

Role and position of the locally published journals in an evaluation-oriented CRIS

Pero Šipka

Centre for Evaluation in Education and Science, Belgrade
University of Novi Sad, Department of Psychology, Novi Sad

Summary

A program of monitoring, evaluation and promotion of the locally published journals (LPJs) has been chosen in Serbia to be the first step in strategic efforts to raise the quality and impact of the national research. The rationales of the program, as well as its outputs and outcomes are here described. The position of LPJs as an entity within CRIS-CERIF architecture is shortly discussed and some arguments in favor to the treatment of LPJs as a separate entity of the highest level are outlined. According to the results so far, such a solution is effective, and might be plausible for policy-makers and developers in other countries of similar socioeconomic status, particularly so in nations of so-called small languages.

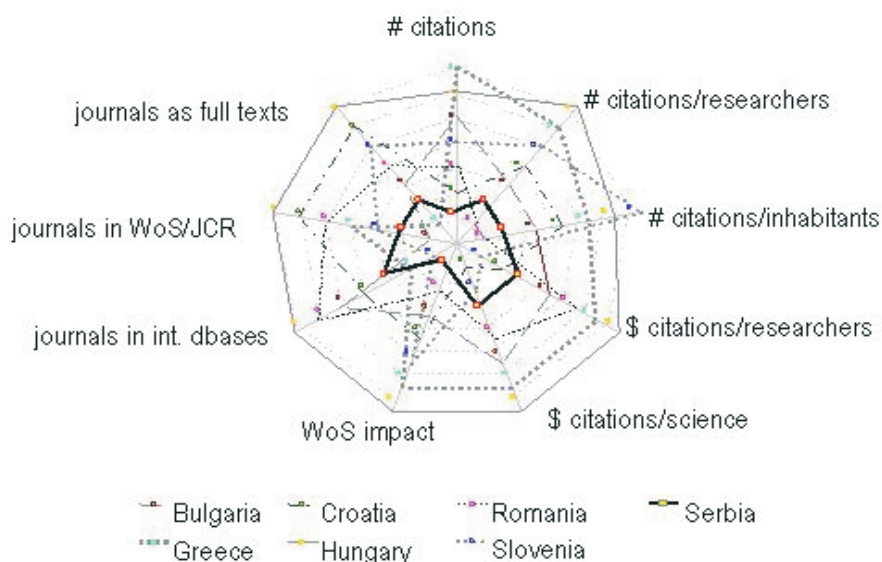
1 Background

Once a regional leader in many fields of science, Serbia lost pace with the most SEE countries during the last decade of the previous century, which was the period of state (self)isolation produced by the extreme political instability. The Relative decline of the national research output was especially obvious from the low publication rate and even lower impact, as measured by ISI-WoS Essential Science Indicators (ESI). These findings of the Centre for Evaluation in Education and Science (CEON/CEES), an independent S&T observatory, were understood in early 2000s as an alarming signal to look more closely into factors underlying the cross-national differences in S&T output (Šipka 2001). We hoped to arrive at conclusions that might be of use to our stakeholders, primarily the Ministry of Science and Technological Development of the new Serbian democratic government, which declared an ambitious strategy of deep and fast reforming of the research sector.

The reasons for the low WoS publication rate of the Serbian authors in the observed period seemed to us natural and self-understanding. However, while analyzing the low national impact we recognized that it cannot be attributed only to the lack of international excellence of their publications, but also to their low visibility. These findings are illustrated here in figure 1. As seen from the country profiles, Serbia was lagging behind of a group of SEE countries not as much in the impact indicators as it was in three indicators (left) reflecting visibility and availability of the articles published in LPJs.

Articles published in LPJs make the vast majority of publication output in developing countries, especially those of so-called small languages. Not having national journals incorporated into the international system of S&T information, which is the case with Serbia, seriously limits national research output, both directly and indirectly. At the same time and

more importantly, this influences the quality of knowledge transferred from the academic sector to the local society. For those and other reasons, CEON/CEES made the follow-up, evaluation and promotion of national journals the number one priority of its mission to help the Ministry in reducing the number of LPJs in



#citations=raw number of citations; #citations/researchers=number of citations by the number of researchers; #citations/inhabitants=number of citations by country population size; \$citations/researchers=citations per dollar by the number of researchers; \$citations/science= citations per dollar by S&T budget size; WoS impact=country impact in WoS; journals in int. dbases=number of LPJs indexed by internat. discipl. databases; journals in WoS/JCR=number of LPJs indexed in WoS; journals as full texts=number of LPJs available online as full texts;

Figure 1. Indicators of WoS impact of some SEE countries as compared to the performance on variables moderating impact

favor to their quality. In Serbia, the total number of LPJs was namely so high that this became a burden to the science budget, leaving potentially valuable periodicals without support sufficient to reach the international level of excellence.

2 Rationales

We conceptualized the problem by focusing on moderators of national research output, some of which are neglected in the scientometric literature.

We assumed that

$$I = V + A * Q * R$$

where: I = impact; V = visibility; A = availability; Q = quality, and R = relevance,

which was operationalized as

I = journal's citation impact/rate in WoS; V = articles metadata online availability; A = on-line availability of full text; Q = adherence to the international publishing standards; R = number of shared international references (related records).

We also assumed that visibility and availability are the only necessary conditions and the two first links in the process chain leading to the higher impact. We also understood that visibility and availability are the most controllable factors. Based on this, we arrived at a simple strategy of raising the national research output through supporting LPJs in stepwise approach towards international recognition:

Visibility → Availability → Relevance → Quality → Impact.

Based on above rationales, we stated the purpose of the project as raising visibility and availability of LPJs and, at the same time, ranking them according to their real impact and bibliometric quality. This was to enable the Ministry to treat them differentially within its program of formal recognition and financing periodicals. The journals of highest potential were to be additionally supported, both financially and technically, to reach the most prominent international databases, such as WoS and Scopus. Building a national citation index as an add-on to WoS and developing indicators for monitoring their performance in both of these evaluation sources, were seen as the two main instruments to achieve the goal.

3 Model

CEON/CEES's program of journal evaluation and promotion was accepted and supported by the Ministry of Science. Independently from the Ministry it was later extended to cover other types of S&T information, including ongoing research projects. At this point a problem appeared of how national journals, as the entity of our primary concern, can be fitted into the CRIS-CERIF architecture (Jörg et al., 2007; Code of Good Practice, 1998), which we made our choice when started working on integration of the national S&T information system. The problem was not merely of theoretical nature, but had also some practical implications. In searching for a solution, we decided to appoint journals the status of the CRIS core entity (figure 2). The justification for such a questionable decision was found in the importance of journals in general, and in our strategy in particular. We saw the scientific journals as an important part of the global system of S&T information. To paraphrase Patrick Doreian (Doreian, 1985), they really are crossroads where all processes and actors in science meet. While planning the national CRIS we refused to see them just as folders where certain type of *ResultsPublications* are taken from, and chose to treat them as a separate and important entity instead. As the entity of the highest level in CERIF they can be more profoundly related to *Persons* and *OrgUnits* and made more exploitable to the end-users.

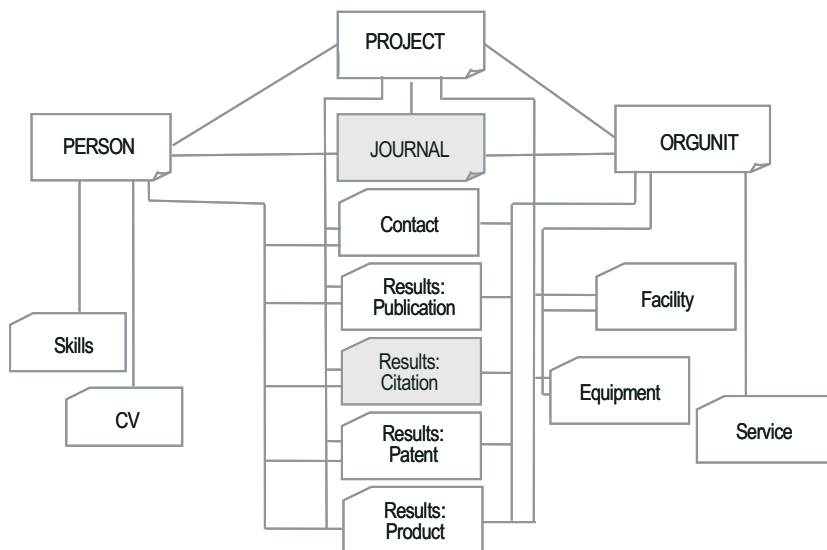


Figure 2. Position of LPJs in CERIF as applied in CRIS-TraM

Our reasons can be better understood if considered from the practical viewpoint taking into account both communication and evaluation role of CRISes built in developing countries:

1. Searching a CRIS from a developing country, e.g. for the purpose of partnering, will be of small help to international users if publication lists of located candidates are not accompanied by data reflecting the quality of their publications. These data would not be necessary for the papers published in well-known international periodicals. However, most of the papers of local authors are published in LPJs, which titles are unknown and say nothing about the real value of papers and, consequently, about the real competence of their authors.
2. If raising the quality of LPJs is made a priority of a program, than subjects responsible for the quality (*Persons, OrgUnits*) should share the destiny of their products. This means that research organizations that are at the same time journal publishers have to be evaluated based also on their journals proficiency. Also, persons acting as journal editors, who are normally active researchers themselves, have to be evaluated based on their journals impact and quality.

Different position of journals is not the only difference between the CRIS general model and our solution called CRIS – Transition Model (CRIS-TraM). Other differences are of less concern here. All of them are dictated by demands coming from the specific organization of S&T activities in Serbia as a transition country and are viewed as temporary. In adjusting the CRIS general model to our present needs we paid attention to adhere with CERIF, i.e. not to threaten interoperability of our data at international level which remained our important aim.

4 Implementation

In 2003 we began our regular follow-up and evaluation of LPJs, starting from their 2002 volumes on. The results are published annually in an electronic publication called Journal Bibliometric Report (JBR), similar to Thomson-ISI Journal Citation Report. Meanwhile, the report became a standard reference for official journals categorization by the Ministry, although the results were not fully accepted by all disciplinary boards authorised by law to attend to the formal journals classification.

In addition, thanks to the support by the Ministry of Science, we expanded our SocioFakt, a disciplinary national citation index, to SCindex: Serbian citation index, covering all fields of science (Kosanović&Šipka, 1996; Šipka 2005). SCIndeks is a hybrid bibliographic system offering, in Open Access regime, metadata under OAI PMH, as well as full text of journal articles. SCIndeks presently contains six year volumes of about 350 professional journals classified as periodicals of scientific character. Social sciences journals already contained in SocioFakt are covered from 1991 on. The retrospective extension of humanities journals from 1996 and all the rest from 2001 on is in due process and to be completed by end of 2008. All the journals listed are indexed on cover-to-cover basis. This makes SCIndeks a comprehensive and reliable resource deserving the main role in the evaluation practices, regardless of the dubious value of research information published in many of the journals indexed.

Finally, in 2006 we extended our system to cover ongoing projects and other “shal ow” data on researchers and their institutions. The resulting CRIS entitled DOSITHEuS was built around CRIS-TraM to cover all accredited research institutions and projects financed by the Ministry of Science. Meanwhile, we continued to work on enriching DOSITHEuS through incorporation of other types of information described by CERIF, or integration with other useful information sources. DOSITHEuS is short of CERIF information on Services, Equipment, and Facilities. It also lacks data on papers and citations published in WoS journals. This is a crucial shortcoming from the evaluation point of view, which is under way to be overcome soon, since the procedures of extracting evaluation-relevant data from WoS are under development.

The extension of SocioFakt was used as an opportunity to remodel the national citation index to fully fit the CERIF. Thanks to the new architecture, the online integration of SCIndeks and JBR with DOSITHEuS was made not only possible, but even trivial. By extending integration to other non-CERIF bibliographic resources such as Journal Repository, doiSerbia national OPAC, and WoS, which is an ongoing project in the mature phase, we are gradually transforming DOSITHEuS from a predominantly communication tool, into the main national evaluation platform, containing almost all evaluation-relevant information in ready-made, i.e. condensed or quantitative form (Šipka 2006, Kosanović&Šipka, 2008).

An important side effect of integration was reducing the costs of information processing in maintaining SCIndeks. Parsing and normalizing citation data, the most expensive operations in preparing bibliographic data to be used for evaluation purposes, was automated to a much higher level. Now, it was possible to conjoin both operations with external database linking with bibliographic sources used as normative databases i.e. resources for authority control. The new organization of the maintenance process as seen from the flowchart (figure

3) led to significant increment in reliability of evaluation data and more trust in resulting indicators.

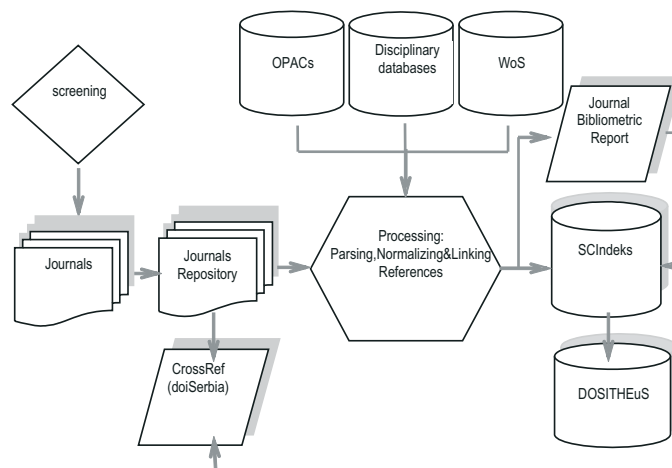


Figure 3. Journals data processing and utilizing in DOSITHEuS

5 Results

If the program of Serbian LPJs evaluation and promotion is judged from the initial expectation point of view, numerous outputs can be listed to prove its viability. The visibility and availability of LPJs were raised dramatically in a relatively short period. The initial profile of Serbia as shown in figure 1 was reversed vertically in a five years period (as if rotated by 180 degrees), indicating now greater visibility than impact. Almost all internationally valuable Serbian LPJs are presently available through SCIndeks as full texts in Open Access regime. Better visibility and availability contributed to enormous increase of citation rate of Serbian journals in WoS which, according to the JBR, showed stable growth trend culminating in 69 percent yearly increment in 2007. Based on the aggregated international and local impact about twenty LPJs were recommended for inclusion in Thomson-ISI indexes and Scopus, most of which were accepted. All these journals, as well as some others identified by our criteria as having international potential, were included in a cross-ref system through doiSerbia. At the same time a substantial number of LPJs were selected and recommended to be dropped out of the program of journals (co)financing by the Ministry of Science, following the idea that the number of supported journals should be reduced in favor of their quality. Finally and most importantly, in 2008 the Journal Bibliometric Report was built into the Ministry's decision making evaluation process, as defined by the new regulation on using quantitative indicators in evaluation. According to the procedures prescribed by this act,ponders based on journal rankings participate heavily in the assessment of overall researchers' publication output. Articles published in international journals and internationalized LPJs are rewarded with substantially more points and hence it is reasonable to expect addi-

tional and deeper effects of the program of journals monitoring and evaluation on journals excellence.

The theme of this paper is the role and position of the LPJs within the CRIS model. As pointed above, it is a question of both formal-theoretical and practical nature. In answering it while developing DOSITHEuS, we decided pragmatically and allocated LPJs a highly important role in the model. Functionally, within the web application, they were given the status of the core entity. The short history of building Serbian CRIS and related databases is long enough to demonstrate that such a solution was effective. This, of course, does not mean that we are pleading for a CRIS-CERIF revision. The privileged position given to LPJs in CRIS-Tram is simply a solution found in a process of developing a national CRIS that is not a product of a greenfield project, is strongly evaluation-oriented, and comes from a developing and transition country. This solution is all but recommendable to developers in western or highly internationalized academic environments. Even in Serbia where it was applied, it is seen only as temporary. However, it is also seen as necessary if importance of LPJs in a transition country is taken into account and their role in evaluation is fully understood. Such a solution might be plausible for policy-makers and developers in countries of similar socioeconomic status and historic heritage, particularly so in nations of so-called small languages.

6 References

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7 Contact Information

Pero Šipka

Juriša Gagarina 111/106, 11070 Belgrade, Serbia

e-mail: esipka@sbb.co.yu