RESEARCH TRENDS ON OPEN ACCESS IN SOCIAL SCIENCES AND HUMANITIES: A GLOBAL PERSPECTIVE

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ABSTRACT

The present study is conducted to know the research trends on open access in social sciences and humanities. It is found that 2217 papers published on open access. These papers have received 9397 citations till January 1, 2014. The average citations per publication has been found ~4.2. The maximum papers in the area of study are published in English 2035 (91.8 percent) language. The majority of literature is published in the form of articles 1652 (74.5 percent). Interestingly, the research was accelerated after 2002 and total 1913 (86.3 percent) papers were published between 2002 to 2012. The research has been published in 160 journals. United States with 748 (33.7 percent) papers is identified the leading countries in OA research, followed by United Kingdom 305 (13.8 percent).Top 15 countries collectively produced the 80 percent of the research. The transformative activity index (TAI) of Norway was highest (~143.3) during 1980 to 2000, while TAI of Italy and Spain (~111.7 each) is measured maximum during 2001-2012. Overall, 160 institutions around the world contributed in OA research. Top 15 top institutes published the 237 (10.7 percent) papers of the total. Indiana University (25 (1.1 percent) is identified the most productive institute and McGrath, M., editor, Leeds, United Kingdom is found the most prolific author in the area of study.

Keywords: Open Access, Bibliometric Study, Content Analysis

1. INTRODUCTION

The new age librarians have greater responsibilities including providing access to relevant information, creating and managing specific contents and preserving the contents for posterity. Besides this, no library is sufficient in resources. The movement of open access was started with cause in declining collections budget, demand for new resources, and rising cost of journals. In addition, fast discrimination of research and social networks between the research scholars resulted in open access movement (Collister, Deliyannides, Dyas-Correia, 2014). Open access movement grant free access to research to everyone. However, some scholar believes that open access movement has largely developed the predatory publishers and standalone journals. Hence, it resulted in research misconduct such as, violation of copy-rights and lower quality publications (Beall, 2013). Therefore, research scholars must develop the competencies to select appropriate journals in their respective area of research (Zhao, 2014). Peter Suber (2008) categorized the two broad view on open access such as, (i) gratis open access (which is free of charge) (ii) libre open access (open access free of charge and free of use). Undoubtedly, the open access help to attain the goals of researchers in enhancing the visibility of their research work among the academicians (Chadwick, 2012). Moreover, 150 universities allowed their teaching staff to deposit their work in open access mode, and

Directory of Open Access Journals (DOAJ) provides access to 9437 open access journals published from 119 countries around the globe (DOAJ, 2013). The process of open access have several inhibits, however many publishers have found ways to flourish by finding the alternative ways in this new publishing model (Busby, 2009). Interestingly, Open Access works also fall within the copy-rights law. However, a license such as, Creative Common License are applied in case users wants to share or reuse the contents. There is difference between open sources and open access, rather difference exists between open data, open contents and open access (Collister, Deliyannides, Dyas-Correia, 2014). In addition, Moreover, open access can invite number of problems for authors. Therefore, the institutional open access policies ought to be creative to overcome all the challenges (Sharp, 2014). Researchers can achieve the target of distribution and impact of their research work (SPARC, 2014). Number of agencies around the world have mandated for open access. Worldwide two distinct approaches of OA are popular; these are *(a) Green Open Access (b) Gold Open Access.* The green open access resulting in self depositing such as, depositing in institutional repositories (Roach and Gainer, 2013). These repositories are being managed by library and information and centers and librarian have to play a crucial role in this. The major purpose of green OA is not to replace publishers but to enhance the research outcome of researchers by indexing these publications on search engines. It results in to spread the research among wider audience so that those who do not have privilege of subscription of journals can know about latest development in the field (Kennan, 2011). While gold open access facilitate to publish the article which can be access, downloaded free of cost. These journals allow the users to access the journals openly forthwith the issue publication. Besides this, some subscription based journals also made available some articles in open access after certain period of time (Zhao, 2014).

2. RESEARCH QUESTIONS?

The present study was carried out to quantitative analysis of research publications on Open Access (OA) in social sciences and humanities. However, the following nine research questions have been addressed in the study:

    (i) What are the types of documents exist on OA access research?
    (ii) Which languages being used most to publish the research on OA?
    iii) What is the trend of research output in OA in social sciences and humanities?
    iv) Which are the most productive journals publishing research on OA?
    v) Which are the most productive countries on OA research output?
    vi) What is the transformative activity index (TAI) in OA research literature?
    vii) Which are prolific institutes in OA research?
    viii) Which are the most productive authors in OA research?
    ix.) Which are the highly cited papers on OA?

3. METHODOLOGY

The data used in the study is obtained from Scopus (http://www.scopus.com). The record published in the form of journal articles, reviews, conference papers, notes, and short survey were selected. The following search string was used to identify the records: ANYWHERE ("open access") OR TITLE-ABS-KEY ("OA"), ("open access movement"), ("open access publishing"), ("open access journals"), ("open access and libraries"), AND PUBDATE > before 1 January 2013. The records selected for the study include peer-reviewed as well as non-peer-reviewed journals articles. In order to identify the citation patterns of literature the online version of SCOPUS was consulted. Citations were identified using one year windows such as, 2003–2004, 2005–2006, 2007–2008, and so on.

4. RESULTS

Type of Documents

It is found that total 2217 papers are indexed in Scopus using the search string. These papers have been received 9397 citations until January 1, 2014. Out of these records articles are 1652 (74.5 percent), reviews 336 (15.2 percent), editorial 86 (3.9 percent), notes 74 (3.3 percent), letters 49 (2.2 percent) and short survey 20 (0.9 percent).

Language Wise Distribution of Literature

The majority of publication on open access is published in English 2035 (91.8 percent), followed by German 78 (3.5 percent), Spanish 56 (2.5 percent), French 22 (1.0 percent), Portuguese 17 (0.8 percent), Chinese 3 (0.1 percent), Japanese 3 (0.1 percent), Croatian 2 (0.1 percent), Czech and Dutch 1 paper each.

Pattern of Research Output

It is found that maximum documents 325 (14.7 percent) were published in the 2012, followed by 254 (11.5 percent) in the year 2009, 251 (11.3 percent) in 2010 and 240 (10.8 percent) in 2011. The lowest numbers of papers have been published in 1980 and 1983. Figure 1 shows that the research output is accelerated in the area after 2002, and total 1913 (86.3 percent) papers were published between 2002 to 2012. It is found that 2217 papers received the 9397 citation till January 1, 2014. The maximum citations were received on the papers published during the year 2009. One year citation window was used to know the citation in subsequent year of publications. Using the one year citation window, it is identified that 2012 year publications have received maximum citations ~316, followed by ~243 in 2009, ~222 in 2008.
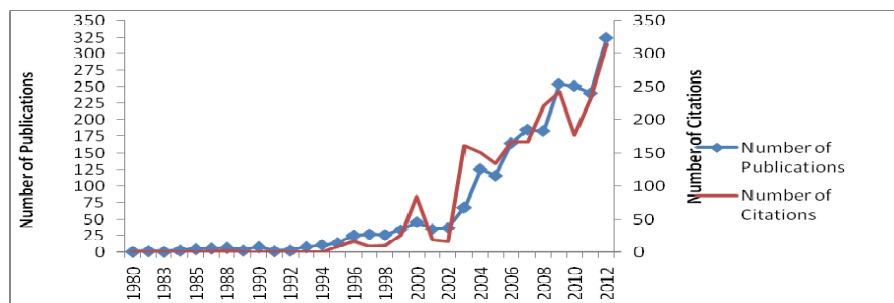

Figure 1. Pattern of Research Outcome

Surprisingly, in the beginning of research in the area during 1980 to 1994, total twelve years no citation was recorded on the publications in next subsequent year. The minimum citations (~1) were recorded using one year citation window in the year 1986 when only 1 citation is found. The average citation per publication was found ~4.2 on the publications on open access in social sciences and humanities. Figure 2 shows the average citations per publications on open access research outcome. The maximum average citations per publications (~22.7) were recorded during the year 1992, followed by ~12.3 in the year 1988, (~9.1) in 1999 and (~9.0) in 1991. Notably during the study period fourteen time average citations was higher than the overall average citations per publications.
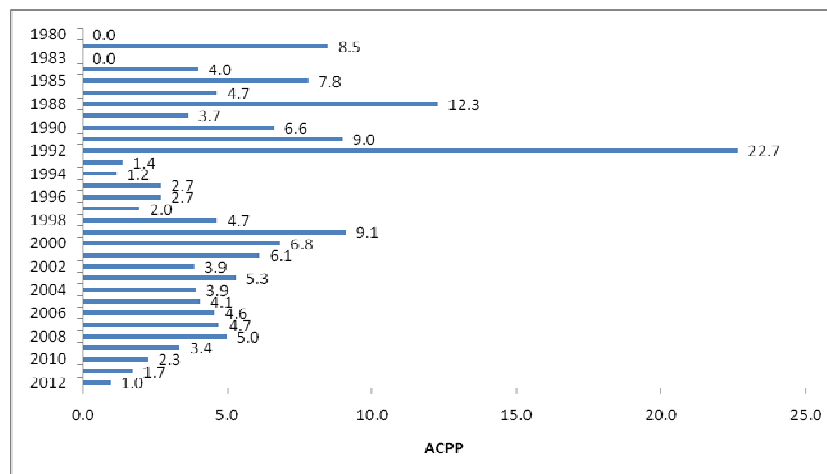
Figure 2. Average Citations Per Publication

Most Common Journals Used for Publishing OA Research

The study found the most productive journals publishing research on OA. In total 160 journals published the research in the area. The most prolific 19 journals published 603 (27.2 percent) papers. These papers have cited 3875 times i.e. 41.2 percent of the total citations on papers published in the area of OA. The remaining 141 journals published the 1614 (72.8 percent) papers and these received 5522 (58.8 percent) citations. Table 1 shows the list of most prolific 19 journals publishing research on OA. The journal entitle 'Learned Publishing' has published the maximum papers 68 (3.1 percent) and these papers were cited 228 times till January 1, 2014. The SJR (SCImago Journal Rankings)- 2013 and SNIP (Source Normalized Impact per Paper) -2013 value of these nineteen journals were also identified and found that Journal entitle 'Nature' has the highest SJR value i.e. ~21.323. Besides this, SNIP-2013 values of journal entitle 'Nature' was highest ~8.822. In addition, h-index value of these productive journals were also calculated and found 'Journal of Environmental Economics and Management' has received highest (~18) h-index value.

Table 1. Most Common Journals Used for Publishing OA Research

Sr. No	Journal Title and Country of Publication	Number of papers	SJR (SCImago Journal Rankings) - 2013	SNIP (Source Normalized Impact per Paper) -2013	Citations	h-index
1	Learned Publishing	68	0.733	1.248	228	10
2	Nature	51	21.323	8.822	475	9
3	Serials Review	48	0.362	0.410	112	7
4	Interlending and Document Supply	45	0.593	0.678	55	4
5	Marine Resource Economics	35	0.599	0.827	385	10
6	Journal of Environmental Economics and Management	34	2.802	2.661	861	18
7	Profesional De La Informacion	33	0.345	0.894	46	4
8	D Lib Magazine	31	0.591	1.392	361	8
9	OCLC Systems and Services	29	0.378	0.449	66	5
10	Serials Librarian	29	0.757	0.693	45	3
11	Science	28	12.465	7.900	188	4
12	Zeitschrift Fur Bibliothekswesen Und Bibliographie	27	0.191	0.470	5	1
13	Railway Gazette International	23	0.100 (SJR-2010)	-	1	1
14	Online Wilton Connecticut	21	0.260	-	39	4
15	Ecological Economics	21	1.910	2.096	500	10
16	Online Information Review	21	0.712	1.062	167	7
17	Scientometrics	20	1.412	1.535	321	9
18	Health and Human Rights	20	0.397	0.848	8	1
19	Voeb Mitteilungen	19	0.100	0.653	12	2
	Total	603	-	-	3875	
	Other 149 Journals	1614	-	-	3764	
	Grand Total 160 Journal	2217	-	-	9397	

Distribution of Literature by Country

The research on open access is being conducted around the globe. However, the western countries are far ahead in publishing research in the area. The European countries have well acknowledged this emerging area. Figure 3 depicts below illustrates the share of publications by leading countries. It is identified that United States is the leading countries and published 748 (33.7 percent) of the research. The second leading country in publishing research is United Kingdom 305 (13.8 percent), followed by Canada 115 (5.2 percent), Germany 112 (5.1 percent). Overall, 94 countries have contributed in OA research. The top 15 countries produced the 1774 (80.0 percent) papers. Out of the top 15 countries majority belong to Europe. Interestingly, India has produced the considerable number of papers 64 (2.9 percent) and listed at the 7th rank. Besides the top 15 countries, the rest produced only 443 (20.0 percent) papers.
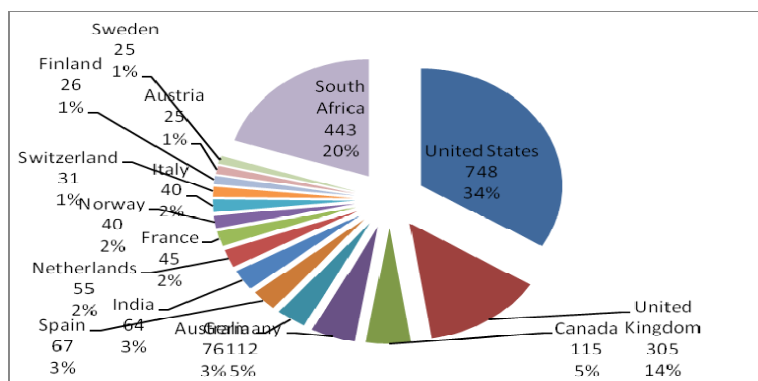
Figure 3. Country wise share of Publications

Table 2. Transformative Activity Index (TAI) of Most Productive Countries

Country	No of papers 1980 to 2000 & TAI	No of papers 2001-2012 & TAI	No of papers	Total Citations	Share (%)
United States	94 (120.1)	654 (97.7)	748	2100	33.7%
United Kingdom	23 (72.1)	282 (103.3)	305	1600	13.8%
Canada	15 (124.6)	100 (97.1)	115	1500	5.2%
Germany	4 (34.1)	108 (107.7)	112	164	5.1%
Australia	5 (62.9)	71 (104.3)	76	91	3.4%
Spain	-	67 (111.7)	67	293	3.0%
India	1 (14.9)	63 (109.9)	64	124	2.9%
Netherlands	2 (34.7)	53 (107.6)	55	85	2.5%
France	3 (63.7)	42 (104.2)	45	430	2.0%
Norway	6 (143.3)	34 (94.9)	40	596	1.8%
Italy	-	40 (111.7)	40	290	1.8%
Switzerland	3 (92.5)	28 (100.9)	31	887	1.4%
Finland	2 (73.5)	24 (103.1)	26	682	1.2%
Austria	1 (38.2)	24 (107.2)	25	18	1.1%
Sweden	2 (76.4)	23 (102.8)	25	147	1.1%
Others (79 countries)	71 (153.2)	372 (93.8)	443	390	20.0%
Total 94 countries	232	1985	2217	9397	100.0%

Note: The value mentioned in parenthesis is TAI value

Transformative Activity Index (TAI)

TAI of top 15 countries is calculated in two block period. The block first is started from 1980 to 2000, and the second block covers the period 2001-2012. It found that in the first block, out of the top fifteen countries only three countries TAI>100, while in second block period twelve countries TAI>100. It clearly shows that research output on OA was enhanced at rapid pace in 21st century. Table 2 below clearly shows that during 1980 to 2000, the TAI (143.3) value of Norway was highest. In the block II the TAI of Italy and Spain (111.7 each) is measured maximum. Interestingly, the TAI of Spain and Italy in the block I was recorded zero.

Top Institutions Publishing Research on OA and Relative Citation Impact (RCI)

OA research has been published by 160 institutions around the world. The study calculated the research outcome of these institutes and found the top 15 institutes (Table 5). It was calculated that these 15 top institutes published the 237 (10.7 percent) papers. These 15

institutes publications received the 3755 (40 percent) of the citations. Table 3 presents the list of top 15 productive institutions. *Indiana University* is the most productive institution. It has published the 25 (1.1 percent) of the papers, followed by *Loughborough University* 24 (1.1 percent), *University of Southampton* 19 (0.9 percent) and UCL 18 (0.8 percent), *University of Hawaii System* 16 (0.7 percent). The citations were also calculated and found that *Harvard University* publications have received the maximum citations 667 (7.1 percent) with highest citations per publication i.e. 51.3.

Table 3. Productive Institutions in the Research Output in OA in Social Sciences and Humanities

Rank	Name of Institution	Number of publications	No of Citations	CPP
1	Indiana University	25 (1.1)	253 (2.7)	10.1
2	Loughborough University	24 (1.1)	332 (3.5)	13.8
3	University of Southampton	19 (0.9)	224 (2.4)	11.8
4	University College London (UCL)	18 (0.8)	233 (2.5)	12.9
5	University of Hawaii System	16 (0.7)	62 (0.7)	3.9
6	UC Davis	15 (0.7)	345 (3.7)	23.0
7	University of Maryland	15 (0.7)	271 (2.9)	18.1
8	Universite du Quebec a Montreal	14 (0.6)	261 (2.8)	18.6
9	University at Buffalo State University of New York	14 (0.6)	60 (0.6)	4.3
10	Hanken - Svenska handelshogskolan	13 (0.6)	175 (1.9)	13.5
11	Cornell University	13 (0.6)	206 (2.2)	15.8
12	Harvard University	13 (0.6)	667 (7.1)	51.3
13	The University of British Columbia	13 (0.6)	239 (2.5)	18.4
14	NHH Norwegian School of Economics	13 (0.6)	213 (2.3)	16.4
15	University of Tehran	12 (0.5)	214 (2.3)	17.8
	Others 145 Institutes	1980 (89.3)	5642 (60.0)	2.8
	Total (160)	2217 (100.0)	9397 (100.0)	

The relative citation impact (RCI) of top institutes was calculated. Figure 4 illustrates that Harvard University (~11.8) has highest RCI value, followed by UC David (~5.3), Universite du Quebec a Montreal (~4.7), and University of Tehran (~4.6).
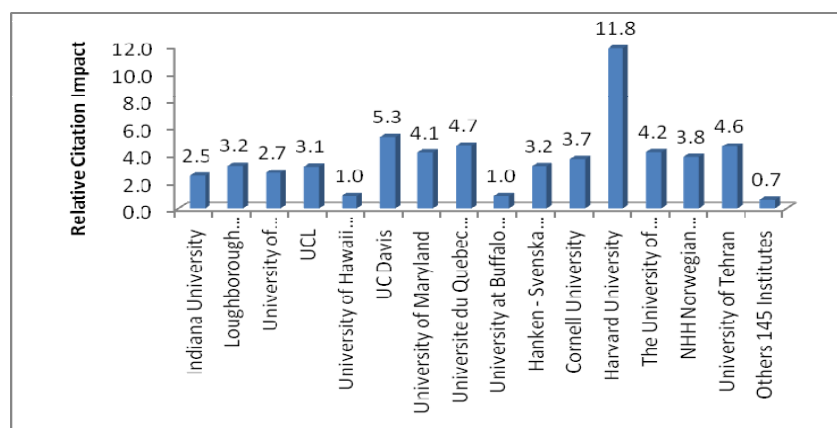

Figure 4. Relative Citation Impact of Top 15 Countries

Productive Authors in IL Research

The study also identified the most productive authors published research on OA. Table 4 below shows the list of most productive authors in the area. It is identified that M. McGrath

the Editor of Leeds, United Kingdom is the most productive author and published 27 papers. His papers have received 11 citations. The second most productive author is identified P.Jacso from University of Hawaii at Manoa who published 18 papers. The h-index (~37) of M. Thelwall was found highest among the 20 most productive authors.

Table 4. Most productive Authors in OA Research

Sr. No	Author	Affiliation	No of papers	No of Citations	ACPP	h-Index
1	McGrath, M.	Editor, Leeds, United Kingdom	27	11	0.4	2
2	Jacso, P.	University of Hawaii at Manoa, Department of Computer Science and Information Systems, Honolulu, United States	18	66	3.7	16
3	Harnad, S.	University of Southampton, Department of Psychology, Southampton, United Kingdom	18	390	21.7	20
4	Oppenheim, C.	Loughborough University, Department of Information Science, Loughborough,	14	278	19.9	21
5	Xia, J.	Indiana University, Department of Library, Bloomington, United States	13	96	7.4	3
6	Bjork, B.C.	Hanken - Svenska handelshogskolan, Helsinki, Finland	10	117	11.7	17
7	Hogrefe, G.J.	Verleger, Hogrefe Verlagsgruppe	10	0	0.0	0
8	Nicholas, D.	University of Calgary, Calgary, Canada	9	120	13.3	25
9	Wilen, J.E.	UC Davis, Department of Agricultural and Resource Economics, Davis, United States	9	269	29.9	22
10	Hannesson, R.	Norwegian School of Economics, Bergen, Norway	7	0	0	15
11	Swan, A.	Key Perspectives Ltd., Truro, United Kingdom	7	85	12.1	5
12	Kousha, K.	University of Wolverhampton, Faculty of Science and Engineering, Wolverhampton, United Kingdom	7	191	27.3	10
13	Probets, S.	Loughborough University, Department of Computer Science, Loughborough,	7	61	8.7	8
14	Butler, D.	University of Edinburgh, Department of Physics, Edinburgh, United Kingdom	7	31	4.4	21
15	Rowlands, I.	University of Leicester, David Wilson Library, Leicester, United Kingdom	7	93	13.3	20
16	Joint, N.	University of Strathclyde, Andersonian Library, Glasgow, United Kingdom	6	13	2.2	6
17	Kaiser, J.	National Cancer Institute, Bethesda, United States	6	6	1.0	26
18	Bhat, M.H.	Islamia College of Science and Commerce, Srinagar, India	6	6	1.0	2
19	Carr, L.	University of Southampton, Southampton, United Kingdom	6	192	32.0	13
20	Thelwall, M.	University of Wolverhampton, Statistical Cybermetrics Research Group, Wolverhampton, United Kingdom	6	236	39.3	37

ACPP- Average Citations Per Publication

Highly Cited Research Papers on IL

The study listed the 10 most cited papers. These 10 papers collectively have been cited 984 times. The paper entitle '*Comparing the impact of Open Access (OA) vs. non-OA articles in the same journals" published in* D-Lib Magazine received the highest citations 165. The Table 5 below shows the top ten articles in the area of study.

Table 5. The Most Cited Papers on OA

Sr. No	Title	Source	Times cited
1	Comparing the impact of Open Access (OA) vs. non-OA articles in the same journals	D-Lib Magazine, 2004, 10 (6)	165
2	A model of regulated open access resource use	Journal of Environmental Economics and Management, 1997, 32 (1), pp. 1-21	140
3	Access/impact problem and the green and gold roads to open access	Serials Review, 2004, 30 (4), pp. 310-314	109
4	Google scholar citations and google Web/URL citations: A multi-discipline exploratory analysis	Journal of the American Society for Information Science and Technology, 2007, 58 (7), pp. 1055-1065	106
5	Informetrics at the beginning of the 21st century-A review	Journal of Informetrics, 2008, 2 (1), pp. 1-52	97
6	Do open access articles have greater citation impact?. A critical review of the literature	Journal of Informetrics, 2007, 1 (3), pp. 239-248	97
7	Challenges and opportunities of open data in ecology	Science, 2011, 331 (6018), pp. 703-705	95
8	Open access renewable resources: Trade and trade policy in a two-country model	Journal of International Economics, 1998,44 (2), pp. 181-209	62
9	The depth and breadth of google scholar: An empirical study	Portal, 2006, 6 (2), pp. 127-141	61
10	Open access and global participation in science	Science, 2009, 323 (5917), pp. 1025	52

FINDINGS

1. The present study shall be useful to understand the process in OA. The major findings of the study are as follows:
2. Total 2217 papers published in the area. These papers have received 9397 citations till January 1, 2014.
3. The maximum papers in the area of study are published in English 2035 (91.8 percent) language.
4. The research is published in 160 journals. Top 19 journals published 603 (27.2 percent) papers. These papers have cited 3875 times i.e. 41.2 percent of the total citations on papers published.
5. United States with 748 (33.7 percent) papers is identified the leading countries in OA research, followed by United Kingdom 305 (13.8 percent).Top 15 countries collectively produced the 80 percent of the research.
6. The transformative activity index (TAI) of Norway was highest (~143.3) during 1980 to 2000, while TAI of Italy and Spain (~111.7 each) is measured maximum during 2001-2012.
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8. The relative citation impact (RCI) was calculated and found that Harvard University (~11.8) has highest RCI value, followed by UC David (~5.3).
9. Indiana University (25 (1.1 percent) is identified the most productive institute and McGrath, M., editor, Leeds, United Kingdom is found the most prolific author in the area of study.

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