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JOURNAL BIBLIOMETRIC ANALYSIS: A CASE STUDY ON QUALITY ASSURANCE IN EDUCATION

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Abstract:-The paper examines the pattern of publications of the journal Quality Assurance in Education (QAE) from 2008 to 2012 and reveals various facets of its publications through key bibliometric measures. The study analyses publications of the QAE from the year 2008 to 2012. The author explores Scopus and Google Scholar to assess the impact and influence of individual papers through comparative analysis of citations recorded in the respective indexing databases. The study finds that out of 112 articles published in the QAE from 2008 to 2012, the journal published a little over 22 articles per annum, on an average. QAE authors have used 43.25 references per article on an average and the average pages per article in the journal ranges from the lowest average of 16.73 in 2008 to the highest average of 19.26 in the year 2011. Majority of its authors have used 41 to 50 references and e-citations in the journal are found less in comparison to that of journals and books. 2012 'Impact Factor' of the journal based on Scopus citations is found to be 1.047 while it is 1.976 based on Google Scholar citations.

Keywords:-Bibliometric study, bibliometric analysis, citation analysis, equal credit method, impact factor, quality assurance in education .

INTRODUCTION

Quality Assurance in Education (QAE) is an international peer reviewed journal, which is exclusively devoted to the significant assessment of quality and connected issues in the whole system of education. It is committed toward the effective dissemination of best practices on the management of change, innovation, and enhancement in the higher education. The journal constantly solicits insights into 'the perceptions and opinions of quality in education of a number of stakeholders to gain an unprejudiced view. The journal seeks to contribute to developing effective strategies to deal with the complex and uncertain environment in which education now operates'. Moreover, QAE consistently asks 'what lessons, if any, can be learned from industry and to what extent industry can learn from education with an aim to compare, analyse, and evaluate perceptions of quality by a number of stakeholders with intent to stimulate and encourage debate, reflect best practice', and to influence and determine policy and decision making in the most effective way [1]. Furthermore, the journal intends to disseminate novel thoughts into the process of teaching, learning, research, and administration of higher educational system all around through its high quality and precise research publications.

In order to assess the impact and influence of the journal, the author carries out a bibliometric study of Quality Assurance in Education from 2008 to 2012 by revealing authorship pattern, statistics of the year wise distribution of publications, bibliographical forms of references, half life period of journal citations, most prolific authors, key journals that have been frequently cited by the authors of QAE, and manual computation of impact factor of the journal based on the obtained citations of its published articles reported in different indexing databases with a view to providing a portrait of the journal indicating the quality and maturity of the spirit of its publications. The paper thus rightly addresses the influence and the scientific impact of Quality Assurance in Education (QAE) upon its readers' community.

OBJECTIVES OF THE STUDY

In the present study, the author intends to analyze the publication parameters of QAE with a view to seeking answers to the following research problems:

First, what is 'the authorship pattern', 'degree of collaboration', 'range of references', and 'average length of a paper' in QAE published from 2008 to 2012?
Second, what is the average impact of papers, published in QAE?
Third, what are the major journals cited in QAE and to what extent they are cited?
Fourth, who are the top authors of QAE who have been cited fairly well?, and
Fifth, what is the impact factor of QAE measured differently based on the record of Scopus and Google Scholar citations respectively?

METHODOLOGY

Keeping in view the objectives of the study, citation data were extracted from the list of references appended at the end of each article of QAE, published from 2008 to 2012 that appeared in html versions, available with the Emerald database. All the citations listed at the end of each article were copied and specific aspects like name(s) of the author(s), their geographical distribution of affiliations, types of articles, page information and keywords indexed in the structured abstracts were gathered from the individual papers. The whole data for five years of publications of QAE were collected and put into an MS Excel spreadsheet under specific aspects for making the analysis convenient. The indexing databases like Scopus (http://www.scopus.com/) and Google Scholar (GS) (http://scholar.google.com) were explored to assess the impact and influence of individual papers through comparative analysis of citations, recorded in the respective databases Moreover, appropriate bibliometric measures were used to evaluate the different facets and publication behaviour of Quality Assurance in Education.

LITERATURE REVIEW

Vijver and Lonner (1995) studied the "Journal of Cross-Cultural Psychology (JCCP) from 1977 to 1993" and revealed that the overall numbers of journals that are quoted in JCCP are high, yet most references (apart from self-references) are to social psychology journals, particularly the Journal of Personality and Social Psychology and the Journal of Social Psychology. JCCP was revisited by Allik (2013) and the study found that, "the impact of the research articles published in JCCP from 2001 to 2010 on the core psychology journals remained at the same (modest) level, while the journal self-citation bias demonstrated a slight increase during the last 10 years". Low (2006) studied the "American Journal of Veterinary Research from 2001 to 2003" and found that, "the majority of those items were journal articles (88.1%), with books accounting for 9.8% of the citations and the remaining 2.1% comprising other material such as government publications, conference proceedings, theses, and so on". Tsay (2011) studied three journals, namely, "Journal of the American Society for Information Science and Technology (JASIST)", "Information Processing and Management (IPM)" and "Journal of Documentation (JOD)" published from 1998 to 2008. The study revealed that the characteristics of the cited journals and books confirmed that all journals under study are information science oriented, except JOD which is slanted towards library science. JASIST and IPM are very much in common and diffuse to other disciplines more deeply than JOD. Tsay and Shu (2011) studied the journal bibliometric characteristics of the Journal of Documentation and the subject relationship with other disciplines by citation analysis and identified three main classes of cited journals in JOD papers. These are library science, science, and social sciences. There are three subclasses as well: Mathematics, Computer Science, and Industries, Land use and Labor. Mamdapur, et al. (2011) indicated the domination of collaborative research in Baltic Astronomy published during the years from 2000 to 2008 and found that authors primarily relied on journals followed by books, conference proceedings and reports. Swain (2011) studied "Library Philosophy and Practice (LPP) from 2004 to 2009" and revealed that major cited journals in LPP were from the core field of Library Science followed by Education, Medical Sciences, Sociology, Psychology, and Computer Science and the authorship productivity pattern of LPP partially complied with Lotka's Law at a slightly greater n value (n=2.54). Singh, Sharma and Kaur (2011) studied 487 articles published in Journal of Documentation from 1996 to 2010 and found that single authored citations were much higher than multi-authored ones.

Lin and Chiu (2012) vividly discussed the topics, article length, number of title words, language, and the conditions of co-authorship, as well as the highly productive authors from the 1,536 articles, published by the Journal of Educational Media & Library Sciences from 1970 to 2010. Sethi and Panda (2012) studied two core library and information science journals indexed under the Science Direct Database during the period between 2000 and 2010 namely, the International Information & Library Review and the Library & Information Science Research. They identified the eight most productive authors in this field, who produced 19 publications each. Qiu and Zhou (2012) conducted a bibliometric analysis of 2152 papers, published in the Journal of Shanghai Jiaotong University (Medical Science) from 2006 to 2010 and found that twenty-four authors published no less than 15 papers, indicating that all of them were holding a senior title or were academic leaders. The study further revealed that one thousand and thirteen papers were cited for no less than 1 time, 13 papers were cited for no less than 10 times, and the average citation frequency was 0.98. Swain and Panda (2012) studied "Journal of Intellectual Property Rights during the period of 2002-2010" and found that, "single authored contribution to the journal was predominant". The study further revealed that about one third of the total publications of this journal received Google Scholar citations, more than half of the cited articles carried just 1 citation, one fourth got 2 citations, and the rest received citations between 3 to 9 times. The average number of citations against all published articles was found to be 0.66 per article; and the self-citations among authors

constituted 22.01% of the total cited scholarly papers. Jena, Swain and Sahoo (2012a) in another typical study found that the Annals of Library and Information Studies has accommodated on an average 8pages per article.

The study further revealed that the share of contribution of India is found to be at the top, followed by Nigeria, the Netherlands and the USA.

Isiakpona (2012) revealed the low level of collaboration among authors of the articles, published in the LIBRES Research Electronic Journal and the degree of collaboration was found to be 0.279. Das's (2012) case study on Nelumbo (plant taxonomy journal) reflected that half of the papers, published in the journal were contributed by two authors and just one fourth of articles were contributed by single authors. Lokhande (2013) exposed the multi-authored characteristics of the journal "Annals of Library and Information Studies from 2002 to 2011" along with other different facets of the publication of the said journal through an extensive content analysis. Regolini and Jannes-Ober (2013) showed the high degree of transdisciplinarity of Informing Science, and the study found that the h index for 184 articles was 12. Swain, et al.(2013) studied Library Review from 2007 to 2011 and found that the degree of collaboration in the publications of Library Review was 0.36 and the journal has accommodated over 22 citations per article. In regard to country productivity, the UK led the table, followed by USA and Nigeria. In another typical study Swain (2013) revealed that a total number of 148 source articles published in the journal Internet Research have received in all 1783 Google Scholar citations averaging 12.04 citations per paper Additionally, the study found that 2012 Impact Factor of Internet Research (based on record of Scopus citations) is 1.900 and immediacy index is 0.241.The present paper intends to measure the impact and citations behavior of the journal Quality Assurance in Education, which has not yet been explored.

DATA ANALYSIS AND INTERPRETATION

The analysis and interpretation of the data are presented in succeeding sections.

TYPES OF CONTRIBUTIONS

Analogous to other Emerald journals, QAE publishes its articles in six major categories, namely: research papers, case studies, viewpoint, general reviews, literature reviews, and conceptual paper. Table 1 shows that, more than two-third of the articles, published in QAE fall under the research paper category (75 papers; 66.96%), followed by case studies (17 papers; 15.18%), conceptual papers (10 articles; 8.93%), and viewpoint (6 articles; 5.36%). However, articles published under general review and literature review showed very low amounts (2 articles; 1.79 % each). It is evident that the majority of QAE authors produced their works under the research paper category. This may be due to the apparently greater freedom in expanding a given research topic.

Table 1: Types of contributions

Types of Articles	*2008*	*2009*	*2010*	*2011*	*2012*	*Total*	*Total Percentage*
Research Paper	12	15	12	19	17	75	66.96
Case Study	05	03	04	02	03	17	15.18
Conceptual Paper	01	05	00	01	03	10	8.93
Viewpoint	02	00	02	01	01	6	5.36
General Review	02	00	00	00	00	2	1.79
Literature Review	01	00	01	00	00	2	1.79
Total	23	23	19	23	24	112	100.00

Furthermore, it is found that the total number of publications is uniformly distributed through the years. The data at level 95% do not confute the hypothesis of uniformity of the number of papers (DOF=4, chisq=2.53. The same is true for the total number of papers, DOF=4, chisq=0.678.)

YEAR WISE DISTRIBUTION OF ARTICLES AND REFERENCES

Table 2 shows that out of 112 articles, published in QAE from 2008 to 2012, the highest numbers of 24 articles were published in the year 2012, while the year 2010 witnessed the lowest record with 19 publications. However, QAE published constantly 23 articles in 2008, 2009, and 2010. On an average, the journal published 22.5 articles per annum. While examining the number of references, used by QAE authors, it is found that the highest percentage of references was reported in the year 2012 and the lowest in 2010. It is further observed that, QAE authors have used 43 references per article on an average, which is much higher than the average of references reported in The Electronic Library from 2003 to 2009, studied by Jena, Swain and Sahu (2012). Thus, it is inferred that QAE authors have used a massive range of references in making their articles. When

stating this, we should not forget that different disciplines produce different number of citations.

On the basis of data in Table 2 one should reject the hypothesis of uniformity of the numbers of references, DOF=4, chisq=69.98. No wonder, numbers of references used by QAE authors tend to increase with years.

Table 2: Year wise distribution of articles and references

Year	*Total no. of articles*	*% of total articles*	*Total no. of citations*	*% of total citations*	*Average citations per article*
2008	23	20.54	790	16.31	34
2009	23	20.54	1011	20.87	44
2010	19	16.96	880	18.17	46
2011	23	20.54	1062	21.92	46
2012	24	21.43	1101	22.73	46
Total	112	100.00	4844	100.00	43

LENGTH OF ARTICLES

Table 3 shows that, the average number of pages per article in QAE ranges from the lowest average of 16 pages in 2008 to the highest average of 19 pages in the year 2011. Taking all 112 articles into consideration, we found that on average total, QAE has accommodated 18 pages per article which is greater than the average pages reported in some of the other Emerald journals, namely The Electronic Library (13 pages), Interlending and Document Supply (6 to 7 pages), the Journal of Financial Crime (14 pages) (Jena, Swain and Sahu, 2012; Swain, Jena and Mohapatra, 2012; Jena, Swain and Sahoo (2012b). Hence, it is deduced that QAE has accommodated a sizable length of papers in its publications. Apparently, it is again true that the affiliation to a given discipline has essential influence on citing behaviour. Moreover, the data at level 95% do not confute the hypothesis of uniformity of the average length of papers (DOF=4, chisq=0.313).

Table 3: Length of articles

Sl No	*Year*	*Total Pages*	*Total No. of Articles*	*Average pages per article*
1	2008	385	23	17
2	2009	424	23	18
3	2010	312	19	16
4	2011	443	23	19
5	2012	423	24	18
Total		1987	112	18

AUTHORSHIP PATTERNS AND DEGREE OF COLLABORATION

The study of authorship patterns seems to be crucial. In this context, “collaboration acts as a natural catalyst to enhance both the quality and quantity of publications. Efforts can also extend beyond authors, encompassing journal editors and peer reviewers” (Gilmore et al., 2006; Katsouyanni, 2008; Zutshi, et al, 2012). Moreover, “increase in the number of multi-authored papers may be due to the collaboration of specialists leading to enhanced quality of research across national, disciplinary, and regional boundaries leading to path-breaking research outputs” (Fox and Faver, 1984; Vimala and Reddy, 1996; Nwagwu, 2007). The other most motivating factors for collaborative research are: “knowledge sharing and information transmission, access to equipment and resources, the division of labor, sharing costs, and higher quality of the research” (Beaver, 2001; Melin, 2000; Nilzad, 2012). In this regard, the degree of collaboration in the field of science and technology is always greater in comparison to researches in the field of social sciences. Contextually, it is observed from Table 4 that the majority of publications in QAE are single-authored (46 articles; 41.07%). The share of multiple-authored articles is distributed as follows: two authors (35 articles; 31.25%), three authors (24 articles; 21.25%). The number of papers, authored by more than three authors is low (7 articles; 6.25%). To find out the degree of collaboration in QAE publications we used Subramanyam's (1983) formula: DC (degree of collaboration) = NM/NM+NS, where NM=number of multiple authored papers; and NS=Single authored papers. We noticed that the degree of collaboration in QAE publications is 0.589. As the value of DC exceeds 0.5, a collaborative trend in QAE publications is quite visible irrespective of the domination of single authored contributions.

Table 4: Authorship patterns

Authorship pattern	*2008*	*2009*	*2010*	*2011*	*2012*	*Total*	*Total %*
Single	12	10	07	08	09	46	41.07
Two	02	08	07	10	08	35	31.25
Three	07	03	05	03	06	24	21.43
> Three	02	02	0	02	01	7	6.25
Total	23	23	19	23	24	112	100.00

BIBLIOGRAPHICAL FORMS OF CITATIONS

Table 5 shows that QAE authors have used journals as the major source of citations (2822 citations; 58. 26%), followed by books (1253 citations; 25.87%). It is observed that web citations (i.e. citations to electronic resources, other than e-journal articles) in QAE are found less in comparison to that of journals and books. Hence, it is deduced that QAE authors have put intense focus on journals and books in constructing their research articles.

Table 5: Bibliographical forms of citations

Bibliographical forms	*2008*	*2009*	*2010*	*2011*	*2012*	*Total*	*Percentage*
Journals	434	520	569	619	680	2822	58.26
Books	220	297	227	268	241	1253	25.87
Web Citations	39	109	32	120	91	391	8.07
Proceedings	11	36	12	20	36	115	2.37
Reports	10	14	11	11	10	56	1.16
Theses	07	05	06	07	09	34	0.70
Others	69	30	23	17	34	173	3.57
Total	790	1011	880	1062	1101	4844	100.00

RANGE OF REFERENCES

Table 6 reveals that the majority of QAE authors have used 41 to 50 references (f=18), followed by 21 to 30 references (f=25). Three of the tallest bars in figure 1 indicate that the length of references in most of the articles fall in the range of 21 to 50 references. Interestingly, no author has cited less than 10 references and just two authors have cited above 100 references in their respective articles. On an average, QAE authors have used a little over 43 references per article (table 2).

Table 6: Range of references

Sl. No.	Citation range	Frequency	Total citations	% of citations
1	< 10	0	0	0.00
2	11 to 20	11	193	3.98
3	21 to 30	25	706	14.54
4	31 to 40	17	628	12.94
5	41 to 50	28	1377	28.36
6	51 to 60	8	473	9.74
7	61 to 70	8	552	11.37
8	71 to 80	3	228	4.70
9	81 to 90	5	434	8.94
10	91 to 100	0	0	0.00
11	> 100	2	253	5.21
	Total		4844	100

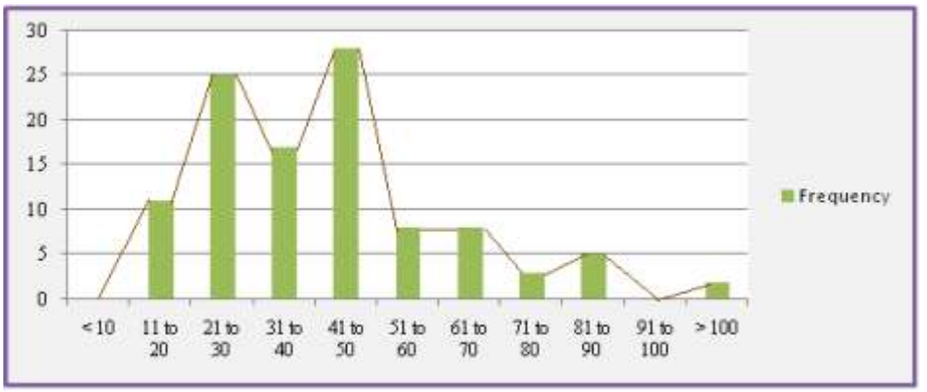

Figure 1. Range of references

COUNTRY PRODUCTIVITY RANKING

The country productivity ranking is measured by using the equal credit method which Lowry, et al. (2007), Serenko et al. (2010); Swain et al, (2012) have used in their respective studies: This is reflected in table 7. In this method, each author receives an equal portion of credit. Thus, a single author earns 1/n points for his country. For instance, if 5 authors have contributed 1 article, then each author will earn 0.2 scoring points. Table 7 shows that, Australia occupies the top position (36 authors; 20.52 Scores). It is followed by the UK (34 authors; 16.99 scores), the USA (28 authors; 13.5 scores), and Greece (10 authors, 4 scores). Concurrently, the country productivity of Syria remains at bottom with just 1 author, earning 0.33 scores apparently through cross country collaboration. Moreover, it is observed that the research productivity of the top four countries has yielded almost half of the contributions to the QAE publications during 2008 and 2012.

Table 7: Country productivity ranking

Rank	*Country*	*Scores*	*No of authors*	*% of Score*
1	Australia	20.52	36	18.33
2	UK	16.99	34	15.17
3	USA	13.5	28	12.06
4	Greece	4	10	3.57
4	India	4	6	3.57
4	New Zealand	4	7	3.57
4	Spain	4	10	3.57
5	Hong Kong	3	4	2.68
5	Portugal	3	6	2.68
6	Turkey	2.5	5	2.23
7	Thailand	2.2	3	1.96
8	Finland	2	2	1.79
8	Germany	2	2	1.79
8	Indonesia	2	4	1.79
8	Ireland	2	3	1.79
8	Kenya	2	5	1.79
8	Malaysia	2	5	1.79
8	Norway	2	5	1.79
8	Singapore	2	2	1.79
9	Vietnam	1.83	3	1.63
10	China	1.5	4	1.34
11	Botswana	1	2	0.89
11	Egypt	1	1	0.89
11	Israel	1	1	0.89
11	Lebanon	1	3	0.89
11	Netherlands	1	3	0.89
11	Nigeria	1	2	0.89
11	Puerto Rico	1	1	0.89
11	Saudi Arabia	1	1	0.89
11	Switzerland	1	1	0.89
11	Tanzania	1	1	0.89
11	UAE	1	3	0.89
11	Uganda	1	3	0.89
11	United Arab Emirates	1	1	0.89
12	Japan	0.6	3	0.54
13	Barbados	0.5	1	0.45
13	Trinidad and Tobago	0.5	1	0.45
14	Syria	0.33	1	0.29
	Total	111.97	213	100

RANKING OF AUTHORS

While observing the data in table 8 it is found that there are 12 authors who have contributed more than two articles to QAE during the studied period. Graham Badley of UK, Patricie Mertova, of Australia, and Dennis C.S. Law of China are at the top with an equal contribution of 3 articles each. Concurrently, four authors from Australia have contributed 2 articles, while one author each from UK, Portugal, Greece, Germany, and Thailand have contributed 2 articles each to QAE publications during the stated period.

Table 8: Ranking of authors

Sl No.	*Rank*	*Author*	*Country*	*No. of articles*
1	1	Graham Badley	UK	3
2	1	Patricie Mertova	Australia	3
3	1	Dennis C.S. Law	China	3
4	2	Chenicheri Sid Nair	Australia	2
5	2	Fion Choon Boey Lim	Australia	2
6	2	Jan H.F. Meyer	UK	2
7	2	Mahsood Shah	Australia	2
8	2	Maria J. Rosa	Portugal	2
9	2	Panos Fitsilis	Greece	2
10	2	Tho D. Nguyen	Australia	2
11	2	Ulf Daniel Ehlers	Germany	2
12	2	Winai Wongsurawat	Thailand	2
13	3	187 authors (1 article each)		187

Ranking of journals

The ranking of journals that have been cited most in the publications of QAE in their decreasing order of citations are presented in table 9. It is found that the source journal (QAE) leads the table with a record number of 314 citations, constituting 11.04 per cent of the total citations, followed by Quality in Higher Education (167 citations; 5.87%), Assessment and Evaluation in Higher Education (75 citations, 2.64%), Studies in Higher Education, and Journal of Marketing (72 citations;2.53% each). In order to know the relative value of the cited journals, Scopus 2011 SJR was retrieved. It is also found that authors of QAE have cited a few journals, which are above the rank of QAE. Hence it is deduced that authors of QAE have rightly taken their research materials from different standard sources, other than the source journal.

Table 9: Ranking of journals

Rank	*Name of the journal*	*No. of citations*	%	Cumulative citations	Cumulative %	SJR*
1	Quality Assurance in Education	314	11.04	314	11.04	0.565
2	Quality in Higher Education	167	5.87	481	16.91	0.390
3	Assessment and Evaluation in Higher Education	75	2.64	556	19.55	0869
4	Studies in Higher Education	72	2.53	628	22.08	1.445
=4	Journal of Marketing	72	2.53	700	24.61	5.389
5	Higher Education	59	2.07	759	26.68	1.093
6	Total Quality Management	45	1.58	804	28.26	-
7	International Journal of Education Management	38	1.34	842	29.6	0.425
8	International Journal of Quality & Reliability Management	35	1.23	877	30.83	-
9	The TQM Magazine	32	1.13	909	31.96	-
10	Managing Service Quality	31	1.09	940	33.05	0.458
11	Higher Education Research and Development	26	0.91	966	33.96	0.607
12	Research in Higher Education	25	0.88	991	34.84	2.337
13	Journal of Business Research	23	0.81	1014	35.65	1.385
14	Journal of Higher Education Policy and Management	19	0.67	1033	36.32	0.685
=14	Journal of Marketing Research	19	0.67	1052	36.99	4.288
=14	Journal of Services Marketing	19	0.67	1071	37.66	0.495
15	Journal of Academic Ethics	18	0.63	1089	38.29	0.199

16	Journal of Education for Business	17	0.60	1106	38.89	-
=16	Teaching in Higher Education	17	0.60	1123	39.49	0.702
17	Journal of Marketing Education	16	0.56	1139	40.05	0.393
=17	Journal of Retailing	16	0.56	1155	40.61	1.968
18	Change	13	0.46	1168	41.07	-
=18	European Journal of Marketing	13	0.46	1181	41.53	0.724
=18	Journal of Marketing for Higher Education	13	0.46	1194	41.99	0.606
=18	International Journal of Service Industry Management	13	0.46	1207	42.45	-
=18	The International Journal of Educational Management	13	0.46	1220	42.91	-
19	European Journal of Education	12	0.42	1232	43.33	0.456
19	Harvard Business Review	12	0.42	1244	43.75	0.579
=19	Higher Education Quarterly	12	0.42	1256	44.17	1.161
=19	Tertiary Education and Management	12	0.42	1268	44.59	0.316
=19	The Chronicle of Higher Education	12	0.42	1280	45.01	-
20	British Journal of Educational Psychology	11	0.39	1291	45.4	1.169
=20	Journal of Educational Administration	11	0.39	1302	45.79	0.878
-	850 journals cited between = 1 to = 10 (Total =885 Journals)	1542	54.22	2844	100	-

*Note: SJR: SCImago Journal Rank is weighted by the prestige of a journal, subject field, quality and reputation of the journal have a direct effect on the value of a citation. SJR value is annually reported by Scopus for each journal indexed in its own database.

Half-life period

According to Haridasan and Kulshrestha (2007), "the half life (median citation age) shows how far back in time one must go to account for the age half of the bibliographic references published in a journal in particular year". In the words of Amin and Mabe (2000), "the cited half-life is a measure of the rate of decline of the citation curve. It is the number of years that the number of current citations takes to decline to half of its initial value". It is evident from table10 that the half of the journal citations in Quality Assurance in Education falls within 8 years of their respective publications (calculated half life=7.82). The lower half of the citation curve in figure 2 shows that the graph follows a straight line pattern right up to 8 years indicating high concentration of citations, and the upper half forming a pattern of loop indicates the low concentration of citations.

Table 10: Half-life period of journals

Sl. No.	Age of citations	Total citations	Cumulative total of citations	% of citations
1	0 to 1	119	119	4.21
2	2	183	302	6.48
3	3	167	469	5.91
4	4	212	681	7.51
5	5	196	877	6.94
6	6	195	1072	6.91
7*	7	192	1264	6.80
8**	8	180	1444	6.37
9	9	159	1603	5.63
10	10	150	1753	5.31
11	11	151	1904	5.35
12	12	123	2027	4.36
13	13	101	2128	3.58
14	14	97	2225	3.43
15	15	89	2314	3.15
16	16	74	2388	2.62
17	17	78	2466	2.76
18	18	65	2531	2.30
19	19	41	2572	1.45
20	20	38	2610	1.35

21	21	28	2638	0.99
22	22	19	2657	0.67
23	23	17	2674	0.60
24	24	18	2692	0.64
25	25	15	2707	0.53
26	26	12	2719	0.42
27	27	11	2730	0.39
28	28	8	2738	0.28
29	29	10	2748	0.35
30	30	2	2750	0.07
31	31	7	2757	0.25
32	32	8	2765	0.28
33	33	12	2777	0.42
34	34	6	2783	0.21
35	35	5	2788	0.18
36	36	4	2792	0.14
37	37	3	2795	0.11
38	38	1	2796	0.04
39	39	1	2797	0.04
40	40	3	2800	0.11
41	= 41 =58	24	2824	0.85

*Subcritical year **Critical year

The half life period (T) of the cited journals can be calculated by using the formula demonstrated by Sen (1999) as:

Half life (T) =Y+ y (1)

Where 'Y' is the number of whole years, and 'y' is the fraction of the year. The fraction of the year y is calculated with the formula:

$$\frac{a-b}{c-b}$$

Where 'a' is 50% of citations, 'b' is the cumulative total of citations of the subcritical year, and 'c' is the cumulative total of citations of the critical year.

Putting the value of y in equation (1), we get

$$T = Y + \frac{a-b}{c-b} \qquad (2)$$

Equation (2) represents the formula for half life.

From the data given in table XI, we find that the value of a= 2824/2=1412

Now it can be seen from table XI that the half life is seven years plus. Hence, Y=7 years and the seventh year is the subcritical year. Here, the cumulative figure for subcritical year is 1264 which is the value of 'b'. The eighth year is the critical year; hence the value of c is 1444. Putting the obtained values in equation (2), we get the half life period

$$(T) = 7 + \frac{1412-1264}{1444-1264} = 7.82$$

Therefore, half life period of journals cited in QAE is 7.82 years which is depicted in figure 2.

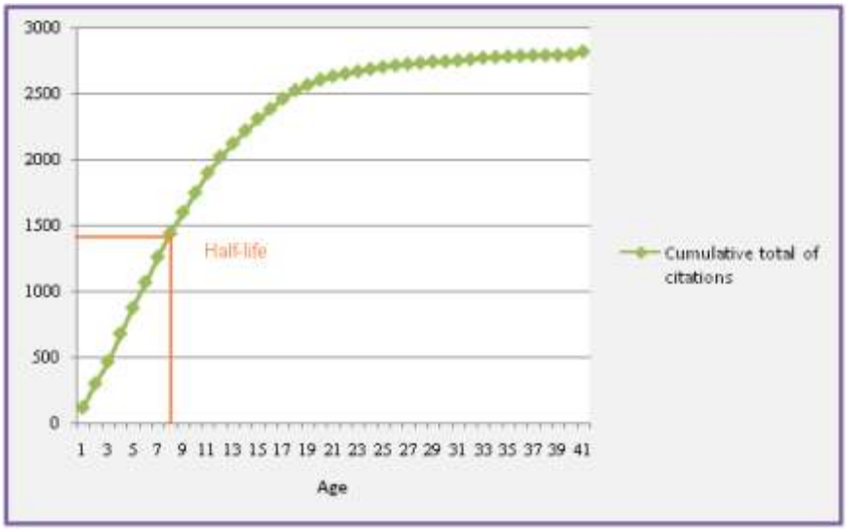

Figure 2. Half life period of journals

External citations to QAE articles and impact of the journal

Citation analysis is based on the premise that authors cite documents they consider to be important in the development of their research. Therefore, "frequently cited documents are likely to have exerted a greater influence on the discipline than those less frequently cited" (Culnan, 1987; Tahai and Meyer, 1999; Ramos-Rodriguez and Ruiz-Navarro, 2004). "There may be several ways to look at the excellence of a journal, i.e. the impact of a journal to the academic world. The widely used and well established methodology to measure the performance and quality of a journal is citation analysis, primarily based upon how often the articles published in a journal are cited by other journal articles and the process starts with counting the number of times an article or author is cited in the scientific literature" (Wade, 1975; Lee, 2009). The journal impact factor published each ear in the JCR (Thomson Reuters, http://scientific.thomson.com/products/jcr/) may be considered as a barometer in assessing the impact of a journal but it has been subjected to much controversies and a good deal of misunderstanding (Pendlebury, 2009) as many of the reputed social science journals are excluded from the purview of such measure principally due to the fact that such journals are not indexed in the Web of Science database from Thomson Reuters.

Therefore, the author intended to measure the impact factor of QAE basing upon the citation metrics retrieved from Scopus and Google Scholar. Scopus citation tracker being a commercial data base is available to the limited audience; thus readers can alternatively track the citation counts of their articles through Google scholar (http://scholar.google.com) which is freely available to the public. Simply, they can assess the citation counts of individual papers by putting the exact title of a particular work in the Google search bar.

Taking the data from table 11, the impact factor of QAE may be computed by dividing the number of current (2012) year citations to the source items published in QAE during the previous two years (2011 and 2010) as explained by Sen (1999) and has already been experimented by Zainab, et al. (2009) in their evaluation of Journal of Computer Science as:

2012 Impact Factor of QAE based on Scopus citations =14+30/23+19=1.047
2012 Impact Factor of QAE based on Google Scholar citations=34+49/23+19=1.976

It is found that QAE has received a little more impact as per the record of GS citations in comparison to that of Scopus may be due to the fact that GS indexes a number of journals, as well as pre-prints and post-prints, available in open access repositories, which are not indexed in Scopus.

Table 11 Citation statistics

Year of publication	No of Publications	Scopus citations	Google Scholar citations	2012 Scopus citations	2012 Google Scholar citations
2008	23	179	445	49	114
2009	23	104	259	39	67
2010	19	52	142	30	49
2011	23	19	65	14	34
2012	24	01	11	00	05
Total	112	355	922	132	269

Here the decrease of the number of citations only expresses the fact that the paper had not enough time to be cited. Table 11 further reveals that QAE has so far received in all 922 citations to all of its 112 articles carrying an overall impact of 8.23 per article as per GS citation reports while, it is 3.16 as per Scopus citation record may be due to the obvious reasons we have stated above.

Self citations

Self-citation has emerged as a distinguishable subgroup of citations and it refers to the citation of a paper which has been authored or co-authored by one of the authors of the citing paper (Dimitroff and Arlitsch, 1995). In contrast, "Journal self-citations are citations of previous papers in the same journal. Since the cited object in journal self-citations is the paper, not the author, journal self-citations are different from other kinds of self-citations, which are related to the author's country, affiliation or research team. The characteristics and patterns of journal self-citation may completely differ from those of author self-citation. An author may never cite his own previously published papers, and yet still cite others' papers published in the same journal, creating an incidence of journal self-citing without author self-citation" (Huang and Lin, 2012). author self citations and journal self-citations reported differently in Scopus and Google Scholar which are presented in table 12.

Table 12: Self-citations reported in Scopus vs. Google Scholar

Year of publication	***Scopus Citations***			***Google Scholar Citations***		
	Citations reported in Scopus	*Author self citation*	*Journal self citation*	*Citations reported in GS*	*Author self citation*	*Journal self citation*
2008	179	19	46	445	31	49
2009	104	10	17	259	12	19
2010	52	8	21	142	18	25
2011	19	3	10	65	7	9
2012	1	0	1	11	1	1
	355	40	95	922	69	103

It is further evident that, both author self-citations (11. 26%) and journal self citations (26.76%) in Scopus is much higher than that of author self-citations (7. 48%) and journal self citations (11.17%) reported in Google Scholar may be due to the reason that many published works of QAE authors have been indexed in Scopus which have not been featured in Google Scholar.

FREQUENTLY CITED PAPERS

As the number of citations to each work were counted, it is found that the article entitled, "The development of a conceptual model of student satisfaction with their experience in higher education" written by J. Douglas, R. McClelland, J. Davies has received the highest number of 37 Scopus citations, followed by Rethinking quality and improvement in higher education by D. Houston (31 Scopus citations), Service quality in postgraduate education by Angell et al and Comparing alternative instruments to measure service quality in higher education by Brochado A (24 Scopus citations each). The ranking of frequently cited articles reported by Scopus indicating their corresponding GS citations are presented in table 13.

Table 13: Frequently cited papers

Rank	*Article*	*Author(s)*	*Publication year*	*Scopus citations*	*Google Scholar citations*
1	The development of a conceptual model of student satisfaction with their experience in higher education	Douglas J., McClelland R., Davies J.	2008	41	103
2	Rethinking quality and improvement in higher education	Houston D.	2008	33	93
3	Service quality in postgraduate education	Angell R.J., Heffernan T.W., Megicks P.	2008	25	83
=3	Comparing alternative instruments to measure service quality in higher education	Brochado A.	2009	25	77
4	On quality in education	Doherty G.D.	2008	22	61
5	The phases and paradoxes of educational quality assurance: The case of the Singapore education system	Ng P.T.	2008	20	16
6	Evaluation of the factors that determine quality in higher education: An empirical study	Tsinidou M., Gerogiannis V., Fitsilis P.	2010	18	56
7	Brewing service quality in higher education: Characteristics of ingredients that make up the recipe	Yeo R.K.	2008	16	54
8	Designing a supply chain management academic curriculum using QFD and benchmarking	Gonzalez M.E., Quesada G., Gourdin K., Hartley M.	2008	13	29
9	Web 2.0 - e-learning 2.0 - quality 2.0? Quality for new learning cultures	Ehlers U.D.	2009	12	50
10	Total quality management practices in Turkish primary schools	Toremen F., Karakus M., Yasan T.	2009	12	24

Note: The citation records were collected in the 2nd week of April, 2014

CONCLUSION

The contents of papers published in Quality Assurance in Education provides a picture of the precise nature of academic publishing of the journal articulating the most crucial aspects of teaching, learning, research, administration, and qualitative evaluation of educational programmes in academic context duly addressing the possible dimensions of the teaching methods and systems adopted by various educational institutions in different parts of the world for the cause of ensuring academic excellence. In this direction, the bibliometric analysis of the journal Quality Assurance in Education provides alluring details of the journal to its readers. In analyzing the journal in length and breadth, it is found that QAE authors have used good number of references for drafting their articles which a healthy evidence of authors banking on plenty of related literature in their research endeavour.

It is further evident that QAE has rightly accommodated high quality contributions representing 39 different countries from all across the world. Impressive impact of its publications, reduced rate of self citations, authors' act of using fair range of references are the testimony of its rich and prudent editorial policy. Hence, it is deduced that Quality Assurance in Education is committed to high standards also in the quality of publication as its name suggests itself.

NOTE

1.http://emeraldinsight.com/products/journals/journals.htm?id=qae

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