Research Output On Quality Assessment And Higher Education: A Bibliometric Study Using Biblioshiny

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Abstract

The study data contains of 3626 documents was retrieved from the Web of Science database for the period of 5 years (2017–2021) on 2nd March, 2022. Data analysis was performed using Biblioshiny. The results of the study revealed that the major increase was observed during 2017–2020, whereas the maximum number of publications (N = 57) in a single year was published in the year 2020. Similarly, the highest number of citations (N = 852) were observed in the year 2021. The most productive countries in terms of citation were the United States (N = 8057 citations), the United Kingdom (N = 4026 citations), and Australia (N = 2588 citations). Results further indicated that more than 54 of the research papers published in the journal Assessment & Evaluation in Higher Education. The study also found that the University of Toronto (Canada) has published the highest papers, i.e. 164. On the theme Quality Assessment and Higher Education field. Overall, the findings of the study reveal that most of the research in the aforementioned field originated from the developed countries which can be related to the developments in the Quality Assessment and Higher Education field. The study indicates the importance of Quality Assessment and Higher Education in the educational context due to an increased trend of inclusion and diversity in the education field.

Keywords: Quality Assessment, Higher Education, Bibiliometrics, Citation Analysis.

1. Introduction

Over the last decade of 21st Century, almost all developed countries have established national systems for the assessment of quality in higher education. Similar this development can be found in many other under developed countries, these developments have been sponsored largely by the state even if the national quality agencies so formed generally possess a considerable degree of operational autonomy and mainly use a form of peer review as their primary assessment method.

Quality assessment of higher education institutions can contribute to the process of standardization of academic degrees. In fact, because of the changing landscape and increased call for accountability, higher education facing the challenge of re-conceptualise methods and processes used to indicate quality and excellence, including those used for assessing and evaluating quality of education institutions. The quality of higher education services, especially in developing countries must be viewed as a strategic issue for social and technological development and economic growth (Ezeokoli and Ayodele 2014).

2. Objectives of the study

The fundamental target of this exploration is to examine the distributions of Quality Assessment and Higher Education literature published during 2017-2021 and indexed in the Web of Science database.

➤ To find out kinds of the documents published on Quality Assessment and Higher Education

➤ Identify the total Citation per Year on Quality Assessment and Higher Education

➤ To know the most Source impact of the top 15 journals on Quality Assessment and Higher Education

➤ To reveal the most prolific contributing authors impact on Quality Assessment and Higher Education

➤ Trace out the highly cited countries on Quality Assessment and Higher Education

➤ To find out the most preferred keywords co-occurrence network

➤ Identify the most relevant affiliation on the theme of Quality Assessment and Higher Education

3. Review of literature

Mallikarjun Kappi and Dr. B. S. Biradar (2019) conducted bibliometric assessment of scientific research output of the Kuvempu University, Shankaraghatta, Shivamogga, Karnataka (1990 – 2019). The data collected from the Web of Science. The analysis includes yearly output of research productivity. The study focuses on Author Productivity pattern, types of documents/records, individual author's research productivity, geographical collaboration of authors (countries of contributing authors) and distribution of research output by language.

 Niradhar Dey, (2011) studied Quality assurance (QA) and accreditation in higher education include the systematic management and assessment of procedures to monitor performance and to address areas of improvement. In the context of globalization, without assuring the quality of higher education programmes it is not possible to ensure credit transfer and student mobility, to address manpower needs, or to improve economic productivity. In the globalised environment the emergence of trans-national institutions and the use of electronic media for distance education pose a great challenge to quality assurance agencies, in (i) clarifying issues pertaining to quality assurance procedures and (ii) developing acceptable criteria for assessment. A joint effort between higher education institutions and accreditation bodies is needed to ensure effective coordination and communication, adhesion to an ethical code of good practice, and objective, fair, and rigorous quality assessment and accreditation.

Shettar, I. M., Hadagali, G. S., & Shokeen, A. (2021) Conducted A Scientometric Analysis of the growth of global literature on Open Educational Resources for the period 2004-2020. A total of 1,751 records were extracted from the Scopus Database from its first publication to till 2020. The Relative Growth Rate (RGR) and Doubling Time (Dt.) of OERs literature have been calculated along with collaboration analysis and co-authorship network maps using VoSViewer. The results of the study show a fluctuating trend for the Annual Growth Rate and CAGR was recorded at 0.450971. The Relative Growth Rate was recorded between 0.16 and 1.70 for different years and observed a gradual increase in doubling time. The Degree of Collaboration (DC) noted was 1.32 and 3.11 Collaboration Index (CI). The study also listed the most prolific authors, institutes and countries in the field of OERs research publications.

4. Methodology

The present study analyzed 3626 global publications on the topic Quality Assessment and Higher Education published from 2017 to 2021. The search term "Quality Assessment and Higher Education" was used to retrieve the publications indexed by Web of Science citation database. The data from Web of Science was exported in plain text file format. This plain text file was further used as the data source in biblioshiny app. The downloaded plain text file format was uploaded to Biblioshiny interface. Then, as per the objectives of the study, the generated excel files were downloaded and used for data analysis.This study examines a wide range of publication out-put on Quality Assessment and Higher Education in terms of authors, affiliation, keywords, publications, citation structures, and the development of research trends through time. The bibliometric approach was used to examine the visual representation of the growth of DH research.

Additionally, data from bibliometric analyses were examined with the use of the Bibliometrix R programme

5. Data Analysis and interpretation

5.1. Document Types

Table-1 Different types of Documents

| SL. No.	Document Types	Number of Articles	Percentage (%)
1	Article	2833	78.13
2	Book chapter	1	0.03
3	Early access	124	9.00
4	Proceedings paper	39	1.08
5	Extracted publication	1	0.03
6	Book review	3	0.08
7	Correction	1	0.03
8	Editorial material	22	0.61
9	Review	602	16.60
10	Early access	15	0.41

The Table 1 showing a collection of documents used in research with the theme of Quality Assessment and Higher Education. The number of documents published is 3626 which are divided into 10 different types of documents, including journal articles (2833 documents), book chapters (1 document), early access (109 documents) proceedings paper (39 documents), extracted publication (1 document), book review (3 documents), correction (1 document), editorial material (22 documents), review (602 documents) and early access (15 documents). Based on the results of the grouping of document types above, the type of document that is most widely used as the subject of research on the theme of Quality Assessment and Higher Education is of journal articles.

5.2. Total Citations per Year

Table- 2 Total Citations per Year

Year	N	Mean TC Per Art	Mean TC Per Year	Citable Years
2017	551	17.87	3.57	5
2018	597	13.65	3.41	4
2019	642	11.31	3.77	3
2020	769	5.34	2.67	2
2021	852	1.49	1.49	1

As seen in the WoS core collection citation database, the global output in Quality Assessment and Higher Education field cumulated to a total of 3626 articles with an average output of 8.04 papers per year during 2017-2021 and average total citations of articles by year are shown in table 2 the highest mean of total citation per articles is of 3.77 listed in the year 2019 against 642 number of the article published, Then, based on the average total citation for each article the highest citation occurred in the year 2017 with an average of 17.87 per articles. Whereas for the average annual citations per year, the research with the highest citation occurred in 2019 is of 3.77. This shows that papers published in 2019 cited more than any other year in the Quality Assessment and Higher Education theme.
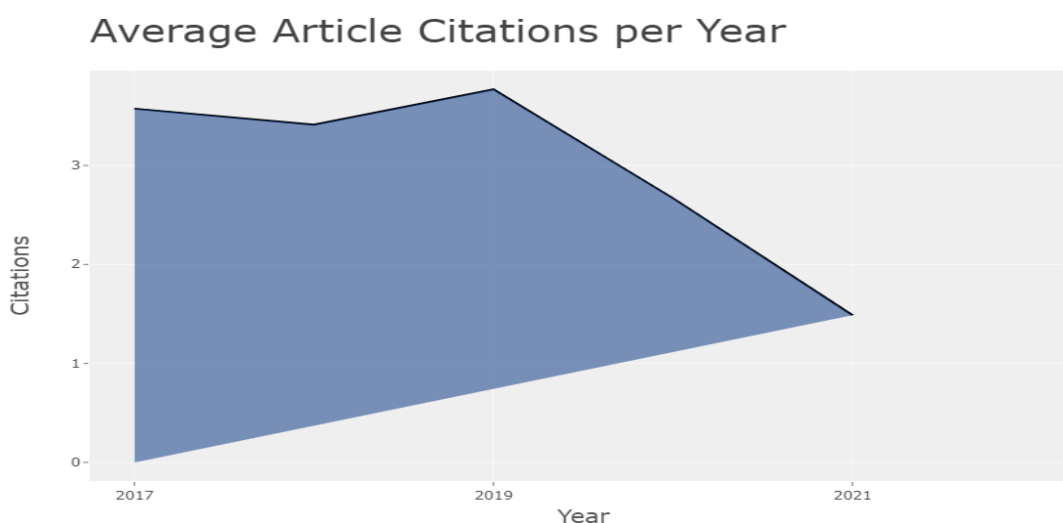
Source: Biblioshiny

5.3. Top 20 Indexed Journals by WOS on Quality Assessment and Higher Education

Table 3 -Top 20 Indexed Journals by WOS on Quality Assessment and Higher Education

Rank	Element	h index	g index	m index	TC	NP	PY start
1	ASSESSMENT & EVALUATION IN HIGHER EDUCATION	14	24	3.85	673	54	2021
2	COCHRANE DATABASE OF SYSTEMATIC REVIEWS	22	38	3.67	1503	52	2017
3	SUSTAINABILITY	10	14	1.67	287	44	2017
4	PLOS ONE	10	16	1.67	364	43	2017
5	BMJ OPEN	12	19	2.00	434	37	2017
6	BMC MEDICAL EDUCATION	8	11	1.33	194	36	2017
7	ACADEMIC MEDICINE	13	19	2.17	442	34	2017

8	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	8	13	1.33	232	34	2017
9	JOURNAL OF MEDICAL INTERNET RESEARCH	13	21	2.17	462	25	2017
10	JOURNAL OF SURGICAL EDUCATION	8	13	1.33	190	25	2017
11	STUDIES IN HIGHER EDUCATION	9	16	1.50	293	23	2017
12	NURSE EDUCATION TODAY	10	16	1.67	280	22	2017
13	BMC PUBLIC HEALTH	10	19	1.67	367	21	2017
14	BMC HEALTH SERVICES RESEARCH	6	9	1.00	117	21	2017
15	JOURNAL OF CLINICAL NURSING	5	8	1.00	88	19	2020
16	SUPPORTIVE CARE IN CANCER	7	9	1.16	96	17	2017
17	HIGHER EDUCATION RESEARCH & DEVELOPMENT	8	14	1.33	203	16	2017
18	NUTRIENTS	9	12	1.5	161	16	2017
19	EARLY CHILDHOOD RESEARCH QUARTERLY	5	9	0.83	94	14	2017
20	HIGHER EDUCATION	8	14	1.33	355	14	2017

Most Relevant Sources
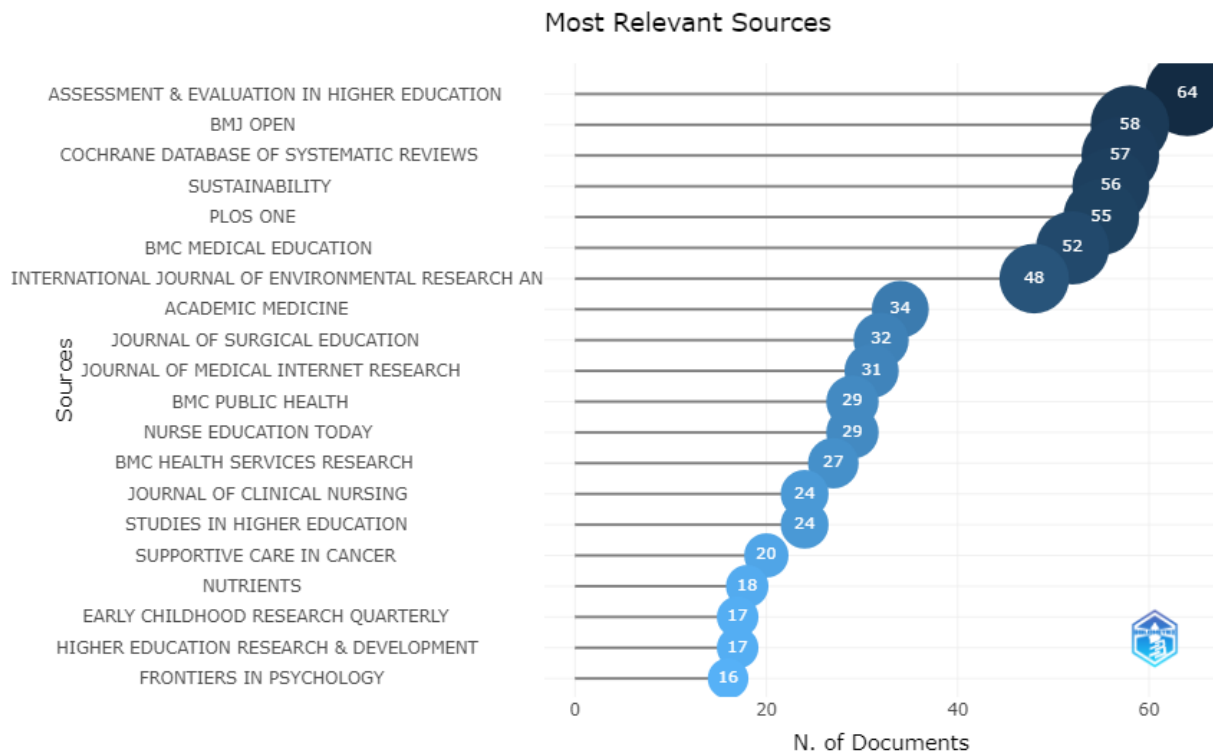
Source: Biblioshiny

During the study period, there were 1242 academic journals that are linked to Quality Assessment and Higher Education related papers. Table -3 shows that Assessment & Evaluation in Higher Education (n = 54, 3.85%), had the highest publication output among the top 20 journals followed by Cochrane Database of Systematic Reviews (n = 52, 3.67%), Sustainability (n = 44, 1.67%), and PLOS One (n = 43, 1.67%). The most cited journals were Cochrane Database of Systematic Reviews (n = 1503), Assessment & Evaluation in Higher Education (n = 673), Journal of Medical Internet Research (n = 462), Academic Medicine (n = 442), and BMJ Open (n = 434). Cochrane Database of Systematic Reviews (22) has the highest h index cited journal for the year 2017, following by Assessment & Evaluation in higher education (14) h-index in the same year, and Academic medicine and Journal of Medical Internet Research (13) h-index in the year 2017. It is also to reveal that m-index of the highly productive journal, that the journal Cochrane Database of Systematic Reviews has the highest m-index of 3.67% followed by Journal of Medical Internet Research with 2.17%, it means the average h-index of the journal.

5.4. Top Ten Authors on Quality Assessment and Higher Education

Rank	Element	H index	G index	M index	TC	NP	PY start
1	LEE J	6	8	1.2	77	8	2018
2	LI J	4	4	0.945	26	8	2020
3	HODDER RK	7	7	1.167	192	7	2017
4	WOLFENDEN L	7	7	1.167	192	7	2017
5	WU Y	4	7	0.667	68	7	2017
6	SUTHERLAND R	6	6	1	156	6	2017
7	TZELEPIS F	6	6	1	159	6	2017
8	WYSE RJ	6	6	1	159	6	2017
9	TEN CATE O	5	6	0.83	138	6	2017
10	WANG Y	4	6	0.66	238	6	2017

Top ten productive author's publications, citations, h index g index and m index values are shown in table- 4 on the topic Quality Assessment and Higher Education. Lee, J. (Soonchunhyang University, Dept Surg. Seoul, South Korea) was first in the number of published articles (8) but h-index (6) total citations are 77 in the year 2018. It means the Author Lee, J has got more than 50% of total citation for 6 of has publications which remain of high impact papers and his 8 publications.   Wang, Y.(Harbin Institute of Technology, chairman Civil & Environment Engineering, School of Civil & Environment Engineering, Shenzhen, Guangdong, Peoples R China) has scored the highest number of citations (238), h-index (4), and m-index (6) for his 6 publications. The highest h-index value was contributed by Hodder, R. K. and Wolfenden, L. (7).

5.5. Most Cited Countries

Table 5: Top 20 Most Productive Countries in terms of Citations

Rank	Country	Total Citations	Average Article Citations	
1	USA	8057	8.14	
2	UNITED KINGDOM	4026	13.84	
3	AUSTRALIA	2588	9.34	
4	CANADA	2332	10.32	
5	CHINA	2213	6.92	
6	NETHERLANDS	1253	14.74	
7	ITALY	1131	14.69	
8	SPAIN	1066	7.56	
9	GERMANY	884	6.91	
10	NORWAY	504	11.72	
11	SWEDEN	328	8.41	
12	BRAZIL	305	4.69	
13	PORTUGAL	305	11.30	
14	DENMARK	303	8.91	
15	KOREA	283	5.05	
16	GREECE	260	14.44	
17	JAPAN	256	8.53	
18	IRELAND	253	5.50	
19	FINLAND	247	11.76	
20	TURKEY	238	4.67	

Total Ninety Six countries were involved on the topic Quality Assessment and Higher Education. Table 5 shows the total citations count and average citations on the topic Quality Assessment and Higher Education during 2017-2021. The United States of America (USA) topped the list with highest citations (8057). The second productive countries were United Kingdom with 4026 citations followed by Australia with 2588 citations, and Canada with 2332 citations. Among the top 20 most productive countries, the highest average citation per publication was received by Netherlands (14.74). The lowest citation reported by Turkey at 20th position with 4.67 average citations during 2017-2021. India is in 34th Position in terms of number of citations and 73rd Position in average article Citations.

Most Cited Countries
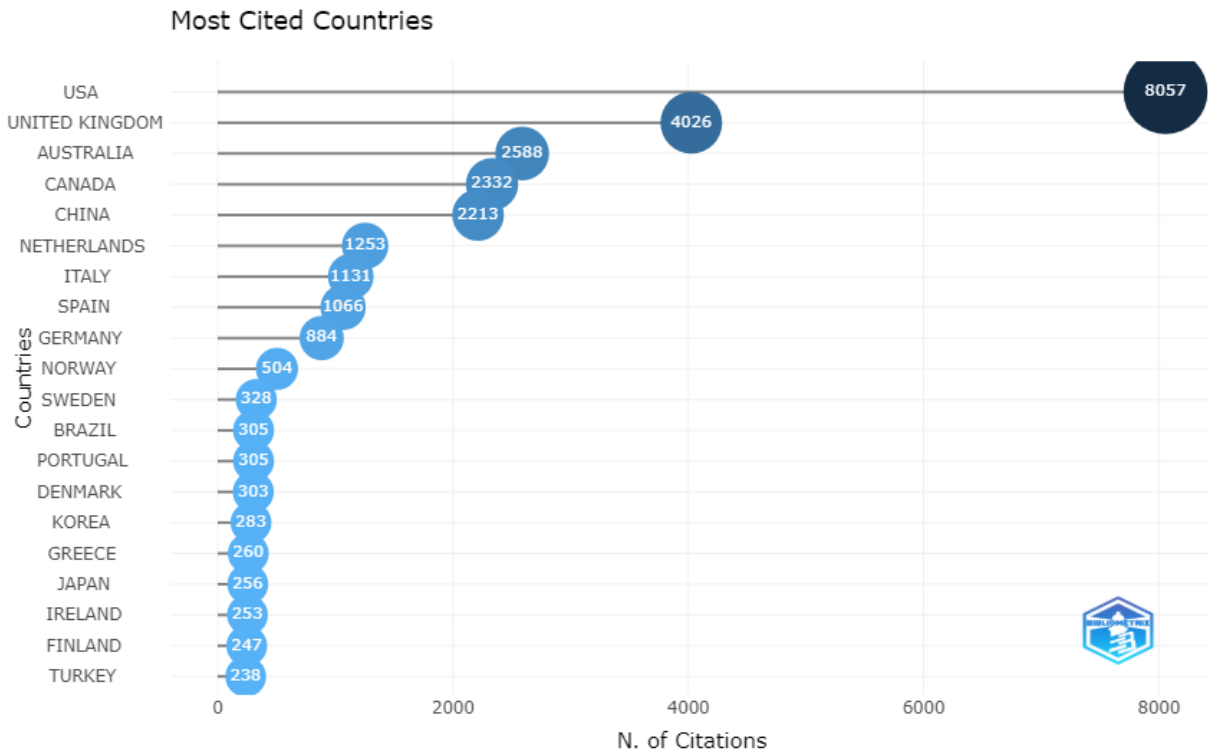
Source: Biblioshiny

5.6. The Most frequent word

Table-6 The Most frequent word

SL. No.	Words	Occurrences
1	Quality	471
2	Quality-of-life	393
3	Education	391
4	Impact	323
5	Health care	228
6	Performance	215
7	Management	199
8	Outcomes	193
9	Students	167
10	Higher-education	150
11	Validation	149
12	Children	144
13	Perceptions	139
14	Risk	138

15	Depression	127
16	Knowledge	121
17	Validity	115
18	Skills	111
19	self-assessment	24
20	Quality improvement	18

Table -6 represents the most prominent keywords used by the authors of Bibliometrics research, the researcher must focus on the subject of Quality Assessment and Higher Education, the first of which is quality, which appears 471 times in the data. The second is quality of life (393 times) and the third is education (391 times); those three words are appeared maximum numbers of times on the theme Quality Assessment and Higher Education, and the following keywoards validity (115) , skills (111), self-assessment (24), quality improvement (18) are appeared comparatively in less number of terms in the research outcome documented.

Source: Biblioshiny

5.7. Most_Relevant_Affiliations

Table-7 Most_Relevant_Affiliations

SL. No.	Affiliations	Country	Articles
1	UNIV TORONTO	Canada	164

2	UNIV SYDNEY	Australia	108
3	MCGILL UNIV	Canada	90
4	HARVARD MED SCH	United States	87
5	UNIV MELBOURNE	Australia	85
6	MCMASTER UNIV	Canada	82
7	UNIV CALIF LOS ANGELES	Canada	79
8	UNIV CALIF SAN FRANCISCO	United States	74
9	UNIV MICHIGAN	United States	73
10	UNIV OTTAWA	Canada	69
11	MONASH UNIV	Australia	66
12	DUKE UNIV	United States	63
13	NORTHWESTERN UNIV	United States	62
14	STANFORD UNIV	United States	61
15	UNIV PITTSBURGH	United States	61
16	UNIV WASHINGTON	United States	60
17	JOHNS HOPKINS UNIV	United States	59
18	UNIV PENN	United States	59
19	UNIV ILLINOIS	United States	58
20	UNIV NEWCASTLE	England	56

The table-7 indicates the top twenty most prolific institutions in the field of Quality Assessment and Higher Education. Out of top twenty most prolific institutions, the University of Toronto, Canada has published the highest papers, i.e. 164, followed by University of Sydney, Australia with 108, McGill University, Canada with 90 publications ranked first, second and third respectively. The study has also found that comparatively less number of papers published by The University of Pennsylvania, United States i.e. 59, followed by The University of Illinois, United States with 58, and Newcastle University, England with 56. Out of the top twenty institutions, eleven institutions are based in United States alone, five institutions are based in Canada, and three institutions are based in Australia and England respectively. Among the Affiliations Institutions All India Institute of Medical Sciences, New Delhi from India remain at 62 rank with 28 publications.

Most Relevant Affiliations
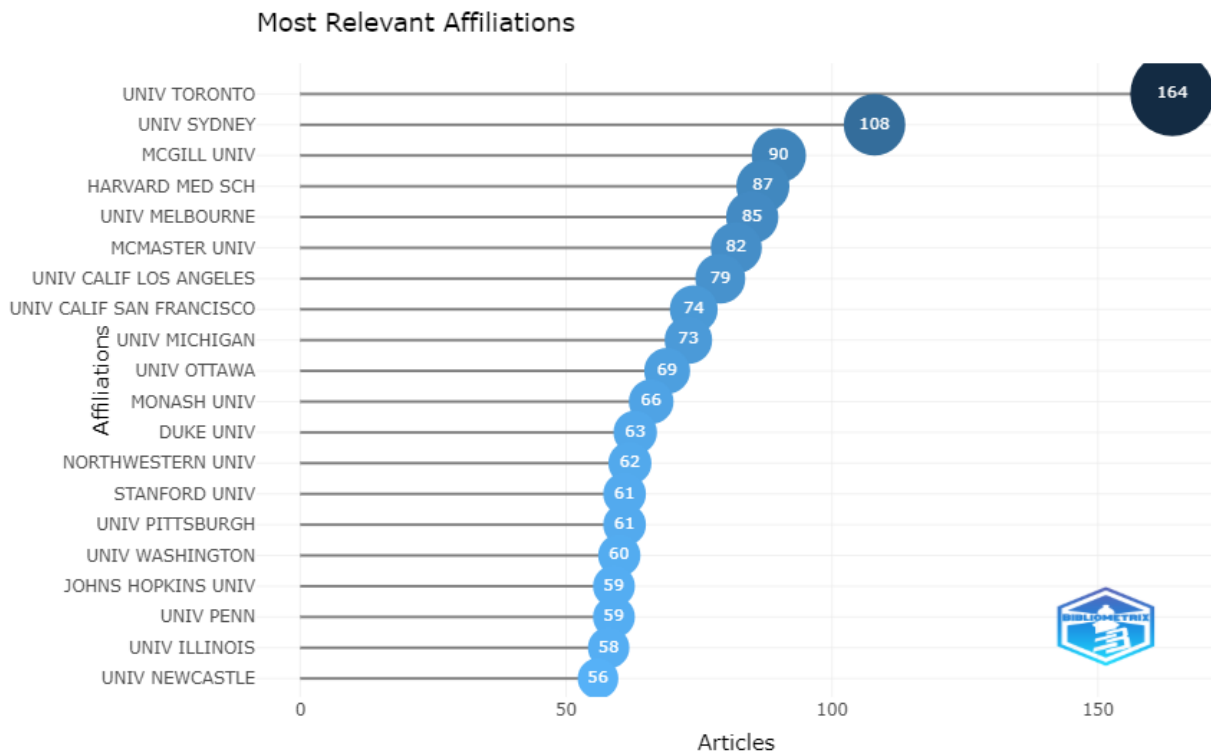
Source: Biblioshiny

Conclusion

The present study analyzed the Quality Assessment and Higher Education research output published during 2017-2021. It shows that research with the theme of Quality Assessment and Higher Education has increased every year. The study found journal articles as the preferred form for the research publications by the researchers in Quality Assessment and Higher Education research field. USA, United Kingdom and Australia are found to be the most productive countries in Quality Assessment and Higher Education research on the basis of h index, g index and m index. Though the study is of the outcome on Quality Assessment and Higher Education, the main subject categories belongs to Education Educational Research (14. 73%), Health Care Sciences Services (9.46%), Public environmental Occupational Health(9.30%), Medicine General Internal(8.25%) and Education Scientific Disciplines (8.06%) and the other areas of Higher Education are Nursing (7.06%), Environmental Sciences (4.66%), Surgery(4.66%), Psychiatry(3.97%) and so forth. The study also found that the University of Toronto has published the highest papers, i.e. 164. On the theme Quality Assessment and Higher Education field. It is found that the indexed publications from India is at minimal on the subject theme Quality Assessment and Higher Education though India is the second largest higher education system in the world with well established quality assessment system.

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