TESTING REVIEWER SUGGESTIONS DERIVED FROM BIBLIOMETRIC SPECIALTY APPROXIMATIONS IN REAL RESEARCH EVALUATIONS

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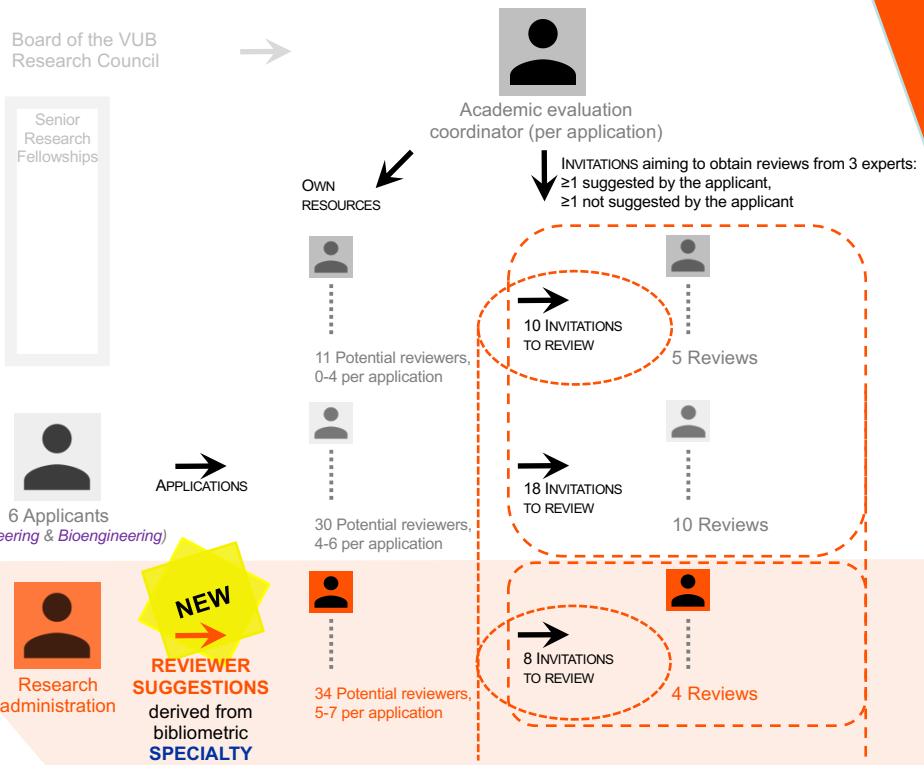
Many contemporary research **funding** instruments and research **policies** aim for excellence at the level of individual **scientists, teams or research programmes**.

Bibliometric **approximations of related specialties** could be useful for instance to **help find reviewers**.

This poster reports findings on the **usability** of **reviewer suggestions** derived from a **new specialty approximation method** combining key sources, title words, authors and references.

Reviewer suggestions were **made available to academic evaluation coordinators** during a real research evaluation.

The coordinators were **free to use or not to use** these bibliometric suggestions.



The **method** builds on conceptual and empirical foundations, and consists of **3 phases**:

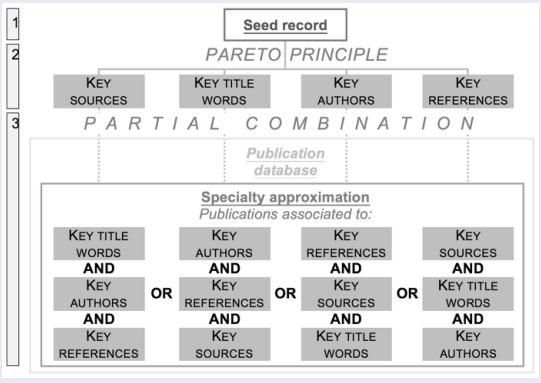
1. specification of the **seed record** as starting point,
2. determination of the sets of most frequently occurring **key sources, title words, authors and references** characterizing the seed record
3. identification of all publications associated to key values for ≥ 3 of the 4 data fields = the **specialty approximation**.

Concepts defining DISCIPLINES [1] and SCHOLARLY COMMUNICATION [2]

Observed **regularities**
- SOURCES [3a] [3b]
- TITLE WORDS [4]
- AUTHORS [5]
- REFERENCES [6]

PILOT APPLICATION DURING EVALUATION

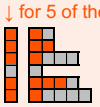
Bibliometric **approximation of a research specialty** by **partial combination of key values for 4 publication data fields**: [7]



Applied earlier to subdomains of Biology [7] and Physics [8].

1. USAGE of the bibliometric reviewer suggestions **by almost all academic evaluation coordinators**

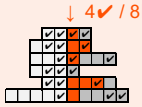
↓ for 5 of the 6 applications



↑ for 8 of the 18 invitations to review sent to experts 'not suggested by the applicant'

2. ACCEPTATION RATE after invitation is **normal**, similar to results for customary approaches

↓ 4✔ / 8☐ for bibliometric reviewer suggestions



↑ 15✔ / 28☐ for the other experts,
☐ suggested by applicants
■ found by coordinators

Responses from invited experts and academic evaluation coordinators contained no indications of mismatched scientific focus.

The results show how the new **specialty approximation method** was successfully applied for the first time *during an evaluation*, to **support academic evaluation coordinators** in their task to **find reviewers** for applications by *individual scientists*.

[1] Sugimoto, C.R., & Weingart, S. (2015). The kaleidoscope of disciplinarity. *Journal of Documentation*, 71(4), 775-794.
[2] Ni, C., Sugimoto, C.R., & Cronin, B. (2013). Visualizing and comparing four facets of scholarly communication: Producers, artifacts, concepts, and gatekeepers. *Scientometrics*, 94(3), 1161-1173.
[3a] Bradford, S.C. (1934). Sources of Information on Specific Subjects. *Engineering: An Illustrated Weekly Journal*, 137(3550), 85-86.
[3b] Garfield, E. (1971). The Mystery of the Transposed Journal Lists -- Wherein Bradford's law of Scattering is Generalized According to Garfield's Law of Concentration. *Current Contents*, 17, 5-6.
[4] Zipf, G.K. (1935). *The psycho-biology of language: An introduction to dynamic philology* (Boston: Houghton Mifflin).
[5] Lotka, A.J. (1926). The frequency distribution of scientific productivity. *Journal of the Washington Academy of Sciences*, 16(12), 317-323.
[6] Price, D.J. (1965). Networks of Scientific Papers. The pattern of bibliographic references indicates the nature of the scientific research front. *Science*, 149(3683), 510-515.
[7] Rons, N. (2018). Bibliometric approximation of a scientific specialty by combining key sources, title words, authors and references. *Journal of Informetrics*, 12(1), 113–132.
[8] Rons, N. (2016). 4D Specialty Approximation: Ability to Distinguish between Related Specialties. In: *Proceedings of the 21st International Conference on Science and Technology Indicators*, 14-16 September 2016, València, Spain.

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