National Current Research Information Systems

Experiences with their Use for Monitoring, Evaluation, Funding, and Studies of Research in Scandinavia

Gunnar Sivertsen
Nordic Institute for Studies in Innovation, Research and Education, Oslo, Norway
CRIS systems in Scandinavia
  - An integrated national system: Norway
  - Integrating local systems: Denmark and Finland
  - Integrating all systems: Sweden?
  - Nordic collaboration

Examples of the use of CRIS systems for four purposes
  - Monitoring
  - Evaluation
  - Funding
  - Studies of research

Discussion: Advantages, limitations, challenges
CRIS systems in Scandinavia

- An integrated national system: Norway
  - Integrating local systems: Denmark and Finland
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Examples of the use of CRIS systems for four purposes

- Monitoring
- Evaluation
- Funding
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Discussion: Advantages, limitations, challenges
The CRIS can itself be nationally integrated – Norway’s solution

One shared national Current Research Information System for 160 institutions in

- The higher education sector
- The independent research institutes
- The hospitals
- Publications and other outputs are listed only once
- Institutional and international collaboration can be traced in the data
Principles behind a shared national CRIS

- **Completeness:** All scholarly publications and other results from research are included.

- **Transparency:** Every institution can see and check all other institutions’ data. The national database is also online and open to society at large.

- **Multiple use of the data:** CV’s, applications, evaluations, annual reports, internal administration, bibliography for Open Archives, links to full text, etc.
### Registration of research outputs and activities

**Search criteria:**
- **Surname:** Sivertsen
- **First name:** Gunnar
- **From:** 2017
- **To:** 2017
- **All publishing channels**

**Showing results 1-1 of 1**

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<tr>
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<td><strong>Author</strong>, Sivertsen, Gunnar</td>
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**Entry no.:** 1447252

**Created:** 2017-02-06 10:11:21 - Gunnar Sivertsen (NIFU)

**Edited:** 2017-02-06 10:11:21 - Gunnar Sivertsen (NIFU)

The entry is owned by: NIFU Nordic Institute for Studies in Innovation, Research and Education
Coverage of scholarly publications

Coverage of 70,500 scholarly publications from the higher education sector in Norway 2005-2012.

- **Scopus**
- **Web of Science**

<table>
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100 per cent?
Showing results 1-4 of 4

1. **Gilhus, Nils Erik; Sivertsen, Gunnar.**
   HAUKELAND NIFU UIB

2. **Aksnes, Dag Westreng; Rørstad, Kristoffer; Piro, Fredrik Niolas; Sivertsen, Gunnar.**
   Are Female Researchers Less Cited? A Large-Scale Study of Norwegian Scientists. *Journal of The American Society For Information Science and Technology* 2010
   NIFU

3. **Sivertsen, Gunnar.**
   NIFU

4. **Sivertsen, Gunnar.**
   NIFU
Sivertsen, Gunnar.
Added references to a monograph and an article in an edited volume.
**CRIS systems in Scandinavia**
- An integrated national system: Norway
- Integrating local systems: Denmark and Finland
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- Nordic collaboration

**Examples of the use of CRIS systems for four purposes**
- Monitoring
- Evaluation
- Funding
- Studies of research

**Discussion: Advantages, limitations, challenges**
Commercial CRIS-solutions for institutional purposes have become widespread.
Each university has a local Pure system.

Annually, data from the local systems are exported to, and integrated in, a national database owned by the Government.
National integration of data - the Finnish solution (VIRTA)

1. Local CRISes or publication databases of universities and other research organizations in which the publication information is primarily input.

2-3. Servers and services used for data transfer. Publication information is transferred using encrypted SFTP-protocol.

4. VIRTA Publication Information Service compiles XML files from various organizations.

5. Publication information in VIRTA is used securely by multiple methods and protocols.

Services using of VIRTA:
- OAI-PMH
- REST
- WEB-SERVICE
- DATABASE LINKS (ODBC)
- FILE TRANSFER

Research organization’s CRIS
## National integration of data - the Finnish solution (VIRTA)

<table>
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<tr>
<th>Data sources</th>
<th>Local CRISes or publication databases of HEIs, university hospitals, state research institutes</th>
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<td>Temporal coverage</td>
<td>All data from previous years to present can be transferred</td>
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<td>Name, ORCID</td>
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<tr>
<td>Identification of duplicates, faults and Publication Forum channels etc.</td>
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</tbody>
</table>
Outline

CRIS systems in Scandinavia
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Discussion: Advantages, limitations, challenges
The special case of Sweden

- 2014-2016: Proposal (rejected) for a new performance-based model based on peer review, and with
  - “a more indirect data collection method in which data is almost exclusively collected from existing sources”.
- Which calls for further development of “PRISMA” – a **fully integrated research information system** in Sweden
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Discussion: Advantages, limitations, challenges
Nordic collaboration on system development, including online dynamic registers of scholarly publication channels
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Discussion: Advantages, limitations, challenges
Statistics since 2011
Possible to drill down to the institutional and departmental level

Vitenskapelig publisering

Institutionene rapporterer antall publikasjoner og forfattere til DBH. Denne rapporten kan vise enten publikasjonspoeng og forfatterandelser, eller antall publikasjoner for et gitt år.

Publikasjonspoeng er et vektet uttrykk for publiseringssaktivitet og mulig, og benyttes i finansieringsmodellen for universiteter og høgskoler. Ved å kikke på verdien i denne kolonnen kan du vise beregningsgrunnlaget. Forfatterandelser blir summet opp på de ulike institusjonsnivåer. For en publikasjon blir hver enhet kreditert ut fra andelen av publikasjonens forfattere som er tilknyttet enheten.

Årstall: 2015

Publikasjonspoeng og forfatterandel 2015

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Statlig høyskoler

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Used in official statistics
CRIS systems in Scandinavia

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Examples of the use of CRIS systems for four purposes

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Discussion: Advantages, limitations, challenges
Informing peer review panels in national research assessments

Norwegian climate research
An evaluation

Evaluation of humanities research in Norway
The Research Council are now conducting an evaluation of the entire field of the humanities. Research and teaching activities will be viewed in an overall context, and special focus will be placed on the societal impact of the research carried out.

The evaluation of humanities research in Norway started in autumn 2015 and is expected to be concluded in spring 2017. The evaluation will be conducted by international experts with extensive knowledge in the relevant subject fields.

The Research Council aims to evaluate all humanities research groups of a suitable size in universities, university colleges and research institutes.

According to national statistics, there are 3,300 persons employed in academic positions in the humanities in Norway. Together they comprise 2,200 R&D full-time equivalents (FTE). Norway invests roughly NOK 1.2 billion in humanities research annually.

Objective of subject-specific evaluations
The aim of the subject-specific evaluations is to provide a critical review of the Norwegian research system in an international perspective, as well as to provide specific recommendations on measures to encourage increased quality and efficiency of research.

These recommendations are intended to serve as a tool for the institutions themselves in their own strategic development efforts, for the Research Council in developing funding instruments and for the public authorities in developing policy.

Another aim of this evaluation is to identify areas in which Norway can play an internationally leading role. The participating institutions will be asked to specify research groups that are, or have the potential to be, at the international forefront.

Interplay between research and teaching activities
Research in the humanities is an important basis for providing high-quality teaching.
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Discussion: Advantages, limitations, challenges
"The dual funding system"
(Public sources)

Government

Research Councils
- Projects and Programmes
- Competition
- Research Evaluation

Direct grants
- Historical, Political
- Strategic
- Performance based

Research institutions
The model has three components:

A. A complete representation in a national database of structured, verifiable and validated bibliographical records of the peer-reviewed scholarly literature in all areas of research;

B. A publication indicator with a system of weights that makes field-specific publishing traditions comparable across fields in the measurement of “Publication points” at the level of institutions;

C. A performance-based funding model which reallocates a small proportion of the annual direct institutional funding according the institutions’ shares in the total of Publication points.
«The Norwegian model» (Denmark, Finland, Norway)

The model has three components:

A. A complete representation in a national database of structured, verifiable and validated bibliographical records of the peer-reviewed scholarly literature in all areas of research;

B. A publication indicator with a system of weights that makes field-specific publishing traditions comparable across fields in the measurement of “Publication points” at the level of institutions;

C. A performance-based funding model which reallocates a small proportion of the annual direct institutional funding according the institutions’ shares in the total of Publication points.

Necessary for getting complete, quality-assured data
A bibliometric indicator
with a balanced representation of all fields

Gunnar Sivertsen

gunnar.sivertsen@nifu.no
Nordic Institute for Studies in Innovation, Research and Education (NIFU)
P.O. Box 2815 Toyen, N-0608 Oslo, Norway

Abstract
As research in progress, we present two studies aimed at redesigning the bibliometric indicator of the “Norwegian Model” as response to an evaluation in 2013. The indicator is supposed to give a balanced representation of all fields, also those that are constructed as “peripheral” in traditional bibliometrics because of limited coverage in databases. The first study deals with balancing between different field-dependent co-authorship practices in the indicator, the other with the possible addition of a measurement of citation impact that could be applicable across all fields.

Keywords
Bibliometric indicators; productivity; citation impact; co-authorship; fractionalization; publication patterns; evaluation; the Norwegian model.

Submission type: Research in progress paper.
Relevant track: Data infrastructure for research metrics.

Introduction
The so-called “Norwegian Model” (Schneider 2009; Sivertsen 2010; Ahlgren et al. 2012), which so far has been adopted at the national level by Denmark, Finland and Norway, partly due to an EU initiative. The initiative is a clear attempt to fill certain gaps and distortions in the traditional bibliometric indicators. In particular, the lack of publication in English journals and the under- or over-representation of certain disciplines are seen as crucial issues to characterize the research performance of the countries. The "Norwegian Model" aims to provide a more balanced representation of all research fields, not only those that are highly represented in international databases. This indicates the importance of developing tools that can better reflect the diversity of research activities and outputs in different fields.
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Discussion: Advantages, limitations, challenges
Based on 13,630 publications from 17,314 researchers in 2011

Figure 1. Age and women's share of Norway's researchers and their total scientific publication output in 2011
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Discussion: Advantages, limitations, challenges
Advantages, limitations, challenges

- **Advantages**
  - Completeness, a balanced representation of all fields
  - Publicly available shared information
  - Multiple use of data for several purposes on different levels in the research system

- **Limitations**
  - International benchmarking not possible so far

- **Challenges**
  - Costly if not running for multiple purposes
  - Responsible use and interpretation of data
  - Commercialization of tools – and of data?
  - Making performing and funding organizations share and use the same data