Implementation of the Evaluation of Researchers‘ Bibliographies in Slovenia

14th International Conference on Current Research Information Systems, CRIS 2018, 13-16 June 2018, Umeå, Sweden
Institute of Information Science (IZUM)

The non-profit public institution with the role of:
• the information service for research, education and culture
• the national bibliographic service (National COBISS Centre)
• the UNESCO regional centre for the development of integrated library systems and current research information systems
• developing and maintaining COBISS and SICRIS information systems
IZUM Homepage

- www.izum.si
COBISS

• COBISS – Cooperative Online Bibliographic Information System & Services (www.cobiss.si)
• Organisational model of joining libraries into a library information system in Slovenia and in some other countries linked in the COBISS.net network
• COBISS.net:
  – Albania, Bosnia & Herzegovina, Bulgaria, Montenegro, Macedonia, Serbia, Slovenia
  – 8 COBIB shared bibliographic databases with 11 million bibliographic records
  – more than 1200 local databases (libraries) with 26 million local bibliographic records
• COBISS.SI (Slovenia): COBIB.SI shared bibliographic database with 5 million bibliographic records, 860 local databases (libraries)
• In 2018: 30th anniversary of the COBISS system
SICRIS / E-CRIS

• National Current Research Information System
• SICRIS (Slovenia)
• E-CRIS (Albania, Bosnia & Herzegovina, Montenegro, Macedonia, Serbia)
• SICRIS is developed and maintained by IZUM and Slovenian Research Agency (ARRS)
• Research entities: research organisations and research groups with registered employees, researchers, research projects and research programmes
• SICRIS homepage (sicris.izum.si) with current numbers of research entities:
Researchers’ Bibliographies

- Bibliographies is one of the COBISS web applications
- Researchers’ Bibliographies connects COBISS and SICRIS systems
- COBISS.net: personal and representative bibliographies
- COBISS.SI also includes:
  - evaluation of bibliographic indicators of scientific performance according to the ARRS methodology and rules
  - evaluation for the purposes of awarding habilitation titles in the three largest universities in Slovenia
  - data from Web of Science and Scopus (JCR, SNIP, citations)
- COBIB.SI bibliographic database: one third of all bibliographic records (1,7 million) belongs to researchers’ bibliographies with
  - researcher’s code
  - type of work: Typology of Document/works for Bibliography Management in COBISS
Example of an Article Display in Researchers’ Bibliographies

- Bibliographic data from COBIB.SI: authors, title, journal title, ISSN, year, pages, doi ...
- Link to JCR and SNIP (built into COBISS)
- Citation data from WoS and Scopus: link to WoS/Scopus, number of citations (TC), number of citations without self-citations (CI) (so-called pure citations)
- Altmetrics data (Altmetric and PlumX)

The evaluation of a scientific article relies on:

- the article category with number of calculated points depending on the number of authors
- the points of above average scientific performance
- the number of pure citations
Article Categories

• 1A1 – 1A4: SCIE (JCR)
  SSCI (JCR)
  Scopus(d) – social sciences (SNIP)
  Scopus(h) – humanities (SNIP)

• 1B: A&HCI, Scopus (except social sciences and humanities)

• 1C: MBP (international databases, e.g. MEDLINE, COMPENDEX ...)

• 1D: important national journals from ARRS list

• 1NK: articles in other journals (not included in scientific performance)
Article Points

• **1A1** (1. quarter): \(100 + 70 \times \frac{(IF - IF_{min})}{(IF_{max} - IF_{min})}\)

  or if the \(IF_{max} - IF_{min} > 3 \times IF_x\) as:

• **1A1** (1. quarter): \(100 + 80 \times \ln\left(\frac{IF}{IF_{min}}\right)\)

• **1A2** (2. quarter): 80

• **1A3** (3. quarter): 60

• **1A4** (4. quarter): 40

• **1B**: 40

• **1C**: 30

• **1D**: 20
Number of Slovenian Articles by Categories and Years

![Graph showing the number of Slovenian articles by categories and years from 1995 to 2015.](image)
Number of Slovenian Articles by SCIE, SSCI, Scopus(d) and Scopus(h) and Years
Above Average Scientific Performance

• **A''** quantitative score: exceptional achievements
  journal is on the 1\textsuperscript{st} or 2\textsuperscript{nd} place in the categories of SCIE (ranked by impact factor) or has an impact factor greater than 8 or belongs to top 5\% of SCIE category or top 10\% of SSCI category or 1A1 in Scopus(d)/Scopus(h) categories

• **A'** quantitative score: high quality achievements
  A'' plus journal belongs to 1A1 category of SCIE, to 1A1 or 1A2 of SSCI, to 1A1, 1A2 or 1A3 of Scopus(d)/Scopus(h) categories or to A&HCl

• **A^{1/2}** quantitative score: important achievements
  (A' plus 1A2 categories of SCIE).
Number of Slovenian Articles in A'', A' and A^{1/2} by Years
Number of Articles in A'' Through Various Sciences (UDC) by Years
Citations WoS/Scopus

• Connecting COBISS and WoS/Scopus citation data
• Links COBISS.SI – WoS/Scopus are established daily
• Number of citations (TC) is refreshed weekly
• Number od pure citations (CI) – without self-citations (for now detected in COBIB.SI database – planning to change)
• By ARRS‘s evaluation number of pure citations in the last 10 years (the highest value of WoS/Scopus)
• SciMet – our portal for managing Slovenian citation production (scimet.izum.si)
Number of Citations (TC) and Pure Citations (CI) from WoS and Scopus by Year of Publication
Number of Pure Citations (CI) Through Various Sciences by Year of Publication
Evaluating Bibliographic Indicators According to ARRS Methodology – Summary Data

• $A_1$ quantitative score (in the last 5 years):

$$A_1 = \frac{Points \times 4}{1500} + \frac{A''}{1500} + \frac{A'}{1500} + \frac{A^{1/2}}{1500}$$

↓ ↓ ↓ ↓ ↓ limit values

7 4 1 1 1

$Points = \sum Z + min\left(\frac{15}{85} \sum Z, \sum S\right)$

Z – scientific points
S – professional points

• $Cl_{10}$ - pure citations (in the last 10 years)
Example of Bibliographic Indicators for a Researcher in Bibliography Section of SICRIS

### Bibliography

Representative / Personal / COBISS+

### Evaluation

**Evaluation of bibliographic indicators of scientific performance according to the ARRS (rules)** - in Slovene

<table>
<thead>
<tr>
<th>Points</th>
<th>A''</th>
<th>A'</th>
<th>A1/2</th>
<th>CI10</th>
<th>CImax</th>
<th>h10</th>
<th>A1</th>
<th>A3</th>
</tr>
</thead>
<tbody>
<tr>
<td>530,06</td>
<td>276,76</td>
<td>487,47</td>
<td>500,81</td>
<td>181</td>
<td>36</td>
<td>7</td>
<td>2,24</td>
<td>0</td>
</tr>
</tbody>
</table>

Data for the last 5 years (citations for the last 10 years) on 08.06.2018;

Data for ARRS tenders (22.05.2018 - Mentorji MR, archive) - in Slovene

### Citations

**Citations for bibliographic records in COBI.B.SI that are linked to records in citation databases** - in Slovene

<table>
<thead>
<tr>
<th>Base</th>
<th>Linked records</th>
<th>Citations</th>
<th>Pure citations</th>
<th>Average pure citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>WoS</td>
<td>16</td>
<td>184</td>
<td>169</td>
<td>10,56</td>
</tr>
<tr>
<td>Scopus</td>
<td>16</td>
<td>196</td>
<td>180</td>
<td>11,25</td>
</tr>
</tbody>
</table>
Example of Bibliographic Indicators for a Researcher in Bibliographies (Matrix Model)

- Number of works:

- Number of points:

- A display example of a article evaluation:

ARRS Public Tenders

• Approx. 5 main tenders and 15 international tenders yearly
• For each tender minimum threshold values are specified (followed by two foreign reviewers)
• For example, for leaders of research projects and programmes the minimum values are:
  – natural sciences: $A_1 : 0.5$ and $Cl_{10} : 200$
  – social sciences: $A_1 : 1$ and $Cl_{10} : 5$

Thank you for your attention!