

International contribution to library and information science in Poland: A bibliometric analysis

REMIGIUSZ SAPA

Institute of Information and Library Science, Jagiellonian University, Kraków (Poland)

This article reports findings from the study of the international contribution to the system of library and information science communication in Poland in the years 2003–2005. The sample consists of articles published both in selected journals and collective works. Two important dimensions determining the internationalization of local scholarly communication are considered: direct contribution (foreign authors' articles and papers and their translations published in Poland) and indirect contribution (citedness of foreign authors' documents in articles and papers published in Poland). Bibliographic data about the geographical distribution and affiliation of foreign authors are gathered and analyzed. Furthermore, the findings of citation analysis are presented to determine the percentage share of citations received by foreign documents as well as to find out what is the structure of such citations regarding the language and form, which thematic areas are most replete with such citations and which foreign journals are most cited in Poland.

Background and goals

Poland is a medium size country in the heart of Europe with the population around 38 million (*Mały Rocznik*, 2005). According to the National Library's *Directory of libraries in Poland* Polish library system consists of more than 10,000 libraries of various types (*Informator*, 2005). Altogether, Polish public, pedagogical and scientific libraries employ almost 30 thousand librarians (2001) (*Polish Librarians*, 2006).

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Address for correspondence:

REMIGIUSZ SAPA
Institute of Information and Library Science
Jagiellonian University, Kraków, Poland
E-mail: sapa@9inib.uj.edu.pl

0138–9130/US \$ 20.00
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In 2003, Polish Librarians Association had 8376 members (SPRAWOZDANIE, 2003). Furthermore, in 2004, 6 university institutes offered studies in information and library science (LIS) accredited by Polish University Accreditation Commission controlled by the Conference of Rectors of Polish Universities (<http://www.uka.amu.edu.pl/>). Counted together, they employed almost 200 scholars and academic teachers. Additionally, there were few other academic institutions offering LIS studies as professional studies (bachelor) or at master level. 13 other centers run post-secondary schools for librarians. Unfortunately, such quite a big scholarly and professional community is, according to the research conducted recently (SIN, 2005), poorly represented in international LIS communication (in 20 prominent international LIS journals). Polish authors contributed less than 1% of the total number of articles published in these journals from 1980 to 2003. Only in the very beginning of this period Poland was among the top 10 providers of LIS articles. The number of articles published by Polish authors in core LIS journals has decreased in last decades (UZUN, 2002). This phenomenon may result from the existence of quite strong LIS communication system in local language (Polish) that performs all or almost all functions such a system should perform and this way there is no strong motivations to make extra efforts to write and publish articles in English. Whatever the reasons are, it is proved that Polish authors don't contribute much to global LIS communication. This article is to find out if they absorb much from international LIS communication.

The main goal of this article is to define the character, scale and directions of international contribution to the system of LIS communication in Poland. Both direct contribution – foreign authors' articles and papers and their translations published in Poland and indirect contribution – citedness of foreign authors' documents in articles and papers published in Poland will be discussed. If we can imagine the system of scholarly communication as a market and publications as products available on this market, the measures used in this article are to reflect the share of this market obtained by foreign authors (additionally segmented according to some selected aspects). In particular the following questions will be considered and answered:

- How many articles (and their translations) written and co-authored by foreign authors are being published in Poland?
- Who are the foreign authors publishing in Polish journals and collective works and where are they from?
- What is the percentage of citations received by foreign authors' documents?
- Which foreign journals are cited most often in Poland? Do they form the main stream of cited journals or only supplement Polish periodicals?
- What is the structure of citations received by foreign documents regarding the language of cited documents?
- What is the structure of citations received by foreign documents regarding the form (digital or printed) of cited documents?

- Which thematic areas are most replete with citations of foreign literature and, on the contrary, which are discussed with neglecting of foreign literature?

Methodology and sources

Research on the internationalization of LIS scholarly communication has its quite long tradition. According to the longitudinal study referred to before (SIN, 2005) year by year LIS communication is becoming more and more international. But the first question that should be asked here is what in fact it means? In other words – how can we measure the internationalization of scholarly communication? REY-ROCHA & MARTÍN-SEMPERE (2004, pp. 96–97) mentioned a few important measures of the internationalization of scientific journals that can be summed up as follows: the inclusion of articles written by foreign authors (and their geographical distribution), co-authorship involving authors not from the country where analyzed journals are published, the scope of citations and the geographical distribution pattern of users (readers, subscribers and citers), publishing choices, the national structure of editorial boards, the policy of publishing institutions and the spectrum of international databases including (indexing) given journals. WORMELL (1998, p. 585) proposed a method to analyze three categories (authors, citations, and subscribers) simultaneously to determine so-called “international visibility of a journal”. Furthermore, we have a few well-known indicators. Apart from well known Garfield’s journal impact factor, immediacy index, cited half-life, which are designed rather to evaluate scholars and journals but which could also be used, to some extent, to measure their international impact, there are some other indicators proposed to measure other phenomena. One example of such is the journal diffusion factor (ROWLANDS, 2002), which also could be used to measure the internationalization of communication. Others, even more adequate here, are the regional impact factor introduced to compute the impact factor of non-SCI journals (SCHLOEGL & STOCK, 2004, p. 1157) or the degree of international openness (REY-ROCHA & MARTÍN-SEMPERE, 2004, p. 99) counted as the percentage of foreign articles in a given journal or group of journals. Of course there are even more indicators introduced to measure and describe various bibliometric aspects of scholarly communication and there is no point in discussing their strengths and weaknesses here (they have been discussed and analyzed in many articles, papers and books) (e.g. BORGMAN & FURNER, 2001).

Generally, regarding the goals of this research, there are at least three main limitations of such measures. The first one is that all of them are focused almost solely on journals (but what about disciplines strongly dependent on collective works, monographs and on other information objects?). The second, maybe even more important here, is the fact that the internationalization or globalization of scholarly communication is generally seen as the internationalization of so-called main-stream

journals (indexed in ISI databases and reported in *Journal Citation Reports*) (e.g. HE & SPINK, 2002). Although it is surely a very interesting and fruitful (judging by the number of publications) approach, it investigates only one side of the internationalization of scholarly communication. The third limitation results from the fact that researchers generally concentrate on bibliometric (or webometric) analyses and rather neglect those aspects of the internationalization that can not be counted directly from publications (of course not all of them – some researchers supplement bibliometric measures with for example scholars surveys (e.g. SCHLOEGL & STOCK, 2004)).

This article is not to overcome all of these limitations, but to propose slightly different approach to the concept of internationalization. The question here is not how much Poland contributes to global LIS communication or to the main-stream journals, but how much foreign authors contribute to Polish local LIS communication systems. The research has a quantitative character and is based solely on bibliometric data but it encompasses all the documents cited in examined literature (not only journal articles, but also monographs, websites, records from databases, grey literature, etc.). It means that its findings and their interpretation are limited to “visible”, formal signs of international contribution that can be measured this way. Other forms of contribution, which weren’t expressed in the form of publications or citations, were not taken into consideration. Nevertheless, taking into consideration all the documents that received any citations regardless their form makes it possible to present these aspects of LIS communication in a more comprehensive way.

The research was carried out in 2005 and 2006 but regards the articles issued with the years 2003, 2004 and 2005 as the dates of publishing (some of them were in fact published in 2006). 5 the most important Polish LIS journals, which attract most citations in Poland (Table 1), were examined. Four of them are purely printed and the first one – *Biuletyn EBIB* – is purely electronic (it doesn’t have any printed versions). What should be mentioned here is the fact that no LIS journal being published in Poland has the word “international” in its title or subtitle.

Furthermore, to minimize the risk of mistakes and misinterpretations, which could result from too small number of articles examined and from limiting the analyses only to journals, articles published in 20 collective works (collections of papers written by various authors but edited and published together in the form of books) in the years 2003–2005 were taken into consideration. Polish National Bibliography (*Polish Books*, 2006) and Polish Bibliological Bibliography (the term “bibliologia” is sometimes used in Poland for information and library science – *Polish Bibliological*, 2006) as well as the website of Polish Librarians Association (<http://www.ebib.info/publikacje>), which offers access to electronic conference proceedings, were surveyed in order to find the proceedings of conferences organized in those years and other collective works published in Poland. Altogether, 33 such LIS publications were identified.

Table 1. Research sources – articles published in Polish journals

Journals	Number of articles published (2003–2005)	Number of articles containing any citations
<i>Biuletyn EBIB</i> [<i>Electronic Information Bulletin for Librarians</i>] http://www.ebib.info/biuletyn/ Sections: <i>Artykuły</i> [Articles], <i>Badania, teorie, wizje</i> [Research, theories and visions]	246	160
<i>Bibliotekarz</i> [Librarian] Sections: <i>Artykuły</i> [Articles]; <i>Z bibliotek</i> [From libraries]	199	97
<i>Przegląd Biblioteczny</i> [Library Review] Section: <i>Artykuły</i> [Articles] (without numbers 1 and 2 from 2003)	38	34
<i>Zagadnienia Informacji Naukowej</i> [Issues of Information Science] Section: <i>Rozprawy, badania, materiały</i> [Thesis, research, materials]	39	39
<i>Praktyka i Teoria Informacji Naukowej i Technicznej</i> [Practice and Theory of Scientific and Technical Information] Sections: <i>Problemy, badania, przeglądy</i> [Problems- research – reviews], <i>Z praktyki INT</i> [From STI practice], <i>Z badań informacji naukowej</i> [Information science research]	44	41
Total	566	371

Not all of them contain many articles with citations and some others were issued in a very limited number of copies, other collective works contain only very few articles that could be without any doubts classified into the field of LIS. Finally, 20 collective works were selected and analyzed (Appendix 1). This way the picture of LIS communication in Poland became more complete and comprehensive. On the other hand, such an approach makes it impossible to answer the questions about the reasons of publishing articles in Poland about the way such decisions are made. While anybody who is able to prove his or her competence can submit the article to most scholarly and professional journals (the initiative can come both from authors and from publishers), collective works are generally composed of articles only of those authors who were invited to do so. But the goal of this paper is not to consider the reasons of publishing foreign authors' articles in Poland but to draw the static picture of the contribution of foreign authors to Polish LIS communication (written and formal) in the years 2003–2005 and this way to define this aspect of its internationalization. It could also be argued that the thematic areas of collective works are usually much more precisely defined and represent the concept of their publishers. They not necessarily reflect the main streams of scholarly and professional community's interests. But having been published they can promote, enliven or even create such interests in various areas. What's more, judging by the number of articles published in collective works in comparison with the number of those published in journals (compare the Table 1 and the Appendix 1) they play extremely important role in the system of communication analyzed in this article and ignoring them would make the picture incomplete and unreliable. In contrast to journals, 3 collective works from those taken into consideration are the result of international events – the conferences organized in Poland by the Institute of

Information and Library Science of the Jagiellonian University (Profesjonalna informacja w Internecie, Informacja o obiektach kultury i Internet, Public relations: biblioteki, wydawnictwa, informacja naukowa, uczelnie – <http://www.inib.uj.edu.pl/konfer/pocz/index.html>).

One could argue that also monographs should have been examined. But there are at least two reasons why they were excluded from the research. The first and the most important one is that in case of monographs, relatively few documents written by relatively few authors contain relatively many citations (particularly in comparison with articles). If monographs had been examined together with articles and papers, the result of such a citation analysis could have been strongly biased and reflected rather individual skills and preferences (or interests) than general patterns. The second one is that monographs are being prepared much longer than articles and those published in 2003 or 2004 may reflect the citation patterns characteristic for previous years. This is why they can hardly be compared with the patterns revealed in articles.

All the citations, both footnotes and references listed for each article as well as attached bibliographies were counted and analyzed. A few basic rules were followed:

- multiple citations of the same document in one article were counted as one citation
- self citations were treated in the same way as other citations (the research was not to evaluate the impact of individual authors)
- short reports on conferences and professional events were not taken into consideration.

Altogether, 8782 citations were identified in 729 articles. The average number of citations in one article equals 12.05.

Foreign authors and their direct contribution

Generally, only 69 articles written by foreign authors were published in the years 2003–2005 in the examined Polish journals and collective works. This number is dramatically small when comparing with the total number of articles taken into consideration in this research. Foreign authors' publications comprise only 6.9% of the "market". This share is even smaller if we compare only articles containing any citations: 47 articles written by foreign authors in comparison with 682 written by Polish ones (6.47%). Furthermore, there aren't any articles co-authored by foreign authors!

Most of the foreign authors' articles were translated into Polish and are available in Polish system of LIS communication only in such versions. In other words, LIS communication in Poland is totally dominated by Polish language – 98.6 % of analyzed articles are available in this language.

27 articles, out of 47 written by foreign authors and containing any citations, are published in the collective works (the authors were either the participants of the

conferences mentioned before or other scholars and professionals invited to write the articles). The other 20 are published in the journals. This means, that thematic areas touched in articles of foreign authors published in Poland reflect rather what Polish scholars, professionals and publishers are interested in than what foreign authors would like to publish. Most of articles published in the journals examined (almost only in one of them – *Biuletyn EBIB*) are translated versions of the same articles published before in foreign journals or conference proceedings. On the other hand, most of the foreign authors' articles published in the collective works are original.

Another question is who are the authors publishing in Polish journals and collective works and where are they from? First of all they are scholars and university teachers. Approximately one third of the total number of the foreign authors are professionals employed in libraries. Quite a big group is also formed by those employed in various institutions connected somehow with library and information profession, for example Libraries, Leisure and Culture Wrexham County Borough Council or Information Resource Center for Germany, US Embassy in Berlin. What is worth mentioning here is the fact that there were neither archivists nor representatives of professionals employed in museums. Furthermore, people dealing with information in a private or, in broader meaning, commercial sector are very poorly represented (the only exceptions are Klaus G. Saur from K.G. Saur Verlag GmbH, Sam Brooks from EBSCO Publishing, and to some extent John N. Aspery from the Institute of Public Relations in London).

Generally, each organization (or institution) is represented by one author. The exceptions are: Department of Information Science, Loughborough University (6 authors and 3 articles), Swedish School of Library and Information Science in Borås (2 authors and 3 articles), British Library (2 authors and 2 articles) as well as Glasgow Caledonian University; Bloomsburg University of Pennsylvania, Andrus Library; Respublikanska naučno-tehnička Biblioteka Belarusi and University of Central England in Birmingham, Kenrick Library, which provided only one article each but written by two authors (Table 3). Furthermore, 8 foreign authors contributed 2 articles each and another 1 even 3. The list presented in the Table 3 is alphabetically organized according to the authors' countries of employment (within the types of institutions defined in the Table 2).

Table 2. Foreign authors according to their affiliation

Types of organizations employing the authors (affiliation)	Number of authors	Number of articles (including the papers containing any citations)
Libraries (including university libraries)	28	30 (19)
Universities	21	25 (21)
Other institutions	9	11 (5)
Publishers	2	2 (1)
Unknown	3	1 (1)
Total	63	69 (47)

Table 3. Organizations employing foreign authors

	Organization	Country
Libraries	Respublikanskaâ naučno-tehničkaâ Biblioteka Belarusi (2 authors)	Belarus
	National and University Library in Zagreb	Croatia
	The State and University Library, Aarhus	Denmark
	Tallinn University of Technology Library	Estonia
	Bibliothèque Scientifique et Technique du Centre National d'Etudes des Télécommunications (CNET)	France
	Bibliothèque, Institut d'Informatique et Mathématiques Appliquées, Grenoble	France
	Deutsche Bibliothek Frankfurt am Main	Germany
	Hochschulbibliothekszentrum des Landes NRW, Digital Bibliothek (DigiBib)	Germany
	Stadtbibliothek Guetersloh	Germany
	Technische Universität Hannover, Technische Informationsbibliothek	Germany
	Zentralbibliothek Forschungszentrum Jülich GmbH (Research Centre Jülich)	Germany
	Zweighbibliothek Medizin Universitäts- und Landesbibliothek Münster (ZB-Med. ULB)	Germany
	British Library, London (2 authors)	Great Britain
	University Library, University of Surrey	Great Britain
	University of Central England in Birmingham, Kenrick Library (2 authors)	Great Britain
	Wellcome Library	Great Britain
	National Library of Foreign Literature	Hungary
	Stadt- und Universitätsbibliothek, Bern	Switzerland
	Koninklijke Bibliotheek	The Netherlands
	Bloomsburg University of Pennsylvania, Andruss Library (2 authors)	USA
Library of Congress	USA	
University at Buffalo, Health Sciences Library	USA	
University of Idaho Library	USA	
University of Illinois, Slavic and East European Library	USA	
Universities	Swedish School of Economics and Business Administration, Helsinki	Finland
	Institut Universitaire Professionnalisé, Grenoble	France
	Dept. Information and Communication, Univ. Applied Sciences and Arts Hannover	Germany
	Polizei-Führungsakademie Münster	Germany
	Aberdeen Business School, The Robert Gordon University	Great Britain
	Centre for Research in Library and Information Management, The Manchester Metropolitan University	Great Britain
	Department of Information Science, Loughborough University (6 authors)	Great Britain
	Glasgow Caledonian University (2 authors)	Great Britain
	Information Systems Institute, University of Salford	Great Britain
	Loughborough University, Department of Information Science	Great Britain
	Auckland University of Technology	New Zealand
	Oslo University College, Faculty of Journalism, Library and Information Science,	Norway
	Swedish School of Library and Information Science, Borås (2 authors)	Sweden
University of Kansas	USA	
Other institutions	Danish National Library Authority	Denmark
	Chartered Institute of Library and Information Professionals	Great Britain
	Institute of Public Relations in London	Great Britain
	Libraries, Leisure and Culture Wrexham County Borough Council	Great Britain
	Public Library Networking Focus. UKOLN	Great Britain
	School Library Association	Great Britain
	National Library Board	Singapore
	Pedagogiska Centralen, Malmö	Sweden
Information resource Center for Germany, US Embassy in Berlin	USA	
Publishers	K.G. Saur Verlag GmbH	Germany
	EBSCO Publishing	USA
Unknown affiliations		Great Britain, Lithuania, USA

At the first sight it seems that the group of university scholars and academic teachers is dominated by the authors from Great Britain (12 from 6 different institutions) and that the most numerous group among librarians are the authors from Germany (6 from 6 institutions). But a closer look proves only the first part of this conclusion. Among the authors representing “other organizations and institutions” there are 4 more authors from Great Britain (and no one from Germany) closely connected with library profession and practice, representing Chartered Institute of Library and Information Professionals; Libraries, Leisure and Culture Wrexham County Borough Council; School Library Association; Public Library Networking Focus. UKOLN.

Foreign universities employing the authors whose articles are published in Poland are not the most often cited universities in international or main-stream LIS communication. They haven't belonged to such universities for at least 14 years preceding this research (PERSSON & ÅSTRÖM, 2005). But it doesn't mean that they don't have an international reputation. They are mainly European institutions and the main-stream LIS communication is dominated by American journals and authors who naturally tend to cite American literature.

The analysis of the foreign authors' countries of employment makes it possible to cast light on the main directions of cooperation and influence. Of course when interpreting following conclusions we should have in mind generally very small direct contribution of foreign authors to the system of LIS communication in Poland (69 articles detected and analyzed). Altogether 17 countries are represented. Most of them (14), what seems to be obvious, are European countries (Table 4).

Table 4. Foreign authors and their articles according to the countries of employment

Countries, where the foreign authors were employed	Number of authors	Total number of articles
Great Britain	24	23
USA	10	13
Germany	9	10
Sweden	3	5
France	3	3
Denmark	2	3
Belarus	2	1
Norway	1	2
Croatia	1	1
Estonia	1	1
Finland	1	1
Hungary	1	1
Lithuania	1	1
New Zealand	1	1
Singapore	1	1
Switzerland	1	1
The Netherlands	1	1
Total	63	69

But, what shouldn't be neglected here, they are mainly countries from the north of Europe – 6 of them are the Baltic Sea countries. The number of Scandinavian authors counted together (from Sweden, Norway, Denmark and Finland) almost equals the number of German authors (7 in comparison with 9). Other continents are represented first of all by the USA (10 authors), but there are also two articles written by authors from such exotic (of course from the Polish perspective) countries like New Zealand and Singapore and this could be seen as a symptom of globalization of LIS communication. It became evident that if a "motorway" leads from Great Britain and quite good and wide "roads" join the USA, Germany and Scandinavian countries (treated together) with Poland, other countries are connected with Poland only with "footpaths". Of course this conclusion regards only the direct contribution of foreign authors to Polish LIS communication system. To see the whole picture it is necessary to analyze citing patterns and, in particular, geographical distribution of citations placed in articles published in Poland (what was carried out and will be presented further in this article).

When comparing the data with the ranking of the most contributing (regarding articles in the main-stream international LIS journals) countries for 1980–2003 (1. USA, 2. UK, 3. Canada, 4. Netherlands, 5. France, 6. Japan, 7. Germany, 8. Australia, 9. Belgium, 10. India) (SIN, 2005) there is nothing strange in the fact that Great Britain is at the top and that the USA and Germany are quite high. But the lack of Canada or Japan and only one author from the Netherlands suggests that geographical distribution of foreign authors is strongly influenced by other factors. Probably it reflects to some extent also the main directions of real and direct cooperation between Polish scholars and professionals and foreign ones, because, as it was said before, the fact of publishing in Poland is caused rather by receiving individual invitation from Polish publishers than by the special willingness of foreign authors. Apart from the UK, the USA, Germany and the Netherlands other countries represented in the Polish system of LIS communication are not the most contributing to international LIS communication.

Another interesting point here is the lack of any authors from Russia who played important role in Polish LIS communication before.

Indirect contribution – citations received by foreign documents

Because, as it was mentioned before, the research was focused on examining the contribution of foreign authors to Polish LIS communication (and not their influence on Polish authors), all the citations, both made by Polish and foreign authors were taken into consideration. The general rule is that the foreign authors don't cite any Polish documents. Due to the small number of articles written by the foreign authors containing any citations (47), the number of citations made by them is quite small (491)

in comparison with those made by Polish authors (8291). In the following, both kinds of citations will be analyzed jointly.

The first question is how many foreign documents are cited in comparison with Polish ones. How much of this “market” belongs to Polish LIS scholars and professionals and what is the part occupied by foreign authors? Generally, foreign authors’ documents (including translations from foreign languages) received 3249 (37%) citations in comparison with 5533 (63%) received by Polish authors’ documents (Figure 1).

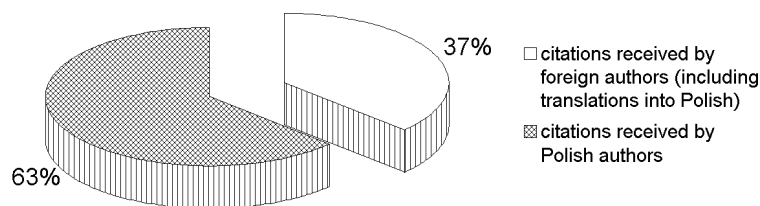


Figure 1. Shares of the “market”

Only 35 articles written by Polish authors from the 682 examined cited solely foreign documents in comparison with 277 articles without any citations of foreign documents. Although Polish documents attract more citations than foreign ones, the difference is not so significant as in the case of the direct contribution analyzed before. In other words, the authors publishing in Polish LIS communication system refer mainly to Polish literature but citations of foreign documents are so numerous, that can’t be perceived as merely supplementing. From this point of view the system can rather be described as balanced than as dominated by Polish documents.

Another issue, which can cast more light on the degree of internationalization of Polish LIS communication, regards the number of citations received by Polish and foreign journals. Altogether, journals from both groups received 2180 citations (Polish journals – 1397 and foreign journals – 783). Even considering only journals, the shares of the “market” looks more less the same as considering all the citations (Figure 1 before). Although Polish journals make up 64.1% of all citations received by journals and prevail in the system, foreign ones are also of high importance (35.9%). Of course analyses based only on the pure numbers of received citations don’t say much about the role of Polish and foreign journals in communication. If we compare not the number of citations but the number of various journals cited, it will become obvious that much more foreign journals (252) take part in Polish LIS communication than Polish ones (187) – what seems to be natural due to the fact, that there are much more non-Polish

LIS journals than Polish ones. It means that individual Polish journals (which in total received more citations), or at least some of them, received significantly more citations than individual foreign ones. The average number of citations received by each Polish journal (7.5) is much bigger than the average for foreign journals (3.1). Table 5 presents the top of the list of all journals (both Polish and foreign) arranged according to the number of citations received. In other words – the list of the journals most cited in the system of Polish LIS communication.

Table 5. LIS journals most cited in Poland (Polish journals are presented in boldface)

No.	Journals	Number of citations received
1	Biuletyn EBIB	279
2	Bibliotekarz	203
3	Przegląd Biblioteczny	151
4	Zagadnienia Informacji Naukowej	106
5	PTINT. Praktyka i Teoria Informacji Naukowej i Technicznej	59
6	Roczniki Biblioteczne	41
7	Poradnik Bibliotekarza	36
8	Forum Akademickie	32
9	<i>Journal of Academic Librarianship</i>	31
10	Biuletyn Informacyjny Biblioteki Narodowej	25
11	<i>Journal of Documentation</i>	25
12	<i>Library Journal</i>	24
13	Studia o Książce	20
14	<i>Journal of the American Society for Information Science and Technology</i> [dawniej <i>Journal of the American Society for Information Science</i>] – <i>JASIST</i>	18
15	<i>Electronic Library</i>	17

The first 8 places are occupied by Polish periodicals which received together 907 citations – almost a half (which equals 1090) of all citations received by journals. Definitely they form the canon of LIS communication in Poland (at least regarding journals). Foreign journals, although quite numerous, only supplement Polish ones.

Table 6 presents only foreign journals which are most cited in Poland.

Table 6. Foreign journals most cited in LIS articles published in Poland (top 11)

Journals	Number of citations received
<i>Journal of Academic Librarianship</i>	31
<i>Journal of Documentation</i>	25
<i>Library Journal</i>	24
<i>Journal of the American Society for Information Science and Technology</i>	18
<i>Electronic Library</i>	17
<i>Library Review</i>	15
<i>College & Research Libraries</i>	14
<i>American Libraries</i>	13
<i>Aslib Proceedings</i>	13
<i>Information Technology and Libraries</i>	13
<i>Library Trends</i>	13

There is no point in presenting the further part of this list. Due to the small number of citations received by individual journals (1 – 12 citations, 4 – 11 citations, 3 – 10 citations and other 233 journals – less than 10 citations each) the results can be biased by the preferences of individual authors. But, having this in mind, it is worth mentioning here that the first non-English language journal on this list is a Russian periodical *Bibliotekowiedzi* (10 citations received).

What seems to be particularly interesting here is the comparison of the above list with LIS journals rankings composed according to other factors. The question is if the foreign journals that attract most citations from articles and papers published in Poland are the same as those having the highest impact factor? Not exactly – only 5 journals from the above list can also be found among those with the highest impact factor (within the top 20): *Journal of Academic Librarianship*, *Journal of Documentation*, *Journal of the American Society for Information Science and Technology*, *College & Research Libraries*, *Library Trends* (MAUER-GÓRSKA, 2004, p. 51–52). Exactly the same 5 titles are repeated (within the top 20) by another ranking list published on ALA websites (SLMR, 2006), which is composed according to the opinions of experts – 56 deans of ALA-accredited LIS education programs and 120 ARL library directors. Generally only 6 journals (those mentioned above plus *Scientometrics*) from 20 most cited in Poland are among the top 20 journals of both lists. It suggests that (apart from those top 6 journals) the quality and impact of LIS journals are not the most important reasons for being read and cited in Poland. In other words, Polish LIS communication is influenced by the main stream of global LIS communication only to a limited extent.

Another question is what is the structure of citations regarding the language of cited documents. As it was easy to predict the foreign documents cited in Poland are most often in English (Table 7). This domination of English language is even more visible if we add also the citations of documents translated from foreign languages (at least 287 were translated from English, 9 from German, 4 from Russian and a few from other languages). Generally, Polish LIS communication is definitely English oriented and can absorb almost only such ideas, research findings and practical solutions that were described and published in English. At least two basic reasons of this situation can be imagined. The first one is that English, what is obvious, dominates global LIS communication. The second one may result from the fact that Polish authors in general are not willing (or able) to read in other languages than English. No matter what the reasons are, documents in other languages than English are referred to in Poland only very seldom and only by very few scholars and librarians. Actually, only foreign authors cite documents in Danish, Croatian, Lithuanian and Hungarian.

Table 7. Language of foreign documents cited in Poland

Language of cited documents	Number of citations
English	2485
German	192
French	129
Russian	60
Swedish	22
Italian	17
Spanish	11
Croatian	4
Czech	2
Lithuanian	1
Danish	1
Finnish	1
Ukrainian	1
Latin	1
Hungarian	1
Bulgarian	1

One could predict that digital documents, particularly those available online, should be cited more often in Poland than printed ones. But judging by the bibliographic descriptions found in the articles only 43.9% of foreign documents cited by Polish authors are digital. However, if we analyze all the citations received both by Polish and foreign documents it will appear that only 25% of them are digital. This, to some extent, proves “printed” character of LIS communication in Poland and the difference, namely 18.9%, probably can be interpreted as the result or influence of online availability on citing patterns. Polish documents used in LIS communication in Poland are rather rarely in digital form (of course apart from the websites) and, on the other hand, Polish authors are probably more willing to use those foreign documents which are easy available on the Web overcoming this way geographical barriers and often also financial ones. But the real share of electronic documents in Polish LIS communication is surely bigger. As it is well known authors sometimes tend to cite printed versions of publications even if they used electronic ones. When gathering data for this research the author, thanks to his personal knowledge about the way the literature for some articles were gathered by their authors, found quite a few examples of such practice. Of course this conclusion is not precise and can be seen only as a signal that the problem exists. Surely some additional research should be carried to prove and elaborate this hypothesis regarding Polish authors (unfortunately, it has not been done so far).

Thematic relations

The last question considered here is which thematic areas are most replete with citations of foreign literature and, on the contrary, which are discussed with neglecting of foreign literature?

The following analyses regard only those thematic areas that are represented at least by 15 articles. Taking into considerations all the subjects, even those touched only in few papers, would be risky because the conclusions could be strongly biased by individual preferences or language skills of given authors. Having eliminated such thematic areas from considerations made it possible to define some more general patterns. In the Table 8 boldface is used to mark the thematic area characterized by the proportion closest to the average for the whole LIS communication in Poland.

Table 8. Citations of foreign documents in articles representing various thematic areas

Thematic areas	Citations of foreign documents
Internet, its users, resources, services and information retrieval	56.1%
Libraries in society (including various aspects of information society or knowledge society and the role of libraries in social transformations and developments)	51.1%
Digitization, preservation, digital archiving of information resources and digital heritage, digital libraries	50%
Libraries in various countries and regions: cooperation, globalization, roles and functions	48.1%
Scholarly communication (including also some other aspects of science of science)	47.5%
Library websites	47.9%
Thematically oriented sources of information (European, medical, public, patent, business, about culture and education, etc.)	42.4%
Library and information services and collections	40.6%
Library catalogues (including document description and standards, cataloging, retroconversion and authority files, the software)	38.8%
Information-retrieval languages (including classification, metadata, ontologies and various issues of terminology)	38.6%
LIS education	36.4%
Library management (including personnel management, public relations, quality management and evaluation, marketing, lobbying, promotion, organizational culture, financing, sponsoring and so on)	34.7%
Library users (including such aspects as library anxiety, library instruction, reading habits and so on)	32.8%
Bibliography (theory, practice and history)	27.6%
Librarians and information professionals / library and information profession	25.9%
Electronic sources of information: e-books, e-journals, databases, etc.	25.1%
Publishing and book selling	23.2%
Law issues regarding libraries, archives and information oriented activities	21.8%
Various types of libraries and information centers (e.g. school libraries, hospital libraries etc.)	20.3%
Library collection management and acquisition	19.4%
History of libraries and library collections (including the history of bibliophilately)	15.7%

It means, that communication within thematic areas placed above this row is more internationally oriented and within those under it is rather locally oriented. There is no areas confined only to Polish documents or only to non-Polish documents. The average proportion is used here as a reference point (and not for example 50%) to avoid the influence of other factors like the availability or accessibility of foreign literature in Poland or the general skills and attitudes of the authors. The goal is to reveal specific characteristics in various thematic areas.

Different types of thematic areas can be observed above the delimiting bold row. First of all there is a subject which obviously should be internationally oriented: *Libraries in various countries and regions: cooperation, globalization, roles and functions*. There is almost nothing interesting in the fact, that those who write about foreign events, history or solutions are more dependant on foreign literature than those who write for example about library law, which is specific for Polish local situation.

The second group is composed of thematic areas connected with the Internet and the phenomena directly caused or influenced by this information environment and other related advancements in digital and network technologies. At the first sight the interpretation seems to be easy – the Internet as a global phenomenon is discussed globally. The same can be said about the area *Scholarly communication* and to some extent about all the other areas above the bold row. But many thematic areas characterized by relatively small number of citations of foreign literature (placed under the bold row in the Table 8) also can be seen as global or at least strongly connected with global phenomena (e.g. *Electronic sources of information: e-books, e-journals, databases*, etc.). Another interpretation could be that digital information environment is dominated by documents written and prepared in English, so writing about such phenomena naturally leads to citing foreign sources and literature more often than Polish ones. But such distribution of citations could be also seen as the result of the fact that the thematic areas represented by articles citing relatively many foreign documents are quite new and fresh or at least much recent than others. It would mean, that the Polish LIS communication system at first absorb foreign literature in a new area and some time must elapse to enter to the system more literature in Polish on a given subject. Generally, “historically” oriented thematic areas are based on Polish literature and sources. It means, such subjects are treated locally in Poland and the research definitely concentrates on Polish local history.

One could also conclude that the Table 8 reflects the popularity of various thematic areas among Polish authors – if there are not enough publications in Polish the authors have to base their considerations and research on foreign publications. But on the other hand, if the number, scope and quality of Polish publications is good enough to satisfy the needs of Polish authors, they tend to use them instead of foreign ones.

The system is Polish oriented and tend to use as much Polish documents as possible. Of course it does not mean that Polish authors are not active in exploring new areas of

LIS theory and practice. The proportion of citations of Polish documents is still quite high, even in the most internationally oriented (and recent) thematic areas.

Conclusions

The system of LIS communication in Poland is definitely dominated by Polish authors and Polish language. Foreign authors publish in Poland only very occasionally and their texts are, as a rule, translated into Polish. Only 6.9% of surveyed articles published in Poland in the years 2003–2005 were written by foreign authors. They can be found first of all in collective works. Generally direct contribution of foreign authors results from their participation in conferences in Poland or other forms of individual and direct cooperation with Polish universities or libraries.

Broadly speaking, the foreign authors publishing in Polish LIS communication system are scholars and academic teachers employed by universities and librarians or people employed by organizations strongly connected with libraries. There are almost no representatives of other professions belonging somehow to LIS area: publishers (only two exceptions), archivists, information brokers, people employed in museums and so on. The group is dominated by British authors. The direct contribution of American, German and Scandinavian authors is also noticeable. However, both the institutions employing the foreign authors and their countries of employment are not those (of course apart from Great Britain, the USA and Germany) which are ranked as most cited or most contributing to international LIS communication.

Indirect contribution of foreign authors expressed in the number of citations received by foreign documents is much bigger than their direct contribution (almost 40% of all citations). This proportion is also confirmed when analyzing only citations received by journals. But, on the other hand, Polish LIS journals form the canon of LIS communication in Poland and foreign periodicals, even if much more numerous, play only supplementing role. The most often cited Polish journal (*Biuletyn EBIB*) received 9 times more citations than the most often cited foreign journal (*Journal of Academic Librarianship*). However, only few of the foreign journals most cited in Poland are those with the highest impact factor or those recognized as having the highest quality. Generally, leading international LIS journals contribute to Polish LIS communication only to very limited extent.

It can be generalized that if articles published in Poland refer to foreign documents, these are documents in English (or translations from English). Other languages (for example German or French) are represented in Polish LIS communication by incomparable small numbers of citations.

According to the citations placed in articles and analyzed in this research, printed foreign publications are more often cited than digital foreign documents (56.1% and 43.9%). This finding may be in contrast with expectations, that availability of

documents on the Web should more significantly influence the pattern of citing. But on the other hand it reflects generally “printed” character of LIS communication in Poland and probably is strongly biased by tendency to cite printed versions of publications even if the electronic one was in fact used. But some additional research is necessary to prove this hypothesis.

Among thematic areas relatively rich in references to foreign documents there are obviously subjects directly describing foreign achievements, solutions and trends as well as subjects representing recent and global issues and problems.

Generally LIS communication in Poland can be seen as rather closed for direct contribution of foreign authors and quite open for indirect influence. But although the fact that almost 40% of this “market” is occupied by foreign authors (indirect contribution) the prevailing position of Polish authors and domination of Polish journals is unquestionable. In other words the system of LIS communication in Poland seems to be strong enough to persist and keep its relatively separate character. It absorbs global achievements and ideas but translate them into Polish and processes the information in Poland using mainly Polish tools. On the other hand, small direct contribution of foreign authors makes the Polish system of LIS communication attractive for those who want to influence significantly LIS developments in Poland: not very strong competition and quite a big number of potential readers make it worth publishing in Poland.

Of course, the conclusions presented above regards only LIS communication and do not represent the situation in other disciplines in Poland.

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Appendix 1
Research sources – article published in collective works

Collective works	Number of articles published (2003–2005)	Number of articles containing any citations
Bibliotekarz w świecie wartości : materiały konferencji, Wrocław, 15-16 maja 2003 r. [Librarians in the world of values: conference proceedings]. Ed. S.Kubow. Wrocław: Dolnośląska Szkoła Wyższa Edukacji Towarzystwa Wiedzy Powszechnej, 2003.	16	13
Biblioterapia w bibliotekach. Zakres, formy, metody, Wrocław, 10-11 października 2003 [Bibliotherapy in libraries: its range, forms and methods]. Ed. B.Szczepańska, B.Antczak. Wydawnictwo SBP-KWE, 2003; http://ebib.oss.wroc.pl/matkonf/wroclaw/index.php	11	9
Czytelnik czy klient. Ogólnopolska konferencja bibliotekarzy, Toruń 4-6 grudnia 2003 [A reader or a client? The all-Polish conference of librarians]. Ed. Bożena Bednarek-Michalska, Barbara Szczepańska. Wydawnictwo SBP-KWE, 2003; http://ebib.oss.wroc.pl/matkonf/torun/index.php	23	19
Zawód bibliotekarza dziś i jutro: materiały z ogólnopolskiej konferencji, Nałęczów 18-20 września 2003 [Librarian's profession today and tomorrow : proceedings of the conference in Nałęczów 18th-20th September 2003]. Ed. J.Nowicki. Warszawa: Wydawnictwo SBP, 2003	13	9
Biblioteki wobec nowych wyzwań [Libraries towards new challenges]. Ed. E.Głowacka. Toruń: Wydawnictwo UMK, 2004.	9	7
Nowoczesna biblioteka akademicka, Olsztyn 20-21 maja 2004 [Modern academic library]. Ed. B.Szczepańska. Wydawnictwo SBP-KWE, 2004; http://ebib.oss.wroc.pl/matkonf/nba/index.php (without poster sessions).	9	7
Polityka gromadzenia i profilowania zbiorów w polskich bibliotekach medycznych w dobie nowoczesnych technologii informatycznych, Gdańsk 21-22 czerwca 2004 [Collection policy in Polish medical libraries in the era of modern information technologies]. Ed. B.Szczepańska. Wydawnictwo SBP-KWE, 2004; http://ebib.oss.wroc.pl/matkonf/med23/index.php	12	10
Przestrzeń informacji i komunikacji społecznej [The area of information and social communication]. Ed. M.Kocójowa. Kraków: Wydawnictwo UJ, 2004	65	57
Public relations: biblioteki, wydawnictwa, informacja naukowa, uczelnie [Public relations: libraries, publishers, information centers, universities]. Ed. M.Kocójowa. Kraków: Wydawnictwo UJ, 2004	38	22
Społeczeństwo informacyjne i jego technologie [Information society and its technologies]. Ed. B.Sosińska-Kalata, K.Materska and W.Gliński. Warszawa: Wydawnictwo SBP, 2004	15	13

(continued on next page)

Appendix 1. (cont.)

Collective works	Number of articles published (2003–2005)	Number of articles containing any citations
Usługi – Aplikacje – Treści w gospodarce opartej na wiedzy. Materiały z VII Krajowego Forum Informacji Naukowej i Technicznej, Ustroń 17-19 września 2003. [Services – applications – resources in the knowledge economy. Conference proceedings..] Ed. D.Pietruch-Reizes, W. Babik. Warszawa: PTIN, 2004.	30	27
W kręgu książki, biblioteki i informacji naukowej: księga jubileuszowa dedykowana Profesorowi Zbigniewowi Żmigrodzkiemu [Books, libraries and information science: a jubilee book dedicated to Professor Zbigniew Żmigrodzki]. Ed. K.Heska-Kwaśniewicz, D.Pietruch-Reizes, Katowice: Wydawnictwo Uniwersytetu Śląskiego, 2004	23	23
Automatyzacja bibliotek publicznych: materiały z ogólnopolskiej konferencji "Automatyzacja bibliotek publicznych", Warszawa, 24-26 listopada 2004 [Automation of public libraries: proceedings of the national conference.]. Ed. E.Górska. Warszawa: Wydawnictwo SBP, 2005	22	16
Bibliologia, biblioteki, bibliotekarze: praca zbiorowa [Bibliology, libraries, librarians]. Ed. D.Grygowski, E.Barbara Zybert. Warszawa: Wydawnictwo SBP, 2005	7	7
Biblioteki naukowe w kulturze i cywilizacji: działania i codzienność : materiały konferencyjne, Poznań, 15-17 czerwca 2005. T. 1 i 2 [Scientific Libraries in culture and civilization : activity and everyday life: proceedings of the conference..]. Ed. H.Ganińska. Poznań: Biblioteka Główna Politechniki Poznańskiej, 2005	42	34
II Seminarium: Gromadzenie zbiorów – sztuka wyboru, Wrocław, 23-24 czerwca 2005 roku [2 nd Seminar: Library acquisition – the art of selecting]. Ed. H.Szarski. Wyd. SBP-KWE, 2005, http://ebib.oss.wroc.pl/matkonf/grom2/index.php	19	14
Informacja o obiektach kultury i Internet [Information on cultural objects and the Internet].Ed. M.Kocójowa, Kraków: Wydawnictwo UJ, 2005	25	22
Internet w bibliotekach III. Zasoby elektroniczne: podaż i popyt, Wrocław, 12-14 grudnia 2005 [Internet in libraries. Electronic resources: supply and demand]. Ed. B.Szczeptańska. Wyd. SBP-KWE, 2005; http://www.ebib.info/publikacje/matkonf/iwb3/ (without poster sessions and PowerPoint presentations)	11	6
Oblicza kultury książki: prace i studia z bibliologii i informacji naukowej [Various aspects of the book and the culture]. Ed. M.Komza et al. Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego, 2005	16	16
Profesjonalna informacja w Internecie [Professional information on the Internet] Ed. M.Kocójowa, Kraków: Wydawnictwo UJ, 2005	33	27
Total	439	358