all authors and conflict of interest statement are included explicitly and in specific sections of the manuscript.
- The authors declare that the manuscript was not deposited and/or previously made available on another preprint server or published by a journal.
- If the manuscript is being reviewed or being prepared for publishing but not yet published by a journal, the authors declare that they have received authorization from the journal to make this deposit.
- The submitting author declares that all authors of the manuscript agree with the submission to SciELO Preprints.