Bibliometric analysis of Central European journals in the Web of Science and JCR Social Science Edition

Slavomír Bucher

Institute of Geography, Faculty of Science, University of Pavol Josef Safárik, Košice, SLOVAKIA e-mail: slavomir.bucher@kosice.sk

ABSTRACT

This paper deals with the multi-perspective bibliometric analysis of Central European scientific journals indexed in the Web of Science database and covered in the Journal Citation Reports - Social Science Citation Index (SSCI). The analysis focuses on the evaluation of the (inter) national orientation of Central European Social Science journals indexed in the period 2012 – 2015. Data were obtained from the Web of Science database on October 20, 2016. The journals are divided in two groups in favour of the scientific discipline identifying the journal in the Web of Science. The first group consists of journals belonged to public health and psychology. The second group includes all social related scientific journals covered in both the SSCI and Science Citation Index Expanded (SCIE) databases. Journals were chosen by language versions of journals in the Web of Science, language versions of articles, authors' most important institutional affiliations; and other statistically significant indicators provided by Clarivate Analytics. Assessment of the "openness of Central European journals" to foreign authors was analyzed on the basis of the "INO indicator" (Index of National Orientation). Statistical analyses were conducted on the articles which carry the relevant scientific information. Descriptive statistics was used for the data analysis, using frequencies, percentages and means. The results of this research showed a strong orientation towards Slovakian and Czech authors regardless of the two analyzed groups. Based on INO, most of the Central European journals quality and impact were comparatively low. A competitive environment has been created for journals in the social science disciplines, especially for those with competitors in neighboring countries in fields such as psychology, economics, geography and sociology.

Keywords: Web of Science; Bibliometrics; Central European Journals; Social Science journals; Indicator of National Orientation; Research assessment.

INTRODUCTION

Bibliometrics is a good tool for measuring research activity and performance and currently, the majority of researchers support the increasing use of bibliometric data for scientometrics assessment. Academic papers serve as a channel through which academics present the results of their research (and verified knowledge of teaching processes (Nederhof 2006; Moed 2010) and journal publications represent one of the main research indicators for academics around the world. However, bibliometric indicator is only one of many other equally important indicators of science and research quality. Journal abstracting and indexing services, as well as the actual processing of publications by global citation databases such as the Web of Science, are far away from completeness and reliability, even

though the results are valuable and well interpretable (Mayur and Mabe 2004; Garfield 2006; Meho and Yang 2007; Bar-Ilan 2008; Varela 2013).

Bibliometric comparison of Central European journals may represent a useful journal evaluation tool for the journal editorial boards in the examined countries. A high number of Central European journals is represented in the Social Science Citation Index (SSCI). The journals are divided in two groups in favour of the scientific discipline identifying the journal in the Web of Science. The first group consists of journals belonged to public health and psychology. Two of them are published in Czech Republic – *Central European Journal of Public Health* and *Czechoslovakia Psychology*, one in Slovakia – *Studia Psychologica*, three in Poland – *Advances in Cognitive Psychology, Nordic Studies on Alcohol and Drugs,* and *International Journal of Occupational Safety and Ergonomics*, and one in Hungary – *Journal of Behavioral Addictions*. The second group includes all social related scientific journals covered in both the SSCI and Science Citation Index Expanded (SCIE) databases (Appendix).

One of the general indicator that determined the national or international journal orientation is language, in which volumes of the journal have been published to the wider academic community. English language represents a global leader in communication worldwide and serve as *"lingua franca"* in scientific research. The last two decades observe a gradual shift towards internationalization of many journals publishing their contributions to a local or regional level. Changing the publication rules policy or replacement national languages by English does not always resulted in increased quality of published articles or required citation quantity (Bloch and Walter 2001). As an example of recent changes in the publication policy rules is the Czech *E & M Ekonomie A Management* which since 2014 has published articles not in Czech or Slovak languages but solely in English.

Thomson Reuters, the then owner of the Web of Science, in 2006 considered the possibility for more progressive indexing new journals from Central and Eastern Europe through an established framework program named *"Regional Content Expansion in Web of Science: Opening Borders to Exploration"*. The expected objective was to enrich the database of regional studies that contribute to the development of scientific knowledge of the region. For this purpose, Thomson Reuters, has collected more than 10,000 publications covering all scientific disciplines, which was not included in the database Web of Science.

What does it mean for a local or a regional focused of Central European journals indexed in SSCI? The Central European region shares common cultural, historical and political heritage. Proximity of cultural and social behavioral patterns, as well as common sphere topics of interest among researchers who published in SSCI create conditions for cooperation in science and research. Indexation of the journals in SSCI may result in the increased attractiveness of Central European authors to publish their articles in the neighboring countries' journals. Due to common cultural and social interests, Central European journals are becoming potentially attractive to scientists from the wider region of Western and Eastern Europe.

Following the works dedicated to the bibliometric research in Central Europe (Zitt and Bassecoulard 1998; Hicks 1999; Siwek 2005; Vanclay 2012; Hofierka and Gallay 2013; Skovajsa 2014a), the survey is based on the well-chosen bibliometric indicators to analyze national and/or international orientation of Central European journals covered in the database Web of Science and Journal Citation Reports – Social Science Edition. For the purpose of this research, all Slovak, Czech, Polish and Hungarian social science related journals have been included in the assessment.

MATERIALS AND METHOD

The study aims to contribute to potential readers interesting information regarding the comparison of social science journals in Central Europe covered by the SSCI citation index, based on data from the Web of Science database and Journal Citation Reports (JCR), covering the period 2012 – 2015. For the purpose of this research, selected indicators were pursued, partly corresponding with: (a) the analysis of authors (Pulišelić and Petrak 2006; Maričić, 2007; Machaček and Kolcunová 2008); (b) language version of journal title referred in database Web of Science; (c) spatial differentiation of authors and co-authors according to their affiliation; (d) articles language version; (e) the most important institutions with authors affiliation of articles, and (f) other statistically significant indicators provided by Clarivate Analytics (previously the Intellectual Property and Science business of Thomson Reuters). An assessment of "Openness Central European Journals" to foreign authors was analyzed through the Indicator of National Orientation (INO). INO indicator is defined as a journal's share of papers from the most represented country in relation to the total number of published papers in the same journal. The higher value of indicator represents the national orientation of journal; on the other hand, the declining value of the indicator increases the share of international journal orientation. The sum of eleven Czech, three Slovak, eight Polish and five Hungarian journals can be found in citation indexes of SSCI and SCIE as part of JCR.

The data source for this research was obtained from the Web of Science on 20 October 2016. Only articles were considered, other resource types such as conference articles, book reviews, and editorial materials were excluded. Thus, data selection had been carried out based on the following criteria: title of the journal, while selecting articles reflected the chosen period of years indicated in methodological section of paper. Obtained results have been standardized and generalized to further processing and analyses. Throughout this paper outcomes productivity analysis has been used for identifying the address of the author(s), as the country of origin of author was referred to in various languages differently. In the case of inconsistent author identification, information on workplace address were obtained and compared with other publications in other bibliometric databases as well.

The method employed are described using various terms in the literature. The basic method could be termed comparative analysis of articles. The analysis included authors' addresses, productivity parameters (authors, institutions, year of publication, article type, language, journal) and citation. Recent studies in the field of bibliometric analysis especially in social sciences and humanities have pointed out to high share of publishing articles primarily oriented to local or regional topics (Makkonen and Mitze 2016; Abrizah, Xu and Nicholas 2017; Jurajda et al. 2017; Tang, Zhang and Naumann 2017). These topics are mostly published in journals and monographs with local or regional impact for limited number of readers. Based on drawn up analyzing of publications (Moed 2005) and spatial impact of journals indexed in the databases Clarivate Analytics has shown that publications covering all social and humanitarian disciplines in citation index SSCI have a higher index of national orientation in comparison with natural or technical disciplines. Furthermore, selected social science disciplines and their publications covered in SSCI (for example anthropology or psychology) show long-term trend for international orientation of processed articles.

When analyzing the data, the methodology employed in the following studies (Andreis and Jokić 2008; Laffan 2009; Bański 2012) was used, where the journals registered in the databases SSCI and SCIE were divided into two categories: (a) Social Sciences – Public Health and Psychology (SSM) and (b) Social Sciences – others (SSO). These researchers have

established that journals in scientific disciplines such as psychology and public health achieve higher scores in following indicators: share of articles published in English, proportion of authors from the states representing Top 20, and lower values in the indicator of national orientation. They have a higher level of openness and internationalization compared to other social science journals.

RESULTS AND DISCUSSION

Bibliometric Indicator Analysis of Central European Social Science Journals Indexed in the Web of Science

Initial analyses show that a high number of journal publishers located their editorial office in the capital cities – Prague (Czech Republic, 9 out of 11), Bratislava (Slovakia, 3 out of 3), Budapest (Hungary 5, out of 5), and Warsaw (Poland, 3 out of 8). Other publishers have located their editorial offices outside the capital city, but in places with a rich academic background (Appendix).

The language of the journal title in Web of Science database is the first indicator which allows definition of the level of openness toward the authors from abroad. Information in the Appendix indicated that 8 journals stated its name in the local language, (N=9, mainly Slovak and Czech journals). There is an interesting group of bilingual journals (N=3) that use a combined title in the local language and in English, for example, the *Czech Sociological Review*. Other journals state their titles in English only, while there is an exception for journals with primary Latin title such as *Acta Oeconomica*. The level of journal openness is evaluated alongside with language mutations of articles published in various volumes and issues. Five out of seven journals belonging to Public Health and Psychology (SSM) group published articles in the period from 2012 to 2015 only in English language (Table 1 - 4).

The more important category between the two belongs to the group Social Sciences – others (SSO), which integrate diverse socially oriented scientific disciplines such as economics, geography, political sciences, business and finance. This category is diverse in terms of language of the analyzed articles, as it was found that there are journals which publish exclusively in English and journals with local or regional topics in local languages. In analyzing the two categories of journals the following results were obtained:

- a) The lowest proportion of English written articles belonged to Social Sciences journals – others (SSO), the highest proportion of English written articles have been recorded in Social Sciences category – Public health and psychology (SSM).
- b) English language in the academic environment represents an essential communication engine across various scientific disciplines. Academics in Central Europe usually publish their papers in English, as well as high-quality Czech (Table 1), Slovak (Table 2), Polish (Table 3) and Hungarian journals (Table 4) normally accept articles in that language.

Table 1: Number and Percentage of Papers Published in Different Languages in the Analyzed Czech Journals for the Period 2012 – 2015

Group of journals/titles	Total No of	Czecl Langua		English lan	guage	Other lang (mostly Sl		
	papers	No	%	No	%	No	%	
		papers		papers		papers		
Journals registered in SSCI & SCIE - Public health and psychology 2012 – 2015, (SSM)								
CENTRAL EUROPEAN JOURNAL OF PUBLIC HEALTH	220	0	0.0	220	100	0	0.0	
CESKOSLOVENSKA PSYCHOLOGIE	186	126	67.7	27	14.5	33	17.8	
Journals registered in SSCI & SCIE - others 2012 – 2015, (SSO)								
AGRICULTURAL ECONOMICS-ZEMEDELSKA EKONOMIKA	222	0	0.0	222	100	0	0.0	
E & M EKONOMIE A MANAGEMENT	198	50	25.3	148	74.7	0	0.0	
FINANCE A UVER-CZECH JOURNAL OF ECONOMICS AND FINANCE	98	0	0.0	98	100	0	0.0	
GEOGRAFIE	93	61	65.6	31	33.3	1	1.1	
MORAVIAN GEOGRAPHICAL REPORTS	86	0	0.0	86	100	0	0.0	
POLITICKA EKONOMIE	171	161	94.2	0	0.0	10	5.8	
PRAGUE ECONOMIC PAPERS	127	0	0.0	127	100	0	0.0	
SOCIOLOGICKY CASOPIS-CZECH SOCIOLOGICAL REVIEW	128	82	64.0	45	35.2	1	0.8	
SLOVO A SLOVESNOST	56	45	80.4	11	19.6	0	0.0	

Source: http://thomsonreuters.com/web-of-science-core-collection/ [accessible 20/10/2016].

Table 2: Number and Percentage of Papers Published in Different Languages in the Analyzed Slovak Journals for the Period 2012 – 2015

Group of journals/titles	Total No of	Slovak Language		English language		Other languages (mostly Czech)	
	papers	No papers	%	No papers	%	No papers	%
Journals registered SSCI & SCIE - Public health and psychology 2012 – 2015, (SSM)		<u> </u>					
STUDIA PSYCHOLOGICA	99	0	0.0	99	100	0	0.0
Journals registered in SSCI & SCIE - others 2012 – 2015, (SSO)							
EKONOMICKY CASOPIS	213	61	28.6	109	51.2	43	20.2
SOCIOLOGIA	103	68	66.0	34	33.0	1	1.0

Source: http://thomsonreuters.com/web-of-science-core-collection/ [accessible 20/10/2016].

Group of journals/titles	Total Polish No of Language		English language		Other languages		
	papers	No	%	No	%	No	%
		papers		papers		papers	
Journals registered in SSCI & SCIE - Public health and psychology 2012 – 2015, (SSM)							
ADVANCES IN COGNITIVE PSYCHOLOGY	65	0	0.0	65	100	0	0.0
NORDIC STUDIES ON ALCOHOL AND DRUGS	116	0	0.0	108	93.1	8	6.9
INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY	236	0	0.0	236	100	0	0.0
AND ERGONOMICS							
Journals registered SSCI & SCIE - others 2012 – 2015, (SSO)							
PROBLEMY EKOROZWOJU	110	18	16.4	92	83.6	0	0.0
EASTERN EUROPEAN COUNTRYSIDE	33	0	0.0	33	100	0	0.0
ARGUMENTA OECONOMICA	59	0	0.0	59	100	0	0.0
POZNAN STUDIES IN CONTEMPORARY LINGUISTICS	89	0	0.0	89	100	0	0.0
POLISH SOCIOLOGICAL REVIEW	115	0	0.0	115	100	0	0.0

Table 3: Number and Percentage of Papers Published in Different Languages in the Analyzed Polish Journals for the Period 2012 – 2015

Source: http://thomsonreuters.com/web-of-science-core-collection/ [accessible 20/10/2016].

Table 4: Number and percentage of papers published in different languages in the analyzedHungarian journals for the period 2012 – 2015

Group of journals/titles	Total Hungarian No of language		English language		Other languages		
	papers	No	%	No	%	No	%
Journals registered in SSCI & SCIE - Public health and psychology 2012 – 2015, (SSM)		papers		papers		papers	
JOURNAL OF BEHAVIORAL ADDICTIONS	114	0	0.0	114	100	0	0.0
Journals registered in SSCI & SCIE - others 2012 – 2015, (SSO)							
ACTA OECONOMICA ACROSS LANGUAGES AND CULTURES	155	0	0.0	155	100	0	0.0
CIVIL SZEMLE	94	82	87.2	12	12.8	0	0.0
ACTA LINGUISTICA HUNGARICA	59	0	0.0	59	100	0	0.0

Source: http://thomsonreuters.com/web-of-science-core-collection/ [accessible 20/10/2016].

The following indicator monitors the spatial national/international localization of authors in the analyzed journals based on their affiliation. In case of Slovak journals (Table 5) authors from Slovakia are the most represented in both categories of the analyzed disciplines – within the SSM journals, the share of articles published by Slovak authors is 35.4 percent (N=35), while in the SSO category, it is 49.4 percent (N=156). Similar results were also observed by analyzing Czech journals with the only difference that the highest share of authors of the articles is represented by Czech authors (Table 5)

Table 5: Number and Percentage of All Papers with Regards to the Country of Origin of the Authors and their Share in the Total Number of Published Papers for the Three Analyzed Groups of Czech, Slovak, Polish and Hungarian Journals (2012 – 2015)

Total No of papers	SSM journa	ls	SSO journa	als
CZECH JOURNALS	406		1179	
Authors (with regards to their country of		0(N (0/
origin)	No of papers	%	No of papers	%
Czech authors	180	44.3	736	62.4
Authors – Central Europe (PL, SK, HU)	134	33.0	194	16.5
out of authors from Slovakia	91	22.4	134	11.4
Authors from the TOP 20 countries	99	24.4	186	15.8
Authors from the rest of the world	113	27.8	201	17.0
Total No of papers	SSM journa	ls	SSO journ	als
SLOVAK JOURNALS	99		316	
Authors (with regards to their country of origin)	No of papers	%	No of papers	%
Slovak authors	35	35.4	156	49.4
Authors – Central Europe (CZ, PL, HU)	22	22.2	151	47.8
out of authors from Czech rep.	8	8.1	143	45.3
Authors from the TOP 20 countries	25	25.3	19	6.0
Authors from the rest of the world	31	31.3	32	10.1
Total No of papers	SSM journa	ls	SSO journ	nals
POLISH JOURNALS	417		406	
Authors (with regards to their country of	No of some set	0/	No. of	%
origin)	No of papers	%	No of	20
				,,,
Dellah authoria	50	12.0	papers	, -
Polish authors	58	13.9	228	56.2
Authors – Central Europe (SK, CZ, HU)	3	0.7	228 17	56.2 4.2
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries	3 272	0.7 65.2	228 17 109	56.2 4.2 26.8
Authors – Central Europe (SK, CZ, HU)	3	0.7	228 17	56.2 4.2
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries Authors from the rest of the world Total No of papers	3 272	0.7 65.2 41.5	228 17 109	56.2 4.2 26.8 22.2
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries Authors from the rest of the world Total No of papers HUNGARIAN JOURNALS	3 272 173	0.7 65.2 41.5	228 17 109 90	56.2 4.2 26.8 22.2
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries Authors from the rest of the world Total No of papers HUNGARIAN JOURNALS Authors (with regards to their country of	3 272 173 SSM journa	0.7 65.2 41.5	228 17 109 90 SSO journ	56.2 4.2 26.8 22.2
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries Authors from the rest of the world Total No of papers HUNGARIAN JOURNALS	3 272 173 	0.7 65.2 41.5	228 17 109 90 SSO journ 362	56.2 4.2 26.8 22.2 nals
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries Authors from the rest of the world Total No of papers HUNGARIAN JOURNALS Authors (with regards to their country of	3 272 173 	0.7 65.2 41.5	228 17 109 90 SSO jour 362 No of	56.2 4.2 26.8 22.2 nals
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries Authors from the rest of the world Total No of papers HUNGARIAN JOURNALS Authors (with regards to their country of origin)	3 272 173 SSM journa 114 No of papers	0.7 65.2 41.5	228 17 109 90 SSO jour 362 No of papers	56.2 4.2 26.8 22.2 nals
Authors – Central Europe (SK, CZ, HU) Authors from the TOP 20 countries Authors from the rest of the world Total No of papers HUNGARIAN JOURNALS Authors (with regards to their country of origin) Hungarian authors	3 272 173 SSM journa 114 No of papers 4	0.7 65.2 41.5 hls % 3.5	228 17 109 90 SSO journ 362 No of papers 113	56.2 4.2 26.8 22.2 nals 9 31.2

Source: http://thomsonreuters.com/web-of-science-core-collection/[accessible 20/10/2016].

As reported by the evaluation indicators of *Thomson Reuters – Essential Science Indicators*, the world's Top 20 countries in relation to the number of citations are ranked as follows: USA, Germany, England, Japan, France, Canada, China, Netherlands, Australia, Spain, Sweden, Switzerland, South Korea, Belgium, India, Scotland, Denmark, Israel, Brazil and Italy. A comparison of Top 20 countries is a common practice in many scholarly publications related to analysis of bibliometric data (Andreis and Jokić 2008; Laffan 2009; Bański 2012).

The share of articles by authors' country of origin does not represent 100 percent; nor does the sum of the number of articles give the resulting value of the category (referred in bold in Table 5). If an article was written for example by three authors from the Czech Republic,

Slovakia and Germany, the article is counted three times (whole counting): once as an article by a Czech author, once in the group of authors from Central Europe, and once in the group of Top 20 (Germany).

Table 6 presents the values of the indicator of national orientation (INO) of Central European journals. Findings show that journals such as *Central European Journal of Public Health* (CZ), *Advances in Cognitive Psychology* (PL), *Nordic Studies on Alcohol and Drugs* (PL), *International Journal of Occupational Safety and Ergonomics* (PL), *Eastern European Countryside* (PL), *Acta Economical* (HU) and *Across Languages and Cultures* (HU) are with the INO values < 34 which reflect (inter) nationally oriented. The value of the indicator symbolizes the country with the highest proportion of articles. Relatively strong (inter) national orientation of the above mentioned journals could be explained by the acceptance of articles in English only, and the long-time indexation status in Web of Science, which corresponds to a sufficient period to transform them from nationally to (inter)nationally oriented periodicals. Journals belonged to Social Science – Public Health and Psychology (SSM) group have a higher rate of (inter) national orientation, compared to the group of journals in Social Science – others (SSO).

Table 6: INO Indicator Czech (CZ), Slovak (SK), Polish (PL) and Hungarian (HU) Journals Registered in WoS (2012 – 2015)

Group of journals/titles	INO	Authors from the TOP	The most represented
	Indicator (%)	20 countries (%)	country
Journals registered in SSCI & SCIE - Public health and			
psychology 2012 – 2015, (SSM)			
CENTRAL EUROPEAN JOURNAL OF PUBLIC HEALTH (CZ)	26.4	37.3	Czech rep.
CESKOSLOVENSKA PSYCHOLOGIE (CZ)	65.6	9.1	Czech rep.
STUDIA PSYCHOLOGICA (SK)	35.4	25.3	Slovakia
ADVANCES IN COGNITIVE PSYCHOLOGY (PL)	32.3	90.8	Germany
NORDIC STUDIES ON ALCOHOL AND DRUGS (PL)	32.8	57.8	Sweden
INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY AND	22.0	61.9	Poland
ERGONOMICS (PL)			
JOURNAL OF BEHAVIORAL ADDICTIONS (HU)	39.5	92.1	USA
Journals registered in SSCI & SCIE - others 2012 – 2015,			
(SSO)			
AGRICULTURAL ECONOMICS-ZEMEDELSKA EKONOMIKA	39.2	33.8	Czech rep.
(CZ)			
E & M EKONOMIE A MANAGEMENT (CZ)	55.1	5.1	Czech rep.
FINANCE A UVER-CZECH JOURNAL OF ECONOMICS AND	45.9	30.6	Czech rep.
FINANCE (CZ)			
GEOGRAFIE (CZ)	81.7	7.5	Czech rep.
MORAVIAN GEOGRAPHICAL REPORTS (CZ)	55.8	8.1	Czech rep.
POLITICKA EKONOMIE (CZ)	90.1	8.8	Czech rep.
PRAGUE ECONOMIC PAPERS (CZ)	64.6	10.2	Czech rep.
SOCIOLOGICKY CASOPIS-CZECH SOCIOLOGICAL REVIEW	68.8	18.8	Czech rep.
(CZ)			
SLOVO A SLOVESNOST (CZ)	83.9	8.9	Czech rep.
EKONOMICKY CASOPIS (SK)	54.5	5.2	Slovakia
SOCIOLOGIA (SK)	53.4	7.8	Czech rep.
PROBLEMY EKOROZWOJU (PL)	63.6	35.5	Poland
EASTERN EUROPEAN COUNTRYSIDE (PL)	30.3	12.1	Poland
ARGUMENTA OECONOMICA (PL)	61.0	11.9	Poland
POZNAN STUDIES IN CONTEMPORARY LINGUISTICS (PL)	42.7	33.7	Poland
POLISH SOCIOLOGICAL REVIEW (PL)	64.3	25.2	Poland
ACTA OECONOMICA (HU)	23.2	29.0	Hungary
ACROSS LANGUAGES AND CULTURES (HU)	18.5	68.5	Belgium
CIVIL SZEMLE (HU)	56.4	17.0	Hungary
ACTA LINGUISTICA HUNGARICA (HU)	39.0	33.9	Hungary

Source: http://thomsonreuters.com/web-of-science-core-collection/ [accessible 20/10/2016]. The best score in the category Social Science – others (SSO) within the Czech Republic and Slovakia have reached two journal – *Agriculture Economics* (INO=39.2) and *Sociology* (INO=53.4). In *Sociology*, almost 50 percent of authors are affiliated to academic and scientific institutions in Czech Republic (Table 7). The most unfavorable score (INO>80) was obtained by journals such as *Geography* (INO=81.7) and *Political Economy* (INO=90.1). In these journals, more than 80 percent of the published articles during the observed period 2012 – 2015 were published in authorship or co-authorship with Czech authors. *Moravian Geographical Reports* is an example of a journal, when language is not a sufficient requirement for the status of (inter)national orientation. The journal published articles exclusively in English, but more than 55 percent of the articles belonged to Czech authors. Moreover, the concept of (inter)national orientation of most Central European social science journals must be understood with some controversy, because mostly articles are published by authors form *"the nearest abroad"* and not with the top 20 countries, as is a case of the majority of Anglo-Saxon publications indexed in the Web of Science.

Selected Bibliometric Indicators of Performance Central European Journals Indexed in JCR Social Science Edition

In the last decade, there have been developments in scientometrics methods that began to offer a range of more sophisticated indicators comparing the quality and evaluation of journals. Unlike the classical impact factor – modern indicators are not limited to the number of citations, the prestige of journal and total citations of article in other journals are also considered (Garfield 1985; Cronin 1998; Frank 2003; Epstein 2004; Brown 2007).

The ranking of Central European social sciences journals indexed in Web of Science in the years 2012 – 2015 is presented in Table 8. The average impact factor (IF) calculated by selfcitations of publication output per author was considered in the analysis. Although this indicator does not reflect the quality of published papers, there were journals identified whose IF value is based on self-citations from previous volumes. The Polish journal – *Problems of Sustainable Development (Problemy Ekorozwoju)*, with the highest average self-citation IF 0.663 is a case in point.

When evaluating the journals based on their geographical region, it was found that Prague's (Hungary) *Geography* journal decreases in rating unlike the Brno's (Czech) *Moravian Geographical Reports*, in comparing the values of IF JCR (average). Slovak journals have lower IF if compared to the Central European journals' IF average value. At this point, however, it is noted that the low IF of Slovak journals is largely influenced by a limited number of those journals registered in the Web of Science. Some social sciences disciplines do not have their own journals, for example in the fields of social anthropology, social geography, linguistics and political sciences. However, an incentive for these disciplines is would be a situation where the editorial board members accepted papers of their academic colleagues from related disciplines, in the case of *Journal of Economics* and *Sociology*.

In the last column of Table 8, quartile rankings are derived for each journal in each of its subject categories according to which quartile of the IF distribution the journal occupies for that subject category (Rousseau 2005). Q1 denotes the top 25% of the IF distribution, Q2 for middle-high position (between top 50% and top 25%), Q3 middle-low position (top 75% to top 50%), and Q4 the lowest position (bottom 25% of the IF distribution). *Hungarian Journal of Behavioral Addictions* has the highest rank in terms of journal quartile (Q2).

Table 7: The Most Important Organizations with Authors' Affiliation of Articles (2012 - 2015)

	The most important orga	nizations with authors affiliatio	n of articles 2012 - 2015
Journal title / number of articles	1.	2.	3.
AGRICULTURAL ECONOMICS-ZEMEDELSKA	Czech University of Life Sciences	University of Economics	Mendel University Brno – 16
EKONOMIKA (Prague) / 222	Prague – 32 aricles (14.4 %)	Prague – 25 articles (11.3 %)	articles (7.2 %)
CENTRAL EUROPEAN JOURNAL OF PUBLIC	University of Pavol Jozef Safarik	Palacky University Olomouc –	Charles University Prague – 19
HEALTH (Prague) / 220	Kosice – 23 articles (10.3 %)	21 articles (9.4 %)	articles (8.5%)
CESKOSLOVENSKA PSYCHOLOGIE (Prague) / 186	Charles University Prague – 46	Czech Academy of Sciences –	Masaryk University Brno – 27
	articles (24.7 %)	38 articles (20.4 %)	articles (14.5 %)
E & M EKONOMIE A MANAGEMENT (Liberec)	University of Pardubice – 15	Technical University Liberec	Technical University Košice – 15
/ 198	articles (7.6 %)	– 15 articles (7.6 %)	articles (7.6 %)
FINANCE A UVER-CZECH JOURNAL OF	Charles University Prague – 31	Czech National Bank – 15	Czech Academy of Sciences – 14
ECONOMICS AND FINANCE (Prague) / 98	articles (31.6 %)	articles (15.3 %)	articles (14.3 %)
GEOGRAFIE (Prague) / 93	Charles University of Prague – 48	University of Ostrava – 11	Czech Academy of Sciences – 9
	articles (51.6 %)	articles (11.8 %)	articles (9.7 %)
MORAVIAN GEOGRAPHICAL REPORTS (Brno) /	Palacky University Olomouc – 13	Czech Academy of Sciences –	Charles University Prague – 8
86	articles (15.1 %)	9 articles (10.5 %)	articles (9.3 %)
POLITICKA EKONOMIE (Prague) / 171	University of Economics Prague –	Charles University Prague –	Technical University Ostrava –
	86 articles (50.3 %)	24 articles (14.0 %)	14 articles (8.2 %)
PRAGUE ECONOMIC PAPERS (Prague) / 127	University of Economics Prague – 38 articles, (29.9 %)	Charles University Prague – 20 articles (15.7 %)	Czech Academy of Sciences – 9 articles (7.1 %)
SLOVO A SLOVESNOST (Prague) / 56	Charles University Prague – 23	Czech Academy of Sciences –	Akcent College corp., Prague – 3
	articles, (41.1 %)	15 articles, (26.8 %)	articles (5.4 %)
SOCIOLOGICKY CASOPIS-CZECH	Czech Academy of Sciences – 28	Charles University Prague – 22 articles (17.2 %)	Masaryk University Brno – 21
SOCIOLOGICAL REVIEW (Prague) / 128	articles (21.9 %)		articles (16.4 %)
EKONOMICKY CASOPIS (Bratislava) / 213	University of Economics	Slovak Academy of Sciences –	University of Economics Prague
	Bratislava – 46 articles, (21.6 %)	33 articles, (15.5 %)	– 21 articles, (9.9 %)
SOCIOLOGIA (Bratislava) / 103	Masaryk University Brno – 13	Comenius University – 13	Slovak Academy of Sciences – 8
	articles, (12.6 %)	articles, (12.6 %)	articles (7.8 %)
STUDIA PSYCHOLOGICA (Bratislava) / 99	Slovak Academy of Sciences – 25 articles, (25.3 %)	University of Ljubljana – 7 articles, (7.1 %)	Constantine Philosopher University Nitra – 7 articles, (7.1 %)
ADVANCES IN COGNITIVE PSYCHOLOGY	University of Aix Marseille – 3	Universität Trier – 3 articles,	Yamaguchi University – 2
(Warsaw) / 65	articles, (4.6 %)	(4.6 %)	articles, (3.1 %)
NORDIC STUDIES ON ALCOHOL AND DRUGS (Warsaw) / 116	Stockholm University – 20 articles, (17.2 %)	University of Helsinki – 11 articles, (9.5 %)	Finland National Institute for Health Welfare – 10 articles, (8.6 %)
PROBLEMY EKOROZWOJU (Lublin) / 110	Lublin University of Technology –	Tongji University – 6 articles,	Poznan University of Life
	13 articles, (11.8 %)	(5.5 %)	Sciences – 5 articles, (4.5 %)
INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY AND ERGONOMICS (Oxon) / 236	Central Institute for Labor Protection – 42 articles, (17.8 %)	Teheran University of Medical Sciences – 9 articles, (3.8 %)	Shiraz University of Medical Science – 7 articles, (3.0 %)
ARGUMENTA OECONOMICA (Wroclaw) / 59	Wroclaw University of Economics	University of Warsaw – 5	Poznan University of Economics
	– 8 articles, (13.6 %)	articles, (8.5 %)	– 5 articles, (8.5 %)
POZNAN STUDIES IN CONTEMPORARY	Adam Mickiewicz University – 25	Zhejiang University – 4	University of Warsaw – 3
LINGUISTICS (Berlin) / 89	articles, (28.1 %)	articles, (4.5 %)	articles, (3.4 %)
POLISH SOCIOLOGICAL REVIEW (Warsaw) / 115	University of Warsaw – 27	Polish Academy of Sciences –	University of Lodz – 7 articles,
	articles, (23.5 %)	9 articles, (7.8 %)	(6.1%)
JOURNAL OF BEHAVIORAL ADDICTIONS	Nottingham Trent University – 15	Yale University – 8 articles,	University of Florida – 5
(Budapest) / 114	articles, (13.2 %)	(7.0 %)	articles, (4.4 %)
ACTA OECONOMICA (Budapest) / 155	Corvinus University Budapest –	Hungarian Academy of	Far East University – 5 articles,
	11 articles, (7.1 %)	Sciences – 7 articles, (4.5 %)	(3.2 %)
ACROSS LANGUAGES AND CULTURES	Ghent University – 5 articles, (9.3	University of Ljubljana – 4	Autonomous University of Barcelona – 4 articles, (7.4 %)
(Budapest) / 54	%)	articles, (7.4 %)	
CIVIL SZEMLE (Budapest) / 94	Eotvos Lorand University – 10	University of Pecs – 9 articles,	Hungarian Academy of Sciences
	articles, (10.6 %)	(9.6 %)	– 6 articles, (6.4 %)
ACTA LINGUISTICA HUNGARICA (Budapest) /	Hungarian Academy of Sciences –	Eotvos Lorand University – 8	Razmany Peter Catholic
59	10 articles, (16.9 %)	articles, (13.6 %)	University – 5 articles, (8.5 %)

Source: http://thomsonreuters.com/web-of-science-core-collection/ [accessible 20/10/2016].

Scientific field	ES	AIS	IF *	JIF
/Journal title				Quartile
Journals registered in SSCI & SCIE - Public health and psychology (SSM)				
CENTRAL EUROPEAN JOURNAL OF PUBLIC HEALTH (CZ)	0.00077	N/A	0.084	Q4
CESKOSLOVENSKA PSYCHOLOGIE (CZ)	0.00009	0.023	0.195	Q4
STUDIA PSYCHOLOGICA (SR)	0.00026	0.112	0.124	Q4
ADVANCES IN COGNITIVE PSYCHOLOGY (PL)	0.00091	N/A	0.025	Q3
NORDIC STUDIES ON ALCOHOL AND DRUGS (PL)	0.00036	N/A	0.183	Q4
INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY AND	0.00060	0.163	0.052	Q4
ERGONOMICS (PL)				
JOURNAL OF BEHAVIORAL ADDICTIONS (HU)	0.00054	0.517	0.395	Q2
Journals registered in SSCI & SCIE - others 2012 – 2015, (SSO)				
AGRICULTURAL ECONOMICS-ZEMEDELSKA EKONOMIKA (CZ)	0.00036	0.075	0.159	Q4
E & M EKONOMIE A MANAGEMENT (CZ)	0.00021	0.064	0.236	Q3
FINANCE A UVER-CZECH JOURNAL OF ECONOMICS AND FINANCE (CZ)	0.00026	0.123	0.137	Q4
GEOGRAFIE (CZ)	0.00021	0.117		Q4
			0.228	
MORAVIAN GEOGRAPHICAL REPORTS (CZ)	0.00018	N/A	0.108	Q3
POLITICKA EKONOMIE (CZ)	0.00026	0.079	0.322	Q3
PRAGUE ECONOMIC PAPERS (CZ)	0.00017	0.089	0.061	Q3
SOCIOLOGICKY CASOPIS-CZECH SOCIOLOGICAL REVIEW (CZ)	0.00035	0.125	0.234	Q3
SLOVO A SLOVESNOST (CZ)	0.00005	0.044	0.270	Q4
EKONOMICKY CASOPIS (SR)	0.00022	0.048	0.097	Q4
SOCIOLOGIA (SR)	0.00009	0.184	0.114	Q4
PROBLEMY EKOROZWOJU (PL)	0.00023	0.120	0.663	Q4
EASTERN EUROPEAN COUNTRYSIDE (PL)	0.00002	0.026	0.044	Q4
ARGUMENTA OECONOMICA (PL)	0.00009	0.021	0.114	Q4
POZNAN STUDIES IN CONTEMPORARY LINGUISTICS (PL)	0.00022	0.103	0.027	Q4
POLISH SOCIOLOGICAL REVIEW (PL)	0.00010	0.042	0.014	Q4
ACTA OECONOMICA (HU)	0.00011	0.075	0.225	Q4
ACROSS LANGUAGES AND CULTURES (HU)	0.00016	0.150	0.019	Q4
CIVIL SZEMLE (HU)	0.00002	0.008	0.118	Q4
ACTA LINGUISTICA HUNGARICA (HU)	0.00023	0.164	0.036	Q4

Table 8: Selected Journals Performance Indicators in the JCR Social Sciences Edition

* Journal self- citation

Source: http://thomsonreuters.com/web-of-science-core-collection/ [accessible 20/10/2016].

The Eigenfactor metrics in relation to IF do not include journal self-citations, moreover honor citations of highly represented worldwide journals (Yin 2011; Jacso 2012), which is reflected in the values of Eigenfactor Score (ES) and Article Influence Score (AIS) indicators in the observed period (Table 8). Almost all Central European journals have ES and AIS values, however the values are significantly lower than their IF values. It indicates that their influence on the world scientific community is less than would be expected if compared to their impact factor values. For the coverage period 2012 – 2015, *Journal of Behavioral Addictions* (0.517, Hungary) was ranked first based on AIS. Skovajsa (2014b) reported that the AIS values for Czech journals are still very low compared to leading Western journals, however, in some Central European journals there are tendencies to overcome other regional journals in the AIS score. Unfortunately, AIS score is dependent on citations in the top international journals worldwide.

In addition, some Central European journals also obtain other impact indicator values such as Immediacy index and Aggregate immediacy index. The Immediacy Index expresses the average number of times an article is cited in the various Web of Science journals in the year it is published (Huang and Lin 2012). It indicates how quickly articles in a journal is cited. The Aggregate Immediacy Index on the other hand indicates how quickly articles in a subject category are cited. Their values from year to year can vary considerably, and because it is a

per-article average, the immediacy index tends to discount the advantage of large journals over small ones. Frequently issued journals and the "Online First" platform may have an advantage because an article published early in the year has a better chance of being cited that the one published later in the year. Many publications that publish infrequently or late in the year have low immediacy index. For this reason, the study does not take further investigation on these indicators because they have lower scientometrics significance in comparison with other journal impact indicators.

CONCLUSION

This paper has presented the assessment of Central European journals covered in the Web of Science database and JCR focusing on social science disciplines. The impact factor of the journals appears as an internationally recognized indicator for evaluating the quality of the journals and their articles. It has initially been used by libraries for journal assessment and it influences subscription decisions. In addition, impact factor has also been perceived as the *"Golden standard"* when determining research quality, comparing performance of academic staff, research institutions, university departments.

In the past few years, however, more and more voices (e.g. Bajerski and Siwek 2012; Shao and Shen 2014) drew the attention of the scholarly community to the shortcomings of this indicator and proposed taking account of the other bibliometric indicators in the evaluation of journals, such as the average 5-year journal IF, Eigenfactor Score (ES) and Scimago Journal Rank (SJR). Eigenfactor indicator does not count self-citation of journal, but on the contrary, prefers citations from highly ranked journals (usually with international orientation), that weighted to make a larger contribution to the eigenfactor than those from poorly ranked journals. Similarly, the SJR indicator assigns different values to citations depending on the importance of the journals where they come from. This way, citations coming from highly important journals will be more valuable and hence will provide more prestige to the journals receiving them. SJR, developed by the Spain research organization Scimago, became the decisive criterion for ranking journals in Scopus database.

Because of the changes in the journal selection and evaluation policy of Clarivate Analytics (previously the Intellectual Property and Science business of Thomson Reuters) in 2016, a list of new, mainly regional journals from Central and Southeastern Europe have been included for indexation in the Web of Science. This procedure has ultimately brought an impact to scholarly publishing in neighboring countries – there is an increase in the number of impact-factored journals in Czech Republic to eleven (11), eight (8) in Poland, and five (5) in Hungary. This has created a competitive environment for social science researchers, especially those who have their competitors in neighboring countries such as in the fields of psychology, economy, geography, and sociology. Slovakia unfortunately has not contributed significantly to the new initiative and the number of impact-factored social science journals remained the same (3). Competitiveness between journals may occur in the next few years and could improve the relative position of IF journals, since authors can cite their papers or their colleagues' papers in various related scientific disciplines.

Newly indexed journals have a worse starting position in obtaining a comparable number of citations than their older competitors in the scholarly communication environment, but there are also exceptions such as the *Moravian Geographical Reports*, when in 2014 and 2015 reached above-average IF within the Central European's social science journals.

The aim of paper has been brought forward to consideration about the possibility of wider opening of Central European journals to the international scientific community. For this purpose, selected bibliographic data are analysed: journal title and author's affiliation, number of published articles, the number and percentage of articles published in different languages, the total number and percentage of articles per country of authors/co-authors' origin and their share in the total number of published articles, as well as index of national orientation. Significant attention has been paid to comparing self-citation impact factor score by the relevant scientific discipline in the Web of Science, JCR rank of the journals as well as average article impact in the journal measured for five years after its publication.

Evaluation of journals by their country indicates that Czech Republic, as a country of origin for authorship of publication in the social sciences, is the most represented country in all journal categories, either as a single author or co-authors of articles, followed by Slovak, Hungarian and Polish authors. Furthermore, for all journals categories, the domestic or country-based authors contributed the most, followed by authors from other regions. However, despite the domination of national journals orientation, if considered the country of origin of authors, journals included in category SSM show a higher international orientation in all key indicators of the study - by language title of journal and published articles. Indicator of national orientation (INO) of Central European journals have revealed that only journals belong to SSM group – Central European Journal of Public Health and the International Journal of Occupation Safety and Ergonomics (INO<34) are (inter)nationally oriented. Journals in the category social sciences – Public health and psychology (SSM) showed a higher rate of (inter)national orientation compared to the other category of social science journals (SSO). Enhancement of the Central European journals registered in the Web of Science database could engage national scientific policy institutions to encourage national journals to be more responsible and more involved in (a) controlling their editorial practices; (b) advocating openness to foreign authors; (c) including mono-thematic issues; (d) using a combination of publishing in both the local language and in English; and (e) encouraging more involvement and participation by academics and researchers to publish their work jointly with regional co-authors, besides those from Top 20 countries (Andreis and Jokić 2008).

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Journal title	Scientific field	Indexation Year in WoS	Head office of the publisher	Name of Publisher	Number of articles	Subject category in WoS
AGRICULTURAL ECONOMICS-ZEMEDELSKA EKONOMIKA	SSO	2007	Prague (CZ)	CZECH ACADEMY AGRICULTURAL SCIENCES	222	Economy
				NATL INST PUBLIC HEALTH, DEPT SCIENTIFIC		Public health
CENTRAL EUROPEAN JOURNAL OF PUBLIC HEALTH	SSM	2011	Prague (CZ)	INFORMATION	220	
						Psychology,
CESKOSLOVENSKA PSYCHOLOGIE	SSM	1985	Prague (CZ)	ACADEMIA, PUBL HOUSE CZECH ACAD SCI	186	Multidisciplinary
				TECHNICKA UNIV & LIBERCI, HOSPODARSKA		Economy, Management
E & M EKONOMIE A MANAGEMENT	SSO	2008	Liberec (CZ)	FAKULTA	198	
FINANCE A UVER-CZECH JOURNAL OF ECONOMICS AND FINANCE	SSO	1998	Prague (CZ)	CHARLES UNIV-PRAGUE	98	Business, Finance
GEOGRAFIE	SSO	2008	Prague (CZ)	CZECH GEOGRAPHIC SOC, CHARLES UNIV	93	Geography
MORAVIAN GEOGRAPHICAL REPORTS	SSO	2011	Brno (CZ)	ACAD SCI CZECH REPUBLIC, INST GEONICS	86	Geography
POLITICKA EKONOMIE	SSO	1985	Prague (CZ)	VYSOKA SKOLA EKONOMICKA	171	Economy, Politics
				UNIV ECONOMICS-PRAGUE, OECONOMICA		Economy
PRAGUE ECONOMIC PAPERS	SSO	2008	Prague (CZ)	PUBL	127	
SLOVO A SLOVESNOST	SSO	2009	Prague (CZ)	CZECH LANG INST CZECH ACAD SCI	56	Linguistics
SOCIOLOGICKY CASOPIS-CZECH SOCIOLOGICAL REVIEW	SSO	1985	Prague (CZ)	SOCIOLOGICKÝ ÚSTAV AV ČR	128	Sociology
EKONOMICKY CASOPIS	SSO	1985	Bratislava (SK)	SLOVAK ACADEMIC PRESS LTD	213	Economy
SOCIOLOGIA	SSO	1994	Bratislava (SK)	SLOVAK ACADEMIC PRESS LTD	103	Sociology
				SLOVAK ACAD SCIENCES INST		Psychology
STUDIA PSYCHOLOGICA	SSM	1985	Bratislava (SK)	EXPERIMENTAL PSYCHOLOGY	99	
						Experimental
ADVANCES IN COGNITIVE PSYCHOLOGY	SSM	2012	Warsaw (PL)	UNIV FINANCE & MANAGEMENT	65	psychology
NORDIC STUDIES ON ALCOHOL AND DRUGS	SSM	2011	Warsaw (PL)	DE GRUYTER OPEN LTD	116	Drugs
PROBLEMY EKOROZWOJU	SSO	2008	Lublin (PL)	POLITECHNIKA LUBELSKA	110	Environment
INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY AND						Ergonomics, Public
ERGONOMICS	SSM	2006	Oxon (UK)	TAYLOR & FRANCIS LTD	236	health
				WYDAWNICTWO UNIWERSYTETU MIKOLAJA		Sociology
EASTERN EUROPEAN COUNTRYSIDE	SSO	2007	Torun (PL)	KOPERNIKA	33	
ARGUMENTA OECONOMICA	SSO	2008	Wroclaw (PL)	WROCLAW UNIV ECONOMICS	59	Economy
POZNAN STUDIES IN CONTEMPORARY LINGUISTICS	SSO	2008	Berlin (D)	DE GRUYTER MOUTON	89	Linguistics
POLISH SOCIOLOGICAL REVIEW	SSO	2006	Warsaw (PL)	POLISH SOCIOLOGICAL ASSOC	115	Sociology
JOURNAL OF BEHAVIORAL ADDICTIONS	SSM	2012	Budapest (HU)	AKADEMIAI KIADO RT	114	Psychiatry
ACTA OECONOMICA	SSO	1985	Budapest (HU)	AKADEMIAI KIADO RT	155	Economy
ACROSS LANGUAGES AND CULTURES	SSO	2008	Budapest (HU)	AKADEMIAI KIADO RT	54	Linguistics
CIVIL SZEMLE	SSO	2007	Budapest (HU)	UJ MANDATUM KONYVKIADO	94	Public health
ACTA LINGUISTICA HUNGARICA	SSO	2007	Budapest (HU)	AKADEMIAI KIADO RT	59	Linguistics

Appendix: Central European Journals Indexed in the Social Science Citation Index (2012 – 2015)

Notes: SSM – Social Sciences: Medicine; SSO – Social Sciences: Others