International Journal of Information Studies & Libraries
4 (1) 2019, 9-15
http://publishingindia.com/ijisl/

Library and Information Science Research Outcomes in MINT's Countries

D. Chinnadurai*

Abstract

Member countries of MINT (Mexico, Indonesia, Nigeria and Turkey) have long history of LIS education and research. This study focus on the pattern on literature growth, research trend in LIS, citation, self cites of documentation and international collaboration. The present study conceived to assesses the quantitative aspect of research output of MINT nations for the period of nineteen years i.e. 1996–2016 in the subject of Library and Information Science. To undertake this study, data was retrieved from SJR – SCImago Journal & Country Rank on March 2018, from http://www.scimagojr.com and data was entered in MS-Excel and analyzed.

Keywords: Mexico, Indonesia, Nigeria, Turkey, LIS, Citation, Self Cites, LIS Research

Introduction

The library research has been traditionally presented as trivial as libraries generally perceived as service organizations supporting the curriculum and facilitating scholarship activities of their parent institutions. Research environment of library and information science has changed radically, as a result of developments in technology, automation of operations, diversification of media, reduced purchasing power, and evolving scholarly communication. Library support for research has traditionally revolved around information discovery, collection development, and some elements of information management, but the shift from print to electronic materials has made the library and its services virtually invisible to many faculty and other researchers, so they are "perceived by users to be more geared to support teaching and learning activities". Information professionals have responded to the situation energetically by launching multiple efforts to prove their worth; evaluation of libraries and assessment of the impact of their research has become a growth industry in recent years. The roles of libraries and librarians in producing research have received particular scrutiny with a notable focus on engagement with e-research developments.

MINT Countries

Global capital is always on the search of the next profitable opportunity and this is the reason why the BRICs or the grouping of Brazil, Russia, India, and China found favor as emerging markets in the last two decades. As these economies began to sag and saturate, the restless investors began looking for the next set of countries that would welcome them and where the prospects for growth are better. This is the reasoning behind the recent trends towards investing in the MINTs or the grouping of Mexico, Indonesia, Nigeria, and Turkey.

Library and Information Science schools was started in Nigeria as far back as 1842, no thought was given to the establishment of libraries and training of librarians until the second half of the 20th century. This was the time, when modern libraries that were first established in Nigeria as a result of the establishment of research institutes and their libraries, had acute staffing problem. Initially, these libraries were almost completely manned by expatriate staff. With the proliferation of libraries over time, it became apparent that the existing expatriate staff could hardly cope with the management of the growing number of libraries. Consequently, there was a pressing need to educate and train more indigenous librarians.

* Librarian, Madurai Institute of Social Sciences, Alagarkoil Road, Madurai, Tamil Nadu, India.
Email: chinnaduraikd@gmail.com, ORCID ID: https://orcid.org/0000-0001-9528-973X

Several reasons were advanced for the growing needs to promote library education in Nigeria[1,2].

Research in library and information science in Indonesia has been less exposed thus giving the impression that the development of science and research in Indonesia lag behind other countries. But, recently prepared draft legislation for a National Library System may enhance the role of library system and Indonesian universities start to digitization of their collection with Ganesha Digital Library Network in 1998, which is known as Indonesian Digital Library Networks (IDLN)[3].

Mexico has some of the best libraries in Latin America; however, their development is uneven. In terms of growth and quality of library services, state university libraries and large private higher education institutions are in the leaders. However, at the bottom are several smaller public and private academic institutions that lag behind. Special libraries are also among the best libraries with good budgets, collections, and professional staff, but several companies fail to provide information services as part of their organizational structure. Its collection development is centralized in Mexico City but buildings and staff are the responsibility of the states and the municipalities. School libraries on the other hand, are few, considering the large number of primary and secondary education schools in Mexico, but the government has invested heavily in creating classroom collections, distributing more than two hundred million volumes in the last seven years. The national information institutions, such as the national library, and the national serials collection have good bibliographic treasures of colonial and contemporary Mexico, but their leading role is limited. Mexican LIS professionals and research scholar's research activities in LIS are gradually increased[4].

Professionalization of the Turkish librarianship took place during the year after World War II, which showed itself in the foundation of the National Library in 1948, the foundation of the first academic institute of librarianship art the Ankara University in 1954. Since 1960, the General Directorate for Libraries and Publications is responsible for the development of the public libraries in Turkey. Since the number of public libraries has risen from 152 to over 1100. Within the same period, many universities were founded. From the universities, the research activities are carried out. Especially, research in LIS steady growth was happened.

Literature Review

In a study, Nisonger (1999) provided a list of published studies of LIS journals as well as a list of the criteria used to compile the citation ranking of the journals in these studies. The 178 LIS journals studied by him were classified in terms of criteria used and fell predominantly into four categories of citation (94), production (33), Subjective judgement (25) and reading (18). The remaining 8 studies used miscellaneous criteria such as familiarity, readability ease, currency of citation etc. Garg and Rag (1988) undertook the study spanning through the period of 1965–1982 in the field of science where physics research was analyzed, published in the both SCI and non SCI journals.

Another study based on the extracts of Scopus undertaken by Singh, Gupta, and Kumar (2005) evaluated the data of science citation Index, wherein the study was undertaken on 901 research publication spread over the period 1993–2001 observed that most of research the work was undertaken in the field of Mathematics, Biology and Clinical Medicine. In A similar study undertaken by Vasishta (2011) for the period 1996–2009 analyzed 177 research publications for PEC University of Technology, Chandigarh observed that there is steady growth in the research output of the university from year after year.

Garg and Sharma (2017) analysis of 2428 papers indexed by Indian citation Index during 2004–2015 indicate that the pattern of growth of Indian library and information science literature has been highly inconsistent with highest number of papers published in 2010. From this study he was found that, academic institutions contributed about 86% of papers. Prolific institutions contributed about 44% of the output, with Mysore University topping the list closely followed by University of Delhi.

Olivarez, Bales, Sare, and Van Duinkerken (2018) discussed about Jeffrey Beall's blog Jeffrey Beall's blog listing of potential predatory journals and publishers,

[1] Shivalingaiah, D., Sheshadri, K.N. and Manjunatha Keralapura. (2009). LIS Research in India 1980-2007: An Analysis of Doctoral Dissertations. Asia-Pacific Conference on Library and Information Education & Practice, 2009. pp.409.420.

[2] Uzun, A. (2002). Library and information science research in developing countries and Eastern European countries: A brief bibliometric perspective. International Information & Library Review, 34(1), 21-33.

[3] Sulistyo-Basuki L. (2004). Digitization of collection in Indonesian academic libraries, Program, 38(3), pp.194-200.

[4] http://eprints.rclis.org/19701/1/18.Pon%20ELIS%20-%20 Mexican%20Libraries %2009% 20-%20Finalisimo%20impresion.pdf.

as well as his Criteria for Determining Predatory Open-Access (OA) Publishers are often looked at as tools to help researchers avoid publishing in predatory journals. Tripathi (2018) aims to highlight the research output of library and information science of the BRICS nations during the ten year period i.e. 2005–2014, as reflected through the WoS (Web of Science) database.

Objectives of the study:

- To find and understand the research productivity in LIS of MINT nations during 1996–2016;
- To find the Total Cites in LIS from MINT during 1996–2016;
- To find self cites in LIS Research among MINT nations;
- To find the international collaboration in LIS from MINT nations during 1996–2016.

Methodology

The data has been extracted from SJR—SCImago Journal & Country Rank on March 2018, from http://www.scimagojr.com and the data retrieved was totally unprocessed and formless, efforts were made to arrange the data in a way to smooth the progress of the accomplishment of the objectives of the study. Then, relevant retrieved data was entered in MS Excel for executing simple operations like addition, Subtraction, drawing percentage etc.

Data Analysis and Discussion

Table and Figure 1 reveal the year-wise allocation of publications in Library and Information Science in Mexico, Indonesia, Nigeria and Turkey. It enables researcher to find that Nigeria is the major contributor to Library and Information Science research among MINT nations. During the period under study Nigeria has published 981 documents contributing 46.34 % of the total 2117 publications published during 1996–2016. Turkey stood second by publishing 26.26% (556 publications) publications whereas Mexico contribution is merely 24.61% (521 publications). Indonesia contribution is 2.79% as it manages to publish meager 59 publications during the entire period of study *i.e.* 1996–2016. Maximum quantitative contribution from Mexico came during 2013 (56 documents) whereas for Indonesia it is 10 documents during 2015 and 2016, for Nigeria it is 145 documents during 2011 and for Turkey it is 86 documents during 2016.

Table 1: Trend Analysis of LIS output from MINT during 1996–2014

Year	*Mexico*	*Indonesia*	*Nigeria*	*Turkey*	*Total*	*%*
1996	3	0	9	5	17	0.803023146
1997	3	0	11	3	17	0.803023146
1998	7	0	9	5	21	0.991969769
1999	6	1	3	6	16	0.75578649
2000	3	0	8	3	14	0.661313179
2001	4	0	8	2	14	0.661313179
2002	9	3	4	12	28	1.322626358
2003	4	2	11	10	27	1.275389702
2004	3	3	10	13	29	1.369863014
2005	21	0	51	23	95	4.487482286
2006	38	4	52	37	131	6.188001889
2007	26	3	47	25	101	4.77090222
2008	38	4	62	26	130	6.140765234
2009	45	0	64	38	147	6.94378838
2010	31	3	129	29	192	9.069437884
2011	40	0	145	31	216	10.20311762
2012	44	3	88	26	161	7.605101559
2013	56	6	41	53	156	7.368918281
2014	42	7	50	70	169	7.982994804
2015	46	10	70	53	179	8.45536136
2016	52	10	109	86	257	12.1398205
Total	521	59	981	556	2117	100
%	24.61	2.79	46.34	26.26		

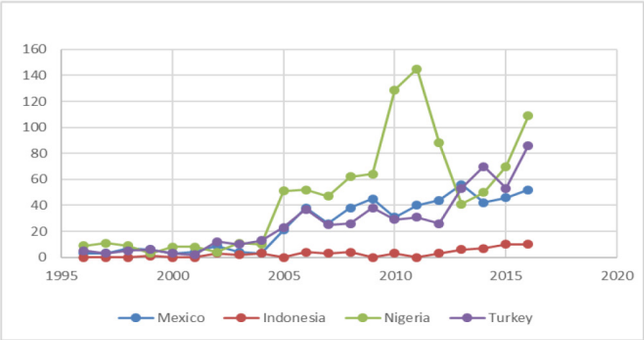

Fig. 1: Trend Analysis of LIS in MINT Countries

Table 2: Total Cites in LIS from MINT during 1996–2016

Year	*Mexico*	*Indonesia*	*Nigeria*	*Turkey*	*Total*
1996	6	0	10	106	122
1997	6	0	28	32	66
1998	43	0	22	71	136
1999	23	3	5	61	92
2000	58	0	28	30	116
2001	85	0	12	10	107
2002	54	4	5	165	228
2003	6	11	133	151	301
2004	7	19	63	198	287
2005	123	0	210	308	641
2006	26	8	144	421	599
2007	113	1	112	792	1018
2008	125	18	147	334	624
2009	329	0	75	548	952
2010	66	3	157	156	382
2011	135	0	83	146	364
2012	227	21	28	60	336
2013	46	7	22	56	131
2014	6	1	4	15	26
2015	75	48	17	83	223
2016	35	3	15	30	83
Total	1594	147	1320	3773	6834

Table 2 depicts Number of citations received in the selected year by a journal to the documents published in the three previous years, *i.e.* citations received in year X to documents published in years X-1, X-2 and X-3. All types of documents are considered. At peak for Turkey during 2007 (792) as far as Mexico, Indonesia and Nigeria are concerned their highest total cites were observed during 2009 (329), 2016 (48), 2010 (157) respectively. 1018 were highest total cites in aggregate for MINT during 2007.

Table 3: Self Cites in LIS from MINT during 1996–2016

Year	*Mexico*	*Indonesia*	*Nigeria*	*Turkey*	*Self cites*
1996	2	0	4	29	35
1997	1	0	10	10	21
1998	6	0	14	23	43
1999	2	0	1	17	20
2000	4	0	19	15	38
2001	7	0	3	5	15
2002	7	1	1	69	78
2003	0	4	56	47	107
2004	4	2	17	49	72
2005	20	0	106	69	195
2006	5	2	43	70	120
2007	33	0	49	63	145
2008	31	3	65	39	138
2009	43	0	42	51	136
2010	16	1	61	16	94
2011	32	0	30	28	90
2012	35	2	5	23	65
2013	10	1	7	12	30
2014	3	0	0	1	4
2015	17	4	6	21	48
2016	16	0	1	5	22
Total	294	20	540	662	1516

Table 3 shows Country self-citations. Numbers of self-citations of all dates received by the documents published during the source year, *i.e.* self-citations in years X, X + 1, X + 2, X + 3… to documents published during year X. When referred to the period 1996–2016, all published documents during this period are considered. Highest self-cites for Nigeria came during 2005, followed by Turkey 70 self cites during 2006, Mexico 43 self cites during 2009 and 4 from Indonesia during 2003. 195 were highest self cites in aggregate for MINT during 2005.

Table 4: Cites Per Documents in LIS from MINT during 1996–2016

Year	*Mexico*	*Indonesia*	*Nigeria*	*Turkey*	*Total*
1996	2	0	1.111	21.2	24.311
1997	2	0	2.545	10.667	15.212
1998	6.143	0	2.444	14.2	22.787
1999	3.833	3	1.667	10.167	18.667
2000	19.333	0	3.5	10	32.833
2001	21.25	0	1.5	5	27.75
2002	6	1.333	1.25	13.75	22.333
2003	1.5	5.5	12.091	15.1	34.191
2004	2.333	6.333	6.3	15.231	30.197
2005	5.857	0	4.118	13.391	23.366
2006	0.684	2	2.769	11.378	16.831
2007	4.346	0.333	2.383	31.68	38.742
2008	3.289	4.5	2.371	12.846	23.006
2009	7.311	0	1.172	14.421	22.904
2010	2.129	1	1.217	5.379	9.725
2011	3.375	0	0.572	4.71	8.657
2012	5.159	7	0.318	2.308	14.785
2013	0.821	1.167	0.537	1.057	3.582
2014	0.143	0.143	0.08	0.214	0.58
2015	1.63	4.80	0.24	1.57	8.24
2016	0.67	0.30	0.14	0.35	1.46

Table 4 reveals average citations (of all times) per document published during the source year, i.e. citations in years X, X + 1, X + 2, X + 3… to documents published during year X. When referred to the period 1996–2016, all published documents during this period are considered. During 2000, highest Cites per document for Mexico were observed as 19.333. Indonesia cites per document were at peak during 2004 as 6.333 whereas for Nigeria it was 12.091 during 2003. In respect of Turkey cites per document was 31.68 during the period of 2007.

Table 5: Self Cites Per Documents in LIS from MINT during 1996–2016

Year	*Mexico*	*Indonesia*	*Nigeria*	*Turkey*	*Total*
1996	1.333	0	0.667	15.4	17.4
1997	1.667	0	1.636	7.333	10.636
1998	5.286	0	0.889	9.6	15.775
1999	3.5	3	1.333	7.333	15.166
2000	18	0	1.125	5	24.125
2001	19.5	0	1.125	2.5	23.125
2002	5.222	1	1	8	15.222
2003	1.5	3.5	7	10.4	22.4
2004	1	5.667	4.6	11.462	22.729
2005	4.905	0	2.039	10.391	17.335
2006	0.553	1.5	1.942	9.486	13.481
2007	3.077	0.333	1.34	29.16	33.91
2008	2.474	3.75	1.323	11.346	18.893
2009	6.356	0	0.516	13.079	19.951
2010	1.613	0.667	0.744	4.828	7.852
2011	2.575	0	0.366	3.806	6.747
2012	4.364	6.333	0.261	1.423	12.381
2013	0.643	1	0.366	0.83	2.839
2014	0.071	0.143	0.08	0.2	0.494
2015	0.321	0.12	0.09	0.84	1.371
2016	0.112	0	0.2	0.2	0.512
Total	84.072	27.013	28.642	162.617	302.344

Table 5 reflects average country's self-citations (of all times) per document published during the source year, i.e. self-citations in years X, X + 1, X + 2, X + 3… to documents published during year X. For MINT nations highest self-cites for MINT came during 2001, 2012, 2003 and 2007 respectively. 24.125 were highest self cites in aggregate for MINT during 2000. Turkey is the highest self cites with 162.617 whereas Indonesia is the lowest self cites with 27.013.

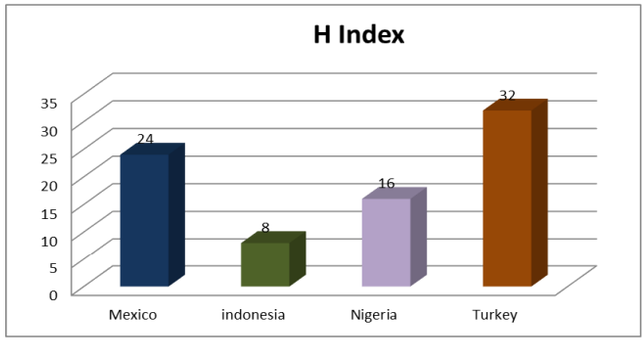

Fig. 2: H-Index bar in MINT Nations

Fig. 2 reveals h-index. The h index is a country's number of articles (h) that have received at least h citations. It quantifies both country scientific productivity and scientific impact and it is also applicable to scientists, journals, etc. H-index bar stood at 24, 8, 16 and 32 for

MINT nations respectively. The h-index is an index that attempts to measure both the productivity and impact of the published work of a scientist or scholar. The index is based on the set of the scientist's most cited papers and the number of citations that they have received in other publications. The index can also be applied to the productivity and impact of a group of scientists, such as a department or university or country, as well as a scholarly journal.

Table 6: International Collaboration in LIS from MINT during 1996–2016

Year	*Mexico*	*Indonesia*	*Nigeria*	*Turkey*	*Total*
1996	0	0	33.333	20	53.333
1997	0	0	9.091	33.333	42.424
1998	28.571	0	0	40	68.571
1999	33.333	0	0	50	83.333
2000	0	0	0	33.333	33.333
2001	25	0	0	0	25
2002	22.222	0	0	41.667	63.889
2003	25	100	27.273	50	202.273
2004	0	0	20	46.154	66.154
2005	38.095	0	1.961	30.435	70.491
2006	34.211	75	11.538	27.027	147.776
2007	57.692	0	12.766	28	98.458
2008	31.579	75	8.065	23.077	137.721
2009	42.222	0	7.813	23.684	73.719
2010	32.258	66.667	4.651	37.931	141.507
2011	30	0	6.207	41.935	78.142
2012	22.727	100	4.545	42.308	169.58
2013	46.429	83.333	17.073	43.396	190.231
2014	38.095	85.714	16	25.714	165.523
2015	32.62	35.01	17.12	15.35	100.1
2016	33.31	29.48	20.58	18	101.37
Total	573.364	650.204	218.016	671.344	2112.928

Table 6, shows that document ratio whose affiliation includes more than one country address. During 2007 it was highest for Mexico at 57.692, 100 for Indonesia during 2003 and 2012, 33.333 for Nigeria during 1996 and 50 for Turkey in the year 2003. Inference drawn is that Turkey always prefer International collaboration during 1996–2016 in LIS research except 2001 whereas no collaboration was found in Mexican publications during 1996, 1997, 2000 and 2004. Indonesia has no collaboration for research publications in LIS during the year 1996 to 2002, 2004–2005, 2007, 2009 and 2011. Nigeria has no international collaboration for research publications in Library and Information Science during the year 1998–2002.

Conclusion

Research and development are the index of prosperity of the nation. From this research we found that, Nigeria stood first among MINT countries with maximum number of output (981) in field of library and information science during the period of 1996–2016 and Turkey stood first with highest citation with 3773 subsequently self cites, h-index and international collaboration. Mexico and Turkey are also seen as contributing significantly in LIS research output. Over all the positive growth has been found in LIS research output among MINT nations during 2009 to 2016.

References

Garg, K. C., & Rag, M. K. D. (1988). Bibliometric analysis of scientific productivity: A case study of an Indian Physics Laboratory. *Scientomatrics*, *13*, 261–269.

Garg, K. C., & Sharma, C. (2017). Bibliometrics of library and information science research in India during 2004–2015. *DESIDOC Journal of Library & Information Technology*, *37*(3), 221–227.

Mangi, L. D. (2014). BRIC's research output in library & information science from 1996–2012 – A quantitative analysis. *Open Journal of Social Sciences*, *2*, 62–73.

Nosonger, T. E. (1999). JASIS and library and information science journal rankings: A review and analysis of the last half century. *Journal of the American Society for Information Science*, *50*, 1004–1019.

Olivarez, J. D., Bales, S., Sare, L., & Van Duinkerken, W. (2018). Format aside: Applying Beall's criteria to assess the predatory nature of both OA and Non-OA library and information science journals. *College & Research Libraries*, *79*(1), 52–67.

Singh, Y., Gupta, B. M., & Kumar, S. (2005). Research contributions and impact of research of Indian Institute of Technology, Roorkee, 1993–2001. *Annals of Library & Information Studies*, *52*, 8–14.

Tripathi, M. (2018). Library and information science research in BRICS countries. *Information and Learning Science*. Retrieved from https://doi.org/10.1108/ILS-10-2017-0101

Vasishta, S. (2011). Assessment of academic research output during 1996–2009: A case study of PEC University of Technology, Chandigarh. *DESIDOC Journal of Library & Information Technology*, *1*, 136–142.