Mapping the Structure and Evolution of Research Methods in Library and Information Science

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Outline

- Research Questions
- Mapping
- Studies Mapping LIS
- Data and Methods
- Results
- Comparisons
- Conclusion
Research Questions

- What are the research methods used in prominent LIS articles?
- Have research methods used in LIS changed over time?
Mapping

- Great interest in recent years
- Based on co-citation analysis
- Document co-citation analysis, author co-citation analysis
- Most frequently mapped knowledge domain - Library and information science (LIS)
- Mapping research methods in LIS
# Studies mapping LIS

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Journals</th>
<th>Time-interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>White and McCain</td>
<td>1998</td>
<td>12</td>
<td>1972-1995</td>
</tr>
<tr>
<td>Åström</td>
<td>2002</td>
<td>9</td>
<td>3 year</td>
</tr>
<tr>
<td>Janssens et al.</td>
<td>2006</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Åström</td>
<td>2007</td>
<td>21</td>
<td>1990-2004</td>
</tr>
<tr>
<td>Janssens, Glänzel and De Moor</td>
<td>2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zhao and Strotmann</td>
<td>2008</td>
<td>12</td>
<td>1996-2005</td>
</tr>
<tr>
<td>Chen, Ibekwe-Sanjuan and Hou</td>
<td>in press</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
Methods

- Document co-citation analysis
- CiteSpace
  (http://cluster.ischool.drexel.edu/~cchen/citespace/)
Data

- Journal Citation Reports (JCR), 2008
  - Information Science & Library Science
  - 20 journals with highest impact factor
  - Excluded 11 that were listed other subject categories

- JCR’s journal lists, 1997-2008

- 6 LIS journals
  - Appeared in 8 or more JCR journal lists
Journals

1. Journal of the American Medical Informatics Association
2. Scientometrics
3. Journal of the American Society for Information Science (and Technology)
4. Information Processing and Management
5. Journal of Documentation
6. Journal of Information Science
Data

- Web of Science
- 8,649 articles
- 1980-2009
- Bibliographic records
  - authors, titles, reference lists
## Total Number of Articles Published in 6 LIS Journals

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JAMIA</td>
<td>3,428</td>
<td>-</td>
<td>519</td>
<td>613</td>
<td>1.132</td>
</tr>
<tr>
<td>Scientometrics</td>
<td>2,328</td>
<td>375</td>
<td>533</td>
<td>963</td>
<td>1.871</td>
</tr>
<tr>
<td>JASIS / JASIST</td>
<td>1,954</td>
<td>418</td>
<td>739</td>
<td>1.312</td>
<td>2.469</td>
</tr>
<tr>
<td>Information Processing and Management</td>
<td>1,852</td>
<td>386</td>
<td>452</td>
<td>627</td>
<td>1.465</td>
</tr>
<tr>
<td>Journal of Documentation</td>
<td>1,712</td>
<td>128</td>
<td>167</td>
<td>320</td>
<td>615</td>
</tr>
<tr>
<td>Journal of Information Science</td>
<td>1,648</td>
<td>319</td>
<td>361</td>
<td>417</td>
<td>1.097</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1.626</strong></td>
<td><strong>2.771</strong></td>
<td><strong>4.252</strong></td>
<td><strong>8.649</strong></td>
<td></td>
</tr>
</tbody>
</table>
Results

1980-2009

1980-1989

1990-1999

2000-2009

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1980-1989

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2000-2009

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Results

- Two research methods/two clusters: Citation analysis and methods of information retrieval
- Prominent articles in these clusters
- Latent semantic analysis, web impact factor, h-index
- Web search queries, web accessibility
## Comparisons

<table>
<thead>
<tr>
<th>Author(s) and Year</th>
<th>Research Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>White and McCain, 1998</td>
<td>Information retrieval, citation analysis/bibliometrics/scientometrics</td>
</tr>
<tr>
<td>Åström, 2002</td>
<td>Citation analysis, experimental retrieval, visualization of knowledge domain</td>
</tr>
<tr>
<td>Jansens et al., 2006</td>
<td>Applied bibliometrics/research evaluation, methodological/theoretical issues</td>
</tr>
<tr>
<td>Åström, 2007</td>
<td>Bibliometrics, information retrieval, a library science oriented sub-field</td>
</tr>
<tr>
<td>Janssens, Glänzel and De Moor, 2008</td>
<td>The same two camps as White and McCain, 1998</td>
</tr>
<tr>
<td>Zhao and Strotmann, 2008</td>
<td>Information retrieval, bibliometrics/scientometrics</td>
</tr>
<tr>
<td>Chen, Ibekwe-Sanjuan and Hou, in press</td>
<td>Information retrieval, citation analysis (h-index sub field)</td>
</tr>
</tbody>
</table>
Discussion

Co-citation maps discussed in this paper are based on references that appeared in articles published in 6 journals in our sample. Different maps could have obtained if more journals were included, although we believe the main trends and actors would not have changed much.
Thank you for your attention!

Questions?

For further information, please contact:
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