



Ekspertne ocene in bibliometrijske ocene: Dve strani istega kovanca?

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Bibliometrija



Članek

Južnič, P., Pečlin, S., Žaucer, M., Mandelj, T., Pušnik, M., & Demšar, F. (2010). Scientometric indicators: peer-review, bibliometric methods and conflict of interests. *Scientometrics*, 85(2), 429-441.



Cilji raziskave

V članku smo želeli raziskati odnos med ekspertnimi ocenami in rezultati bibliometrijskih analiz. Vendar smo za razliko do večine drugih, podobnih raziskav, tu testirali različne oblike ekspertnih ocen. Podatki so bili podatki različnih razpisov ARRS za finansiranje projektov, pri katerih so uporabljali različne oblike/načine ekspertnih ocen.



Dva načina kako vrednotiti raziskovanje

Ocene ekspertov, kolegialne ocene (peer reviews) uporabljamo tudi za oceno raziskovalnih projektov. Tu gre za kvalitativno oceno raziskovalne uspešnosti, ki je starejša od bibliometrijskih metod.

Povezanost

Bibliometrijski indikatorji

Ocene ekspertov

Kvaliteta raziskovanja



Znanstvena - raziskovalna politika

Evaluacija raziskovanja je postala pomembna naloga upravljalcev raziskovalne dejavnosti in nosilcev raziskovalne politike. has become a large part of the business of science and technology management. Pogosto gre za pomemben del odločanja o finansiranju in alokacije sredstev, kot dela širše raziskovalne -znanstvene politike.



Raziskovalni problem

- Kako so ocene ekspertov in bibliometrijske metode za evaluacijo raziskovalne dejavnosti uporabljene v praksi, kako so povezane in kje so morebitne razlike.



Three Calls for research projects proposals in Slovenia

2002 (2003) with a domestic peer review system designed in such a way that conflict of interest is not avoided efficiently,
2005 with a sound international peer review system with minimised conflict of interest influence, but limited number of reviewers and

2007 (2008) with a combination of bibliometric and a sound international peer review with minimised conflict of interest influence.



Research model

Bibliometric data for all applicants for all calls for proposals are available in Slovenia Research Agency and calculated on the basis of SICRIS. So three different peer review systems were used and compared with same set of bibliometric indicators. All three Calls for research projects follow basically the same procedure. Any researcher in Slovenia can write her or his proposal and ask for a grant. It can be either basic or applicative project, the maximum length of three years.



Bibliometric indicators

They were two pure bibliometric indicators, A1 number of publications and

A2 number of citations, and

A3 projects (in FTE) that grant seeker had already received from other sources (non-Agency).

All data were normalised so to give each indicator value from 0 to 5.



Simulation

Simulation was done based on the presumption, that all proposals would be decided solely on the basis of two bibliometric indicators (A1, A2) and of one general scientometrics indicator A3.

The results of this simulation were then compared with actual decision done on the basis of peer reviews.

Simulation results by years 2002, 2005 in 2007

	2002/2003			2005			2007/2008		
	Number of proposals	Bibliometric indicators/Actually selected	%	Number of proposal	Bibliometric indicators/Actually selected	%	Number of proposals	Bibliometric indicators/Actually selected	%
Natural science	60	11/20	55	46	17/24	71	152	18/33	55
Engineering,	114	15/31	48	114	26/41	63	222	31/46	67
Biotechnical sciences	27	1/4	25	39	7/12	58	79	5/11	46
Social sciences	54	8/14	57	43	6/10	60	72	10/12	83
Humanities	47	4/11	36	33	8/11	73	78	25/35	71
All*	302	39/80	49	275	64/98	65	603	89/137	65

Simulation results by years 2002, 2005 in 2007 – Natural sciences

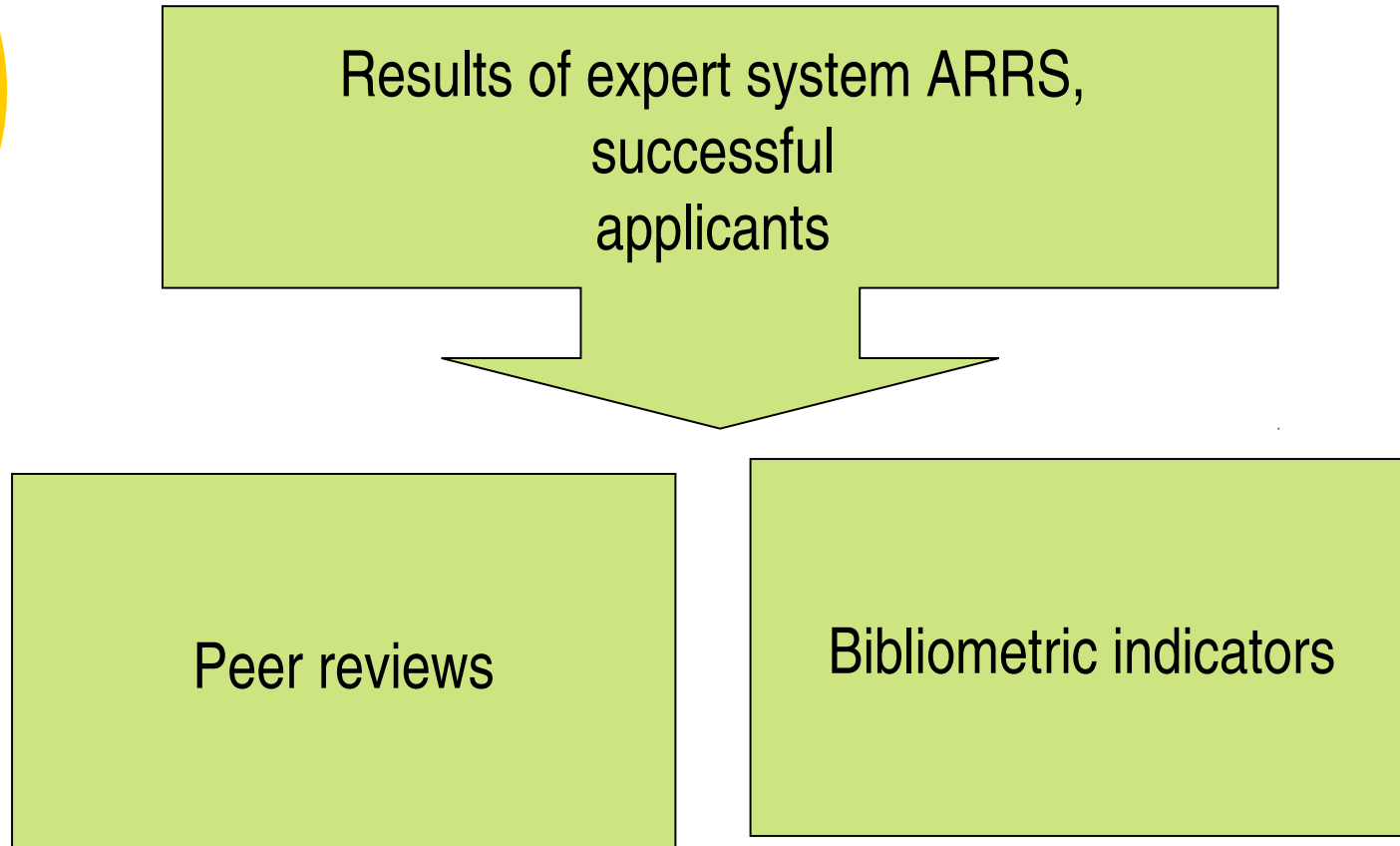
	2002/2003		2005		2007/2008	
	Number of proposals	Bibliometric indicators/Actually selected	Number of proposals	Bibliometric indicators/Actually selected	Number of proposals	Bibliometric indicators/Actually selected
Natural sciences						
Mathematics	8	3/4	1	0	12	0/1
Physics	11	0/2	11	3/5	38	4/7
Biology	11	0/2	10	4/6	22	3/5
Chemistry	8	2/4	6	1/2	30	4/6
Biochemistry	1	0/1	3	0/1	12	2/4
Geology	5	2/3	2	1/1	18	0/3
Computer intensive methods and applications	1	1/1	2	2/2	5	1/2
Ecology	10	1/1	8	4/5	11	2/3
Pharmacy	5	2/3	3	2/2	4	2/2
All	60	11/20	46	17/24	152	18/33



Reviewers

Reviewers has have three elements to evaluate
B1 research qualification of grant seeker,
B2 quality of the project and
B3 social relevance
(from 1 to 5).

Results





Conclusions

Our results are supporting the conclusions that peer ratings cannot generally be considered as standards to which bibliometric indicators should be expected to correspond. Instead we have found that shortcomings of peer judgements, of the bibliometric indicators, as well as lack of comparability can explain why the correlation was not stronger. This means that the level of correlation may still be regarded as reasonable and in the range of what could be expected, considering the factors discussed above.



Discussion

We focused on the bibliometric indicators as well as on the peer review side on several specific elements of the assessments, in order to gain more insight into relevant aspects of the evaluation procedures and improve it for the benefit of science policy in Slovenia.



Further research

So peer evaluation and bibliometric assessment showed correlation, the important results are why particular bibliometric indicators correlate more with different peer review systems.