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Research Trends in Library and Information Science in India during 2016-2021: A Bibliometric Analysis

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ABSTRACT

Research trends in Library and Information Science Ph.D. level carried out in universities of India during the six years (2016-2021) have been analysed to find out the current Research trends and areas of research, growth pattern and productivity of universities along with broad and narrow subject areas in the discipline in Library and Information Science. The present study helps the Library Science research community current research scenario and direction of research in this era of information and communication technology.

KEYWORDS: *Research; LIS Education; Research Trends; Doctoral Theses; Bibliometric Analysis.*

INTRODUCTION

This study find out the current research trends in all India central & state government universities most of the prolific topic for research in field of library and information science have been analysed during period (2016-2021) to find out the growth pattern, productivity of the universities, types of works, research areas, and zonal status etc. The Present study is confined to Shodhganga: e- PhDs thesis and dissertations of LIs field, one of the leading PhDs theses on higher education in India, being published by overall Indian Universities, New Delhi on weekly basis, and each volume having fifty two issues. In order to recognize the most recent trend and pattern in the field of Library and Information Science in India, it was conceived to accept the bibliometric study on one of the leading and consistent journals on higher education in India and accordingly Shodhganga: PhDs e- theses and dissertation purpose and the present study remains confined for the period (2016-2021). Apart from assessing the research output of the PhDs e- theses during total six years the aim was also to analyse the authorship pattern, Year wise PhDs, Core subject wise research output, University wise research output, Zone wise, state wise performance PhDs e- thesis, and Guideship pattern.

Shodhganga

Shodhganga" was established in 2011 currently Thesis and dissertations from 544 universities of India total number of 359378 full-text thesis and the total number of 8657 synopses coined to E-PhDs theses and dissertations to all Indian universities. INFLIBNET Centre Online availability of electronic theses through centrally-maintained digital repositories not only ensures easy access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. As per the Regulation, the responsibility of hosting, maintaining, and making the digital repository of Indian Electronic Theses and Dissertations (called "Shodhganga"), accessible to all institutions and universities, is assigned to the INFLIBNET Centre.

LIS Education

In India Library and Information Science (LIS) education was started first time in 1911, in the erstwhile State of Baroda. LIS education India started in India Dr. S.R. Ranganathan during the period 1926-1931 at the Madras University Library in association with Madras Library Association. Madras University continued under the stewardship of Dr. S.R. Ranganathan till 1937 after Andhra University, Banaras Hindu University, Bombay University, Calcutta University and Delhi University introduced Post -Graduate Diploma Courses in Library Science in the year 1935, 1941, 1944, 1946 and 1948 respectively. LIS education NISCAIR in New Delhi started the library science education programmes. During 1947, altogether 27 universities were offering diploma courses in Library Science. In year 1957, for the first time in the country, Aligarh Muslim University started B.Lib.I.Sc. Course. The courses were offered at different levels such as Certificate, Diploma, Bachelor s, P.G. Diploma, Master s and research degree programmes i.e. M Phil and Ph. D under different modes (on regular/on campus or distance/off campus or sometimes both) and schemes (annual or semester). At present, formal research in LIS is conducted at 6 levels, viz. Diploma, BLib.I.Sc, MLISc, M.Phil, PhD. & D.Litt.

Current Trends

According to National Knowledge Commission (NKC) report (March 2007), "India growth of libraries & has contributed to the development of field of Library and information science such as new ere current trends Library and Information science they are so many tends new technologies digital library Altmetric study/ Bibliometric/ Scientometric/ ICT currently working for this subject research working Electronic Resource Management, RFID Implementation; ICT; Cloud Computing; Internet of Things; Big Data and Data Visualization; Agricultural Information System; Artificial Intelligence; Mobile-Based Library Services; Intelligent Library Search & Federated Search; Academic Integrity and Plagiarism; Library resource and services.

REVIEW OF LITERATURE

Pujar, S. M., & Tadasad, P. G. (2016) Conducted a study on "MOOCs – an opportunity for international collaboration in LIS education: A developing country's perspective" LIS education during period 2011-2018. The Purpose of this study, to evaluate the enrolment scenario of Library and Information Science education in India through distance mode. Findings of the study the maximum majority (67.78%) of students were enrolled in the Under Graduate programme (B.Lib.I.Sc.) Similarly, of the total students enrolled in LIS through distance mode during the period of study covers 51.36% female students and 48.63% male students. In terms of caste category of the total students enrolled in study, 10.12% belonged to the Scheduled Caste category, 4.7% to Scheduled Tribes category, and 28.77% Other Backward Class and 56.08% from general category, which include general category students as majority comparative to other category students.

Bhanu Partap (2015) Conducted a study were analysis of LIS current research trends at the Ph.D. level in field of Library and Information Science carried out in the universities of India during (2008-2013). In this study Research Methodology and data collected for this study from "Theses of the Month" of 'University News-A weekly journal of higher education' is consulted data analysis through MS excel, SPSS.

Finding of this study is Dr Babasaheb Ambedkar Marathwada University is maximum 21 research works done by 1st rank and subject wise Research Output is 30 research study based on information need and seeking behavior (User Study); 27 research output and minimum subject research output is related to library classification subject ; only one research performance and state wise research output Andhra Pradesh is most highest total number of 19 research output of this study and most of the study is single author 217; year wise research output highest performance of year 2010 total number of 54 research output.

Yadav, A.K.S., & Gohain, R.R. (2015) Carried out were analysis of under this title "Growth and Development of LIS Education in India" This study was analysis of LIS education growth and development during 1947-2014. The data were mainly drawn from various sources on Internet and by email contact with the author's acquaintances in several LIS schools of various universities. Finding of this study analysis of growth of LIS departments in Indian Universities has been discussed in clear vision of the statement. Presently there are 141 (100%) university departments offering LIS courses. While analyzing the above facet it could be revealed that, the growth is highest after 2000 i.e. 59 (41.84%), followed by the period 1981-1990 which constitute 22 (15.60%) and 18 (12.77%) both for 1961-1970, 1991-2000 respectively.

Singh, S. P., & Babbar, P. (2014). Conducted a study under tittle "Doctoral research in library and information science in India: Trends and issues". This study was completed its 100 years of LIS Education in India research has always been regarded as the most significant intellectual activity in the higher education system. Research methodology of the study data collection of this study by latest edition of universities Handbook published by association of Indian University. Finding of this study subject wise most of the highest emerging area is IT application and E- resources is library during (1980-2012) both are total number of 52 research output in this subject and Language wise

distribution of English language is however university conducted PhDs degree.

OBJECTIVES OF THE STUDY

1. To find out the current trends in Library & Information Science research in India.
2. To find out about which university given maximum output in Library & Information Science research work from 2016-2021.
3. To find out about the research productivity of supervisors wise PhD. Theses.
4. To find out about the zones wise, which produce the most output in LIS research in India
5. To find out the subject wise distribution of research works in LIS.
6. To determine the diversity and trends of research in the field of Library and Information Science.

METHODOLOGY

The main source of data collection is "Shodhganga E-Theses" during period 2016-2021 PhD Theses. Feature of the said which periodically lists out the doctoral theses accepted and awarded by different state and central government universities in India. Data were analysis tables for using MS Excel, SPSS application software.

SCOPE AND LIMITATIONS
The study covers research works in LIS at the PhD level only accepted for doctoral degree by Indian Universities. The study does not consider the research works in LIS registered in universities during period 2016 to 2021. It has considered only those titles of doctoral theses that appeared in the 'Shodhganga' awarded by different Universities in India. The scope of the study is future value for LIS current research trends.

DATA ANALYSIS

After collecting the data, data analysis is done in tabulation form. "Shodhganga" awarded different universities PhDs degree electronic thesis and dissertation of six years, i.e., 2016-2021.

Table 1: Research Output from High Performing Universities

Sr. No	University Name	Research Output	Ranking
1	Mysore University	39	1
2	Alagappa University	33	2
3	Babasaheb Bhimrao Ambedkar University	19	3
4	Dr. Babasaheb Ambedkar Marathwada University	19	3
5	Andhra University	18	4
6	Gauhati University	17	5
7	North-Eastern Hill University	15	6
8	Aligarh Muslim University	15	6
9	Banaras Hindu University	13	7
10	Kurukshetra University Kurukshetra	13	7
11	Jiwaji University	13	7
12	Punjabi University	12	8
13	Indira Gandhi National Open University	10	9
14	Assam University	10	9
15	Mizoram University	9	10
16	Maharshi Dayanand University Rohtak	9	10
17	Dr. Babasaheb Ambedkar Open University	9	10
18	Delhi University	8	11
19	Bangalore University	8	11
20	Pondicherry University	7	12
21	Guru Nanak Dev University	6	13
22	Manipur University Imphal	3	14
23	Bundelkhand University	3	14
24	Maharaja Sayajirao University of Baroda	1	15

Table 1 shows that during the total period of six years (2016-2021) of LIS research covered under this study, 309 PhD theses have been awarded by 24 central and state government universities. Find out Mysore University and Karnataka is the leading university with awarding of 39 PhDs is first rank found that followed by Alagappa University 2nd rank with awarding of 33PhDs each. Lowest ranking of the university is Maharaja Sayajirao University of Baroda found that total number of only one research output of this study.
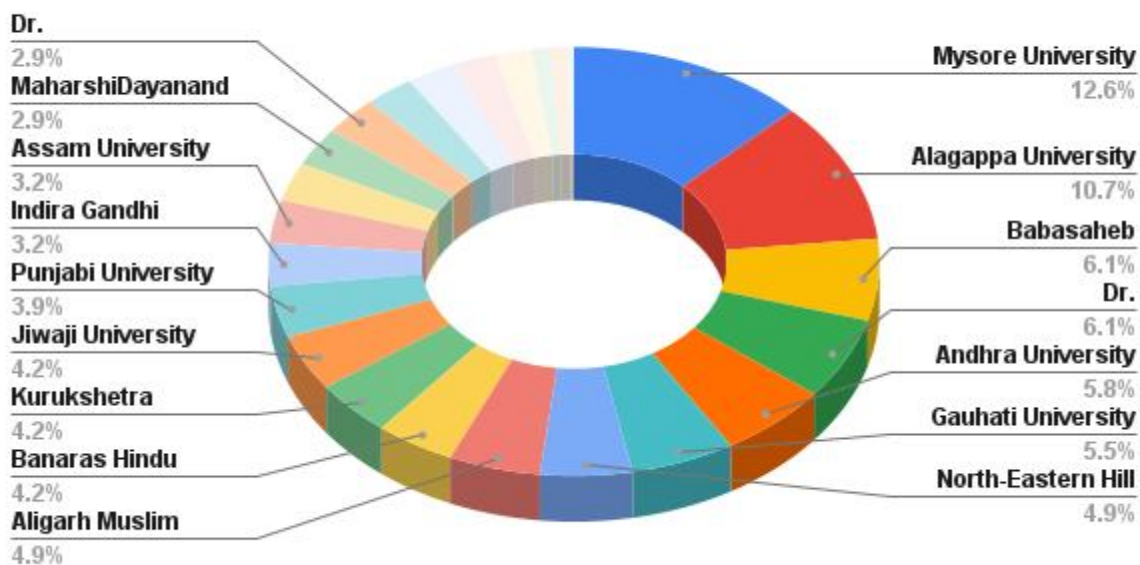
Research Output and Ranking

Figure 1: Research Output from High Performing Universities

Table 2: Subject wise Research output

Sr. No.	Categories of Subject Areas	Research Output	%	CF	CF%
1	ICT and Library automation	57	18.45	57	18.45
2	Bibliometric/Citation analysis/Scientometric/ Altmetric studies	52	16.83	109	35.28
3	Status surveys	44	14.24	153	49.51
4	Information sources and services (Use)	38	12.30	191	61.81
5	Information needs and seeking behaviour (User studies)	23	7.44	214	69.26
6	Information literacy	17	5.50	231	74.76
7	Academic libraries	13	4.21	244	78.96
8	Collection development	12	3.88	256	82.85
9	Library professionals/staff	9	2.91	265	85.76
10	Public libraries	7	2.27	272	88.03
11	Resources sharing	5	1.62	277	89.64
12	Special libraries	5	1.62	282	91.26
13	Knowledge sharing and Knowledge Management System	5	1.62	287	92.88
14	Library Consortia	4	1.29	291	94.17
15	IPR/ Copyright	3	0.97	294	95.15
16	LIS Education	2	0.65	296	95.79
17	Finance/ Financial management	2	0.65	298	96.44
18	Marketing of LIS services and products	2	0.65	300	97.09
19	Others/Miscellaneous	2	0.65	302	97.73

20	Total Quality Management	2	0.65	304	98.38
21	Physically challenged/ Assistive Technologies	2	0.65	306	99.03
22	Cataloguing	1	0.32	307	99.35
23	Agriculture Information Need and System	1	0.32	308	99.68
24	Gray Literature	1	0.32	309	100.0
	Total	**309**	**100**	**309**	**100**

Table 2 reveals that ICT and Library automation (57 PhDs), Bibliometric/Citation analysis/Scientometric/Altmetrics studies (52PhDs) and Status surveys (44 PhDs) are the main thrust areas of research during the span of study (2016-2021).
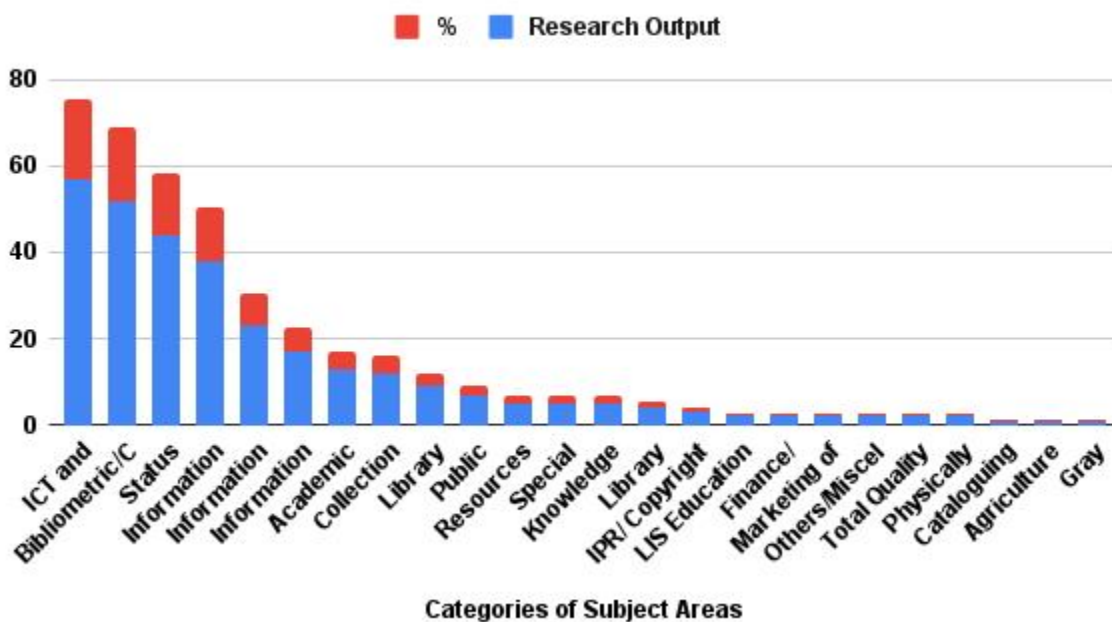

Figure 2: Subject wise Research output

Table 3: Zone-wise Research output

Sr. No	Zone	Research Output	%
1	North	108	34.95
2	South	105	33.98
3	East	54	17.48
4	West	29	9.39
5	Central	13	4.21
	Total	**309**	**100.00**

Table 3 highlights the total research output from particular zone of India (divided in five zones) during 2016-2021. It is found that maximum PhDs have been awarded by the universities situated in the north zone, i.e. 108, followed by south zone (105 PhDs), East zone (54 PhDs), West zone (29 PhDs) and Central zones (13 PhDs) respectively.
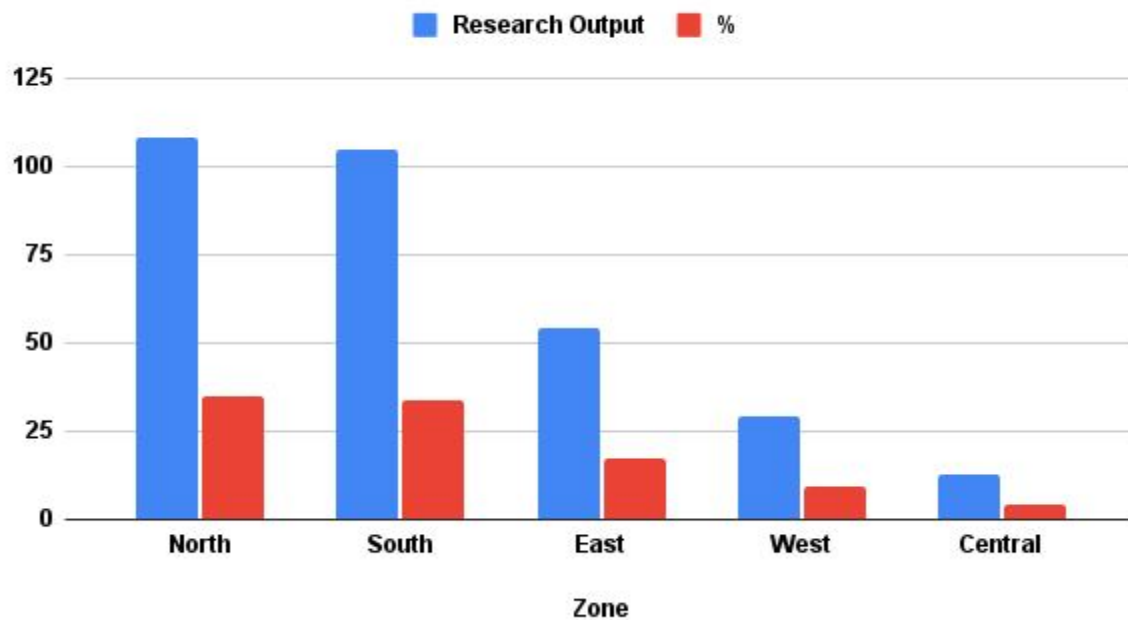
Figure 3: Zone-wise Research output

Table 4: Year Wise Research output

Sr. No.	Year	Research Output	%	CF	CF %
1	2016	56	18.12	56	18.12
2	2017	69	22.33	125	40.45
3	2018	58	18.77	183	59.22
4	2019	67	21.68	250	80.91
5	2020	33	10.68	283	91.59
6	2021	26	8.41	309	100.00
	Total	**309**	**100.00**	**309**	**100.00**

Table 4 revealed year-wise total research output from the different central and state universities in India which have LIS departments and offer the LIS research degree during 2016-2021. It has been found from the analysis of data that in 2017 highest numbers of PhDs were awarded, i.e. 69(22.33%) as compared to other years 56(18.12%) PhDs in 2016, 58(18.77%) PhDs in 2018, 67(21.68%) PhDs in 2019, 33(10.68%) PhDs in 2020 and 26(8.41%) PhDs in 2021, respectively.
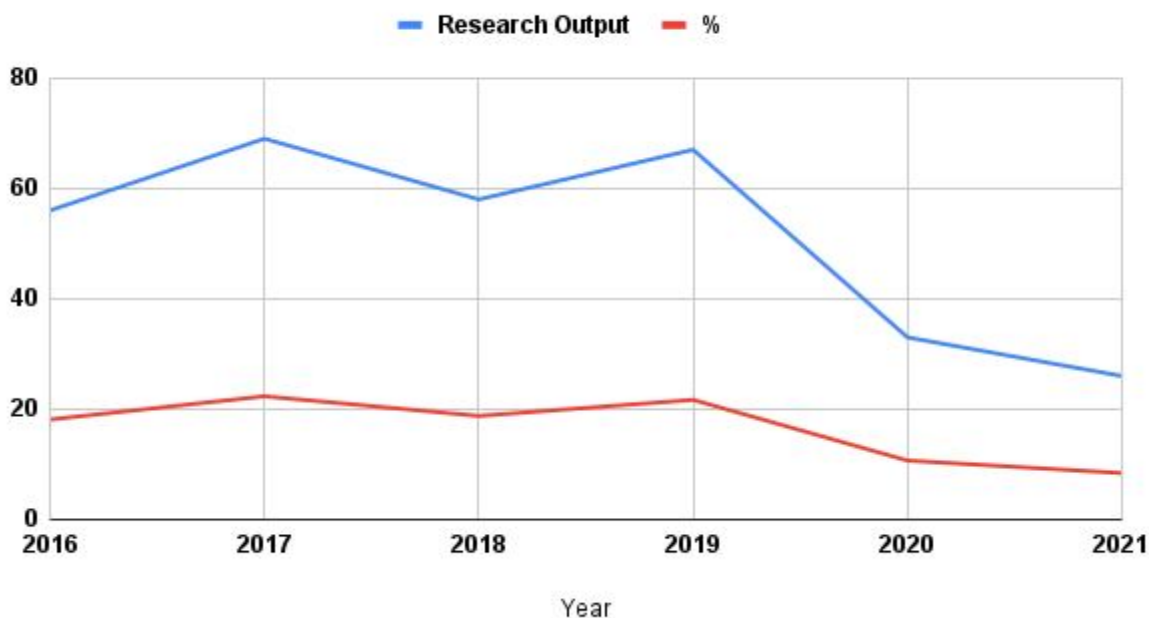
Year Wise Research output

Figure 4: Year Wise Research output

Table 5: State-wise Research output

Sr. No.	State	Research Output	%
1	Uttar Pradesh	50	16.18
2	Karnataka	47	15.21
3	Tamilnadu	40	12.94
4	Assam	27	8.74
5	Haryana	22	7.12
6	Maharashtra	19	6.15
7	Delhi	18	5.83
8	Andhra Pradesh	18	5.83
9	Panjab	18	5.83
10	Meghalaya	15	4.85
11	Madhya Pradesh	13	4.21
12	Gujarat	10	3.24
13	Mizoram	9	2.91
15	Manipur	3	0.97
	Total	**309**	**100.00**

Table 5 shows that state wise maximum research output during the period 2016-2021. It is shown in the above table that Uttar Pradesh is the leading state in regards to conducting and awarding highest number of research degrees, i.e. 40 PhDs during the span of six years of the current study. Very next to Uttar Pradesh in which 50 PhDs were awarded followed by Karnataka 47 PhDs, Tamilnadu 40 PhDs, Assam 27 PhDs, Haryana 22 PhDs, Maharashtra 19 PhDs, Delhi, Andhra Pradesh and Panjab equal 18 PhDs. Meghalaya 15 PhDs, Madhya Pradesh 13 PhDs, Gujarat 10 PhDs, Mizoram9 PhDs and last state is Manipur 3 PhDs. Highly performance in Uttar Pradesh state.
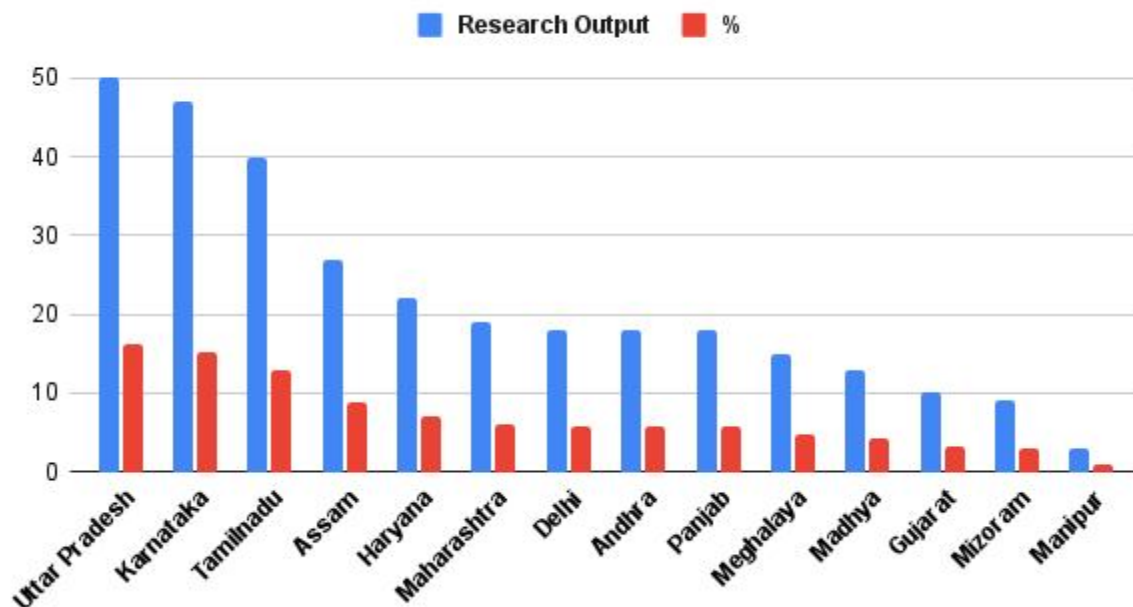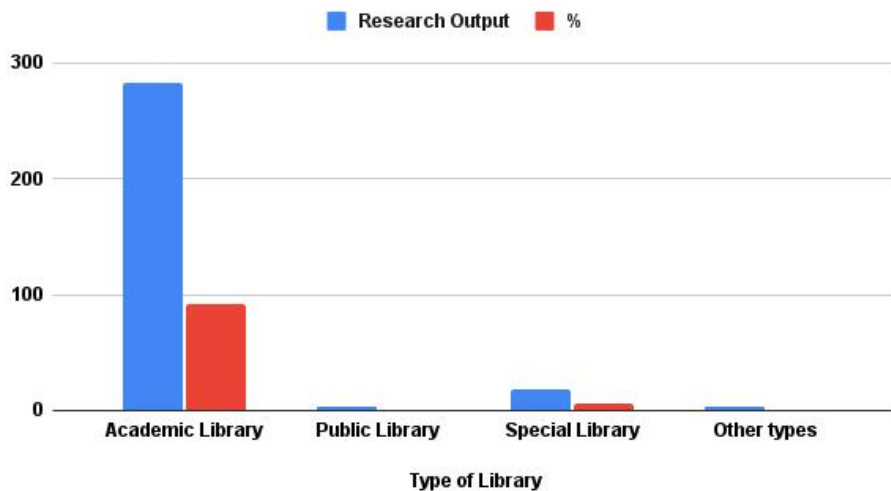
State-wise Research output

Figure 5: State-wise Research output

Table 6: Library Wise Research Output

Sr. No	Type of Library	Research Output	%
1	Academic Library	283	91.59
2	Public Library	4	1.29
3	Special Library	19	6.15
4	Other types	3	0.97
	Total	**309**	**100.00**

Table 6 shows the total research output on different aspects of different type of libraries. It is revealed from the above table that maximum research work, i.e. 283 (91.59%) PhDs was done on different areas of research which are representing academic libraries while 19 (6.15) PhDs was awarded on special libraries and 4 (1.29%) PhDs was awarded on public libraries during the span covering for study. Three PhDs has been awarded covering different aspects representing different types of libraries. It shows that academic libraries are the major concern for the research scholars in all over the India as compare to public and special libraries research works.

Figure 6: Library Wise Research Output

Table 7: Guideship Pattern of Research Works

S. No.	Guideship	Number of Research Works	%
1	Single	298	96.44
2	Joint	11	3.56
	Total	**309**	**100.00**

Table 7 reveals that how much research work has been supervised by the single guide and two guides. It is revealed from the above table that maximum number of 298(96.44%) PhDs has been supervised by single guide and only 11(3.56%) PhDs was supervised by two guides. Single guide is preferred by most of the research scholars for their research work.
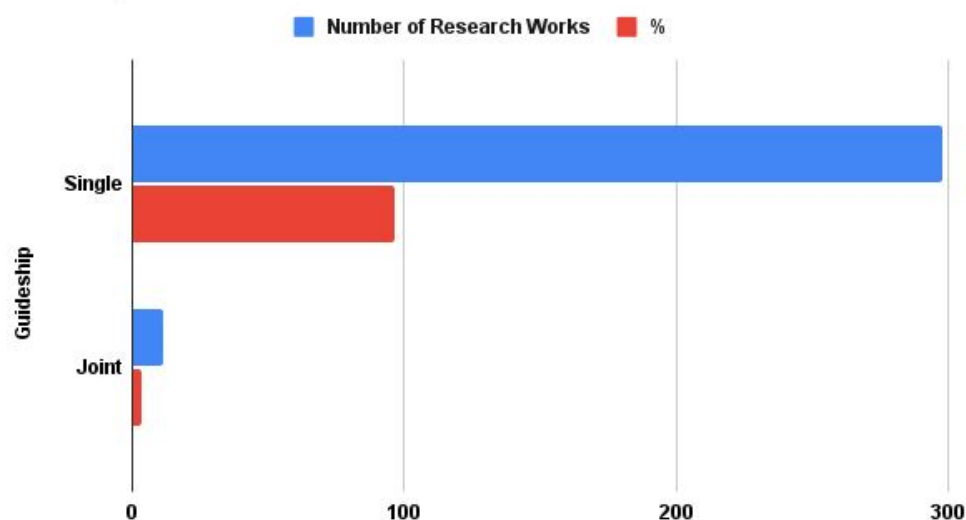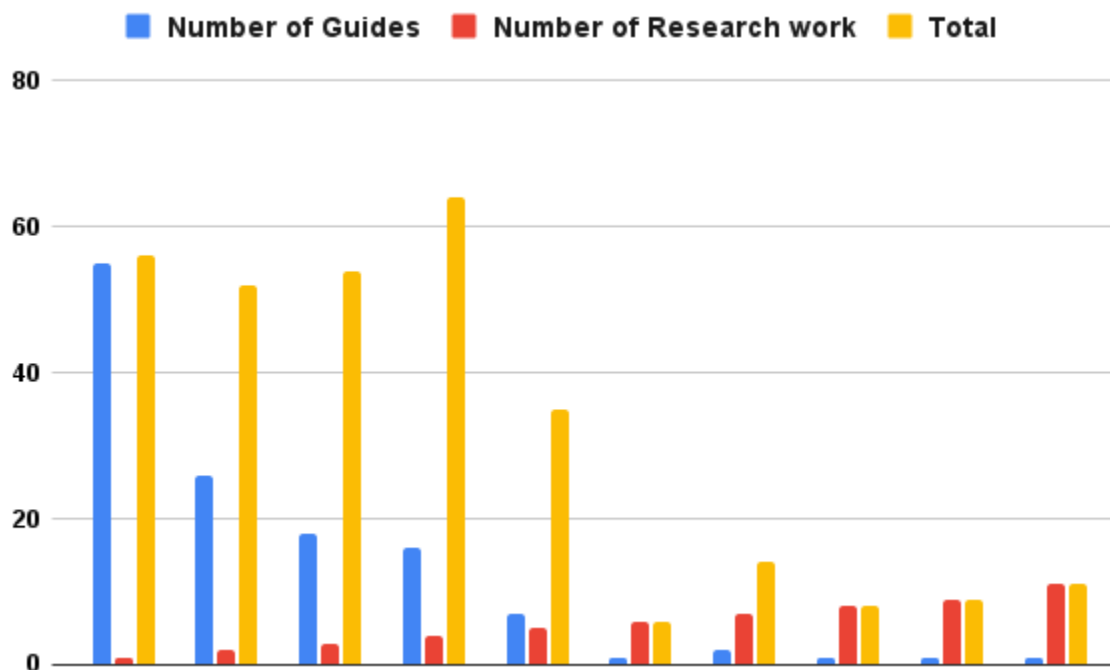

Figure 7: Guideship Pattern of Research Works

Table 8: Distribution of Research Supervisor Contributing Research Works

Sr. No	Number of Guides	Number of Research work	Total	%
1	55	1	56	18.12
2	26	2	52	16.83
3	18	3	54	17.48
4	16	4	64	20.71
5	7	5	35	11.33
6	1	6	6	1.94
7	2	7	14	4.53
8	1	8	8	2.59
9	1	9	9	2.91
10	1	11	11	3.56
	Total		**309**	**100.00**

Table 8 Find out the supervisors wise research work (PhDs) has been supervised by each and individual guides (research supervisor) is highlighted in the above table no. 8. Highest 55(18.12%) by one supervisors, 26(16.86%) It is found that two research supervisors and three supervisors guided 18(17.48 All over single supervisors is highest PhD awarded by during the span of study, during 2016-2021.


Figure 8: Distribution of Research Supervisor Contributing Research Works

Table 9: Top Ten Ranking of Guides

Sr. No.	Ranking of Guide	Name of the Guide	Number of PhD. Guided
1	1st	Dr. K. Rao. Somasekhara and Dr. V. Raju Dhana	11
2	2nd	Dr. S. Thanuskodi	9
3	3rd	Dr. P. Sarasvathy	8
4	4th	Dr. C.P Ramasesh	7
5	5th	Dr. R.K Choudhary	6
6	5th	Dr. M. Chandrashekara	6
8	6th	Dr. Moses Mark Naga	5
9	6th	Dr. ArchanaShukla	5
10	6th	Dr. Manoj Kumar Sinha,	5

Table 9 According to this study, total 309 PhDs have been awarded under the guidance of 298 single supervisors and 11 joint supervisors. Table 9 provides the listing of 12 top ranking supervisors out of total 309 PhDs total number of 11 highest supervisors by research work 1st rank is Dr. Dr. K. Rao. Somasekhara and Dr. V. Raju Dhana, been supervised highest number of research works.
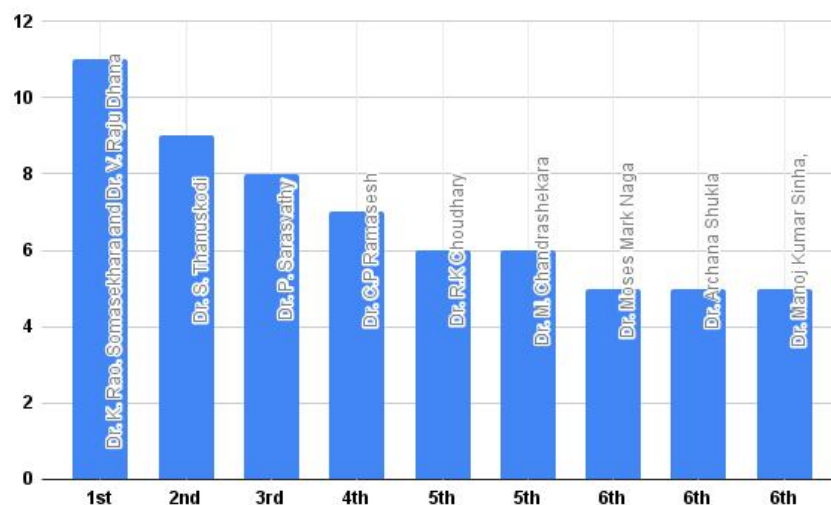
Figure 9: Top Ten Ranking of Guides

MAJOR FINDINGS

Some of the major findings are come out as follows:

- Mysore University, Karnataka, Alagappa University, Tamil Nadu and Babasaheb Bhimrao Ambedkar University, Lucknow and Dr. Babasaheb Ambedkar Marathwada University, Aurangabad are the leading universities with regards to awarding of PhDs among other universities in which research degree courses are offered in Library and Information Science.

- This study interesting to find that during 2016-2021 the span of study, the research interest among LIS professionals is mainly on current emerging areas, such as ICT application and library automation, bibliometric/scientometric/citation studies/Altmetric study, and less stress on traditional areas of research in library and information science.

- Zone wise found from maximum PhDs have been awarded by the universities situated in the north zone, total number of 108(34.95%), followed by south zone 105(33.98%) PhDs),

east zone 54(17.48%) PhDs) and West zone 29(9.39%) and Central zones 13(4.21%PhDs) respectively.

- It is found that in 2017highest numbers of PhDs, 69(22.33%) has been awarded as compare to other years covered in the study.
- The highest number of PhDs, i.e. 50(16.18%) has been awarded by the universities situated in Uttar Pradesh during the span of study (2016-2021) as compare to other states.
- Find out the total number of 283(91.59%) PhDs has been awarded on different aspects which are representing academic libraries followed by special libraries and public libraries.
- It is also found from the study that maximum number of PhDs (298 out of 309 PhDs) has been supervised by single guide and only 11 PhDs was supervised by two supervisors.
- Only two supervisors supervised 11(3.56%) and 9(2.91%) PhDs respectively, while Majority of research supervisors, i.e. 55(18.12%) supervised single PhD research scholars.
- Dr. K. Rao. Somasekhara and Dr. V. Raju Dhana total number of 11 PhDs are the leading supervisors for this study.

CONCLUSION

The present study on current research trends in library and information science in India during the period 2016-2021 reveals that 309 PhDs have been awarded by 24 universities situated in different states of India. It showed that number of PhDs during six years of study (2016-2021) has increased PhDs/ Year library science as compared to earlier years. Possibly, it may because of PhD is the highest and reputed qualification in the profession and off course University Grants Commission (UGC) But, there

is a need to standardization of higher education in Library and information science research growth and research degree programs in LIS departments of the universities in India, so that qualitative work would be come out rather than quantity of research work. It would help to the younger generation to attract in higher education in the field of LIS and motivate them to do something new for the benefit of the profession and professionals. These study findings, various library subject wise, year-wise, supervisors wise, university wise research output of current research trends in Library and Information science research works.

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