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# Social Innovation and Impact Digitalisation: A Pilot Study on the OCER Platform

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**Abstract.** *This piece analyzes the OCER platform in the context of social innovation and impact concerning the academic realm in Romania. OCER is a contemporary and creative digital instrument designed to enhance the use of open and sustainable science. The current study sought to evaluate the functionalities of pilot platform as well as its potential career impact. In this, the study technique used semi-structured talks to learn more about their info systems connection, job resource hubs, and other linked performance helpers. The findings gave a first way to a methodical and legal setting for using OCER in Romania which includes training sessions, good practice papers, feedback forms, and experience sharing times. This paper also makes ideas for key extra parts for the test platform like building a guide for checking the platform through compares and making responsible use rules. It is pointed out in this study that the OCER pilot platform has remarkable capabilities for aiding young researchers and, with the coming into place of the national legislative framework in conjunction with international efforts pertaining to the domain of open science, it will turn into a massive digital center.*

**Keywords**: *platform for research, academic collaboration, career development, innovation, and performance.*

## Introduction

The improvements seen in recent years in the evolution of study and research, post the pandemic era, has greatly heightened the need for digital flexibility in terms of free resource and information document accessibility with the intent of having heightened performance in research activities. In Romania, lack of funding and support, as well as the absence of a targeted mentoring system and comprehensive professional development planning, hinder the career development of young scholars. Academic institutions and authorities need relevant statistics to identify knowledge gaps compared to international standards and develop appropriate strategies. Therefore, there is a

DOI: 10.2478/picbe-2025-0365

growing interest in creating and connecting professional digital environments, improving data collection and analysis to optimize interdisciplinary collaboration.

The OCER pilot platform (*https://observatorulcarierei.github.io/ocer/*) addresses these problems resulting from gaps in our country. OCER is constructed as a digital environment where researchers can monitor and develop their careers through an individual profile. This platform will integrate support tools that are now diffused across various systems into one unified coherent system. OCER will make systematic statistical data analysis to assist self development through personalized recommendations, emerging career opportunity identification, and professional trajectory support. Unlike existing national solutions like mentoring-only platforms, OCER incorporates career monitoring, research resources, and interdisciplinary collaboration into one digital platform. Thus, the solution will fulfill the young Romania researchers' needs by offering a multilayered responsive structure with which integrates the national research framework and open science approaches on a global scale. The platform is envisioned as a new education model to drive young researcher engagement and experience exchange or talent mobility. To sum up, the OCER platform will help narrow the gap between the academic community's needs and available resources for young researchers in Romania—a challenge that can be met through ethical and legal digital tools plus artificial intelligence. First, this article analyses the theoretical foundations of innovation in academic research; next, it explores a strategic methodology for relevant result identification. Also incredibly important is developing legislative implications for national-level OCER implementation.



## Literature review

*Social Innovation in Education and Research*

A study carried out in 2010 showed that the innovation endeavors in academia concentrate on solutions that lead to further technological advancement and fulfill requirements for knowledge transfer in a highly networked world (Murray, Caulier-Grice, Mulgan, 2010). Taking this into consideration, OCER is designed in such a way that it triggers innovation in research by mitigating the resource constraints and fostering open science. From the conceptual framework of Murray, Caulier-Grice, and Mulgan, OCER drew two important ingredients of social innovation: results openness and scalability as answers to systemic inequalities within academia. This posits it firmly within the realm of social innovation whose hallmark is positive impact on communities and broader social benefits. Other research innovation initiatives studies point to them as digital platforms that foster the exchange of ideas among academics and also break barriers in accessing information and resources by the marginalized, thus democratizing knowledge (Phills, Deiglmeier, and Miller, 2008; Bornstein and Davis, 2010).

Starting from the idea that platforms like OCER are essential for better multistep teamwork between schools and business, giving workers the chance to share experiences. As Mustata and Niculescu (2023) notes, online places show how working together of workers can be helped. This study shows the role of places in pushing a circle which helps the joining of the idea of open school. Kirk and Roper (2021) evidenced through their studies the potency of digital platforms in the enhancement of interdisciplinary collaboration by dismantling the traditional scientific fence around it. Their studies detail how these sites may actually offer a particular kind of setting for researchers to work together toward forming well-structured digital academic networks. The other two, Moore, Smith, and Allen (2019), say through their work that the integration of sustainability into research practices is achieved via digital tools. They assert that it is these sites which give a

researcher or group of researchers from different locations working collaboratively sustainability-related projects an understanding of the framework within which they operate. It underscores what this study is about—the potential that digital platforms have in solving complex challenges at a global level through sustaining research results. Of interest is how European Open Science Cloud has elaborated on success and possibilities with digital platforms in research and in equitable access to resources.



The research underscores the necessity of drawing, resources from the researchers across, the academic spectrum to help develop, inclusive research regulations that, leverage diversity for innovation and knowledge dissemination (Westley & Antadze, 2010). OCER initiates further development bringing together such initiatives which offers Romanian researchers access to this free digital platform and network which reflects international policy in open science fields (European Open Science Cloud, 2018).

*Social Engagement and Academic Impact*

The OCER platform was initially a pilot project aimed at increasing scholarly impact by engaging researchers in a community-oriented collaborative environment. The platform was developed taking into account that socio-culturally participatory scholarly platforms often value the responsible use and free dissemination of information, thus emphasizing their role in promoting research integrity and ethical practices. Dacin et al. (2010) stressed that integrating early adopter communities is essential to developing solutions that resonate with end users, maximizing their relevance and adaptability to meet the needs of researchers participating in the final digital community.

Based on the needs of these user groups, OCER will mainly build an open science space that is in line with the European Commission's goals of making research transparent, accessible and interdisciplinarity (European Commission, 2020). In summary, the pilot platform aims to support Romanian research institutions and promote their integration into a shared knowledge ecosystem. The integration of best practices between research institutions is essential to strengthen ethical standards and promote scientific integrity, thereby aligning national standards with global research standards.

## Research Methodology

This pilot study used semi-structured interviews to explore in depth the participants' perceptions of the OCER platform. The interview was structured thematically in line with the studies.

Objectives of this methodology are:

- User feedback on the platform's structure and identification of its key functionalities.
- Development of a pilot project plan for national implementation of the platform considering information that will be collected during the present study.
- Identification of the methodological framework needed for the structured and scalable implementation of OCER at the national level.

The research design comprised:

**Target group selection**: Participants were chosen from a targeted group of researchers identified in an earlier study and who laid the foundation for developing the OCER platform. This target group represents specific academic domains and factions among researchers based on their experience; hence it will include respondents who are professionals in applied research in engineering fields such as biotechnology, management, biochemistry, mechatronics, biomedical

research, IT, and acoustics. The selection was carried out through purposive sampling to ensure that participants typify the target users of the platform while stressing academic diversity alongside the career stages of the researchers.

**Data collection:** These semi-structured interviews were collected over a period of three months. Hence qualitative information was collected on the usability of the platform, its functionality, and its potential impact on academic career development.



Before that, the interview guide was created based on thematic groups spotted in the literature, making sure of a well-argued structure. So, the design of the guide centered on the main research questions, focusing on how OCER tackles major areas of researchers and their practical implications.

The data obtained from the semi-structured interviews were put into one document, aligning answers with the interview guide divided into themes related to literature-based concerns. This further facilitated analysis as it strengthened interpretation regarding what potential users consistently expressed. Questions were asked within these themes based: on institutional experiences and the three elements of the "new culture of learning" - places, people, partnership (Thomas & Brown, 2012) shown below. Keeping these questions in mind, results are structured as follows:

- Digital skills: They put forward great importance for training in this, along with urging that educational resources be integrated as an unbranded part of dedicated sections.
- Interdisciplinary collaboration: They put forward a need for improving the communication tools in the virtual spaces (forums, workshops, chats, sessions).
- Sustainability: They give more importance to the integration of sustainability principles in research activities.
- Academic communication: They discussed how they would need resources to help them with international dissemination.

The interviews analyzed have triggered the need to develop a pilot project plan, this study also helping develop the methodological framework necessary for implementing the platform at a national level. The other gives a view of how literature-based thematic structures can guide digital platform development in academe.

The interviews' interpretation served as the underpinning for designing the pilot project plan, which was structured for subsequent stages of testing the functionalities of the platform and collecting feedback from users—thus integrating qualitative results to ensure that the pilot project addressed identified needs in the literature and thus laid the foundation for phased adoption.

The research methodology of this qualitative study caused the alignment of the study objectives with a wider scheme for developing and implementing digital platforms for academic innovation. The results expected will validate the capability of the pilot platform and bring to light the importance of integrating user feedback into a scalable digital framework.

## Research Results

This work tries to look at how important, useful, and good the OCER platform is for solving big problems in research and academics. Ideas were collected from open yet guided talks held with scholars of varied scholarly and career paths. The results are shown as groups of themes that link straight to the study's goals making sure of understanding and connection.

This study, therefore, undertook an assessment of the ability of OCER pilot platform to solve problems in academic research. Data was obtained through semi-structured interviews with researchers at different levels of their academic journey and in diverse engineering disciplines. The responses are presented in thematic groups based on the interview guide and directly related to the study objectives, ensuring coherence in the study.



*Thematic analysis*

The response analysis was done on major structures, centering on the shared needs of the platform users. Existing literature guided the thematic analysis; hence pattern identification was accurate.

Patterns like digital skills, teamwork across different fields, green thinking, and sharing science helped us understand the data in a clear way. The facts we got made the plan for the test project and showed the method for using the OCER platform at home country level.

**Table 1. Clustered Themes**

| **Interview guide** | **Key findings in the centralized interview responses** |
|---|---|
| Digital Competence<br>*Digital Competence Framework for Citizens (DigComp)* (European Commission, 2017) and *ISTE Standards for Educators* (ISTE, 2017) | Respondents highlighted the need to develop IT skills, proposing training modules and user guides integrated into the platform. |
| Interdisciplinary Collaboration<br>*Framework for interdisciplinary collaboration (National Academies of Sciences, Engineering, and Medicine, 2004)* | Participants emphasized the importance of communication, highlighting communication barriers and suggesting the identification of virtual rooms for interaction and exchange of experience. |
| Sustainability<br>*Sustainable Development Goals (United Nations, 2015) și Quadruple Helix Innovation Model (Carayannis & Campbell, 2010)* | Respondents suggested integrating sustainability principles into the workflows of young researchers and promoting projects with an environmental impact. |
| Scientific Communication<br>*Science Communication (National Science Foundation, 2017) și European Science Communication Network (ESCN, 2020)* | Respondents expressed interest in how publications are disseminated internationally, in line with OCER's strategic objectives. |
| Ethics Integrity<br>*European Code of Conduct for Research Integrity (ALLEA, 2017) și Responsible Research and Innovation (RRI) Framework (Von Schomberg, 2013)* | Respondents appreciated the section dedicated to ethical principles and proposed interactive modules for resolving ethical dilemmas specific to disciplines common to researchers active on the platform. |

Source: Authors' own research.

## Map of the pilot project

This section of the present study is going to initiate the OCER pilot project at a national level by presenting a strategic framework. It will highlight the steps necessary for its launch which are:

1. Duration and planning of the pilot project: This pilot project will provide adequate time for testing. Key stages and deadlines will be monitored in a detailed timetable, facilitating structured progress monitoring during the pilot phase. Planning coordinates all aspects of the project from participant selection to financial resource allocation and legislative coordination.
2. Identification of Key Functionalities: The particular capabilities of the OCER platform shall be tested according to the requirements and situations recognized by the taking part institutions. For the triumphant carry out of the pilot project, an attentive study of accessible resources (Figure 1) will be required, comprising also the setting up of a devoted project management group with skill in several areas and lastly also the setting up of a budget to cover the expenses of the technical team.



Clear indicators that will evaluate the pilot project. Subjective results and areas for improvement.

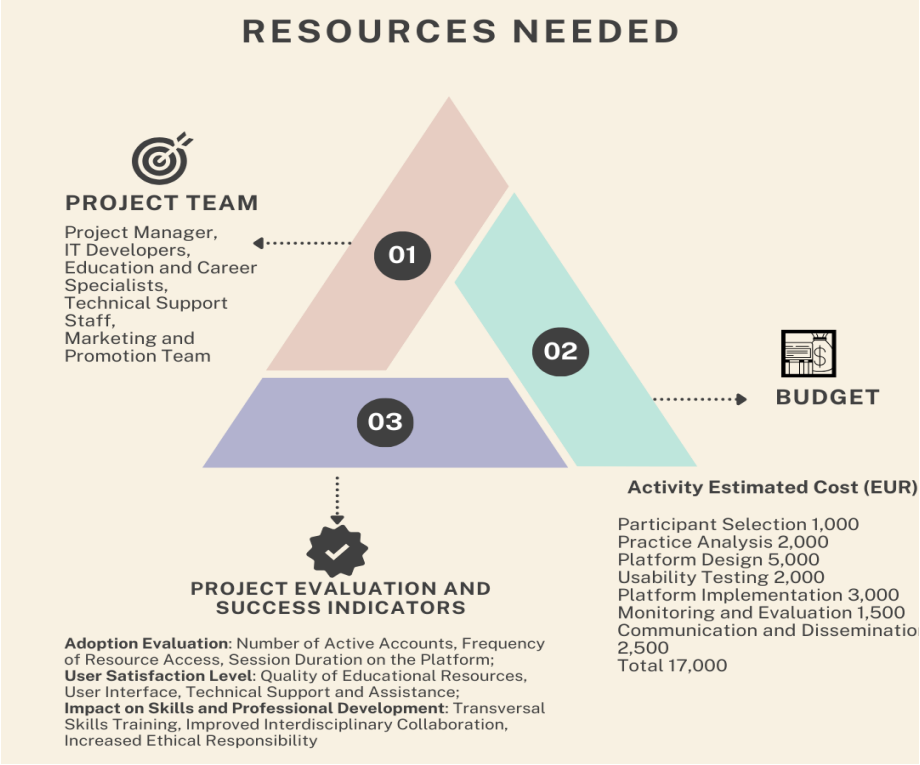


**Figure 1. Resources needed**

Source: Authors' own research.

*Future Directions*

From the results of the interviews held for this study a pilot project was developed with the aim of testing the functionality of the OCER platform in a controlled environment using a representative sample of academic and research institutions (Figure 2).


**Figure 2. Project Plan**

Source: Authors' own research.

Institutions of academia and research that can be proposed for amalgamation into this digital IA for scholastic investigations will be cautiously picked. Including representative institutions will collect information from various fields which is indispensable for determining the criteria to assess the platform functionalities and features to implement. Each participating institution brings unique perspectives in shaping the platform according to the needs of the academic community. By submitting anonymized data on their research activities, results, and plans for professional development, these institutions help create predictive algorithms that generate suggestive recommendations. In collaboration with users the pilot project team will develop use cases encompassing the operational needs of users based on the workflows identified in discussions with stakeholders, once the OCER functionalities have validated applications of young researchers.

This approach can allow necessary adjustments to maximize relevance for each discipline accordingly and furthermore, collecting information through this platform will contribute to improving the UX/UI design process making the interface intuitive easy to use and tailored to specific needs.


**Figure 3. Screenshots of the platform demo** (data has been anonymised)

Source: Authors' own research.

Interactive elements like the dynamic graphs on the "Financing" page and user-created content in the "Forum" section improve user involvement. The graphs act as analytical instruments providing information on funding opportunities. The discussion board helps to establish a community for exchanging ideas among scholars. Further, the world map on the "Oportunități" page reflects the site's emphasis on highlighting cross-border cooperation.



Results from the analysis of the OCER platform used thermal mapping technology to review how users interacted with the site and what areas they found most interesting. Thermal maps offer valuable insight into how users move about a site, what mouse movements they make, where they click, and even their scrolling behavior; therefore providing information on which parts of a site attract attention. This data has driven the development team to orchestrate an optimal layout and functionalities for these high-interest areas: "Opportunities" and "Financing," ensuring that critical information is easily accessible and prominently displayed. These map results also help show under-utilized areas of the website, giving direction for incremental improvements to enhance user interaction and satisfaction.

The method is analytical at improving the overall user experience but also in making sure it fits well with the academic community's specific needs and preferences. Continual user monitoring can change with shifting needs as it relates to maintaining its relevance in usable applications among competition in digital research tool landscapes.tool landscapes.

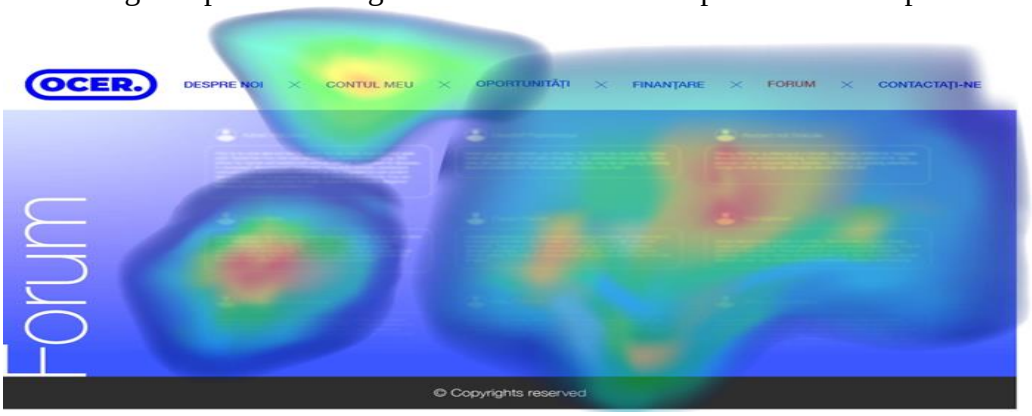


**Figure 4. Website heatmap** (used for identifying most used areas of a website)
Source: Authors' own research.

The Heatmap Analysis Model, through Kernel Density Estimation (KDE), gives a strong structure for looking at user interaction information on the OCER site, like where they click, mouse movement, and scrolling action. KDE is a non-parametric way to estimate the probability density function of a dataset and spot areas of high density — that is, where engagement by users is focused. The formula for KDE is $f(x) = \frac{1}{nh}\sum_{i=1}^{n} K\left(\frac{x-x_i}{h}\right)$, where n is the number of data points, h is the bandwidth controlling the smoothness of the estimate, and K(.) is the kernel function, often Gaussian. By weighting user interactions based on their distance from a target point, KDE creates a smooth, continuous representation of engagement patterns.

KDE was run on the OCER platform utilizing data such as clicks on certain parts (e.g. "Financing", "Opportunities"), how long people hover over content, and scrolling action. The heatmaps show very clearly where users are most interested — hotspots — and in turn guide design choices towards improving user experience more effectively. For example, interactive elements like funding charts or discussion blocks in the "Forum" section can be checked by KDE whether

they are successfully engaging users or otherwise which sections have to be redesigned to get more attention. Bandwidth h chosen for this run is very important — smaller values capture finer details whereas they risk producing noisy output; larger values give smoother estimates but may overlook subtle patterns. There are major benefits in this, such as its flexibility with any kind of user interaction data and providing an ongoing, understandable visualization of engagement density. The OCER platform team can make informed decisions about which sections to improve and how to increase the impact of areas with high interest by creating heatmaps from KDE results. Including thermal mapping in the platform's analytical framework helps trace user behaviors and feeds them back into the iterative design process so that usability and service to meet user needs are improved. The KDE-based heatmap analysis thereby further empowers the platform to deliver a smooth, engaging experience for researchers and thus enhance its effectiveness as a digital research tool.

Initial Monitoring and Evaluation: In this phase, the platform usage will be carefully monitored. The research team will collect continuous feedback from users through interviews and satisfaction questionnaires focusing on different aspects of the platform including its accessibility, performance, and how relevant its functionalities are to research activities. This continuous assessment will help in pinpointing not only possible problems but also better ways of doing things which in turn helps the team make informed adjustments throughout the pilot phase.

User Training: In the pilot, we have provided training sessions to make users familiar with the features of the platform. This will include best practices for effective use and will be according to specific needs that were identified in earlier stages of the pilot. This project will enhance user engagement by equipping them with necessary skills and knowledge so researchers can take full advantage of all capabilities available within OCER.

Real-time Feedback: Users can contribute suggestions and opinions as they use the platform, which promotes continuous improvement of the system culture. This in turn enables the project team to respond and adjust based on detailed feedback, thereby improving user experience and satisfaction. This approach highlights the value of the platform as it continuously evolves to meet the needs of academic users.

## Methodology for implementing OCER at national level

To implement this platform at the national level, a methodology for continuous evaluation and improvement has to be first developed and approved based on feedback and data collected during the pilot phase (Figure 5).

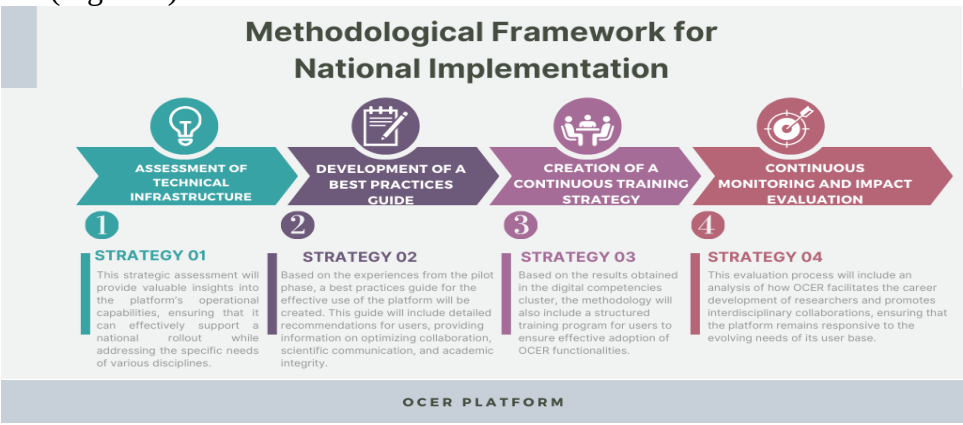


**Figure 5. Methodological framework** (project pilot)

Source: Authors' own research

The results of the pilot project study shall determine whether national implementation will be extended with functionalities to more institutions in Romania. Based on user feedback and performance indicators, the national implementation plan comprises structured stages supporting further platform development and sustainability, aligning it with the needs of institutions, European policies and standards, and active members. For this evolution to take place, we suggest making a blueprint of decent ways that will tackle the infrastructure needs and growth potential of the platform. As for long-term sustainability, an organized money plan will be started to keep up the availability of resources and make sure their upkeep. Concerning organizational flexibility, we see its assimilation in line with European Commission guidelines.

*Legislative considerations*

For the implementation of OCER at the national level, data provision and research ethics policies should be followed at both national and European levels along with partnership agreements. This has already been somewhat legislated, for instance in the Romanian Higher Education Law (No. 199/2023) and the Law on the Status of Research, Development, and Innovation Personnel (No. 183/2024). This will also fit in with the National Strategy for Research Innovation and Smart Specialization (Romanian Government 2023) which helps in collaboration support and skill development among researchers. Another very vital part is that it should be GDPR compliant as required for ensuring confidentiality and security of data provided by users of the platform. The OCER platform is ALIGNED with EU initiatives including Horizon Europe and Digital Education Action Plan, incorporating the principles of the European Charter for Young Researchers in terms of transparency, fairness, and accessibility to research. Last but not least it ALIGN Open science mandates offer resources on intellec-tual property, data ownership and ethics in AI use to researchers for a ethically sound framework.

*Method framework*

Based on the pilot project results proposed in this study, a structured implementation plan with phased implementation was developed to lay the foundation for national implementation. The evaluation results laid the foundation for further development and phased implementation of the platform, including coordination with key government departments and educational institutions, and the integration of resources and support mechanisms to promote cooperation in R&D and innovation. In line with this, the proposal shall also include the development of an elaborate monitoring system capable of tracking key performance indicators reflecting platform impact and effects as well as discovery of weaknesses requiring amelioration.

Thus, through the incorporation of OCER into a proper legislative and methodological framework, the objective is to foster an integrated environment that shall fortify the national research infrastructure base in order to enhance its competitiveness and capacity for international cooperation.

## Conclusions

This study intended to gather indicative information for the design and implementation of OCER at the national level. By bringing together issues like interdisciplinary teamwork, sustainability, and ethical rules this study helps show how digital tools can make academic environments in Romania more modern and better.

This study aims to advance understanding of how interdisciplinary collaboration and the principles of educational innovation can be realized through digital platforms in response to institutional demands and the needs of young researchers.

This research brings to the fore how much digital platforms matter in promoting teamwork across different disciplines and making related resources and information readily available, with the OCER platform filling certain voids in present scholarly activities and answering the demand for more effectiveness. These notions align well with that of the other literatures where they emphasize the role of digital infrastructures in facilitating interdisciplinary studies (Kirk and Roper, 2021) while they champion the inclusion of sustainability as part of its main functions (Moore et al., 2019).



This study managed to get key suggestions for the next steps, like making more training materials, widening teamwork features, and putting in solutions that better help sharing and global advertising of research. The plan for the pilot project design also had organizing a legal and method-based frame to be checked by the leaders.

To conclude, the OCER pilot project can be fairly acknowledged as the crucial initial step in the digitization of such a meaningful academic domain coupled with its contribution to European open science initiatives. Feedback that has been received indicates very positive thrusts which essentially consolidate the OCER platform as a key auxiliary tool for supporting the career development of young researchers. Moreover, coordination with existing studies brings forth how relevant OCER is within broader international digital research platforms. Hence, future research guidelines will revolve around maximizing functionalities and setting up tangible legislative and methodological frameworks to resonate better effects on the academic community in Romania.

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