

Analyzing publishing trends in information literacy literature: A bibliometric study

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ABSTRACT

The main objective of this study was to explore scholarly communication trends in the field of information literacy. A total of 1989 records from Scopus bibliographic database, published from 2003 to 2012, were analyzed. The Scopus database was preferred over the Web of Science as it provided considerably more hits for the phrase 'information literacy'. Other possible synonyms for the concept of information literacy were ignored to minimize the retrieval of irrelevant documents. MS Excel as well as specific Scopus analytical tools were used for data analysis. Some areas covered in the data analysis included: annual growth in information literacy publications, preferred journals for publishing information literacy articles, most prolific authors, top countries producing information literacy literature, and publication distribution by subject. It was found that the number of information literacy publications have increased steadily during the last ten years. It was also revealed that a majority of information literacy publication were written by authors from North America and the United Kingdom.

Keywords: Information Literacy; Bibliometrics; Citation Analysis; Publishing Trends; Social Sciences; Scopus

INTRODUCTION

The last three decades have seen a growing interest in information literacy research and its applications. Information literacy scholars and practitioners are sharing their models, standards, research findings and implementation ideas through various communication channels. Although the term 'information literacy' was first coined by Paul Zurkowski in 1972, it is continuously going through refinements in its scope and coverage. Several information literacy standards and guidelines have been proposed by institutions of higher education and professional associations. In the United States, the American Library Association (ALA) and Association for Educational Communications and Technology's landmark publication *Information Power*, and the Association of College and Research Libraries (ACRL) publication *Information Literacy Competency* have both become the *de facto* standards for information literacy competencies from kindergarten to college, both across the US and in many other countries throughout the world. In 2012, ACRL established a Task Force to revise and propose a new framework for Information Literacy Competency Standards for Higher Education (ACRL 2015). The task force has presented its recommendations in January 2015, which will be considered by ALA in its midwinter meeting 2015.

In United Kingdom, the UK Standing Committee for National and University Libraries (SCONUL) first proposed the Seven Pillars of Information Skills in its position paper in 1999. In 2012 the model was revised and expanded to make it more comprehensive. In addition, in order to make it relevant to different user communities and ages, the new model presented a generic “core” model for Higher Education, to which a series of “lenses”, representing the different groups of learners can be applied (SCONUL 2011). This approach is also reflected in SCONUL’s definition of information literacy which reads “Information literate people will demonstrate an awareness of how they gather, use, manage, synthesize and create information and data in an ethical manner and will have the information skills to do so effectively” (p.3)

In 2000 the Council of Australian University Librarians (CAUL), made up of representatives from various Australian and New Zealand universities, the Technical and Further Education (TAFE) sector, and other related organisations reviewed the US Information Literacy Standards for Higher Education for adaptation and implementation in the Oceanic region (Mokhtar and Majid 2008). In 2003, the standards were further revised based on recommendations and experiences of academics and librarians who used the CAUL original set of benchmarks. The second edition was renamed the Australian and New Zealand Information Literacy Framework (ANZIL) and essentially provided four guiding principles and more comprehensive details for each of the six core standards.

In 2003, the International Federation of Library Associations (IFLA) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO) organised a regional workshop on information literacy, involving participants from seven Southeast Asian countries. The participants recommended to UNESCO for Southeast Asian countries to jointly improve information literacy education in schools. This spawned a project for the development of information literacy education through school libraries in Southeast Asia in 2004 with financial assistance under the UNESCO’s Information for All Program (IFAP) (Mokhtar and Majid 2008).

Though international and regional standards are very useful in outlining a set of desired information literacy competencies, it is equally important that these standards should be customized to suit unique local conditions of individual countries. Mokhtar et al. (2010) proposed a 6+3 model for teaching information literacy competencies to students in Singapore. This model, in addition to expanding the Big6 information literacy competencies, proposed three additional competencies related to ‘Ethics and Social Responsibility’, ‘Collaborative Information Behaviour’, and ‘Attitude and Perceptions (e.g. initiative, curiosity, persistence, etc.)’. Similarly, Edzan and Saad (2005) analysed information literacy initiatives in Malaysia and proposed a framework for the implementation of a national information literacy agenda.

LITERATURE REVIEW

An awareness of the importance of information literacy competencies for different levels of students has generated tremendous interest among library and information researchers and practitioners. Previously the majority of information literacy studies focused on schools as well as institutions of higher education. However soon it was recognized that information literacy competencies are not only necessary for students, these are also

highly desirable in the workplace. Several recent studies have also highlighted the need for information literacy skills among the workforce in different industries (Crawford and Irving 2009; Lloyd and Williamson 2008; Zhang, Majid and Foo 2012), as information is considered a key factor in organizational performance and success. All these developments are reinforcing the need to further expand the scope of information literacy by accommodating new concepts and applications. Consequently the field of information literacy is growing rapidly, resulting in a more diverse body of literature. A bibliometric analysis of information literacy literature will help understand publishing trends in this emerging discipline which would be useful for researchers in identifying new areas of research.

The discipline of bibliometrics refers to an area of study which uses statistical methods to discover historical developments in a particular subject, patterns of authorship, citation analysis, core journals and other publications. Bibliometric techniques can measure scholarly output of researchers, identify prolific authors, explore trends in literature citation, identify high impact journals, impact of individual articles, and assess contributions made by different institutions in knowledge creation and dissemination (Meyer 2013). A bibliometric analysis can also identify gaps in the existing literature which may help scholars in selecting potential areas of their future research (Lowry 2013).

There are many applications of bibliometrics. At individual level, scholars can use this information to identify high impact factor journals for publishing their research findings and compare their research productivity with their peers (UNESCO 2005). Bibliometric indicators such as citation count, Hirsh-index and other measures can be used for annual appraisals, promotion and tenure, and assessing research funding proposals (Durieux and Gevenois 2010). At a higher level, bibliometric measures can be used to assess the accomplishments of an institution as well as to benchmark its performance nationally and internationally (MyRI 2013). Funding agencies can use this data to measure return on investment and identify areas where more research funds should be diverted. In an international context, citation count is one of the criteria used for ranking global universities.

Libraries also use bibliometric data for various purposes, including developing and assessing the effectiveness of their collections. Many libraries use journal impact factor as one of the criteria for selecting and cancelling journal titles (Gureyev and Mazov 2013). Vallmitjana and Sabaté (2008) pointed out that citation analysis data can help libraries identify the most frequently consulted journals and obsolescence rate of journals in a particular subject area. Citation analysis technique can also be used to investigate trends in using library collections by faculty and students. Based on citation analysis of 248 graduate dissertations, Kayongo and Helm (2012) investigated the extent to which collections of the Hesburgh Libraries of University of Notre Dame met the needs of its graduate students. They reported that over 90 percent of the 39,106 citations in theses and dissertations were from books and journals and the university libraries owned 67 percent of these items.

Tunon and Brydges (2005) claimed that citation analysis can also indicate students' information literacy and library research skills in using relevant and up-to-date materials for their assignments, research reports and dissertations. They felt that citation analysis has the advantage of being an unobtrusive and non-invasive analytical tool that can be used to quantify students' meta-cognitive skills, beyond basic informational and procedural knowledge. Using 143 doctoral dissertations, they proposed an object rubric that can mechanically award points for currency, type of document, and certain document-specific

criteria. Cooke and Rosenthal (2011), based on citation analysis of students assignments, reported that university students at Florida Gulf Coast University started using a wide variety of library resources after receiving library instruction.

Rehn et al. (2014) highlighted that bibliometric analyses can result in four major indicators of research quality and performance. The 'Quantity' indicators measure the number of publications and citations attributed to a group of authors during a specific time period. It also indicates the number of publications produced by an institution in relation to the world production as well as those published in top ranked journals. The 'Performance' indicators, such as Hirsh index, provide a transparent and unbiased method to assess the performance of scholars by maintaining a balance between research productivity and citation counts. The 'Structural' indicators determine connections between publications, authors, and areas of research. Finally, the 'Impact' indicators measure how many times an average article published in a journal has been cited. This will indicate popularity and impact of a particular journal. These indicators also assess the average number of citations per article within a particular subject field during different time spans.

Pendlebury (2010) noted that quantitative evaluation of publications and citation data is now used in almost all disciplines. Diaz and Silveira (2014) analyzed articles published in three prominent music journals during a period of 20 years (1990-2009). They reported that currently more papers are published on topics relating to expression, physiological and neurological issues in music. Fodor et al. (2014) investigated publishing trends in the field of traumatic stress research and found that 87% of such papers were published in high income countries while 51% of all the papers were produced in the USA. Santos and García (2011) investigated the publishing trends in sports economics during the period 1956-2009. Based on their data analysis, they claimed that sport economics can now be considered as a successful and fast-growing area of research. They also reported that recent authorship and citation concentration indicate an advanced process of consolidation in this research field.

Some bibliometric studies have also investigated publishing trends in different types of literacy. Bankson (2009) analyzed literature on health literacy published during 1997-2007 and found a gradual growth in articles in this discipline. Tsay and Fang (2006) also found a steady increase in information literacy literature, mostly published in English language journals. They reported that more than 66% of the information literacy literature was published in the USA and Great Britain. Their study also revealed that the most productive authors were primarily female university faculty and their major research fields were information literacy, bibliographic instruction and information technology.

Two major sources used for citation analysis studies are Web of Science (WoS) and Scopus. Aharony (2010) investigated trends in information literacy using Web of Science database for a period from 1999 to 2009. Her study revealed that over 96% of information literacy literature is in English language, 64.2% published in the USA and UK, and a gradual increase in number of publications, from 75 in 1999 to 346 in 2008. The *Journal of Academic Librarianship* was at the top with 82 (4.16%) papers on information literacy. Abrizah et al. (2013) compared the coverage, ranking, impact and subject categorization of library and information science literature in Web of Science and Scopus databases. They reported that during the year 2010, WoS covered a total of 79 journal titles under its category 'Information Science and Library Science'. On the other hand, during the same year, Scopus database covered 128 journal titles under its category 'Library and Information Science'.

Nazim and Ahmad (2007) took a different approach and analyzed journal articles on information literacy using the LISA database. They reported that 63.2% of the articles were written by single authors, 27.3% by two authors and the remaining 9.5% by three or more authors. Regarding authors' productivity, it was revealed that an overwhelming majority (83.8%) of the authors have contributed only one paper while two papers were written by 10.8% of the authors. Only 5.4% of the authors have written three or more journal articles on information literacy. They also reported that 88.3% of the information literacy literature was in English language.

A similar trend was also obvious in other disciplines. López-Illescas et al. (2008) examined coverage and citation impact of oncological journals in the Web of Science and Scopus. It was found that although Scopus covered 90% more oncological journals compared to WoS, the average Scopus-based impact factor for journals indexed by both databases was only 2.6% higher than that based on WoS database. Pisyakov (n.d.) compared the impact factors of 20 leading economic journals, for a period 2003-2004, based on Journal Citation Reports (JCR) and Scopus database. It was found that Scopus recorded more citations as well as covered more journals titles compared to JCR.

As information landscape is becoming more complex due to exponential growth in information sources as well as emergence of new information communication channels, researchers are now taking keen interest in the discipline of information literacy. It will be interesting to analyse different attributes of the existing literature on information literacy and identify current trends in scholarly communications. The main objective of this study was to conduct a bibliometric analysis of information literacy literature. Some areas covered in this study were: the total number of information literacy publications; top authors and their affiliations; literature distribution by subject, country and document type; and annual growth in information literacy literature during the last 10 years (2003-2012). It is expected that this analysis would be useful for information literacy and bibliometric researchers, information literacy training providers, libraries, library and information studies programs, publishers and conference organizers.

RESEARCH QUESTIONS

The study is expected to answer the following research questions:

- a) What is the annual growth rate of information literacy literature during the period 2003-2012?
- b) What are the main trends in information literacy literature for attributes such as country of publication, subject area, document type, language, and highly cited journals?
- c) Who are the most prolific authors in information literacy discipline and their affiliations?
- d) What are the top journals publishing information literacy literature and the number of citations received by them?

METHODOLOGY

Scopus database was used to extract publication data for a period from 2003 to 2012. Scopus was preferred over other citation databases as it is considered one of the biggest

abstracting and citation database. It provides access to over 50 million records from 21,000 titles, published by over 5000 publishers (Scopus 2014). For the purpose of this study, a common search strategy was used to search Scopus and Web of Science (WoS) databases. Scopus retrieved around 2000 records on information literacy while WoS returned about 1200 items. Scopus was also preferred as a previous study by Aharony (2010) has already investigated the publishing trends in information literacy literature for a period from 1999 to 2009 by WoS database. Similarly, a study by Abrizah et al. (2013) also found that Scopus covered more library and information science journals than Web of Science. Another reason for preferring Scopus was its 'Affiliation Identifier' field which allowed identification of authors' employing institutions and their locations. It helped identify top institutions based on number of information literacy publications and citations. This field also allowed computation of top countries publishing information literacy literature. In addition, certain other Scopus analytical tools were used for compiling useful statistics.

The phrase "information literacy" was searched in a multiple-field index, including fields such as 'article title', 'abstract' and 'keywords'. Other possible synonyms for the concept of information literacy, such as information skills, IT literacy, digital literacy, information retrieval skills, library literacy, and media literacy, were ignored to minimize the retrieval of irrelevant documents. The search was further limited by using a date range (2003-2012) and document type (articles or conference papers). Other document types such as books, book reviews, letters, editorials, short surveys, and business articles were excluded from the search. The data downloading and analysis work was undertaken in October/November 2013 and 1989 records were included in this analysis. The publication data from Scopus were imported into MS Excel for citation analysis. Additional computations were performed by using certain analytics tools provided by Scopus database.

FINDINGS AND DISCUSSIONS

The following sections present findings of the bibliographic analysis including the total number of information literacy publications, number of citations received by them, prolific information literacy authors and their affiliations, distribution of information literacy publications by subject area, country and document type, top journals publishing information literacy articles, and journals receiving the highest number of citations.

Number of Information Literacy Articles and Conference Papers

It was found that the number of articles and conference papers on information literacy has increased steadily from 48 in 2003 to 347 in 2011 (Figure 1). However, there was a slight drop in 2012 where 336 articles were published. The share of journal articles and conference papers in the total sample of 1989 items was 82.7% and 17.3% respectively. In the following sections the term publication will be jointly used for journal articles and conference papers. Several previous studies have also shown a steady increase in information literacy publication during the last 15 years (Aharony 2010; Bankson 2009; Tsay and Fang 2006).

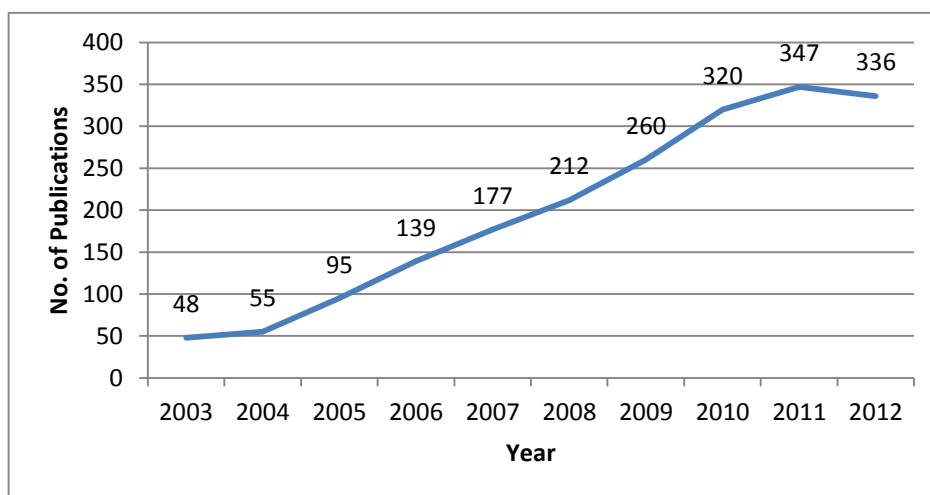


Figure 1: The Growth of Information Literacy Publications (2003-2012)

Number of Citations Received by Information Literacy Publications

A slightly different pattern was observed for the number of citations received by information literacy publications. Forty-eight articles published in 2003 received 196 citations, an average of 4.1 citations per publication (Table 1). The highest average number of citations received by each information literacy publication in 2004 was 10.8 which steadily declined during the following years. It was probably due to the fact that usually there is a considerably long lag-time between publishing of an article and citations received by it from other authors. Similarly, abstracting and citation databases also take time in processing and uploading of new publications which affect their citation counts.

Table 1: Number of Citations Received by Information Literacy Publications

Year	Total Publications	Total Citations	Average citation/ paper
2012	336	429	1.3
2011	347	603	1.7
2010	320	682	2.1
2009	260	1031	3.9
2008	212	1091	5.1
2007	177	886	5.0
2006	139	833	6.0
2005	95	824	8.7
2004	55	592	10.8
2003	48	196	4.1

Most Prolific Information Literacy Authors

One of the purposes of bibliometric studies is to explore productivity of individual scholars as well as to identify prolific authors in a particular subject area. A majority of the articles used in this study were written by more than one author. As the amount of contribution made by each author in writing the article was unknown, an equal credit was given to all authors. The total number of authors publishing four or more articles on information literacy was 63. Table 2 provides a list of authors who have written eight or more articles on information literacy. It was found that *Julian, H.* was on the top of the list as she has

produced 18 publications on information literacy during the period 2003 to 2012, followed by *Pinto, M.* (17 publications) and *Badke, W.* (15 publications). However, it was also worth noting that only 6 authors have produced more than 10 publications during the same time period.

Table 2 also provides information about total number of citations received by each authors and the average number of citations per paper. However, care should be expressed in using the citation figures as not all publications were produced in the same year. Obviously, the publications produced during early years of the study period (i.e. 2003) are likely to receive more citations than those published at the end of year 2012.

Table 2: Top Authors in the Field of Information Literacy (2003 – 2012)*

Author	Publications	Total Citations	Citations per Article
Julien, H.	18	139	7.72
Pinto, M.	17	67	3.94
Badke, W.	15	29	1.93
Lloyd, A.	12	194	16.17
Majid, S.	12	46	3.83
Shenton, A.K.	12	44	3.67
Foo, S.	9	38	4.22
Bruce, C.	9	35	3.89
Detlor, B.	8	20	2.50
Serenko, A.	8	20	2.50
Koltay, T.	8	13	1.63
Fosmire, M.	8	9	1.13

*Based on data retrieved on 02 November 2013

Highly Cited Articles

Table 3 presents information about the top ten highly cited information literacy articles in the Scopus database. It was worth noting that none of the conference papers was among the top 10 highly cited information literacy papers. The article by Metzger (2007) received the highest number of citations which is considerably higher than the average number of citations received by other information literacy papers.

It was also found that article of only one author (*Annemaree Lloyd*) from the list of most prolific authors was able to appear in the list of top 10 highly cited papers. Similarly, a majority of the highly cited articles were published between the years 2004-2007. It is understandable as articles need considerable time after their publication to receive maximum number of citations. Another interesting finding was that, although the *Journal of the American Society for Information Science and Technology* was not among the top 10 journals publishing information literacy articles, three of the highly cited articles were published by it. One possible explanation could be that *Journal of the American Society for Information Science and Technology* only published selected but high quality articles on information literacy which received more citations.

Table 3: Top Ten Highly Cited Articles

No	Author(s)	Title	Year	Source title, Volume and Issue	Citations
1	Metzger, M.J.	Making sense of credibility on the web: Models for evaluating ... future research	2007	<i>Journal of the American Society for Information Science and Technology</i> 58(13)	106
2	Elmborg, J.	Critical information literacy: Implications for instructional practice	2006	<i>Journal of Academic Librarianship</i> 32(2)	71
	Fisher, K.E., Durrance, J.C. & Hinton, M.B.	Information grounds and the use of need-based services by immigrants ... approach	2004	<i>Journal of the American Society for Information Science and Technology</i> 55(8)	65
3	Foster, A.	A nonlinear model of information-seeking behavior	2004	<i>Journal of the American Society for Information Science and Technology</i> 55(3)	60
4	Hart, A., Henwood, F., & Wyatt S.	The role of the internet in patient-practitioner ... qualitative research study	2004	<i>Journal of Medical Internet Research</i> 6(3)	56
5	Cotugna, N., Vickery, C.E., & Carpenter, K.M.	Evaluation of literacy level of patient education pages in health-related journals	2005	<i>Journal of Community Health</i> 30(3)	55
6	Jacobs, S.K., Rosenfeld, P., & Haber, J.	Information literacy as the foundation for evidence-based practice... approach	2003	<i>Journal of Professional Nursing</i> 19(5)	53
7	Ivanitskaya, L., O'Boyle, I., Casey, A.M., & Ivanitskaya, L.	Health information literacy and competencies of ... Self-Assessment (RRSA)	2006	<i>Journal of Medical Internet Research</i> 8(2)	52
8	Maybee C.	Undergraduate perceptions of information use: The basis for creating ... instruction	2006	<i>Journal of Academic Librarianship</i> 32(1)	47
9	Gross, M., & Latham D.	Attaining information literacy: An investigation of the ... and library anxiety	2007	<i>Library and Information Science Research</i> 29(3)	46
10	Lloyd, A.	Information literacy landscapes: An emerging picture	2006	<i>Journal of Documentation</i> 62(5)	43

Authors' Affiliations and Number of Citations Received

Data were also analyzed to explore affiliations of authors and the number of citations received by their information literacy publications. It was found that 23 publications were produced by the staff of Universidad de Granada while authors of 22 publications each were affiliated with University of Sheffield and University of Alberta (Figure 2). From the top authors' affiliations, it was quite obvious that most of the information literacy publications were either produced by academic staff of different universities or by their library professionals. None of the public, school or special libraries were able to get the first 14 positions.

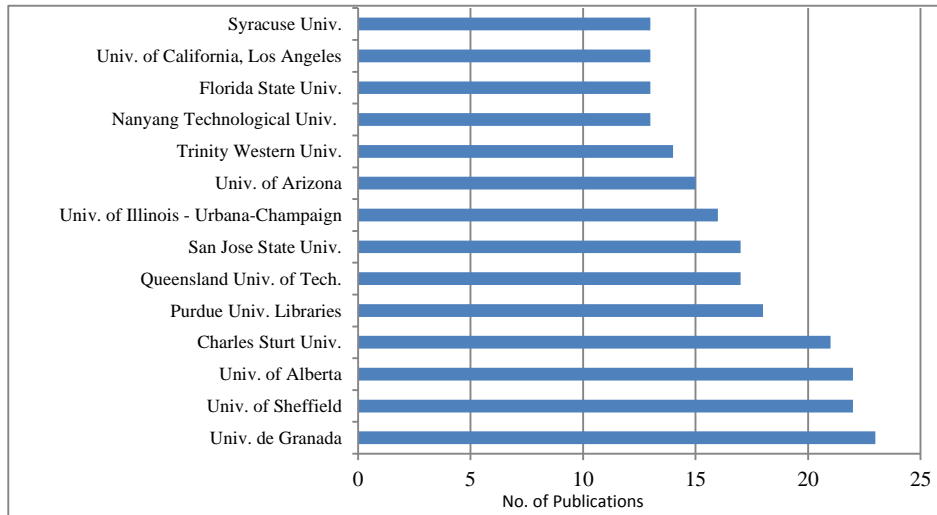


Figure 2: Affiliations of the Authors

Citation count has becoming very important for individual authors and their institutions, particularly in academic environment. An interesting picture emerged when citations received by papers produced by authors of top institutions were further analyzed. It was found that, on average, each publication produced by the staff of University of California received 14.7 citations (Table 4). Information literacy publications produced by the staff of Florida State University and Charles Strut University also received more than 10 citations each. It appeared that although staff of some universities produced less number of information literacy publications, they were able to receive higher number of citations.

Table 4: Average Number of Citations Received by Each Information Literacy Publication from Different Institutions (sorted by citations per paper)

No.	Institutions	Total Publications	Total Citations	Citations per Paper
1	University of California, Los Angeles	13	191	14.7
2	Florida State University	13	142	10.9
3	Charles Sturt University	21	221	10.5
4	University of Sheffield	22	186	8.5
5	San Jose State University	17	128	7.5
6	Syracuse University	13	96	7.4
7	University of Alberta	22	156	7.1
8	Purdue University	13	69	5.3
9	Nanyang Technological University	13	61	4.7
10	Universidad de Granada	23	66	2.9
11	Queensland University of Technology	17	45	2.6
12	University of Illinois at Urbana-Champaign	16	35	2.2
13	Trinity Western University	14	29	2.1
14	University of Arizona	15	24	1.6
15	Purdue University Libraries	18	27	1.5

Publication Distribution by Subject Area

For the purpose of this analysis, the subject categories used by Scopus were used. Some of the publications, covering different aspects of information literacy, were placed under multiple subject categories. It was found that 57.4% of the publications were related to social sciences category which also included the discipline of library and information science (Table 5). Other subject categories with more than 5% of information literacy publications were computer science (16.4%), medicine (6.0%) and engineering (5.2%).

Table 5: Distribution of Information Literacy Publications by Top 10 Subject Areas

No.	Subject Area	Total Publications	Percentage of Publication
1	Social Sciences	1585	57.4%
2	Computer Science	453	16.4%
3	Medicine	166	6.0%
4	Engineering	145	5.2%
5	Business, Management and Accounting	102	3.7%
6	Nursing	56	2.0%
7	Health Professions	51	1.8%
8	Arts and Humanities	49	1.8%
9	Psychology	21	0.8%
10	Biochemistry, Genetics and Molecular Biology	20	0.7%

Publication Distribution by Country

It was found that 47.4% of the information literacy publications were produced by authors from the United States (Table 6). It was followed by publications from the United Kingdom (7.4%) and Canada (5.7%). From the Asian continent, China was on the top with 72 (3.6%) information literacy publications, followed by Taiwan (2.6%) and Japan (1.2%). From the African continent, South Africa was on the top with 27 (1.4%) publications, followed by Nigeria 19 (0.9%) publications. It appeared that most of the information literacy publications were written by North American authors whereas contributions from other countries were quite limited. This finding is in line with previous bibliometric studies on information literacy which showed that more than 50% of the publications were written by authors from the USA (Aharony 2010; Nazin and Ahmad, 2007; Tsay and Fang 2006).

Distribution of Information Literacy Publications by Language

It was found that an overwhelming majority (93.5%) of the information literacy journal articles and conference papers were published in English language. This finding is understandable (as shown in Table 6) as over 65% of the information literacy publications were produced by authors from four largely English speaking countries, i.e. the USA, UK, Canada and Australia. Similarly, authors from many non-English speaking countries were also either publishing in English language professional journals or presenting their papers in conferences conducted in English language. This finding is also in line with previous studies which reported that more than 90% of the information literacy literature was in English language (Aharony 2010; Tsay and Fang 2006).

Table 6: Distribution of Information Literacy Publications by Country

No	Country	Total Publications	Percentage of Publications
1	United States	942	47.4
2	United Kingdom	147	7.4
3	Canada	113	5.7
4	Australia	92	4.6
5	China	72	3.6
6	Spain	58	2.9
7	Taiwan	51	2.6
8	South Africa	27	1.4
9	New Zealand	26	1.3
10	Japan	24	1.2
11	Iran	23	1.1
12	Hong Kong	23	1.1
13	Sweden	22	1.1
14	Nigeria	19	0.9
15	Malaysia	18	0.9
16	Others	332	16.7

Table 7: Distribution of Information Literacy Publications by Language

No.	Language	Total Publications	Percentage of Publications
1	English	1883	93.5
2	Spanish	51	2.5
3	Chinese	24	1.2
4	Portuguese	13	0.6
5	German	9	0.5
6	Japanese	8	0.4
7	French	7	0.3
8	Others	20	1.0

Top Journals Publishing Information Literacy Articles

The top journals publishing information literacy articles were *Reference Services Review*, *Journal of Academic Librarianship*, and *College and Undergraduate Libraries* (Table 8). All titles in the list of top 10 journals, publishing information literacy articles, were from the discipline of library and information science (LIS). This indicates that LIS journals are most appropriate for publishing information literacy research as well as for seeking information in this subject area. A study by Aharony (2010) also showed that *Journal of Academic Librarianship* was among the top two journals publishing information literacy articles.

Table 8: Top 10 Journals Publishing Information Literacy Articles

Rank	Source Title	No. of Articles (2003-2012)	Journal Rank (SJR 2013)
1	<i>Reference Services Review</i>	98	Q1
2	<i>Journal of Academic Librarianship</i>	64	Q1
3	<i>College and Undergraduate Libraries</i>	62	Q1
4	<i>Journal of Library Administration</i>	44	Q1
5	<i>Communications in Information Literacy</i>	39	Q2
6	<i>New Library World</i>	34	Q1
7	<i>Library Review</i>	33	Q2
8	<i>Public Services Quarterly</i>	31	Q2
9	<i>Portal: Libraries and the Academy</i>	30	Q1
10	<i>J. of Lib. & Info. Services in Distance Learning</i>	30	Q2

Journals Receiving the Most Citations

It was found that although the *Journal of Academic Librarianship* had published 64 information literacy articles during the period 2003 to 2012 (Table 9), its articles received more citations (9.95 citations per article) than its close competitor *Reference Services Review* which published 98 articles (5.16 citations per article). An interesting situation emerged when seven journals which were among the top 10 titles receiving the most citations were not among the top 10 journals publishing information literacy articles. This means journals publishing more information literacy papers do not necessarily get more citations. It is likely that prestigious journals, publishing quality research articles are likely to get more citations.

Table 9: Top 10 Journals Receiving Highest Number of Citations

Rank	Source Title	Total Citations	No. of Articles	Citations per Paper	Journal Rank (SJR 2013)
1	<i>Journal of Academic Librarianship</i>	637	64	9.95	Q1
2	<i>Reference Services Review</i>	506	98	5.16	Q2
3	<i>Journal of Documentation</i>	384	28	13.71	Q1
4	<i>College and Research Libraries</i>	331	25	13.24	Q1
5	<i>Journal of the American Society for Info. Sci. & Technology</i>	268	11	24.36	Q1
6	<i>Journal of Librarianship and Information Science</i>	215	25	9.60	Q2
7	<i>Portal: Libraries and the Academy</i>	206	30	6.87	Q1
8	<i>Information Research</i>	165	27	6.11	Q2
9	<i>Library Review</i>	144	33	4.36	Q2
10	<i>Research Strategies</i>	143	26	5.50	Q2*

* SJR for 2008 as the title ceased in 2007

Moreover, it was also worth noting that a majority of the journals, except *Journal of Librarianship and Information Science*, receiving on average of more than 6 citations per information literacy article, also achieved the highest quartile value of Q1 from *SCImago Journal & Country Rank (SJR) 2013*. This means that information literacy articles published in top ranked journals are likely to garner more citations. It could be due to reason that these journals adhere to stringent review and selection criteria and only accept quality papers for publication.

CONCLUSION

The discipline of information literacy has gained importance during the last three decades. Although the number of publications in this narrow subject area is steadily increasing, the overall volume of literature is considerably low. One possible reason could be that usually more emphasis is placed on the application side of this discipline than theoretical foundations. More scholarly research is required on different aspects of information literacy and its allied disciplines to provide sound theoretical support. Another worth noting trend in this analysis was that more than one-half of the journal articles and conference papers were produced by authors from North America. The contributions from Asian and African countries were negligible. There is a need that scholars from these regions to also contribute to reputable international journals as well as present their research in prestigious international conferences to achieve more visibility and recognition. This will also bring more value and diversity in the information literacy literature.

ACKNOWLEDGEMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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