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Library and information science research in SAARC and ASEAN countries as reflected through LISA

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Member countries of SAARC (South Asian Association for Regional Cooperation) and ASEAN (Association of South East Asian Nations) have long history of LIS (Library and Information Science) education and research. This study compares LIS research output in member countries of these two associations, using LISA (Library and Information Science Abstracts) data. The study focuses on the pattern of literature growth, core journals, authorship pattern and research trends. Finds that SAARC countries are ahead of ASEAN members. India is leading in LIS among SAARC countries and Singapore among ASEAN countries. As per LISA, both groups have marginal contribution in international journals and therefore, core journals are of Asian origin only. The results of study call for more collaboration among the member countries of SAARC and ASEAN. It also identifies the need for formulation and implementation of information policy similar to that of Singapore among member nations of both the regional associations.

Introduction

In South Asian region, there are two strong regional associations namely, South Asian Association for Regional Cooperation (SAARC) and Association of South East Asian Nations (ASEAN). SAARC was established in 1985 with seven member countries of South Asia, namely; Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. Afghanistan joined SAARC as the eighth member country recently. ASEAN was formed in 1967 with five founder members, namely; Thailand, Indonesia, Malaysia, Singapore, and the Philippines. Another five members joined later i.e., Brunei Darussalam in 1984, Vietnam in 1995, Laos 1997, Myanmar in 1997 and Cambodia in 1999. Countries in both these region realize that the use of information and communication technology (ICT) applications for various activities plays a vital role in national development. Accordingly, a few major ICT related projects have been initiated; for example, Software Technology Parks in India, Multimedia Super Corridor in Malaysia and Singapore. The study presents a brief overview of research output available in Library and Information Science (LIS) in SAARC and ASEAN regions. Bibliometric methods are used for analysis and evaluation of recorded knowledge and research performance of individuals, institutions, countries, and regions in a given field of research. However, the research outcome of any region is directly related to its demography. Here, in this study, the demographics of both the regions are different and play an important role in research and developmental activities. The SAARC region occupies an area of 5,136,740 square km, has a population of 1,467,255,669, GDP is USD 4,074,031 and its per capita GDP is USD 2,777, where as ASEAN area is 4,400,000 square kilometer with a population of 553,900,000, GDP USD 2172,000 and its per capita GDP is USD 4,044 (source: http://www. wikipedia.org/).

LIS in SAARC region

The literature survey reveals that there are very few bibliometric studies on LIS research in SAARC. Gupta, et al., [1] investigated science and technology as a whole and collaboration among South Asian countries using Science Citation Index (SCI 1992-1999). The result shows that India had relatively stronger collaborative linkages with all other South Asian countries. Viswanathan et al[2], reviewed the development and status of library and information networks in South Asian regions with particular reference to India. Mangla[3] studied LIS programmes at the postgraduate level offered by universities and research institutions in SAARC region.

A brief overview of Library education in SAARC Countries is given below:

Bangladesh

Library education in Bangladesh is mainly centered at Dhaka University, which has been offering Masters' programme since 1962. After the country's independence in 1971, library education has changed, modified and improved[4]. While the curriculum is at par with international standards, there is a shortage of trained manpower in LIS education[5]. In Bangladesh, special libraries are relatively well developed, because many of them have support from external sources. Bangladesh has an active library association established in 1956, which has a membership of 1,350[6,7]. Publication pattern in LIS during 1966-1997 shows that most of the LIS literature from Bangladesh was published in Indian LIS journals[8].

Bhutan

Library development in Bhutan began effectively in 1969 with the establishment of the National Library of Bhutan to collect and preserve ancient Bhutanese and Tibetan works. Bhutan's first public lending library, established in 1978, was merged with Thimphu Public Library in 1980. Shortage of qualified staff and lack of sufficient funding and established book trade within the country are the problems hampering the library development in Bhutan[9, 10].

India

India has a glorious past where many ancient centres of higher learning flourished and attracted students from all over the world. In ancient times, libraries were part of royal houses, monasteries and 'gurukuls'. The modern LIS research in India is nearly a century old, mainly developed around university system. In post independence India, LIS education developed because of Dr S.R. Ranganathan's untiring scholarly efforts[11]. Major part of LIS infrastructure was developed during the last five decades. Indian National Bibliography, started in 1958, provides a bibliographic control over Indian publications. National documentation centers, such as erstwhile Indian National Scientific Documentation Center (INSDOC) which has merged with another national institute and presently known as NISCAIR (National Institute of Science Communication and Information Resources), DESIDOC (Defense Scientific Information and Documentation Centre), NASSDOC (National Social Science Documentation Centre) and SENDOC (Small Enterprises National Documentation Centre) came into existence after independence and have been providing documentation and information services at national level[12]. Information systems and networks such as INFLIBNET (Information & Library Network)[13], ENVIS (Environmental Information System) and different metropolitan area library networks such as DELNET, CALIBNET and MALIBNET provide library services at different levels. Bhabha Atomic Research Centre (BARC), Mumbai and Indian Council of Agricultural Research (ICAR), New Delhi are functioning as input centers for INIS and AGRIS respectively. As of the year 2002, about 49 universities offer full time Ph. D programme and 3 universities part time Ph. D. programme, 89 universities have Master's degree programme, 87 universities/ colleges offer Bachelor's degree programme in LIS[14].

Maldives

The first 'Maldives National Bibliography' covered all the titles published in Maldives during 1990-1995 and acquired by the National Library of Maldives. This is the first step towards development of national bibliography as there is no legal deposit system[15]. Recently, on request of the Maldivian Library Association, Sri Lanka Library Association has launched a special education programme to promote the library profession in Maldives[16].

Nepal

The Nepal National Library (NNL), established in mid 1950s, acts as a national repository[17]. Also, to this efforts four public libraries, in four regions of the country, are designated as branch libraries to provide library services all over the country. The NNL also publishes ancient texts, a national union catalogue and a regular acquisitions list. However, inter-library lending and document supply are almost non-existent in Nepal. The country lacks good collection, trained staff and organized libraries. Beside this, Tribhuvan University Central Library (TUCL) is the largest and professionally organized library which functions as national, public and academic library.

Pakistan

Pakistan, like India, has inherited glorious legacy of ancient centres of learning. Pakistan has a large number of academic, R&D, public and community libraries.

Pakistan Library Association (PLA) plays an important role in selecting and developing library software for local needs[18]. Netherlands Library Development Project (NLDP), in association with PLA, has contributed to manpower training, hardware supply, software development, information networks, and curriculum development[19]. The country is yet to formulate either a national information policy or a national plan with respect to library and information services [20, 21].

Sri Lanka

The spread of LIS education in Sri Lanka gained momentum after independence. Early efforts of LIS education was made by the Sri Lanka Library Association, Department of Library Science, Kelaniya University and the Sri Lanka National Library Services Board[22]. Information Technology (IT) applications are used in libraries for information management. A concept called E-Sri Lanka, has been initiated to create IT environment to bridge intra-nation digital divide[23].

LIS in ASEAN Region

Preservation and conservation of library materials are the major concern for ASEAN nations. Due to historical, political and climatic conditions, Burma, Cambodia, Laos and Vietnam are facing problems to preserve their library materials. The preservation work has been initiated to save rapidly deteriorating library collections. The work of assessing need, staff education/training and microfilming politically threatened collection is going on[24]. The member nations are paying strong attention to inculcate and introduce IT applications in library and information sector.

Brunei Darussalam

The government of Brunei is investing heavily in information technology and gearing up for e-governance[25]. Brunei Darussalam has required infrastructure to access digital world. A number of ICT-related projects including e-governance initiatives have been planned and implemented under the Brunei Economic Development Council. Digital libraries and the digital transformation of heritage information have been identified[26]. However, LIS education in Brunei is not yet fully developed. University Brunei Darussalam (UBD) Library, being the largest library in the country, undertakes training, consultancy, and education. The initiatives of LIS education in Brunei Darussalam is promising but challenging[27].

Cambodia

In mid 70's during the Khmer Rouge regime in Cambodia, library activities were fully stopped and collections were dispersed. Cambodia's national library reopened in 1980, after the civil war. French government took initiative to restore library, and conservation work, as the Government funding was insufficient for acquisitions; books are coming through donations only[28]. Presently, Cambodia is getting free access to 2,300 biomedical and social science international periodicals under Health Internet work Access to Research Initiative (HINARI) program. HINARI provides this kind of access facility to the countries whose per capita Gross National Product (GNP) is less than 1,000 dollars[29].

Indonesia

LIS infrastructure in Indonesia is relatively better, digitization of collections in universities started with Ganesha Digital Library Network in 1998, which is known as Indonesian Digital Libraries Network (IDLN), The State Ministry of Research and Technology has distributed document-digitizing software (Docushare) to universities[30]. Recently prepared draft legislation for a National Library System may enhance the role of library system [31].

Laos

French government, through Banque Regionale du Livre (BRL) is cooperating for collection development. Through this initiative, French-language books and audio visual materials are available in the country's public/ university library network. There are no publishing houses or bookshops, collections are sparse, and mostly LIS training is obtained from abroad[32].The Archives of Traditional Music is working to provide procedures and protection of musical recordings manuscripts[33].

Malaysia

With the convergence of computer and telecommunication technology, government is supporting information technology and multimedia industry. The project is called the Multimedia Super Corridor (MSC) and is planned as a high-technology centre. Malaysian government realize the importance of librarians and accordingly Master of Library and Information Science

(MLIS) education program hase been started at the University of Malaya since 1996[34]. The LIS research has helped to enrich the pool of local LIS publications[35]. It is observed that, information technology is the popular research area among MLIS students[36].

Myanmar

Myanmar is one of the most vulnerable nation which has experienced savage war and turbulence. Myanmar has essentially been an isolated state due to political instability, with closed borders and a military government. Very little literature are available about its infrastructure and facilities[37].

Philippines

The foundations of Philippine librarianship are due to few American librarians and Filipino scholars. After World War II, the country strengthened academic institutions and has nurtured library schools through association and cooperative effort[38]. Library automation system has been started and most of the libraries are using CDS/ISIS or a general purpose database management system. Academic libraries are better equipped and library systems are interconnected through information highway known as (PHNET), which is the country's gateway to the Internet [39].

Singapore

Singapore has developed National Information Infrastructure (NII). In 1991, with the support of National Computer Board (NCB) presently known as the Infocomm Development Authority (IDA), Singapore government has launched the "IT 2000" with an aim to transform Singapore into an "Intelligent Island". The "Library 2000 Review Committee" created the 'National Library Board' (NLB) in 1995. Main thrust of NLB was to create libraries and networking them with overseas libraries. National Library Board (NLB) has come up with a new library system and established community public libraries even in shopping malls for young adults, where apart from entertainment young people can read [40]. Singapore National Library (SNL) provides new concept of libraries where central lending library coexists with drama centre, display space, cafes, gardens observatory pods and so on [41]. In this way, NLB is bringing libraries closer to users and providing global access to wealth of knowledge. The Library 2010 Report addresses challenges for the Singapore society along with strategic solution. Beside this, National Archives of Singapore uses digital techniques to capture non-dynamic and text-based archival records to digitize for posterity[42, 43, 44].

Thailand

Since the 1980s, UNESCO developed CDS/ISIS are in use in libraries. In 1987, Chiang Mai University Library was the first to start use of a commercial integrated library management system. In 1992 the National Library of Thailand used the "Dynix" Library Automated System Software. Nowadays, a range of library management software including ALICE, Dynix, INNOPAC, TINlib and VTLS, are available for use in academic libraries[45]. Thailand has Public Academy Library Network; PULNET (Provincial University Library Network); Thai Library Network Metropolitan (THAILINET-M); and ThaiLIS (Thai Library Integrated System). Thai academic libraries have attempted for library automation and nation wide network[46].

Vietnam

A good number of networks and services are evolving in Vietnam[47, 48]. Except Provincial Library, other libraries in Vietnam lacks proper infrastructure and facilities. Vietnamese are very enthusiastic about libraries but library services are still in evolving stage [49].

Objective of the study

- To identify literature growth, core journals, and authorship patterns in LIS in SAARC and ASEAN regions as reflected through LISA.

Methodology

Data for the study was downloaded from online version of Library and Information Science Abstracts (LISA) published by Cambridge Scientific Abstracts (CSA) using respective country name as a keyword. For the period, 1967 to 2005, 4,166 records were downloaded from LISA for SAARC countries (India 3,367, Pakistan 418, Sri Lanka 175, Bangladesh 140, Nepal 39, Bhutan 19 and Maldives 8). Similarly, a total of 2,318 records were downloaded for ASEAN countries (Singapore 750, Malaysia 566, Thailand 248, Philippines 248, Indonesia 227, Vietnam 163, Myanmar 41, Cambodia 39, Laos 25 and Brunei 11 records). The data was downloaded using software "Endnote 7" of ISI (Institute for Scientific Information) research soft. The retrieved data of both

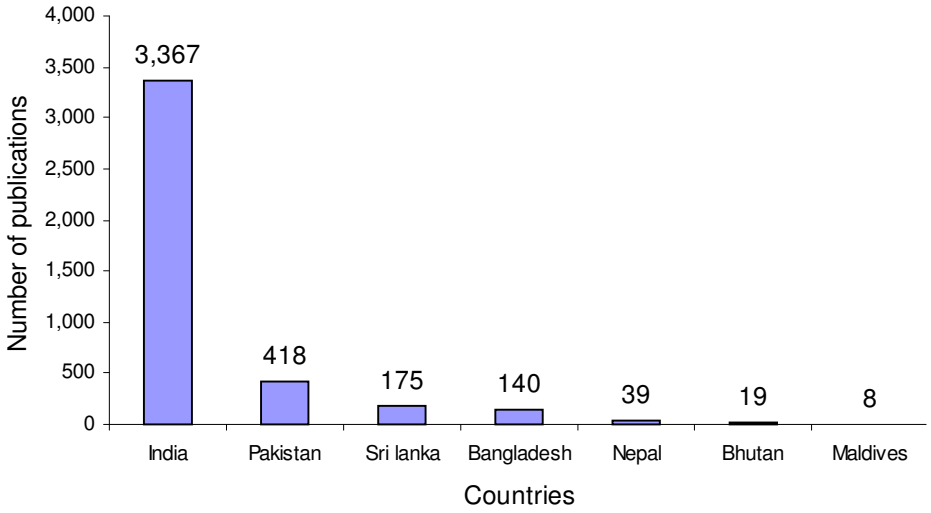

Fig. 1 — Number of publications by SAARC countries

the regions is merged in two separate databases. After merging the records, duplicates, triplicates are removed from both the databases. For SAARC 3,958 and for ASEAN, 2,143 records remain for analysis. Core journals, authorship pattern and language of publications analysed are based on these records only. Further, in retrieved output, all records have been checked manually to ensure that all are related to LIS research of respective countries.

Limitations of the study

The limitations of the study have to do essentially with the limitations of the LISA database. LISA is a comprehensive abstracting database of LIS literature and hence was chosen for the study. However, the database suffers from a major disadvantage which is that it does not index author address/affiliation. It is, therefore, not possible to download exact records indexed based on country of publication. Therefore, the study has used the country name as a keyword. This would have lead to downloading irrelevant records that were not published from a country but has the country's name as a keyword for whatever reasons. Similarly, genuine records pertaining to a country may not have been downloaded because the country name has not been used anywhere in the article/abstract.

Although, LISA is quite comprehensive, the database does not seem to actually index the entire research output of a particular country. This is at least the case with India as a large number of conferences, seminars and festschrift volumes are published every year and the country also publishes about 20-25 LIS periodicals. But the coverage of these sources by LISA is very poor. This scenario can be true for other countries as well.

Despite these limitations, this study is still based on LISA as it a popular abstracting service in LIS and the results are expected to give an indicative trend of the literature growth, core journals and authorship pattern pertaining to SAARC and ASEAN regions.

Results

English is the predominant language of LIS research in both the regions as 3,865 records (97.65%) out of 3,958 records of SAARC and 1,940 (90.52%) out of 2,143 records of ASEAN countries are in English language and only few publications are in native language.

Literature growth

Figure 1 shows India at the top among SAARC countries with 3,367 publications, followed by Pakistan 418, Sri Lanka 175, and Bangladesh with 140 publications. Publication output of Nepal, Bhutan and Maldives are not substantial. Singapore is at the top among the ASEAN countries with 750 publications, followed by Malaysia 566; Philippines and Thailand have 248 each. (Figure 2). Figure 3 shows no significant trend in publication, however, India's contribution in comparison to other countries of the region dominates. The highest number of Indian publications is 208 in 1999 and thereafter, a gradual decline is seen. In last few years India's contribution as seen through LISA is about 80 publications per year.

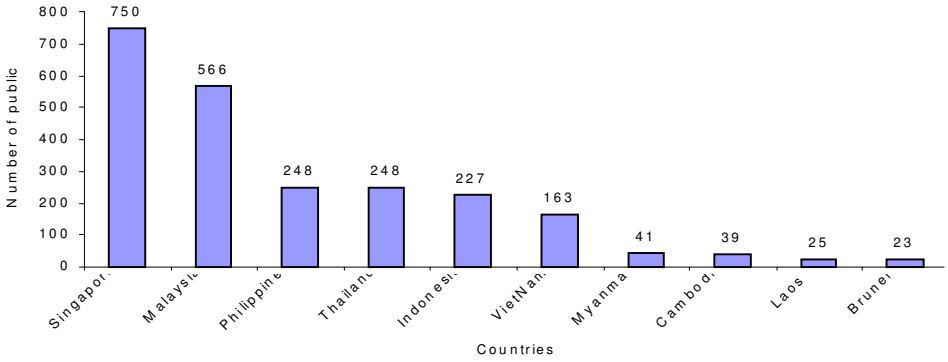

Fig. 2 — Number of publications by ASEAN countries

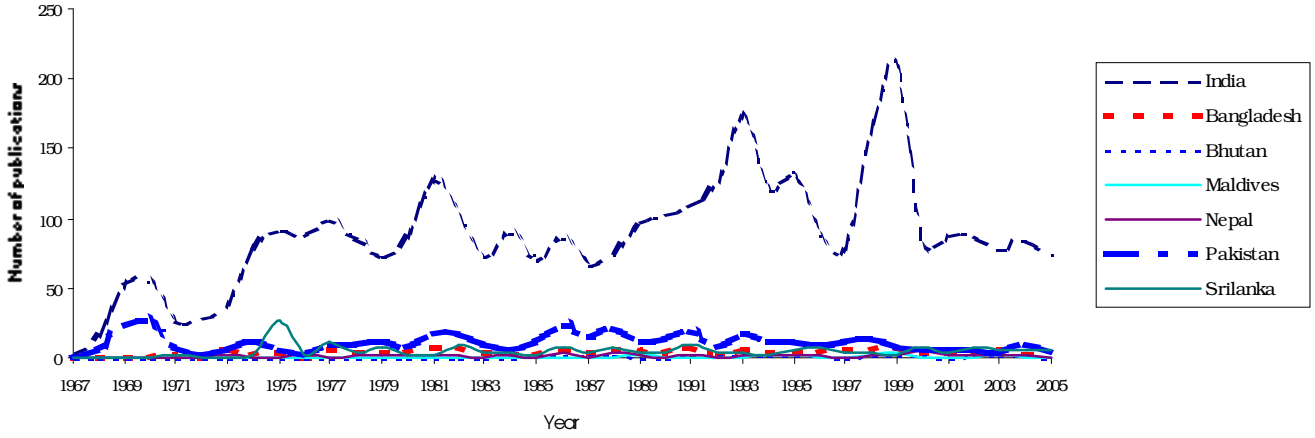

Fig. 3 — Growth pattern of LIS literature of SAARC countries

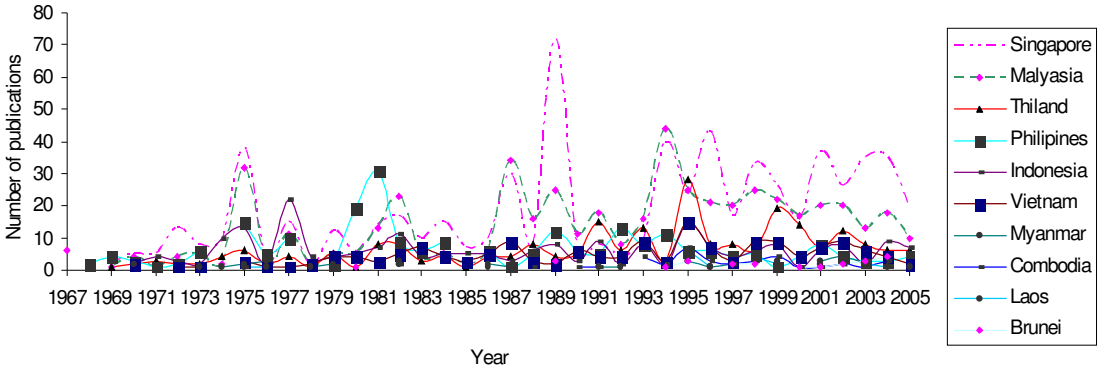

Fig. 4 — Growth pattern of LIS literature from ASEAN countries

ASEAN region growth shows Singapore as the largest producer, but others too have marked presence (Figure 4). In Figure 5 cumulative growth shows that SAARC dominates over ASEAN. The growth curve of both the region does not show any definite pattern other than an increase and then sudden drop in publications. Interestingly, exponential growth of literature in SAARC occurred in three time phases i.e. in 1972-75, 1987-93, and 1997-99. Similarly, ASEAN region per year R&D output crossed 100 publications in 1975, 1989, 1994, 1995, 1996 & 1999.

Core journals

Samuel Clement Bradford's[50] theory is a milestone in Bibliometrics. Various bibliometricians have different interpretation of Bradford's Law. This includes

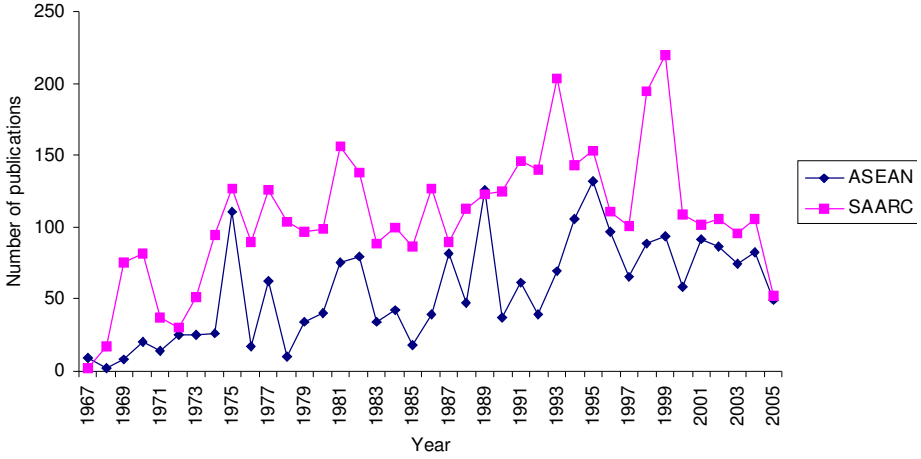

Fig. 5 — Comparative LIS literature growth of ASEAN and SAARC countries

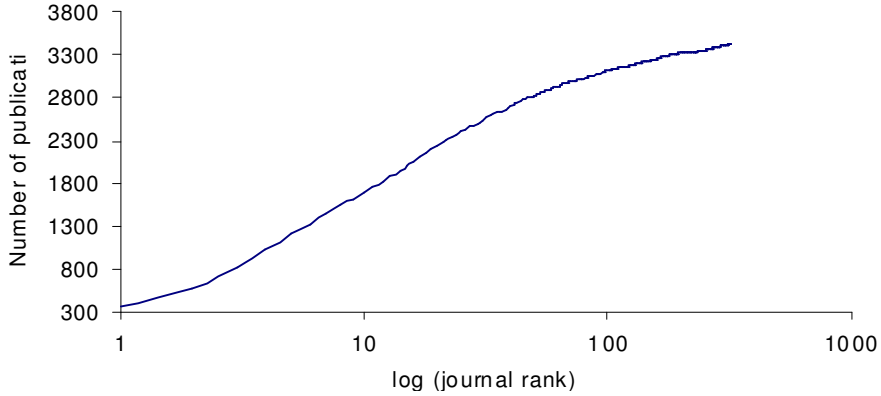

Fig. 6 — Bradford's curve of SAARC Core journals

Table 1 — SAARC core journals

	Journals	No. of publications	% of total publication
1.	Herald of Library Science	362	10.55
2.	Annals of Library Science and Documentation*	241	7.02
3.	Journal of Library and Information Science (India)	220	6.41
4.	IASLIC Bulletin	199	5.80
5.	Pakistan Library Bulletin	186	5.42
	Total	1208	35.2

*Continues as Annals of Library and Information Studies

Leimkuhler[51], Brookes[52], Rousseau and Leimkuhler[53] , Egghe[54], Rousseau[55], Antonio & Isidoro[56] and so on. In case of SAARC, ~ 322 journals publish 3,431 articles wherein four journals publish ~ one third of the total literature (Table 1). Those journals are; *Herald of Library Science(362), Annals of Library Science and Documentation (241), Journal of Library and Information Science (India)(220), IASLIC Bulletin (199) and Pakistan Library Bulletin (186),* Interestingly, none of these journals is covered in JCR, therefore has no impact factor. Plotting cumulative number of publications with logarithm of journals a typical Bradford curve is obtained (Figure 6). A typical "S" shaped sigmoid curve comes for SAARC core journals which indicate subject maturity. In case of ASEAN ~ 332 journals have published 1,702 articles and these are distributed among a wide variety of journals. One third of the total publications have published in large number of journals as shown in table Table 2. A Bradford plot (Figure 7) shows that the curve is "J" shaped rather than a typical

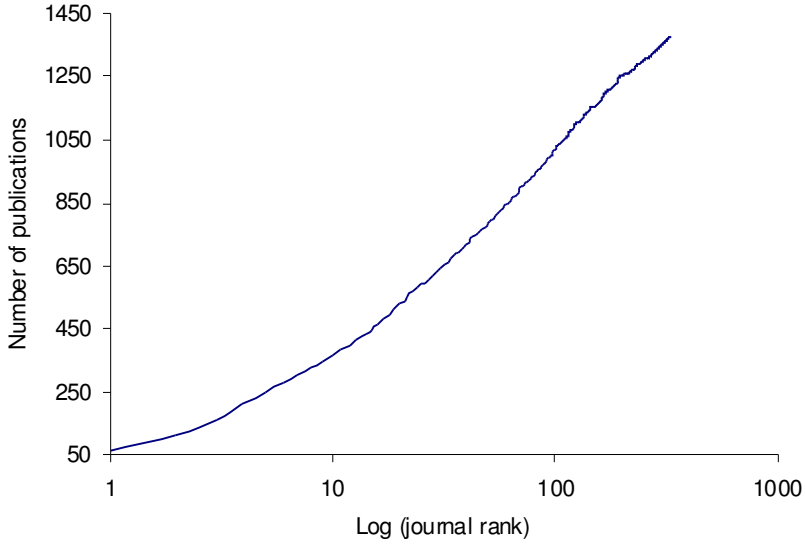

Fig. 7 — Bradford's curve of ASEAN Core Journals

Table 2 — ASEAN Core journals

	Journals	No. of Publications	%of Total
1	Kekal Abadi	75	4.4
2	Asian Libraries	68	3.99
3	Singapore Libraries	53	3.11
4	Malaysian Journal of Library and Information Science	49	2.87
5	Proceedings of the First Conference of Southeast Asian Librarians	44	2.58
6	Journal of Philippine Librarianship	42	2.46
7	International Library Review	37	2.17
8	Information Development	31	1.82
9	IFLA Journal	27	1.58
10	Libri	26	1.52
11	Library Review	24	1.41
12	COMLA Newsletter	24	1.41
13	Majallah Perpustakaan Malaysia	21	1.23
14	Journal of Information Science	21	1.23
15	Inspel	20	1.17
		562	32.95

"S" shape and this indicates infancy of the subject in ASEAN countries.

Authorship Pattern

The authorship distribution and its pattern reveal that both the regions almost have the same trend. SAARC countries show that ~ 162 articles do not contain name of the authors, these are mainly conference proceedings and few are anonymous works. The study found ~ 31 articles was authored by more than 5 authors. Interestingly, authorship pattern reveals that single authors contribute 67%, two ~ 23% and three 4% articles. Similarly, ASEAN countries show that ~ 101 articles do not contain name of authors, these are mainly conference proceedings and anonymous works. The authorship distribution of ASEAN countries reveals, single author contribute ~ 63%, two ~ 21%, and three 6%. Single authorship is more common in both the regions; as it is 67%, and 63% in SAARC and ASEAN respectively.

Applicability of Lotka's Law

Lotka's Law[57], describes the frequency of publication by authors in a given field. It states, "the number of authors making n contributions is about $1/n^2$ of those making one; and the proportion of all contributors, that make a single contribution, is about 60 percent". This can be interpreted as of the total number of authors in a given field, 60 percent will have just one publication, and 15 percent will have two publications ($1/2^2$ times of 60), 7 percent of authors will have three publications ($1/3^2$ times of 60). In SAARC, 3,260 authors have published 3,958 articles, i.e. ~ 1.21 articles per author. Authors with one publication are ~ 2,470 (76%), two 403 (12%), and three 141 (4.2%) and more than ten ~ 37 (1.13 %). In ASEAN, 2,107 authors have published 2,143 articles, i.e. ~1.01 articles per authors, among them 1,218 (58%) publish one, two169 (8%), three 66 (3%) and more than ten ~ 8 (0.3%) articles. Different interpretations and formulations of Lotka's law have been given by different authors[58,59]. Accordingly, all authors' data was collected, arranged and value of C and n are determined. The value of C for SAARC countries is 0.67 and for ASEAN is 0.72 and value of n for SAARC is -2.22 and ASEAN is -2.4. The value of C & n indicates that the authorship pattern for both the regions follow almost same trend. Although, Kolmogrov-Smirnov goodness of fit test shows that authorship pattern for SAARC follows Lotka's law but ASEAN does not. This may be due to the fact that ASEAN produce less quantity of literature in comparison to SARRC.

Discussion

The study shows that 97.65% and 90.52% records of SARRC and ASEAN are in English language. India's contribution is at the top among the SAARC countries which is due to its long standing, infrastructure, facilities, and scholarly importance to LIS. Countries like Bangladesh, Nepal, Bhutan and Maldives need to increase their LIS research output. Singapore with its 750 publications tops among ASEAN, followed by Malaysia 566, Philippines 288 and Thailand 288. R & D output of Vietnam, Myanmar, Cambodia and Laos exposes their weakness in LIS. No significant trend in publications has been observed in both the regions. SAARC dominates over ASEAN. Three-time phased exponential growth has been observed in SARRC, first may be due to initial formative years of LIS as a subject and its introduction in educational institutes, second, in 1990's perhaps because of impact of ICT and its application in libraries, and third is due to availability of Internet and advancement of Web technology. ASEAN region output has crossed 100 publications per annum which may trigger further growth as libraries/information centers of this region are automated and have adopted information technology tools for delivery and management of information. The Bradford curve for SAARC core journals is a typical "S" shaped sigmoid indicates maturity of subject where as ASEAN core journals forms "J" shaped curve reveals growing age of LIS in the region. Authorship pattern shows almost similar pattern, however, SAARC data follows Lotka's law but ASEAN does not. It is also pertinent to mention that research output from countries like India definitely would be higher than the retrieved data but due to indexing limitations of source database, research output but being shown less.

Conclusion

LISA reflects that LIS research in both SAARC and ASEAN regions need to be strengthened. SAARC is ahead of ASEAN in LIS research output. Except for Singapore which is an ASEAN member, no other country has a national policy for LIS. Therefore, planners, decision makers and LIS professionals of all countries need to pay higher priority to LIS. As LISA does not index addresses/affiliation, national LIS databases need to be consulted to get a more accurate picture of LIS research in the two regions.

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