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Towards a Responsible Research Assessment Transition: A Novel Framework for Researcher Profiles

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Abstract

The reform of the research assessment system is a top priority on the European Research Area policy agenda. Recognizing that the evaluation of research projects, researchers, research units, and institutions plays a crucial role in the functioning of a robust Research and Innovation system, recent policy efforts emphasize the need for transformative approaches to research assessment. While research is increasingly collaborative and interdisciplinary, traditional research assessment methods, predominantly reliant on publication metrics, only capture a narrow perspective of the diverse activities that constitute high quality and impactful research.
In response, the CoARA Agreement on Reforming Research Assessment, supported by over 800 signatories, calls for a broader recognition of the breadth and diversity of research contributions, career paths, and outputs. This reform champions an evaluation paradigm that prioritises qualitative assessment, supported by a responsible use of quantitative indicators. The movement for reform also calls for acknowledgement of contributions to Open Science, focusing attention on the need to shift towards more inclusive and transparent evaluation frameworks, supported by open research information and non-proprietary data sources.
This practice-oriented contribution focuses on the development of a framework for Researcher Profile within the Horizon Europe project GraspOS. The Researcher Profile is a service aiming to support research funding and performing organizations in the implementation of CoARA Agreement commitments, and to offer a flexible framework for assessing researchers which values diverse practices and prioritizes comprehensive quality and societal impact of research.

Introduction

In recent years, the European Research Area policy agenda has placed the reform of the research assessment system at the forefront of its policy actions, recognizing that the way research projects, researchers, research units, and research institutions are assessed is fundamental for a well-functioning Research and Innovation system. These policy efforts aim to accelerate the shift away from traditional, publication-based assessment methods, underlining their limitations in reflecting the increasingly collaborative and interdisciplinary nature of research (European Research Area policy agenda, 2022). Consolidated evidence shows that publication-based metrics such as the Journal Impact Factor and the h-index (Elsevier Language Services, 2020) fail to reflect the broad range of activities that make up research and are widely (mis)used as proxies for assessing the quality, performance and impact of research

and researchers (Hicks et al., 2015; Pontika et al., 2022; DORA, 2024). Critics argue that the current assessment system creates perverse incentives, encouraging researchers to prioritize publication venue and citation counts (Edwards et al., 2017) over research quality, open collaboration, and societal impact (Di Donato, 2024).

In response to the identified challenges, the European Commission has led efforts to establish a clear and common direction for the reform of research assessment practices. The European Commission Scoping Report "Towards a reform of the research assessment system" (European Commission, 2021) called for research proposals, researchers, research units and research institutions to be "evaluated on their intrinsic merits and performance rather than on the number of publications and where they are published, promoting qualitative judgement with peer-review, supported by responsible use of quantitative indicators." Echoing this call, signatories of the Agreement on Reforming Research Assessment (ARRA) (CoARA, 2022) have undertaken to uphold a series of commitments, including recognizing and valuing diverse contributions to and careers in research.

A number of EU-funded projects are tasked with supporting the ongoing policy reforms and designing new ways to incentivize higher quality research, collaboration and Open Science practices (European Commision, 2024). Among these, the Horizon Europe project GraspOS: Next Generation Research Assessment to Promote Open Science (GraspOS) addresses the need for new services and tools to support a research assessment system that incentivizes Open Science practices. The project aims to develop data infrastructure facilitating qualitative and quantitative assessments, ultimately supporting the practical implementation of the reform at various levels and the transition towards an Open Science-aware responsible research assessment.

Research Questions: Advancing Fair and Inclusive Research Assessment

Building upon these ongoing reform efforts, this paper introduces an innovative service, the Researcher Profile, designed to promote fair and responsible research assessment. The central research question guiding this development of the service is how responsible and fair research assessment can be effectively promoted while also enabling researchers to showcase their contributions beyond publications. This ongoing research aims to explore alternative and holistic frameworks that recognize diverse research outputs, such as datasets, software, policy impact, public engagement, and interdisciplinary collaborations. By addressing systemic biases in current assessment models, the study seeks to develop equitable and transparent approaches that align with open science principles and foster a more inclusive research environment.

A key focus is on designing a researcher profile service that effectively integrates qualitative descriptions with responsibly used quantitative indicators to enhance research assessment. This involves examining how the developing service contributes to a more inclusive and responsible evaluation of diverse scholarly contributions. By ensuring a balanced approach, the study aims to move beyond traditional publication-centric metrics, enabling a more comprehensive representation of researchers' work. This study will identify key barriers and provide

support to researchers across disciplines in demonstrating the broader impact of their work. Ultimately, it aims to contribute to a more responsible and comprehensive research evaluation system that values diverse scholarly outputs while ensuring fairness and transparency.

The Framework for Researcher Profile: an innovative service to support organizations in adopting responsible research assessment practices

The need for innovative services to support responsible research assessment transition

Our approach integrates the responsible use of quantitative indicators with qualitative information on researchers' contributions, ensuring a more holistic evaluation process. This innovation addresses the need to move beyond purely metric-based assessments by incorporating contextually rich, qualitative insights into research impact, collaboration, and Open Science engagement. Furthermore, our service introduces customizable templates tailored to different research domains. By accounting for the unique requirements and evaluation criteria of various disciplines, these templates enable a more nuanced and equitable representation of researchers' contributions. This customization not only enhances the visibility of diverse research outputs but also facilitates more efficient and meaningful assessments aligned with field-specific expectations.

The Researcher Profile represents a significant step towards responsible research assessment, fostering a system that values quality, collaboration, and societal impact over traditional publication metrics. By aligning with the broader objectives of the ERA policy agenda and recent EU initiatives, our contribution seeks to advance the practical implementation of more inclusive and comprehensive research evaluation practices.This service is envisaged as a service showing a novel researchers' curricula considering a framework of indicators and research activities library. The Researcher Profile design aligns closely with the latest policy recommendations and guidelines promoting a responsible approach to research assessment. In particular, the concept considers the SCOPE Framework (INORMS Research Evaluation Group, 2023) and follows the DORA Guidance on the responsible use of quantitative indicators in research assessment (DORA, 2024).

Leveraging an Innovative Service to Tackle Research Assessment Challenges

Metrics and indicators serve as useful benchmarks for measuring research activities; however, they cannot fully capture the complexities of academic contributions on their own. As outlined in the DORA Guidance on the responsible use of quantitative indicators in research assessment (DORA, 2024), it is essential to adopt a contextualized approach and enrich these indicators to ensure they effectively reflect the broader impact and quality of research.

Qualitative insights provide the necessary context that metrics alone cannot convey, highlighting nuances such as innovation, collaboration, and societal influence. The

narrative explanations of research activities and competencies, often culminating in the development of narrative curricula vitae (CVs). These narrative serve to provide a more comprehensive view of a researcher's accomplishments, contextualizing their contributions beyond numerical metrics. They highlight aspects such as interdisciplinary collaboration, innovation, and societal impact, which are difficult to quantify. However, researchers and evaluators identified potential drawbacks, including the significant burden on evaluators, who must process and critically analyze extensive qualitative descriptions. Furthermore, the subjective nature of narrative assessments introduces risks of bias proficiency in language, and cultural presentation skills. These elements can inadvertently favor individuals with stronger communication abilities or cultural capital, potentially leading to inequities in the evaluation process.

These qualitative insights, when combined with robust evidence, become a useful tool to enable fair and responsible research assessments. The development of the Researcher Profile takes this into account by embedding a qualitative perspective supported by quantitative information to provide a broader understanding of a researcher's contributions. In this context, this tool will contribute to a more responsible and comprehensive evaluation system by recognizing diverse research contributions beyond traditional metrics, fostering inclusivity, and ensuring a fairer assessment of researchers' work and societal impact.

An innovative strategy to support fair and responsible research assessment across disciplines will be the creation of different templates for the narrative CV and the profile itself, tailored to accommodate the diverse domains of researchers across scientific disciplines. Whether in engineering, social sciences, or other fields, our goal is to highlight researchers' contributions more effectively by providing discipline-specific formats that align with the nature of their work. This adaptability ensures that the profile remains relevant and equitable across various research areas, supporting a more inclusive and comprehensive assessment framework. By enabling flexibility in how achievements are presented and evaluated, this approach fosters a more nuanced and fair recognition of research excellence beyond traditional publication-based metrics.

Methodology: Designing the Framework for the Researcher Profile

The framework for the Researcher Profile aims to provide a customisable service that allows researchers to dynamically and seamlessly showcase their diverse contributions to research, knowledge and innovation. The design of the framework was based on a re-engineering process. Re-engineering in a scientific or engineering context refers to the process of redesigning or modifying existing systems, products, or technologies to improve performance, functionality, or to adapt to new requirements (Software Re-engineering: An Overview, 2018). Firstly, a landscape analysis of existing services and platforms (Google Scholar, Academia.edu, Web of Science, ResearcherID) was conducted, documenting their structure and the types of data they offer and showcase for researchers. Through this process, several pieces of information were gathered on the types of data presented and collected references to relevant indicators. Also key aspects of a researcher's career path, such as positions

held and extracurricular contributions and other activities about a researcher's career trajectory were collected.

To select novel indicators and categorize relevant activities for the Researcher Profile, the development of the service builds upon the ongoing work of Horizon Europe project OPUS (Open and Universal Science, 2022). More specifically, the OPUS project is working on a framework to assess researchers, including Open Science dimension to ensure that such practices are explicitly recognised and rewarded (O'Neill, 2023). From this framework, three main categories – "Research", "Education" and "Valorisation"– were identified in which the data collected, through our landscape analysis, were classified. These categories serve as a structured framework to organize and interpret the diverse information gathered from various sources.

Building on this foundation, ensuring a comprehensive evaluation that aligns with the UNESCO Recommendation on Open Science while leveraging insights from our landscape analysis Open Science as a fourth category was integrated. Open Science is essential for accelerating innovation, ensuring global access to knowledge, and fostering collaboration across disciplines, with many platforms from landscape analysis showcasing researcher's Open Science contributions. In the framework regarding the researcher's Open Science activities, the evaluation will include key indicators such as open access publishing and use of open-source software for research. However, the scope of Open Science will not be limited to these indicators; instead, it will be considered more holistically, encompassing key pillars as defined in the UNESCO Recommendation on Open Science (UNESCO, 2021).

To achieve the objectives outlined the required data on researchers' contributions will be sourced from ORCID and the OpenAIRE Graph. Specifically, information on researchers' education, qualifications and work experiences will be integrated from ORCID and automatically displayed within the developing service as recorded there. Similarly, data on research outputs, projects, and the researchers' broader network will be sourced from the OpenAIRE Graph, an extensive research database encompassing diverse research contributions. All collected information will be organized according to the initial prototypes developed through a design program. Moving forward, the aim is to integrate additional data sources to enhance the breadth and depth of the information collected, providing a more comprehensive view of researchers' contributions. Additionally, the plan is to implement a functionality that allows users to manually edit and update their data, ensuring flexibility and accuracy in maintaining profiles and related information. The aim of the developing service is to include all these diverse activities, showcasing the overall impact of the researcher's work. Finally, practical feedback on the components of the framework will be provided by the nine GraspOS Pilots (GraspOS – Pilots) who each represent a specific context in the research assessment system (National research funding and performing organisations, universities and university departments, disciplines).

Key characteristics of the Researcher Profile

The Researcher Profile service includes several key components, along with relevant indicators, to provide evidence of the researchers' contributions. Additionally, it outlines benchmarks and information that reflect the impact of the researchers' work across various dimensions. This holistic approach ensures that both qualitative and quantitative information are considered in research assessment.

A key element of this framework is the Narrative CV section, which will gather qualitative input on a researcher's skills and experiences. Based on the four-module model of the Royal Society's Résumé for Researchers (Resume for researchers), this approach supports a more contextual and qualitative assessment of their diverse contributions to research and society. These include contributions a) to the generation of knowledge, b) to the development of individuals, c) to the wider research community and d) to broader society. To further enhance the completeness of the profile, additional modules will present other types of experiences, such as extracurricular or voluntary work, thereby providing a more complete view of a researcher's curricular. This Narrative CV section will serve as the core feature of this profile, offering a comprehensive overview of achievements and contributions, providing context on the impact of their research, supported by evidence-like quantitative indicators. This section as referred above will differ and be tailored to accommodate the diverse domains of researchers across scientific disciplines. Complementing the Narrative CV, the interactive timeline will provide a dynamic, visual representation of a researcher's milestones, allowing users to explore the evolution of their research activities in a chronological order. By selecting on different elements, users can access more detailed information, making the exploration of data and narratives more engaging.

The Research Outputs section will further enrich the developing service by gathering a broad range of outputs including publications, preprints, datasets, and other research-related products, recognizing the need to showcase the variety of outputs produced in science. This section allows researchers to provide context through narrative boxes, enabling them to explain the rationale, activities, and outcomes behind their work.

Additionally, a dedicated section will recognize engagement with Open Science, highlighting researcher's activities who contribute to making scientific knowledge openly available, accessible, and reusable. The Researcher Profile aims to consider three pillars of Open Science, as reported in the UNESCO Recommendation on Open Science (UNESCO, 2021): open scientific knowledge, open science infrastructures, and open engagement of societal actors along with several Open Science indicators.

Valorisation will be another key feature, focusing on the broader impact of research. It refers to the process of enhancing the value of contributions often through refining, promoting, or developing it. This section will highlight how research contributes to practical applications, products, or social benefits, particularly in addressing real-world problems. By recognizing the societal and economic contributions of research, this section will complement the Researcher Profile focusing on the wider impact of research beyond academia.

Considerations for future developments and implementation

The main aim of the GraspOS project is to develop tools and services to support and facilitate the transition to Open Science-aware responsible research assessment practices. In light of the movement for reform and the growing emphasis on acknowledging a wider range of contributions to science and society, including Open Science practices, the framework under development promotes a balanced approach that combines qualitative information supported by quantitative indicators. However, as with any new service, the design and development of the Researcher Profile should carefully examine a variety of potential challenges.

There may be a risk that specific quantifiable Open Science practices or outputs substitute previous misused metrics, overlooking the need to monitor a comprehensive transformation of a new research culture. In addition, there is a need for assessing the values and impacts of science, focusing on the people who are conducting, engaging with, and/or benefiting from scientific work. Existing methods to assess the adoption of Open Science practices should therefore be strengthened (UNESCO, 2023), particularly to track the research culture change and value open and reproducible research processes.

The development of the Researcher Profile addresses several important considerations related to the flexibility of the developing profiles across diverse fields of study. One of the key challenges is ensuring that the framework can adapt to different contexts and needs across disciplines. Research contributions in fields such as the social sciences and applied sciences are fundamentally different in the way they are produced, disseminated, and evaluated.

A rigid, one-size-fits-all Researcher Profile structure would fail to capture the unique characteristics and impact of work in each domain, making it challenging for evaluators to assess the full breadth and depth of individual contributions. A unified approach would not only risk undervaluing important contributions, but it would also create unnecessary challenges for evaluators. The framework for the Researcher Profile needs to be flexible enough to be adapted to various local contexts and cater to research institutions' diverse values, needs and goals. Ultimately, the goal is to design a service that enables the creation of customizable, context-aware CVs, allowing researchers to highlight the achievements most relevant to their field.

Conclusion

The reform of research assessment is a critical step toward fostering a more inclusive, transparent, and Open Science-aware research culture. Traditional metrics, while providing useful benchmarks, have long been misapplied as proxies for quality, leading to systemic biases and misaligned incentives. In response to these challenges, the European policy agenda has prioritized the transition toward responsible research assessment, emphasizing the need for both qualitative and quantitative approaches that recognize diverse research contributions.

The Researcher Profile, developed as part of the Horizon Europe GraspOS project, offers a novel and pragmatic approach to addressing these challenges. By integrating qualitative insights with quantitative indicators, this innovative service ensures a

holistic and fair evaluation of researchers, acknowledging contributions beyond traditional publication-based metrics. The inclusion of a Narrative CV, interactive timeline, and domain-specific templates addresses the need for flexibility across disciplines, ensuring that researchers from all fields can effectively showcase their impact. Furthermore, the integration of Open Science principles aligns with international policy frameworks, reinforcing transparency, collaboration, and societal engagement in research assessment.

Looking ahead, the implementation of the Researcher Profile will require continuous refinement and collaboration with stakeholders to ensure its adaptability and effectiveness. It is imperative to prevent the replacement of old, flawed metrics with equally narrow Open Science indicators, instead fostering a cultural shift that values diverse research outputs and practices. As the research community advances toward a more responsible and comprehensive assessment system, the Researcher Profile serves as a pivotal tool in driving this transformation, ultimately strengthening the integrity, inclusivity, and impact of research within and beyond academia.

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