The usage of open infrastructures for an alternative assessment of the quality of research outputs

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Why is assessment important and what is the problem? (1)

- Overview:
  - not all research outputs are recognized, and there are no mechanisms to trace and appraise all outputs (datasets, software, etc.)
    - So, what about them?
  - Scopus and Web of Science citation indexes have a significant impact on the quality assessment of research outputs
    - Are there any alternatives?
  - researchers produce scientific outputs that cannot be assessed using traditional approaches
    - Is it valuable if it is not assessable using quantitative indicators?

Why is assessment important and what is the problem? (2)

- How does assessing reflects on different types of entities in the process of research evaluation:

- Research output
  - Quality, impact, influence, level of successfulness

- Researchers
  - monitor, ranking, related objects

- Institutions
  - track quality of researcher's productivity, projects, capacities
- Decisions-makers
  - decisions on different level

Traditional (Highly influential) citation indexes

- **Scopus** and **Web of Science**:
  - Used for assessing and defining criteria for research promotion and career development
  - Regulations adopted by local decision-makers
  - High pressure to publish research output in indexed journals
  - Recognised as highly influential
  - Commercial products-> black box
  - Further functionality developed as an additional tool/software that base their implementation on indexed data
  - Subscriptions

Alternative databases

- Tracks research output impact on other source (Social media, research networks, blog, posts,…)
- Supports tracking research with predefined parameters
- Provides APIs that can be integrated with existing infrastructure.
- Usually, data are available for outputs that have a DOI

- alternative to traditional citation database
- considered to be more open and inclusive than traditional database
- Contributes to open infrastructures through open APIs that can track the impact of research outputs across the Internet
- Usually, data are available for outputs that have a DOI

Open databases

OpenCitations

- Fully supports the founding principles of Open Science
- Compliant to the FAIR data principles
- Upgraded with a system that provides persistent identifiers (PIDs)
- Provides APIs in different forms (SPARQL endpoints, REST, Search Interfaces)

OpenAlex

- Acts as a collector and aggregator of different sources (ORCID, ROR, DOAJ, Unpaywall, Pubmed, etc.)
- Supports integration with custom solutions for providing knowledge graphs, system for recommendation, search engine, etc.
- Expected during summer 2022 to launch new tools that support the full web UI
- … Until then we have to be satisfied with APIs ☺

Traditional
+
Alternative
+
Open
=
Assessment

- Sustainable
  - Must be accessible to single user (researcher) or group of users (institution) without affecting their sustainability
- Applicable
  - In different scientific fields, productivity is measured based on of different types or research outputs
- Integrable
  - Data and/or software support integration with existing research infrastructures and services
- Trustable
  - Collected/indexed data are gathered by using reliable methods or by exchanging information with other trustable sources
- Verifiable
  - To provide functionalities that can be used for tracking the validity of metric scores or other retrievable data