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Library data in higher education institution management: Publishing behaviour research as a factor of academic assessment

Changes in the higher education landscape at the end of 1990s were brought about by various factors, one of the most important being the implementation of Bologna process. In many countries, like in Slovakia, the policy of democratisation in access to higher education lead to an increasing number of schools, higher number of students and shifts in the distribution of financing from the central level, based on the performance factor.
In this constellation of internal and external influences, the academic library moves closer to the centre of higher education institution information management system as it collects, stores, processes and disseminates information closely connected with some of the performance indicators, namely the publishing outputs of the faculty members. In line with the library law in Slovakia, one of the principal duties of academic libraries lies in building an official register of publications for their own university. This data is then integrated on a higher level to a national database.
The article presents a project of a research in publishing behaviour in a scholarly environment, with special focus on finding differences in patterns of information use, selection of publishing channels, citation modes and attitudes towards the electronic publishing media in two areas of scholarly research – arts/humanities and „hard“ or exact sciences.

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Introduction

Changes in the higher education landscape at the end of 1990s were brought about by various factors, one of the most important being the implementation of Bologna process throughout Europe. This process is defined by 5 principal action lines that reflect the deepening of international dimension in higher education:

- The adoption of a *common framework of readable and comparable degrees,*
- The introduction of *undergraduate and postgraduate levels in all countries,*
- *ECTS (European Credit Transfer System) compatible credit systems,* also covering lifelong learning activities,
- *A European dimension in quality assurance,* with comparable criteria and methods,
- The *elimination of obstacles to the free mobility* of students and teachers.

In many countries, like in Slovakia, the policy of democratisation in access to higher education led to an increasing number of schools, higher number of students and shifts in the distribution of financing from the central level, based on the performance factor.

In this constellation of internal and external influences, the academic library moves closer to the centre of higher education institution information management system as it collects, stores, processes and disseminates information closely connected with some of the performance indicators, namely the publishing outputs of the faculty members. In line with the library law in Slovakia, one of the principal duties of academic libraries lies in building an official register of publications for their own university. This data is then integrated on a higher level to a national database.

Obviously, as the information and communication technology evolved, especially during the last decades of the 20th century, the very substance of communication processes in the society went through turbulent changes and it must have been reflected in the realm of education as well. Hence, the relationship between libraries and academia was set on a new ground and was looking for contemporary expressions. Electronic communication and publishing, online distant access to electronic resources, all of these technological shifts revolutionized the way and the speed with which new information is transported towards its consumer and penetrates into the structures of shared knowledge, redefining the DNA of human society.

This article looks at recent changes in the academic library domain and presents a project of a research in publishing behaviour in a scholarly environment, with special focus on identifying differences in patterns of information use, selection of publishing channels, citation modes and attitudes towards the electronic publishing media in two areas of scholarly research – arts/humanities and „hard“ or exact sciences.

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1. Academic libraries in electronic environment

Some 20 years ago, with the advent and mass spread of electronic communication, the humankind witnessed a revolutionary change in the means of communicating knowledge. Electronic resources started to appear and became freely available on the internet. Nowadays, anybody can publish anything and it seems that if you need information, you just need to type several letters into your google. Of course, the information professionals know that not everything is freely available and the quality of what is available is often disputable. This is the environment where libraries should serve as quality controllers, as service and access concentrators.

Academic libraries, aware of their role in knowledge promotion, have rich experience in providing and concentrating licensed access to network information for their institutions, faculty and students. New communication technology brings not only new means of access to information but also new ways how people use information resources, how they work.

1.1 Libraries and the technology

The shift in our users / patrons attitudes toward libraries in the environment of electronic resources and services has been visible and studied for some time. In recent years, Department of Library and Information Studies at the Comenius University in Bratislava carried out several research projects in the area of *user information behaviour*. It focused, among other things, on changes in behaviour patterns of pre-electronic and electronic era from the viewpoint of practice and preferences in information search, processing and usage. The results that we obtained were in line with the research carried out on a larger, international scale. They confirm that people prefer using electronic resources because of their instant availability. Quick and easy access is one of the key factors of selection. On the other hand, when it comes to publishing, authors in the scholarly domain prefer traditional publishing channels, mostly due to factors connected with credibility and academic values (e.g. Steinerová and Šušol, 2005).

Web 2.0 represents a new paradigm, new level of development in web technology that fosters *individualization of communication* and creation of social networks. As Stuart Weibel puts it in the discussion on „online lives“, it is a happy irony that we are witnessing the steady transition of computing technology from an alienating presence in our lives toward an enabling technology for better communication and connection (Libraries..., 2007).

In order to draw our patrons from the virtual space back to our libraries and their services, it is necessary to change the optics and „to start thinking about the library in the user environment rather than the user in the library environment“ (Storey, 2006). This can be done via several strategies – e.g. integrating local library systems with instant messaging systems (to send the message about a book being delivered to the library), integration with course management systems (to prepare the course information package for the students), or linking the search results in Amazone to display local library holdings etc. (Storey, 2008).

To go even further, it may be useful to bring up the notion of community that is so popular in cyberspace nowadays. OCLC, for example, started to create worldCat community around their union catalogue. It is being done via personal profiles or worldCat accounts where link to the local library is preserved and users have the possibility of adding reviews, evaluations, recommendations on the items in the catalogue. At the same time OCLC developed new tool – WorldCat Local which integrates access to the whole collection of library information resources via simple search box, looking for information in WorldCat as such (Gauder, 2008).

In the light of what have been mentioned about changes in the functioning of libraries in general, one certainly has to ask questions about the future of academic libraries, about their position in the structure of a university, their services, about new possible crossroads of interest for an academic library and a higher education institution. In recent years, there was

plethora of research activities going on all over the world to find the answers. A lot of them were aimed at finding qualitative and quantitative measures of changes in using information services at academic libraries. Research carried out by the Research Information Network and the Consortium of Research Libraries in April 2007 showed that there had been a fall over the past years in the number of researchers visiting their institution's library regularly. Also, as users of digital information, researchers place a high value on electronic journals, but a much lower value on libraries' provision of other kinds of digital resources (Researchers, 2007).

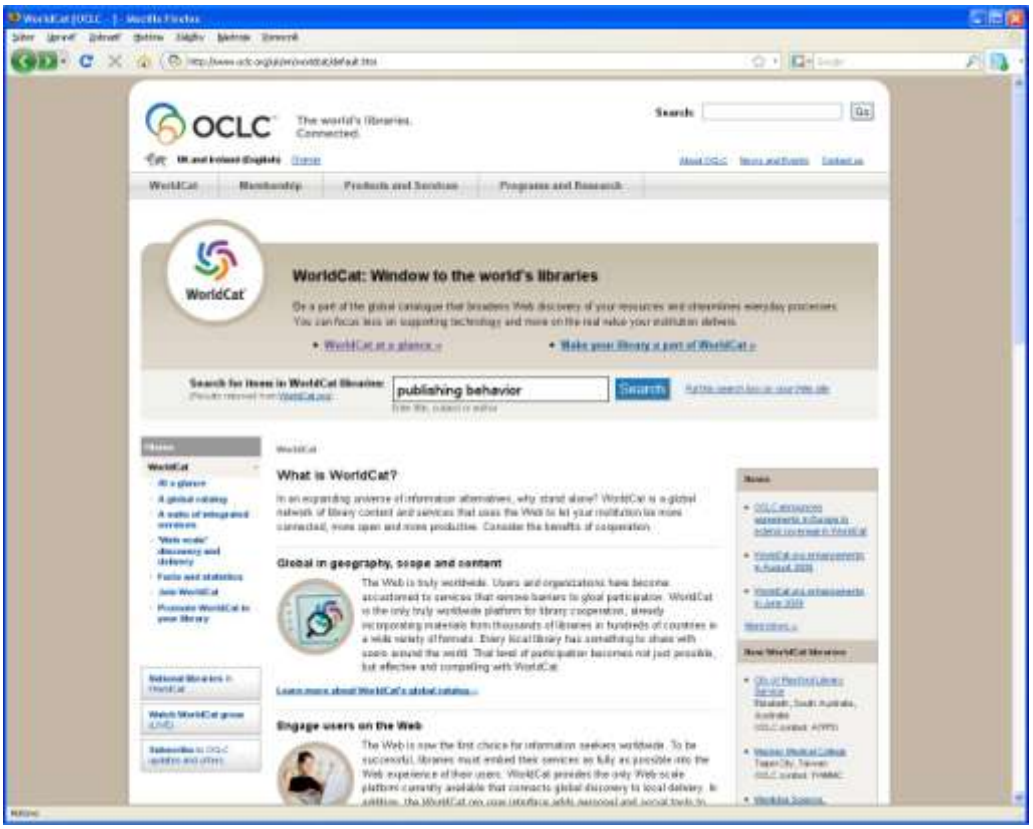

Figure 1: OCLC WorldCat Catalogue

In 2005, a large study on academic library usage and outcomes among students and faculty was conducted by the Library Research Service and the Colorado Academic Library Consortium (Dickenson, 2006). The results of the survey show that the faculty takes greater advantage of remote library access than do their undergraduate students. Print publications remain the most frequently utilized type of information resource among faculty members, although access to electronic journals was also mentioned by more than 60% of respondents.

A user survey concentrated on usage of electronic resources was carried out among the students of the Faculty of Philosophy, Comenius University in Bratislava, in 2008. The academic library offers online access to electronic journals and books via several internationally known providers and services like Web of Knowledge, Scopus, eBrary Academic Complete, Blackwell, Science Direct, ProQuest 5000 International, and others. It was only a pilot study with 60 respondents (approx. 2% of the students population) but the results showed that even though most of the students consider themselves to be experts in using internet and speaking foreign languages (English representing around 90%), yet only around 10% of them use access to electronic resources via library site. It is surprising that only 56% of students know about this service. Most of the students think that the service is not sufficiently promoted, although library makes regular presentations to newly admitted

students and special one-off courses offered to individual departments at the beginning of each academic year.

As for the policies and visions, Marcum's idea of new academic library in 2002 was built on such concepts as web-based information, meta-data, resource links, cross data-base searching, online data-bases, document delivery, remote access, group study areas, services oriented organization, consortia, information commons (Marcum, 2003). Similarly, Campbell sees a new mission of academic libraries in new activities or services, like providing quality learning spaces, creating metadata, offering virtual reference services, teaching information literacy, managing resource licenses, collecting and digitizing archival materials, maintaining digital repositories (Campbell, 2006). These new approaches and services do not necessarily reflect only the technological changes in the environment, but also social and organizational shifts in academic and library institutions.

In his strategy for academic libraries in the first quarter of the 21st century, Lewis (2007) outlines a bunch of 5 principal goals: complete the migration from print to electronic collections; retire legacy print collections; redevelop library space; reposition library and information tools, resources, and expertise; migrate the focus of collections from purchasing materials to curating content.

1.2 Libraries and the organisation

In principle, there seem to be two paths that have the highest priority in the development of academic libraries at the moment. One of the promising new directions that are not only being examined but put into practice, is the academic libraries involvement in the trend of *institutional publishing*, creating open access electronic repositories of intellectual output of university teachers and researchers. Quite naturally, libraries are the units which frequently take the responsibility for conceiving, building and maintaining these repositories.

The second direction can be seen as a more profound one, an attempt to change the perspective of perceiving the *place of academic library in the structure of a university*. Traditionally, a university or faculty has several scholarly units, usually called departments or institutes, which are devoted to various academic disciplines. Then there are 3 or 4 organizational, administrative units that take care of the institution's functionality and that usually have their own information system – which is more or less computerized and more or less interconnected. These administrative units are – department of study affairs, department of research, department of international affairs, department of personal/economic agenda.

Library is still very often seen as a mere warehouse of books and journals, under better circumstances it is known as a unit responsible for access to electronic resources. Even nowadays, however, the academic libraries – at least in Slovakia – participate on the tasks which have direct impact on the faculty's general perception, from the outside of the institution. It is, for example, building of the registry of faculty members' publications as one of the principal parameters in the measurement of faculty performance.

The level of cooperation among the above-mentioned faculty units and the library could and should be higher. In fact, it seems that new requirements on the quality and amount of data that is necessary to be produced for top hierarchies of higher education management (university, ministry) command a totally new scale of integration, which could lead, for example, to a direct connection between library catalogue and individual courses descriptions, or increase library's involvement in the preparation of accreditation materials.

A model of such aggregation can be based on the principles of integrated knowledge management in the environment of higher education institution (Rešetová, 2007). The model is built upon a central position of academic library that is surrounded by the other four units. It collects, integrates and processes the information for the purposes of the institutional management. This solution could seem ambitious, but taking to account the experience of

information professionals in the library and the absence of other units that would be able to take over the role of managing a complex system of academic information, this approach could be justifiable.

Actually, this model seems to be in line with the recent trends of the search for economic efficiency in the library domain. As Kaufman points out, "university administrators are asking library directors to demonstrate their library's value to the institution in easily articulated quantitative terms that focus on outputs rather than on traditionally reported input measures" (Kaufman, 2008). Pilot projects of this type are carried out mainly in the United States and are based on the *return on investment* (ROI) model (Luther, 2008). It concentrates on an attempt to express the contribution of the library and its services to the support of the university's goals. This contribution can be articulated, for example, on the basis of grant income generated by faculty with the help of library services.

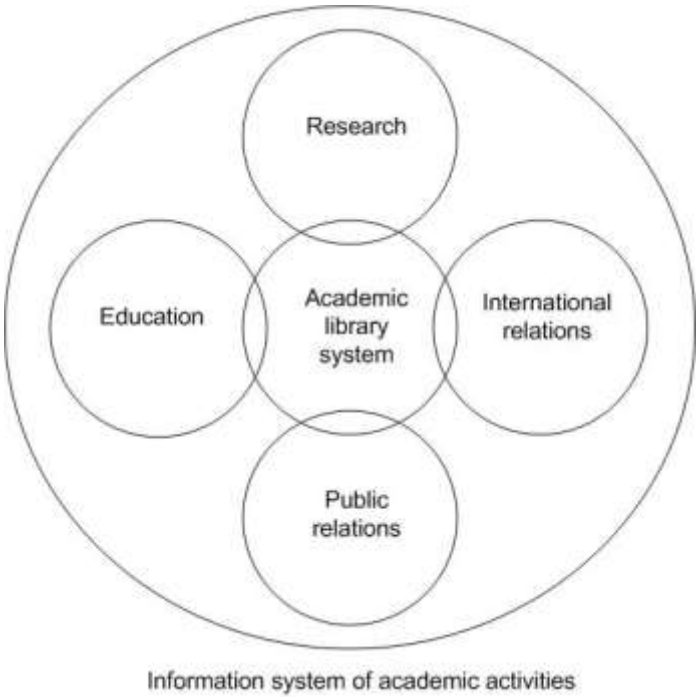

Figure 2: Integrated knowledge management of higher education institution (Rešetová)

2. Publishing behaviour

Publishing behaviour represents an important part of *information behaviour* of information users. While information behaviour in the broadest sense is usually defined as a complex of various ways of interaction between a human as an actor of information processes and the information, the publishing behaviour is a specific component of this phenomenon, that occurs on the production side of information / communication spectrum. It is possible to explore the publishing behaviour using various approaches, quantitative and qualitative methods, analyzing the subjective interpretation of reality among authors themselves (sociological or ethnological methods based on questionnaires, surveys or interviews) or measuring hard data in the form of publishing outputs / production.

2.1 Publishing behaviour research

Research into publishing behaviour of authors in the academic environment is almost as old as the modern science. Reflections on scholarly communication belong to the principal components of the philosophy of science. One of the most important pushes for the

development of this research area arrived in 1960s, with the application of computing technology into the processes of secondary information storage and retrieval. It is no surprise, then, that there is an enormous amount of articles and reports in the literature. Research projects of this character concentrated, of course, mostly on specific conditions and problems of particular scientific discipline (Cox, 1993, Luukkonen, 1992, Swan, 2008, Kyvik, 2003, Rey, 1998, Rockwell, 2000, Björk et al, 2000 etc.).

One of the recent surveys in Slovakia was done in 2002 by means of a questionnaire among the users of academic libraries. It focused, among other things, on the authors' relationship towards traditional and electronic publishing technologies. The results supported the assumption that the acceptance of electronic communication channels for publishing the output of scientific research depends on particular discipline, with strong unbalance between social sciences and humanities on one side and natural and technical disciplines on the other. We also found the correlation between the level of acceptance and usage of electronic publishing and the age of author, the level being higher in age groups up to 40 years. A straightforward link between increasing age and decreasing support to using electronic communication technologies in publishing, however, was not clearly confirmed (Šušol, 2004).

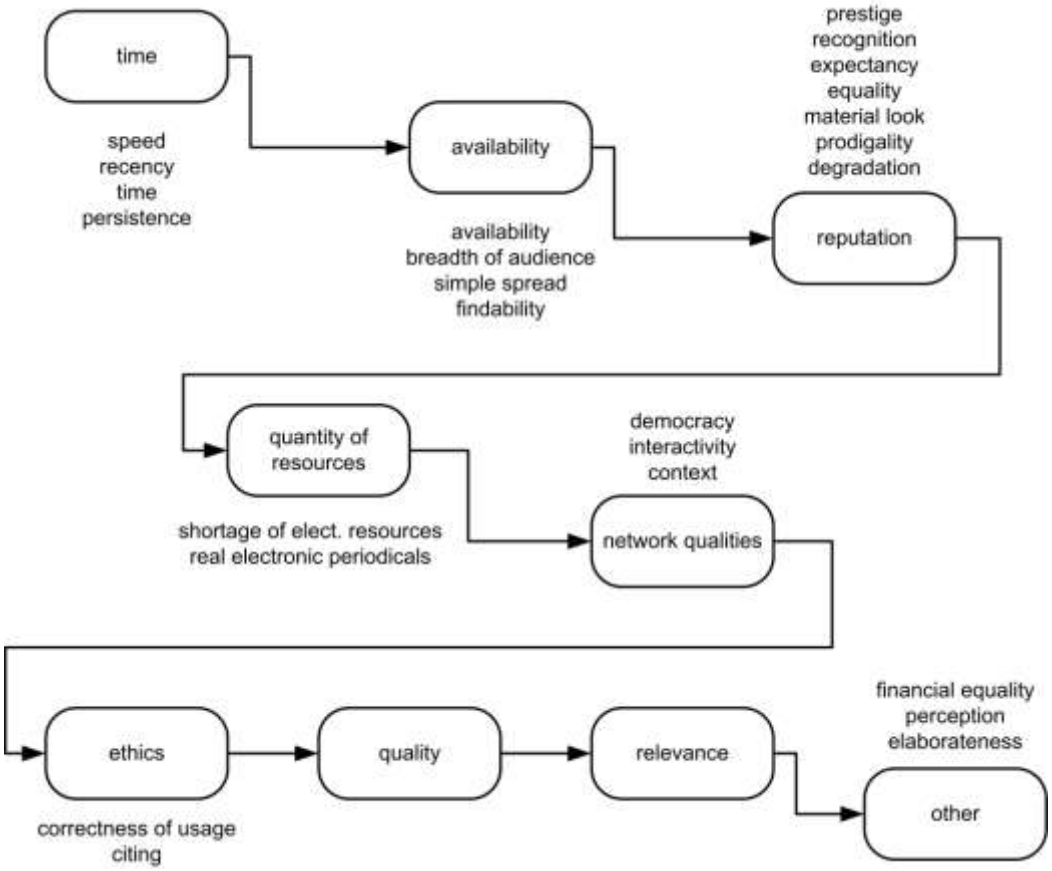

Figure 3: Phenomenographic map of the reasons of author's attitudes towards traditional and electronic publishing

A combination of qualitative and quantitative methods was applied in the survey of publishing preferences of PhD students at the Faculty of Philosophy, Comenius University in Bratislava. One of the key issues was the authors' attitude towards traditional and electronic publishing. Out of 21 respondents, there was only 1 who clearly preferred publishing in electronic resources, while 8 students did not use or prefer electronic publishing at all. The

real as well as potential authors are aware of the differences between various types of electronic resources as far as their quality, prestige or financial suitability are concerned. The phenomenographic map, illustrating the reasons of individual author's attitudes or choices, contains 3 most frequent categories – *time*, *availability* and *reputation*. First 2 categories (time and availability) are being mostly connected with electronic publishing. The results also indicate that the refusal of electronic publishing channels is caused rather by their non-acceptance in the authors' closest peer environment, not that much by the fact that the authors themselves would not realize the overall circumstances, advantages and disadvantages of electronic publishing (Steinerová et al, 2006).

Publishing behaviour, however, is closely connected with a wide range of other topics, including economic, social and environmental dependencies of information activity, literacy and information literacy (Rankov 2004, Steinerová 2005, Hrdináková 2007), information policy, quality of information environment, website findability and user-friendliness (Makulová 2007a, Makulová 2007b). The above-mentioned examples and results demonstrate that the publishing behaviour is a multi-dimensioned research domain, as the behaviour of information process actors is influenced by various factors. The attitudes, opinions, preferences, that together define publishing behaviour of authors in academic area, are not only subject to evolution in time, but have also certain local or national particularities.

2.2 Publishing behaviour and university financing

One of the principal approaches towards research in publishing behaviour is the application of quantitative methods of scientometrics or bibliometrics that are usually put into a broader context. Scientometrics is not a new discipline, but very current at the moment in Slovakia, vividly discussed in the academic circles due to the fact that some of its methods and indicators are being recently used as an important part of university management and of allocation of financial resources from the level of ministry of education.

This model of financing is based on the fact that universities are not only educational but also scientific institutions, that the education is inevitably bound to university teachers' own research and the overall results of a university are connected with its scholarly qualities. In the area of educational performance, basic parameters are the number of students, indicator of economic intensity of the study field, and indicator of qualification structure of the teachers (professors, associated professors, assistants with PhD). When it comes to research, the variables like the number and financial value of research grants, doctoral (3rd level) studies, and publishing outputs are taken into account.

Usage of scientometrics procedures in the assessment of scientific performance is constantly criticized, the most frequent objection being that the quality is not taken into consideration. The truth is, however, that over the years the system which is basically *quantitative* has taken on some *qualitative features*, used mostly within institutional assessments of scientific and pedagogical productivity – although this attempt at „qualification" of a quantitative system is not always successful. The number of students as a benchmark of measuring performance in education is typically a quantitative parameter, pushing universities to enroll large amounts of students and, at the same time, it definitely lowers the level of university education. The attempt to make the system more qualitative led to the introduction of teachers qualification structure coefficient (based on the assumption that the higher the qualification of teacher, the better his teaching is?) or economic intensity coefficient. In scientometrics itself, there are certain methods of introducing qualitative parameters reflecting not only the amount of publications or citations, but also their character (type of publication, type of citation/reference), or the quality of resource in which the article is published (Current Contents, ISI, impact factor, Hirsch index etc.).

On the level of publications, for example, scientometrics usually works with 2 types of data – number of publications and number of citations or references on these publications. This quantitative data can be qualified in various ways:

- publication – type
- publication – citation
- citation – type (domestic, foreign, registered in citation indices, non-registered, reviews)

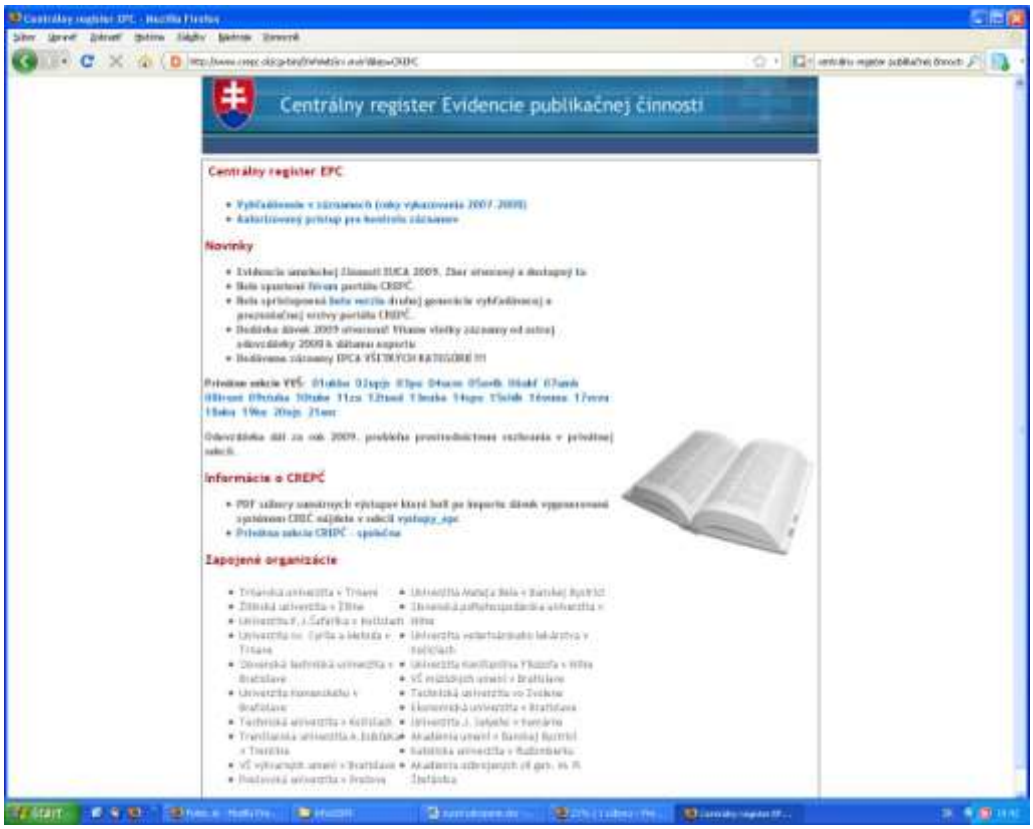

Figure 4: Central register of HEI publications in Slovakia

The discussions concerning the applicability of scientometric methods in research quality and performance assessment become even more heated when it comes to money. Within a university, the distribution of finances that is based on performance criteria is traditionally seen as a disadvantage for the humanities. Quantitative parameters of research evaluation are apparently more suitable for the exact disciplines with direct international cross-connections. In the strict budget regimes of this type, faculties of humanities and social sciences find themselves very often in existential problems, underfinanced, asking questions about their raison d'etre. Situation seems to be similar in many Central European countries (Randák et al, 2008).

As a result of performance measurement activities in Slovakia, the system of registration of publications was introduced. On its microlevel, the system is run by academic libraries and became an important tool of comparing performance of individual universities in publishing. This data is integrated on a macrolevel into the Central register of publishing activity which has several functions, like a public presentation of Slovak universities production, collection of national data for the purpose of financial management of universities and removal of duplicities in the registers of individual schools (Skalka, 2008).

Discussions on the role of quantity and quality indicators in scientometric assessment of research are not isolated in Slovakia. In Great Britain, for example, a series of articles and comments on judging the relevance of scientometrics criteria in comparison with expert assessment appeared in connection with a national project of research evaluation (e.g. Harnad, 2008a). It is frequently concluded that the expert assessment by a group of peers from the scientific discipline is a natural criterion of validating the metrics approach. The latest run of British RAE was mostly based on expert judgment of publications, but the forthcoming project – the Research Excellence Framework (REF) which has been heavily discussed lately, will be assessing with the help of metrics data, including citations, the number of graduates of PhD level studies or the amount of financial means obtained via grant schemes. Some form of expert assessment is being considered as well, although maybe only in the form of interpretation of results obtained via metrics data. (Harnad, 2008b)

Similar model of science assessment was applied in 2008 in Australia, within the Australian Research Quality Framework project. Expert evaluation is based on quantitative performance indicators, including bibliometrics. These indicators are taken into account together with other data that the evaluation commissions have at their disposals – contextual information from the evaluated groups, full-texts of publications that are considered representative and best, complete list of publications for the assessed period of 6 years (Butler, 2008). These evaluation criteria are similar to the principles of so-called complex accreditation of higher education establishments that is going on at the moment in Slovakia.

Several authors (Harnad, Oppenheim), however, in their analyses point to the fact that the conclusions of the assessment based on the principles of scientometrics usually match the expert assessment, so all and all both approaches lead to the same result.

2.3 Proposal of a new research

In order to become familiar with the publishing behaviour in academic environment in Slovakia, we propose a research that will be carried out in the following years by means of several methods and will concentrate on its various aspects:

- authors' preferences (questionnaire)
- attitudes towards publishing in electronic publishing channels / repositories
- strategies and politics in the area of publishing (interviews with managers)
- real publishing patterns in a wide range of scientific disciplines (metrical analyses)

Bibliometric component of the analyses will focus mostly on these issues:

- publishing in foreign language / current contents journal (possibilities, numbers etc.)
- usage of foreign (foreign language) resources / electronic resources
- types of publications
- co-authorship
- methods and quantity of citing/referring
- attitude towards publishing in the network environment / open access regime.

The research should lead to defining the patterns of publishing behaviour of authors in the academic environment, with respect to the particularities in humanities / social sciences, natural sciences and technical disciplines. On the international level, in cooperation with partner departments (Czech republic, Poland, Slovenia) the research will strive to compare the situation in several EU countries that have similar conditions influencing the structure of publishing behaviour (linguistic, geographic, historical determinants), eventually with other countries of Europe (Germany, Austria, Greece, Netherlands). The aim of such confrontation is to find the scale of competitiveness of science in Slovakia with respect to the conditions in the neighbouring countries.

The pilot phase of bibliometric analyses was carried out at the Comenius University (CU) in Bratislava, on the data of publications register that is available via iPortal of the Academic

library (http://edo.uniba.sk:8000/cgi-bin/gw_45_1e/chameleon). The aim of the analysis was to map principal publishing patterns of CU teachers, with respect to finding the differences in various areas of scientific research.

In March 2009, the CU database, which has been systematically built since the beginning of 1990s, contained 182 713 records about various types of publications. In order to concentrate on comparison of publishing behaviour of authors in selected areas of research, data of 4 CU faculties were chosen for the introductory phase of analyses – Faculty of philosophy (FiF), Faculty of medicine (LF), Faculty of mathematics, physics and informatics (FMFI) and Faculty of natural sciences (PrF). These faculties are responsible for almost 62% of university production in publications. The distribution of records among faculties in the whole retrospect of the database is as follows:

FiF	FMFI	PrF	LF	CU overall
31 139	14 697	29 673	37 405	182 713

Table 1: Number of records in the CU publication register database

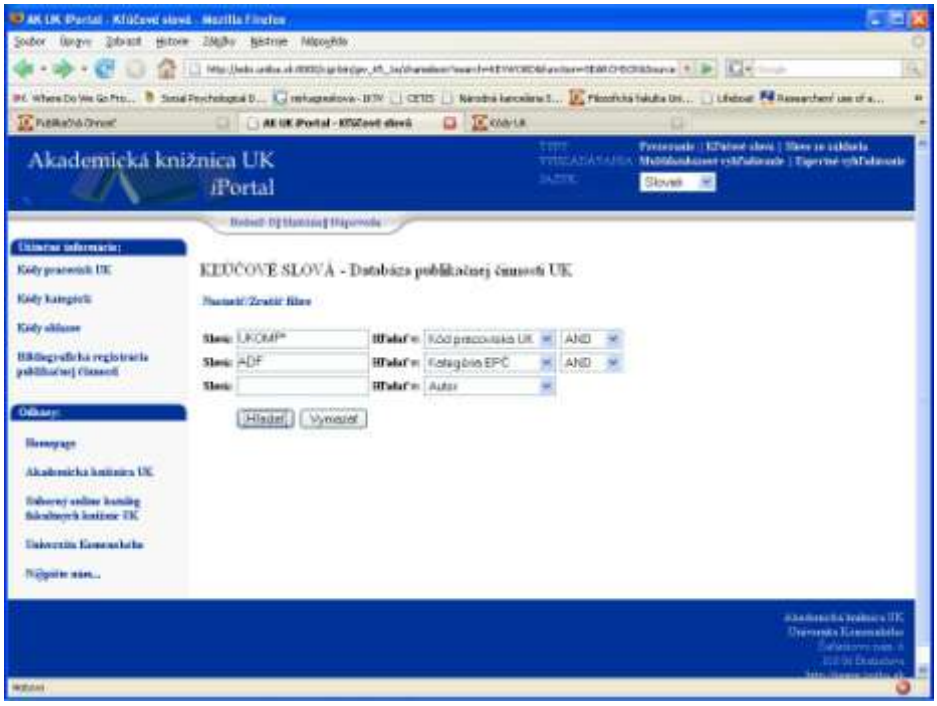

Figure 5: iPortal of the Comenius University Academic library

We were interested in the typological structure of publications. Typology of publications that is used at the universities in Slovakia was defined by Decree of ministry of education in 2008. Overall, the scale contains 79 types of publications. Some of them are considered to be of higher quality (e.g. A – scientific works), as they publish the results of original scholarly research, usually validated by the quality of publication resource/journal (CC journal, reviewed collection of papers etc.).

The articles in national journals and papers presented at national conferences are the most frequent types of publications. The articles in foreign CC journals and contributions at foreign conferences represent approximately 5% of production. Top 20 of the most frequent publications at the university level does not contain monographs, which are usually considered to be the crucial scientific output in the area of humanities and social sciences.

Code	Category	CU	CU %
ADF	Scientific works in national non-CC journals	22276	12,19
BDF	Professional works in national non-CC journals	18009	9,86
AFH	Abstracts of contributions from national conferences	15588	8,53
AFD	Published contributions at national scientific conferences	15186	8,31
AED	Scientific works in national reviewed collections of papers, monographs	11527	6,31
ADC	Scientific works in foreign CC journals	9689	5,30
AFG	Abstracts of contributions from foreign conferences	9331	5,11
GII	Various types of publications and documents that cannot be classified to any category	9244	5,06
ADE	Scientific works in foreign non-CC journals	7645	4,18
AFC	Published contributions at foreign scientific conferences	6339	3,47
EDJ	Surveys, translations in journals and collections of papers	6298	3,45
EDI	Reviews in journals and collections of papers	6289	3,44
ADD	Scientific works in national CC journals	3797	2,08
AEG	Short announcements, abstracts of scientific works in foreign CC journals	2775	1,52
BCI	Course books and textbooks	2696	1,48
BED	Professional works in national reviewed collections of works (conference as well as non-conference related)	2592	1,42
BEF	Professional works in national non-reviewed collections of works (conference as well as non-conference related)	2481	1,36
FAI	Editorial works on book publications	2431	1,33
AGI	Reports on research projects	2419	1,32
DAI	Theses	2116	1,16

Table 2: 20 most frequent types of publications at CU overall (absolute figures and percentages)

Detailed metrics of publishing activity with focus on the share of individual categories on the production of each faculty reveals that the output of the Faculty of philosophy concentrates in the area of survey works, reviews and professional works in national non-CC journals and national conferences. Focus of publishing at Faculty of mathematics, physics and informatics is on scientific works in foreign CC journals, contributions on national and foreign conferences as well as works in national and foreign non-CC journals. In natural sciences, top 5 most frequent publications are scientific works in national non-CC journals, contributions and abstracts from national conferences, articles in foreign CC journals and in national reviewed collections of works, abstracts of contributions from foreign conferences. At the Faculty of medicine, the most frequent publications are scientific works in national non-CC journals, abstracts of contributions from national conferences, professional works in national non-CC journals and abstracts of contributions from foreign conferences.

In humanities and social sciences, it is more typical to publish in national information channels, journals and conferences, in information resources of professional and survey character. As a big part of the disciplines in this area has a philological or literary nature, it is comprehensible that the reviews are quite frequent.

On the contrary, in the disciplines of „exact“ nature, like mathematics, physics or natural sciences, the publishing is focused more on international audience and hence on CC journals. The question is to what extent this international character of research is influenced by other factors, like the researchers' ability to conceptualize and present a regional or national research problem in a way that is attractive for the professionals abroad, or the capacity to communicate the research results in foreign language.

	FiF	FMFI	PrF	LF
ADF	7,09	7,82	10,90	20,95
BDF	11,24	2,43	2,74	9,53
AFH	0,41	2,79	10,13	16,34
AFD	7,54	12,34	10,08	4,50
AED	6,73	5,31	9,48	4,44
ADC	0,28	20,43	9,70	3,51
AFG	0,37	4,42	8,37	8,42
GII	10,36	2,31	2,29	2,66
ADE	1,70	9,14	3,65	5,54
AFC	2,59	11,21	4,04	1,35
EDJ	8,87	0,52	0,63	4,11
EDI	12,08	0,44	0,31	0,88
ADD	1,19	1,95	5,29	1,47
AEG	0,03	0,39	1,08	3,69
BCI	1,07	1,58	1,15	0,98
BED	1,18	0,55	0,58	0,60
BEF	3,38	0,26	0,40	0,25
FAI	3,09	1,10	0,49	0,34
AGI	0,79	1,48	2,36	1,16
DAI	0,92	1,52	0,74	1,46
Total	31139	14697	29673	37405

Table 3: Share of publication categories on the overall production of the faculty

Conclusions

Research in publishing behaviour of authors in the academic environment is extremely important for the higher education institutions in Slovakia – it helps reveal principal facts about the structure of publications and tendencies of its development. Bibliometric / scientometric analyses play an important role in processes of macrosystem management in higher education. Knowledge of these principles provides universities with a tool for defining their place in the system of research capacities of Slovakia and for assessing their success while competing for financial resources coming from the state budget. It can also serve as an instrument of changing publishing behaviour with respect to the criteria of research quality assessment. Academic libraries, however, can also benefit from the identification of basic publishing behaviour patterns, as it enables them to better understand the principles of publishing in particular scientific discipline and approach actively the definition of acquisition and licensing policy.

Introductory comparison of publishing production in four faculties of Comenius University in Bratislava was carried out on the basis of quantitative analysis of bibliographic data. Representation of publication categories in the Academic Library database supports a traditional view of differences in publishing patterns in humanities and natural sciences. Publishing in humanities is more endogenous, concentrated on communicating national, domestic research themes and issues in domestic publishing channels. Publishing in exact sciences is more exogenous, focused on foreign, international conferences and journals. This orientation is mostly due to prevailing international character of research topics that are presented in publications in this area.

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