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Doctoral Research in Library and Information Science in India: Trends and Issues

Shashi Prabha Singh* and Parveen Babbar**

**Department of Library & Information Science, University of Delhi, Delhi-110 007*
E-mail: singh_34@yahoo.com

***Central Library, Jawaharlal Nehru University, Delhi-110 067*
E-mail: parveenbabbar@gmail.com

ABSTRACT

Library & Information Science has completed its 100 years of education in India. Research has always been regarded as the most important intellectual activity in the higher education system, therefore this research article aims to provide a comprehensive picture of doctoral research carried out by various LIS departments of India. Universities offering regular PhD programme were identified using various primary/secondary, online/offline sources. A questionnaire was designed for data collection and the same was sent to the heads and faculty members of LIS departments of these universities by e-mail/in print. Based on data collected from 81 departments located in 22 states of India, the growth and development of LIS research in India since the award of first PhD in 1950 till 2012 is traced.

Keywords: Library and information science, LIS, PhD, research, universities, India

1. INTRODUCTION

Research is the most important intellectual activity in the higher education system which provides dependable solutions to the problems being manifested in various fields of knowledge. Research brings prestige not only to the nation and the department/ university but also to the research scholar. Today in this competitive world, no university can afford to remain static, it has to evolve continually and consciously by adding new ideas, inventions and discoveries in different fields of knowledge through research. Research generates new knowledge which ensures development of a subject, and helps to establish sound theories of the subject. Research is directly responsible for the social and economic development of a country. It has been regarded as a determinant force in supporting and shaping a sustainable future of a nation. According to former President of India, Dr A.P.J. Abdul Kalam[1], "the importance of research cannot be underestimated today when it has emerged as the driving force in the process of self-reliance in all cutting-edge technologies. In certain universities, research has been the main contributor and guiding force in realising its core competence". In other words, research would be a way to harness and find means to cater the social and economic needs of the world.

2. LIS EDUCATION: PRESENT SCENARIO

Foundation of LIS education in India dates back to 1911 when William Alanson Borden (1853-1931), an American disciple of Melvil Dewey started a short-term training programme in Library Science at Baroda under the patronage of Maharaja Sayaji Rao Gaekwad II (1862-1939), the Ruler of erstwhile princely State of Baroda. This was the first formal training course in Library Science started in India. Library and Information Science (LIS) education in India completed its 100 years in 2011. Now LIS education has grown and developed into a full-fledged discipline. According to Singh[2], various levels LIS courses offered by university departments, institutions, library associations and specialised institutions are as follows:

- Certificate Course
- Undergraduate Diploma Course
- Postgraduate Diploma Course
- Bachelor of Library and Information Science
- Master of Library and Information Science
- Associateship in Information Science
- MPhil in Library and Information Science
- PhD in Library and Information Science
- DLitt in Library and Information Science

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As far as LIS courses at university level are concerned, large number of universities are offering various courses. Data collected from published and unpublished sources (including questionnaires used for this study) reveals that over the period of time, number of such universities has grown. Details about the number and level of courses offered by these universities are as follows:

- 181 universities are offering library science courses
- 131 are offering bachelor's degree course
- 136 are offering master's degree course
- 41 (out of 136) are offering two-year integrated master's level course,
- 21 are presently offering MPhil degree, (19 departments started and closed)
- 93 universities (including 10 distance education universities) are offering PhD degree.

3. LIS RESEARCH SCENARIO UP TO 1970s

Research in Library Science dates back to 1950 when Manindra Nath Basu was awarded PhD on a topic, 'Museum methods and the process of cleaning and preservation'[3] from University of Calcutta (from other than Library Science department). Ranganathan who was a great visionary, fully realised the role of research in LIS education so after the establishment of full-fledged Library Science Department at University of Delhi, he took steps for initiating the research programme in the Department. The process was initiated by moving a proposal to university authorities in 1948 but the formulation of rules and regulations took nearly 4 years. Ultimately, he accomplished the mission as Mr D.B. Krishna Rao was registered as the first candidate in 1952 for PhD[4]. At that time, University of Delhi was the only university with a full-fledged department of library science in the British Commonwealth to offer the PhD programme in LIS. Mr D.B. Krishna Rao worked under the guidance of Dr S.R. Ranganathan on a topic, 'Facet Analysis and Depth Classification of Agriculture', and was awarded PhD degree in 1957[5]. However, after a gap of twenty years, second PhD was awarded in 1977 to Mr Pandey S.K. Sharma on a topic, 'Expansion and modification of DDC.....Indian religion' from LIS Department of Panjab University, Chandigarh[3].

Based on data collected for this study, it was found that during 1950-76, 7 PhDs were awarded in library science from other departments also as only few LIS departments were offering research facilities. Due to such situation, the process was quite slow and total 20 PhDs were awarded (0.68 PhD per year) during initial 29 years, i.e., up to 1979, including 7 PhDs from other than Library Science departments. Since PhD of Mr Manindra Nath Basu was not from Library Science department, Mr D.B. Krishna Rao's PhD is regarded as the first PhD in Library Science in India[3].

4. SITUATION FROM 1980s

During 1980s, situation was much improved as 103 PhDs were awarded at an average rate of 10.3 PhDs per year which was 151 times higher in comparison to initial 29 years (1950-1979). During 1990-1999, this number grew further to 395 at an average growth rate of 39.5 PhDs per year. Next decade of 2000-2009, proved to be highly productive as during this decade there were total 804 PhDs (average 80.4/year) awarded by the end of 2009. However the growth rate was highest during 2010-2012 as in just within three years, the increase was highest at an average rate of 144 PhDs per year. This high rise in number of PhDs award can be attributed to many factors like, PhD being a prestigious qualification and considered suitable for higher jobs, and majority of the young professionals are getting interested in doing PhD. Another important factor is that University Grants Commission (UGC) provides good financial assistance to all the candidates who qualify Junior Research Fellowship (JRF) exam for conducting PhD. Third factor is emphasis on research qualification by institutions, universities and UGC for promotion/selection to senior positions is also prompting the professionals to obtain PhD degree out of necessity. All these factors are leading to continuous growth of PhDs.

5. SCOPE

Library and Information Science (LIS) research in India has completed its 63 years in 2012. Therefore, the time is ripe enough to introspect how LIS education has grown over the period of time and achieved its present status. Therefore, the study aims to trace the growth and development of research activities in India carried out by various regular LIS departments/schools of India. This study covers the total span period of 63 years, starting from 1950 when the first PhD was awarded till 2012. All relevant information relating to each PhD awarded by 81 universities, located in 22 states of India has been collected. The universities conducting PhD programme through distance mode have not been included in this study.

6. OBJECTIVES

The basic objective of this study is to trace the overall growth of LIS research in India from the award of first PhD in Library Science. The other objectives of the study are to:

(a) Know chronological distribution of PhDs in LIS during the last 63 years;

(b) Identify the contributions made by individual universities, Indian states and supervisors towards LIS research;

(c) Ranking of states and universities according to their productivity;

(d) Identify the thrust areas of LIS research; and

(e) Identify the emerging areas of research in LIS.

7. METHODOLOGY

To begin with, latest edition of Universities Handbook[6], published by Association of Indian Universities (AIU), Delhi was used to identify the universities/departments/schools/colleges conducting PhD program on regular basis. To be comprehensive, other sources were also used and a list of 83 departments conducting regular PhD programme was prepared. For collecting the requisite information, a questionnaire was designed and the same was sent to these 83 departments through e-mail and/or post. Simultaneously, search in printed and online sources was also started to collect the relevant data. Among print sources, *PEARL: A Journal of Library & Information Science; DESIDOC Bulletin of Information Technology; University News*[7]*; IASLIC Newsletter*[8] (both print and online), and *CLIS Observer*, etc., were scanned regularly. Two main online Indian repositories on PhD theses, namely *Vidyanidhi* and *Shodhganga*[9], INFLIBNET (Information Library Network, UGC) were also accessed. OPAC of National Social Science Documentation Centre[10] (NASSDOC) and website of universities and departments were also accessed. Personal phone calls to the heads, professional colleagues and faculty members of LIS department were also made for collecting the data of their respective departments.

For the purpose of analysis, a database was created in MS-Access using 21 fields for processing, analyses and presentation of data in various Tables. The database contained the name of PhD scholars, topics of research, name of single/ joint supervisors, years of award and the name of the university, state, etc. For assigning subject headings to PhD titles, a controlled vocabulary was developed using Sears List of Subject Headings[11] (Ed. 20) and other such sources. Thereafter, data was analysed according to different parameters and the same is presented in subsequent section under Data Analysis.

8. LIMITATIONS AND PROBLEMS FACED

Efforts were made to make the study comprehensive and up to date but two departments did not respond in spite of repeated reminders, mails and phone calls. While collecting the data, it was surprising to find that large number of LIS departments were not maintaining their PhD data even in this technology-based era, when record creation and maintenance has become so convenient and easy. However, majority of the departments provided information in raw form which in many cases was incomplete in terms of titles, years or name of supervisors, etc. In some cases, same candidate was found to be listed twice under different universities, years and spellings, etc. As regards university websites are concerned, very few were offering information about LIS departments, but no information about PhDs awarded was given. In some cases, PhDs information was there but it was not up to date. So non-availability of information about the departments on university websites was a serious limitation. Other frequent problem being faced was that many websites could not be opened because either the server was down or the department's site was under construction. Although, two exclusive online Indian repositories are also available on PhD data, namely, *Vidyanidhi* and *Shodhganga*, but these too were not found to be of much help because *Vidyanidhi* was found to be non-functional most of the times, and *Shodhganga* was not comprehensive in coverage, as only 190 PhDs in LIS were found listed in it at the time of access.

9. DATA ANALYSIS

For this study, data of 1754 PhDs awarded from 81 universities, located in 22 states of India was collected up to 2012. Quantitative analysis of the data has been presented under the following heads:

- Distribution by decades
- Distribution by universities
- Distribution by states
- Top ranking subjects
- Emerging areas in LIS research
- Distribution by supervisors
- Distribution by languages, and
- PhDs awarded from other than LIS departments.

9.1 Distribution by Decades

It is evident from Table 1 that during the first two decade of 1950-59 and 1960-69, just 2 PhDs were awarded in each decade. This growth was multiplied 8 times during 1972-79 when 16 PhDs were awarded in 8 years at the rate of 2 PhDs per year. Thereafter continuous growth was witnessed at the rate of 10.3 PhDs per year during 1980-89 and 38.5 PhDs per year during 1990-99. Growth during the next decade of 2000-09 crossed all the previous records as it was more than double (80.4 PhDs/year). However, last decade covering only three years form 2010-2012 superseded the growth rate of all the previous decades as 432 PhDs were awarded just within these 3 years at an average rate of 144 PhDs per year. Thus, it can be inferred that the number of PhDs awarded is continuously increasing at a good increasing average annual rate (Fig. 1).

Table 1. Decade-wise distribution of PhDs

Decades	PhDs (%)	Rank
1950-59	2 (0.11 %)	6
1960-69	2 (0.11 %)	6
1970-79	16 (0.91 %)	5
1980-89	103 (5.87 %)	4
1990-99	395 (22.52 %)	3
2000-09	804 (45.84 %)	2
2010-12*	432* (24.63 %)	1

*Data is for three years only

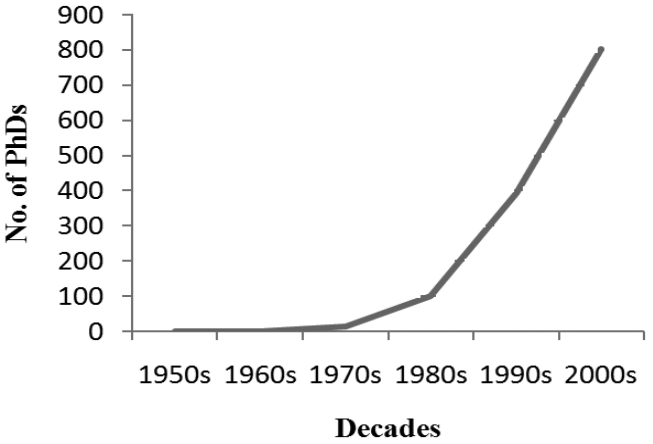

Figure 1. Distribution by decades.

9.2 Distribution by Universities

During the total period of 63 years (1950 to 2012) of LIS research covered under this study, 1754 PhDs have been awarded by 81 universities (*Annexure-I*). Analysis of top ranking universities presented in Table 2, reveals that out of these 81 universities, 31 universities have awarded 1-9 PhDs; 16 universities 10-19 PhDs; 12 universities 20-29 PhDs; and 11 universities 30-44 PhDs. There are only 11 universities which have awarded 50 (cut off no.) or more PhDs (Table 2) and they together account for 41.33 % of total research output (725/1754 PhDs). This data has been presented university-wise in descending order. Table 2 also presents annual average growth of these universities, calculated on the basis of total number of PhDs awarded by each university, divided by the total span period of research of that university.

Usually it has been observed that older departments contribute more in the overall growth and development of a profession but data in Table 2 reveals that the departments of Jiwaji and Annamalai Universities despite being the youngest departments, awarded highest number of PhDs. Among older university departments, Karnataka, Pune, and Madras could justify their research output although, award of first PhD in these departments took longer time which was 18 years for Karnataka, 28 years for Pune and 27 years for Madras. Among all LIS departments, although Andhra University's Department is the oldest which took 48 years to award its first PhD, still it could compete with Pune and Madras because of its annual average growth rate. On the contrary, Delhi University which was the first to award its first PhD, has fallen at the bottom because it awarded PhDs at the lowest average rate of 1.05 PhDs/year, yet it could find a place among 11 top ranking universities on account of its total research output.

9.3 Distribution by States

There are 81 universities in 22 states of India which are offering PhD programme and awarded 1 to 224 PhDs. Table 3 provides data of only 11 high performing states which have awarded minimum 62 PhDs (cut off no.). These 11 states account for 84.83 % (1488/1754 PhDs) of total research output. Data in Table 3 reveals that Karnataka is on the top with highest contribution of 12.77 % PhDs; followed by Maharashtra (11.35 %); Madhya

Table 2. Ranking of high performing universities

S. No.	University name	Dept Estd.	Ist PhD award year	Gap in period*	Total Res. period	Total PhDs	Average PhDs/ Yr
1.	Jiwaji University	1982	1988	6	24	97	4.04
2.	Annamalai University	1979	1990	11	22	88	4.00
3.	Karnataka University	1962	1980	18	32	84	2.62
4.	University of Pune	1958	1986	28	26	67	2.57
5.	University of Madras	1960	1987	27	25	63	2.52
6.	Andhra University	1935	1983	48	29	61	2.10
7.	University of Delhi	1946	1957	11	55	58	1.05
8.	Panjab University	1960	1976	16	36	54	1.50
9.	University of Rajasthan	1960	1978	18	34	52	1.52
10.	Mysore University	1965	1984	19	28	51	1.82
11.	RTM Nagpur University	1956	1992	36	20	50	2.50

* Refers to Gap between year of establishment of department and year of first PhD award

Table 3. Ranking and average growth in high performing states

S. No.	State	Ist PhD in state	Years up to 2012	No. of PhDs (%)	Avg. growth	Rank
1.	Karnataka	1980	32	224 (12.77 %)	7.00	2
2.	Maharashtra	1986	26	199 (11.35 %)	7.65	1
3.	Madhya Pradesh	1984	28	190 (10.83 %)	6.78	3
4.	Tamil Nadu	1986	26	169 (9.64 %)	6.50	4
5.	Andhra Pradesh	1983	29	150 (8.55 %)	5.17	5
6.	Uttar Pradesh	1982	30	127 (7.24 %)	4.23	6
7.	West Bengal	1950	62	120 (6.84 %)	1.93	9
8.	Punjab	1976	36	96 (5.47 %)	2.66	8
9.	Orissa	1985	27	89 (5.07 %)	3.29	7
10.	Delhi	1957	55	62 (3.53 %)	1.12	11
11.	Rajasthan	1978	34	62 (3.53 %)	1.82	10
Total share of PhDs				**1488 (84.83 %)**		

Pradesh (10.83 %); Tamil Nadu (9.64 %); and Andhra Pradesh (8.55 %). These 5 states together contribute to 53.13 % of total output of 22 states. State-wise average growth of PhDs (calculated by dividing total number of PhDs awarded by each state with total period of research of that state) reveals change in rank order as compared with descending order adopted to present the total research output of each state. This change is there because of variation in number of universities offering PhD programme in each state and also state-wise variation in the total span period of research.

9.4 Distribution by Subjects

For subject analysis, all 1754 PhDs were grouped into 99 subject headings using controlled vocabulary developed for this study on the basis of Sears List of Subject Headings. Table 4 projects 13 top ranking subjects on which maximum number of PhDs (53.24 %) have been awarded. Of these, Bibliometrics/Scientometrics/Webometrics studies taken together have been found to be the most popular area of research with 171 (9.75 %) PhDs, followed by Library Personnel with 114 (6.5 %) PhDs; Information Seeking Behaviour with 94 (5.36 %) PhDs; and Information Services with 73 (4.16 %) PhDs. Total of these four subject areas account for 25.77 % of total research output.

Table 4. Top ranking subjects in LIS PhDs

S. No.	Subject	No. of PhDs (%)	Rank
1.	Bibliometric/ Scientometric/ Webometric studies	171 (9.75 %)	1
2.	Library personnel	114 (6.5 %)	2
3.	Information seeking behaviour	94 (5.36 %)	3
4.	Information services	73 (4.16 %)	4
5.	Information needs	69 (3.93 %)	5
6.	Technical processing, tools and techniques	65 (3.71 %)	6
7.	Library studies	53 (3.02 %)	7
8.	E-resources	52 (2.96 %)	8
9.	IT application in libraries	52 (2.96 %)	8
10.	Library services	51 (2.91 %)	9
11.	Library administration and management	50 (2.85 %)	10
12.	Networks and consortia	49 (2.79 %)	11
13.	Information systems	41 (2.34 %)	12

9.5 Emerging Areas in LIS Research

In present day environment, information technology (IT) is playing a very crucial role not only in economic and social development of India but also in the field of Library and Information Science. It is visible from the growth of LIS literature in IT-related areas and its wider application in libraries for performing various library operations and providing wide range of services. It is also evident from the fact that during last one decade or so, there is a shift in thrust areas of LIS research from traditional librarianship to IT-related areas. As a result in recent decades, several PhDs have been awarded on IT-related areas. First three areas in Table 4 are of very popular nature on which maximum PhDs have been awarded, followed by other 17 areas that are slowly gaining attention in LIS research. Decade-wise analysis about the emergence of these areas in Table 5 reveals that out of total 20 subject areas, only 4 have emerged during 1980-1989 and 5 during 1990-1999. Remaining 11 have emerged after 1999 only.

Decade-wise growth of PhDs in these areas in Table 5 reveals a growing trend where 2000-2009 had been found to be quite productive (with 152 PhDs) but the highest growth at an average rate

Table 5. Research thrust on emerging areas

S. No.	Subject areas	1980-89	1990-99	2000-09	2010-12	Total
1.	IT application in libraries	1	4	31	16	52
2.	E-resources	-	-	22	30	52
3.	Networks and consortia	2	9	25	13	49
4.	Library automation	1	2	16	2	21
5.	Internet resources	-	-	13	6	19
6.	Library management software	-	3	7	5	15
7.	Total quality management	-	-	7	7	14
8.	Digital libraries	-	-	7	4	11
9.	Institutional repositories	1	2	2	5	10
10.	Digitisation	-	-	5	4	9
11.	Expert systems	-	-	6	1	7
12.	Web resources	-	-	1	5	6
13.	Open access resources	-	-	2	3	5
14.	Web sites	-	-	4	1	5
15.	Webometric studies	-	-		4	4
16.	Web portals	-	-	1	2	3
17.	Customer relationship management	-	-	1	2	3
18.	Web search engines	-	-	-	3	3
19.	E-learning and e-learning resources	-	-	2	1	3
20.	Knowledge audit	-	-	-	2	2
21.	**Total PhDs (Decade-wise)**	**5**	**20**	**152**	**116**	**293**

of 38.6 PhDs per annum has been attained just within 3 years during 2010-2012. This shows that research on IT-related areas was initiated during 1980s but it picked up from 1990s and now these areas are gaining due attention among scholars showing a shift of interest in research towards IT-related areas.

9.6 Distribution by Supervisors

According to this study, total 1754 PhDs have been awarded under the guidance of 348 single supervisors and 73 joint supervisors. Table 5 provides the listing of 16 top ranking supervisors (guided up to 16 PhDs) who account for guiding total 329 (18.76 %) PhDs. Among these 16 supervisors, Prof C.R. Karisiddappa and Prof P.S.G. Kumar have supervised highest number of scholars as single supervisors. However, 152 PhDs have been awarded under joint supervision also. In this list of 16 high performing supervisors, 4 supervisors in Table 6 (at S. No. 3, 5, 6, and 9) were also joint supervisors. On adding their number of joint guidance, their rank order has changed. Prof C.R. Karisiddappa maintains his first rank, even without having any PhD under joint supervision. Prof Raju[3] has very aptly compared him with master blaster, Sachin Tendulkar, the epitome of cricket.

Table 6. Ranking of high performing supervisors

S. No.	Supervisors	Individual supervision		Joint supervision	
		PhDs	Rank	PhDs	Rank
1.	C.R. Karisiddappa	36	1	Nil	1
2.	P.S.G. Kumar	33	2	Nil	3
3.	N.R. Satyanarayana	24	3	1	5
4.	B. Ramesh Babu	23	4	Nil	7
5.	S.L. Sangam	22	5	2	6
6.	J.N. Gautam	20	6	15	2
7.	K.C. Panda	20	6	Nil	8
8.	M. Nagarajan	19	7	Nil	9
9.	Hemant Sharma	18	8	10	4
10.	M. Suriya	17	9	Nil	10
11.	S.R. Gunjal	17	9	Nil	10
12.	M.R. Kumbhar	16	10	Nil	11
13.	M.T.M. Khan	16	10	Nil	11
14.	Manorama Srinath	16	10	Nil	11
15.	S. Ravi	16	10	Nil	11
16.	U.C. Sharma	16	10	Nil	11

9.7 Distribution by Languages

In Library Science, majority of the PhDs are submitted and awarded in English language. However, some universities allow submission of PhDs in other languages also such as Hindi, Marathi and Bengali languages. Decade-wise data in Table 7 reveals that out of total 1754 PhDs, 77 PhDs were submitted in these four languages. Of these 77 PhDs, highest percentage of PhDs are in Hindi (64.93 %); followed by Bengali/Gujarati (12.98 % each), and Marathis (9.09 %).

Table 7. Language-wise distribution of PhDs

S. No.	Period range	Bengali	Gujarati	Hindi	Marathi	Total
1.	Up to 1985	Nil	Nil	Nil	Nil	Nil
2.	1986-1990	Nil	Nil	2	1	3
3.	1991-1995	2	Nil	2	Nil	4
4.	1996-2000	Nil	Nil	8	Nil	8
5.	2001-2005	5	6	12	2	25
6.	2006-2010	2	3	16	2	23
7.	2011-2012	1	1	10	2	14
	Total	**10 (12.98 %)**	**10 (12.98 %)**	**50 (64.93 %)**	**7 (9.09 %)**	**77**

9.8 PhDs from other than LIS Departments

Initially very limited number of LIS departments were offering PhD programme because at that time in majority of the LIS departments, neither adequate infrastructure facilities nor the research supervisors were available. At that time, many universities provided the opportunity to library professionals who were willing to do PhD in Library Science to register themselves in other departments of their university. First such PhD was awarded to Manindra Nath Basu in 1950 from University of Calcutta on a topic Museum Method and the Process of Cleaning and Preservation. About 18 such university departments falling under Social Sciences, Humanities, Commerce & Management, etc., registered and facilitated award of total 33 PhDs in Library Science-related areas from their university. Among these 33 PhDs, maximum PhDs (9) were awarded from History Department, for other departments, the number varied from 1-2.

10. DISCUSSIONS

(i) Initially research activities in LIS were at low pace. As a result, only 25 PhDs were awarded during 1950-1982 (0.75 PhDs per annum) but during 1983-1992, research activities got sudden momentum showing continuously rising trend with the award of 196 PhDs (19.6 PhDs per annum). This rise was still higher during 1993-2002 when 485 PhDs were awarded (48.5 per annum) and highest in 2003-2012 with 1048 PhDs (104.8 per annum) just in three years.

(ii) It was observed that the research output of younger university departments was much higher than the older ones, as they had the privilege of starting research programme with good faculty strength and infrastructure facilities. Older departments suffered for a long time for infrastructure as well as adequacy of faculty strength to supervise. As a result, there has been longer gap for awarding the first PhD.

(iii) Regarding growth of PhDs in states, it has been found that Karnataka, Maharashtra, Madhya Pradesh, Tamil Nadu, and Andhra Pradesh together contribute to 53.13 % of total output. This picture is emerging because the number of universities is more in these states.

(iv) In recent times it has been observed that the registration for PhD is continuously increasing. Probably PhD being a higher and prestigious degree, majority of the professionals are getting interested in upgrading their profile to attain higher positions. Availability of financial assistance to young professionals by qualifying the Junior Research Fellowship exam of UGC provided further impetus to researchers. Above all, UGC's insistence on qualification of PhD for higher positions is also prompting the professionals to obtain PhD degree out of necessity. But this quantum jump has affected the quality of research as till recently in many universities, single supervisor was guiding large number of candidates even without having adequate research facilities. But now UGC has fixed the number of candidates to be guided by professor (8), associate professor (6) and assistant professor (4) for guiding the PhDs.

(v) It has been found that good numbers of PhDs awarded are surveys, which are oriented towards some phenomena of a particular library or group or type of libraries. Such surveys are taken up with some well-defined objectives to bring improvement in the existing situation of libraries. But it has been observed that usually

outcomes/suggestions of such studies are not communicated to respective libraries to bring improvement in the existing library conditions. This demands that there must be some kind of understanding between the scholar and the concerned library to implement all possible suggestions. Moreover, such results must be widely publicised through online forums, social networking or regular publications, etc., among the LIS professionals to enable them to take advantage of such findings.

(vi) From various titles of PhDs, it has been found very limited number of studies have been carried out on theoretical aspects to expand the theoretical base of LIS. In this regard, Varalakshmi[12] has also pointed out that there is a need to concentrate on theoretical studies to add new theories and concepts. She further stressed that unless the research is not directed towards theoretical base, future development of the profession will remain stagnated and chain us to the past.

(vii) IT environment has raised the market expectations by directly affecting the LIS schools as well as libraries to perform better. With this new dimension, it is interesting to find that during the last one decade or so, there is a clear shift of research interest among LIS professionals also from traditional areas to currently emerging areas like, 'Web Resources', 'Open Access Resources', 'E-learning Resources', 'Total Quality Management', 'Websites' and 'Search Engine', 'Design and Development of Models in Different areas', etc., which is a good sign of development in the field of LIS.

(viii) There is a continuous quantitative growth in doctoral research in LIS but the prevailing situation calls for serious attention by a national body (as suggested by National Knowledge Commission[13], India) for prescribing and implementing some minimum standards for maintaining the quality of research. Further, such a body should ensure that all the LIS departments of India must adhere to uniform standard practices which are presently varying from state to state.

11. CONCLUSIONS

The present study reveals that research in LIS was at low ebb up to late 1970s, but after that the number of PhDs has been continuously increasing decade by decade. Present decade has crossed all previous records as just within three years from 2010-2012, the number of PhDs has increased at the highest average rate of 144 PhDs/ year. Probably this increase is happening because majority of the departments are now having qualified research guides and are paying due attention on developing adequate infrastructure for research. Moreover, UGC has also laid down the condition of PhD as an essential qualification for higher positions both in libraries as well as in LIS departments. While it is appreciable to note that more and more young professionals are pursuing research, but there is an evident need to ensure that quality of research is not compromised. Moreover, while selecting the topic for research, due attention must be paid on interdisciplinary areas, having universal significance and potential to expand the boundaries of knowledge. Another important point which all scholars as well as supervisors must keep in mind is that the topics chosen for research must be of high standard as value of research lies in quality not in quantity. Perhaps there is a dire need to control this mushrooming growth in LIS research. For this, there must be some national body devoted to monitor and ensure the adherence to research standards. The Indian Institute of Library and Information Science as proposed by National Knowledge Commission (India) must take the responsibility to control, direct and prescribe standards for conduct and award of PhD degree but unfortunately till date neither this Institute has come up nor the proposal has been implemented.

REFERENCES

1. Abdul Kalam, A.P.J. Knowledge into power. *In* Beyond degrees: Finding success in higher education, edited by Ira Pande. Harper Collins, New Delhi, 2008.
2. Singh, S.P. Library and information science education in India: Issues and trends. *Malaysian J. Lib. Inf. Sci.*, 2003, **8**(2), 1-18.
3. Soma Raju, P. Research in library and information science. *PEARL: J. Lib. Inf. Sci.*, 2008, **2**(1), 3-9.
4. Krishan Kumar & Sharma, Jaideep. Library and information science education in India. Har-Anand Publications, New Delhi, 2009
5. Chatterjee, Amitabha; Rath, Prabhash Narayana & Poddar, Ashok. Research trends in library and information science in India. *Annals Lib. Sci. Doc.*, 1995, **42**(2), 54-60.
6. Association of India Universities. Universities Handbook, (Ed. 32). Association of Indian Universities, New Delhi, 2010.
7. *University News*. Theses of the Month, 1994-2012.

8. Indian Association of Special Libraries and Information Centres (1990- 2013), *Personalia*, *IASLIC Newsletter*, Kolkatta.
9. Shodhganga-INFLIBNET: Indian ETD Repository. http://shodhganga.inflibnet.ac.in/ (accessed during 12 January 2012-4 April 2013).
10. National Social Science Documentation Centre. NASSDOC OPAC, 2013. http://202.71.128.164:9080/icssr/html/SearchForm/ (accessed during 12 May 2012-19 July 2013).
11. Sears List of Subject Headings. Ed.20. H.W. Wilson, New York, 2010.
12. Varalakshmi, R.S.R. Library and information science research in India: Some observations and comments. *Library Science*, 1994, **31**, 91-110.
13. National Knowledge Commission. Report to the Nation, 2009. http://knowledgecommission.gov.in/reports/default.asp/ (accessed on 29 November 2012).
15. Sujatha, G. Doctoral dissertations in library and information science. *PEARL: J. Lib. Inf. Sci.*, 2007, **1**(3), 53-79.

About the Authors

Prof (Mrs) Shashi Prabha Singh obtained her MSc (Zoology), and PhD (LIS) from University of Delhi. She is actively involved in academic and research activities. She has authored 3 books and published 70 articles in national and international journals, edited books, conferences and newspapers, etc. She is on the Editorial Boards of various national and international journals. Her areas of specialisation include: Reference and information sources, knowledge organisation, research and technical libraries, research methods, etc.

Dr Parveen Babbar is working as Deputy Librarian, Jawaharlal Nehru University, Delhi. He had been awarded Gold Medal in MLIS from Delhi University. He obtained PhD (LIS) from University of Rajasthan. He has published about 30 papers in national and international journals and presented various papers in national and international conferences.

Annexure-I

University-wise distribution of PhDs

S. No.	Name of university	No. of PhDs (%)	Rank
1.	Allahabad University	1 (0.06 %)	44
2.	Hemawati Nandan Bahuguna University	1 (0.06 %)	44
3.	Jamia Millia Islamia	1 (0.06 %)	44
4.	Jawaharlal Nehru University	1 (0.06 %)	44
5.	University of Patna	1 (0.06 %)	44
6.	Birla Institute of Technology	2 (0.11 %)	43
7.	Gujarat University Ahmedabad	2 (0.11 %)	43
8.	Indian Institute of Technology, Delhi	2 (0.11 %)	43
9.	Kachchh University	2 (0.11 %)	43
10.	Lalith Narayan Mithila University	2 (0.11 %)	43
11.	Maharshi Dayanand University	2 (0.11 %)	43
12.	Saurashtra University	2 (0.11 %)	43
13.	Tilak Maharashtra Vidyapeeth	2 (0.11 %)	43
14.	Bhavnagar University	3 (0.17 %)	42
15.	Madurai Kamaraj University	3 (0.17 %)	42
16.	North Maharashtra University	3 (0.17 %)	42
17.	Ranchi University	3 (0.17 %)	42
18.	Anna University, Chennai	4 (0.23 %)	41
19.	Cochin University of Science & Technique	4 (0.23 %)	41
20.	Rabindra Bharati University	4 (0.23 %)	41
21.	Babasaheb Bhimrao Ambedkar University, Lucknow	5 (0.28 %)	40
22.	Mumbai University	5 (0.28 %)	40
23.	Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Satna	6 (0.34 %)	39
24.	Makhanlal Chaturvedi National University of Journalism and Mass Communication	6 (0.34 %)	39
25.	Tilka Manjhi Bhagalpur University	6 (0.34 %)	39
26.	M.S. University, Baroda	7 (0.40 %)	38
27.	Shivaji University, Kolhapur	7 (0.40 %)	38
28.	Swami Ramanand Teerth Marathwada University	7 (0.40 %)	38
29.	Mizoram University	8 (0.46 %)	37
30.	Sardar Patel University	9 (0.51 %)	36
31.	S.N.D.T. Women's University	9 (0.51 %)	36
32.	Mohan Lal Sukhadia University	10 (0.57 %)	35
33.	Pt Ravishankar University	10 (0.57 %)	35
34.	University of Jammu	10 (0.57 %)	35
35.	Bharathidasan University	11 (0.63 %)	34
36.	University of Kashmir	12 (0.68 %)	33
37.	Kuvempu University	13 (0.74 %)	32
38.	Punjabi University	13 (0.74 %)	32
39.	University of Lucknow	14 (0.80 %)	31
40.	Sant Gadge Baba Amravati University	15 (0.85 %)	30
41.	University of Kerala	15 (0.85 %)	30
42.	Aligarh Muslim University	16 (0.91 %)	29

43.	Kurukshetra University	17 (0.97 %)	28
44.	Sri Krishnadevaraya University	18 (1.02 %)	27
45.	Awadhesh Pratap Singh University	19 (1.08 %)	26
46.	Hemchandracharya North Gujarat University	19 (1.08 %)	26
47.	Manipur University	19 (1.08 %)	26
48.	North East Hill University	20 (1.13 %)	26
49.	Vidyasagar University	21 (1.19 %)	25
50.	Bangalore University	22 (1.25 %)	24
51.	Guru Ghasidas University	22 (1.25 %)	24
52.	Berhampur University	22 (1.31 %)	23
53.	Mangalore University	24 (1.37 %)	22
54.	University of Burdwan	26 (1.48 %)	21
55.	Dr B.R. Ambedkar University, Agra	27 (1.54 %)	20
56.	Osmania University	27 (1.54 %)	20
57.	University of Calcutta	27 (1.54 %)	20
58.	Guru Nanak Dev University	29 (1.65 %)	19
59.	Vikram University	29 (1.65 %)	19
60.	University of Calicut	30 (1.71 %)	18
61.	Bundelkhand University	31 (1.76 %)	17
62.	Sambalpur University	32 (1.82 %)	16
63.	Banaras Hindu University	33 (1.88 %)	15
64.	Dr Babasaheb Ambedkar Marathwada University, Aurangabad	33 (1.88 %)	15
65.	Dr Hari Singh Gour Vishwavidyalaya	33 (1.88 %)	15
66.	Gulbarga University	33 (1.88 %)	15
67.	Utkal University	34 (1.93 %)	14
68.	Gauhati University	38 (2.16 %)	13
69.	Jadhavpur University	43 (2.45 %)	12
70.	Sri Venkatswara University	44 (2.50 %)	11
71.	University of Mysore	51 (2.90 %)	10
72.	Rashtrasant Tukadoji Maharaj Nagpur University Nagpur	51 (2.90 %)	10
73.	University of Rajasthan	52 (2.96 %)	9
74.	Panjab University	54 (3.07 %)	8
75.	University of Delhi	58 (3.30 %)	7
76.	Andhra University	61 (3.47 %)	6
77.	University of Madras	63 (3.58 %)	5
78.	University of Pune	67 (3.81 %)	4
79.	Karnataka University	84 (4.78 %)	3
80.	Annamalai University	88 (5.01 %)	2
81.	Jiwaji University	97 (5.52 %)	1
Total		**1754**	