Building Metrics for Theses Repositories

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ABSTRACT: *The ShodhGangotri of INFLIBNET Centre is a repository of research synopses of Indian Universities. The present study applying webometric method analyzes the contents of the same available till 31st July, 2019. The analysis of the data throws light on many aspects on the research trends of Indian Universities. A total of 6574submitted synopses have been uploaded in the repository covering 34 different disciplines or subjects by 449 Departments of 70 Indian Universities. There is a wide range of differences in the Supervisor and Scholar ratio of the research while 1205 faculty members are guiding a single scholar, on the other hand a single supervisor is also found to guide 27 scholars. Guiding 16 to 27 scholars by a single supervisor is also observed. The result gives current research trends and its progress in various Indian Universities. Being the only Research in Progress Database of Indian Universities ShodhGangotri can play a crucial role to avoid duplication of research and to let the researchers know about the general trends of research in various fields of study in the country.*

1. Introduction

It has always been a tedious job to assess the research trends of a country due to lack of current and comprehensive tool providing all the aspects of the ongoing research activities. In this ICT-driven knowledge society, we are witnessing a dynamic change in the storage, retrieval and transfer of information and knowledge. In India, some initiatives are found to be taken up towards making availability of synopses of various on-going research programmes through building repositories. The initiatives of Information and Library Network (INFLIBNET) Centre are a commendable one in this regard. Its repository "ShodhGangotri" acts as a platform to provide the required information on the research in progress across the country. Accessing the available data using webometric tools, analysis can be done to understand the trends of research in various fields of knowledge in the country. ShodhGangotri is a repository where electronic version of approved synopses submitted by research scholars to the universities for registering themselves for the Ph.D. programme is made available. The repository as such can reveal the trends & directions of research being conducted in Indian universities. It also, on the other hand,

would avoid duplication of research programmes. The present paper is an attempt to assess the trends of research in Indian Universities through this electronic repository of the synopses.

2. Some Past Studies

In recent past some scholars have given thrust on ShodhGangotri, INFLIBNET and Research in Progress as the following brief review shows. On certain aspects of ShodhGangotri, Subhash(2019), Rane(2013) and Sengupta(2013) studied about the current status and contributions made by the Universities in India to ShodhGangotri and the on-going research submitted to ShodhGangotri. The studies agreed that ShodhGangotri plays an important role in avoiding duplication of research work as it provides information about proposed research work submitted in various Universities and educational institutions across the country. In the area of Research in Progress, Fu-Min et.al.(2018), Yina(2018), Zhu, Kong, Hong,, Li and He(2014) and Goodall and Pattern(2011) reviewed REEs, describing the technical and scientific background of down hole control of engineering, analyzing the global scientific outputs of ontology research and investigated on library uses at Huddersfield University. These studies give a brief idea on the research in progress and its trends in different field or subject around the globe. Studying the trends of research productivity, Gogoi, Borua and Kalita (2016) analyzed the bibliographic records of 533 items retrieved from the Web of Science published from 2006 to 2015. It shows increasing publication trend of the Dibrugarh University. On the other hand, Sheeja(2019), Panda, Arora and Rai(2016) and Rose(2013) described about INFLIBNET that provides open access to research theses and synopses of various Indian Universities. They also described the functionalities of J-Gate plus services. It is concluded by stating that INFLIBNET plays a major role in promoting scholarly communication among the academicians and researchers in India.

3. Research Trends in India and ShodhGangotri

Analyzing the research synopsis, we can understand the trends of research in a university/institute. For a particular country, if we have a repository of such synopses we can easily familiar with the same. List or Directory of Research in progress are also valuable tools to understand the same. Presence of synopsis of the research work is an additional advantage to the research in progress database. It helps to understand the researcher about a particular topic or area of interest. Recently the INFLIBNET Centre (http://www.INFLIBNET.ac.in) has hosted synopses of researches submitted to the universities in India by research scholars for registering themselves for the Ph.D. programme by launching its repository ShodhGangotri. Synopsis in the repository is expected to be mapped to full text electronic thesis in the "ShodhGanga" repository of the Centre (http://www.Shodhgangotri.inflibnet.ac.in).As such, once the full-text thesis is submitted for a synopsis, a link to the full-text theses would be provided from ShodhGangotri to "ShodhGanga". Through ShodhGangotri the on-going research trends can be easily traced form the web portal. It also helps to avoid duplication of research work. As on 31st July 2019, a total of 6574 research synopses have been uploaded on the ShodhGangotri covering 34 subjects. The Universities contributing to the ShodhGangotri are scattered all over the country. Advance Search facility is available in ShodhGangotri, which means anyone looking for a synopsis can search their desired synopsis by keywords, title of the synopsis, guide or supervisors' name, or the researchers' name. The synopses are grouped under their respective Universities and departments. The portal has each University's name & its departments, colleges, centers or schools. The arrangement makes it possible for the research Scholars from the University to deposit synopsis in the respective departments. The entire synopses submitted to the ShodhGangotri are available in open access to the academic community world-wide. There are 867 Universities which are approved by the UGC, comprising of 389 State Universities, 124 Deemed Universities, 47 Central Government & the rest 307 being Private Universities. But only 70 Indian Universities have submitted their research synopses in the ShodhGangotri so far. In the days to come the number of synopsis is expected to increase progressively.

4. Objectives of the Study

The objectives of the present study are:
• To survey and understand the Indian Universities/institutions contributing research synopses in ShodhGangotri;
• To know the quantum of research in progress of the country through the repository;
• To assess the University-wise contribution of synopsis in India;
• To analyse the guide-ship pattern of research as per researcher and supervisos;
• To ascertain the growth of synopses over the years.

5. Methodology

The following methods & procedures have been used in the study:

• Prominent search engine like Google chrome has been used to collect data for the study;

• The study has been conducted by browsing the contents of the website ShodhGangotri;

• Simple tables have been used to present the analyzed data for empirical interpretation;

• Literature survey method has been employed for the review of the past studies. Some selected literature have been scanned &reviewed; and

• Simple statistical techniques have been used for analyzing the data.

6. Analysis and Interpretation

6.1. The Research Synopses
The available research synopses as on 31st July, 2019 under ShodhGangotri is accounted to be 6574 as the following table 1 shows.

Number of universities contributing synopsis	70
Number of departments under the universities	481
Number of departments contributing synopsis	449
Number of synopsis contributed	6574
Number of discipline/ subject	34

Table 1. Research Synopses as on 31st July, 2019

Of the about 867 universities in the country only 70 Indian universities contributed a total of 6574 research synopses in the repository covering 34 different subjects. Again, of the 481 total departments under these Universities, only 449 have contributed synopses in the said repository.

6.2. Synopses by Subjects
The subject-wise distribution of synopses is shown intable-2 below.

Sl. No.	Subject	No. of Synopsis	Universities Contributing the Subject	Rank	Percentage(%)
1	Commerce &Management	1094	26	1	16.64
2	Education	667	16	2	10.14
3	Applied & Physical Science	636	6	3	9.67
4	Medicine & Pharmacy	484	14	4	7.36
5	Literature & Language Studies	460	10	5	6.99
6	Fine Arts	430	5	6	6.67
7	Computer Science & IT	386	17	7	5.87

8	Engineering & Architecture	353	20	8	5.36
9	Biological Science	334	28	9	5.08
10	Chemical Science	251	20	10	3.81
11	Mathematics & Statistics	202	15	11	3.07
12	English	154	10	12	2.39
13	Humanities & Social Science	123	5	13	1.87
14	Economics	122	11	14	1.85
15	Physics	100	20	15	1.52
16	Psychology	88	9	16	1.36
17	Law	85	9	17	1.29
18	Hindi	73	7	18	1.13
19	Physical Education	62	6	19	0.94
20	Geography	56	3	20	0.87
21	Library & Information Science	49	12	21	0.75
22	Political Science	56	7	22	0.85
23	Business Management	40	5	23	0.62
24	Music & Dance	40	3	24	0.62
25	Sociology	37	6	25	0.57
26	Philosophy	29	4	26	0.45
27	Environmental Science	27	7	27	0.42
28	History	35	6	28	0.53
29	Mass Communication	26	8	29	0.4
30	Social Work	25	6	30	0.39
31	Agriculture	21	2	31	0.33
32	Anthropology	13	3	32	0.2
33	Women Studies	9	3	33	0.14
34	Earth Science/Geology	7	5	34	0.11
	Total	6574			100

Table 2. Distribution of the synopses

As the Table 2 shows, Commerce and Management ranks the highest with a total of 1094 synopses with 16.64% followed by Education (10.14%), Applied & Physical Science (9.67%) and so on. The lowest is Earth Science as it contributes only 7 synopses covering only 0.11% of the total. On the other hand, Biological Science is the subject which is offered by maximum number of Universities followed by the subject Commerce & Management. The subject Agriculture is found to be least offered by Universities i.e. by only 2 Universities of the country.

6.3. Guide-Ship Pattern

Differences are observed concerning the supervisor and scholar ratio pertaining to the guide ship pattern of research in Indian Universities. As the table 3 shows, a total 6574 scholars are found to be guided by 2800 supervisors.

Sl. No.	Supervisor	No. of Scholars Assigned	No. of Research Work
1	1205	1	1205
2	709	2	1418
3	384	3	1152
4	234	4	936
5	103	5	515
6	58	6	348
7	28	7	196
8	27	8	216
9	19	9	171
10	11	10	110
11	8	11	88
12	3	12	36
13	3	13	39
14	3	14	42
15	1	16	16
16	1	18	18
17	1	19	19
18	1	22	22
19	1	27	27
Total	2800		6574

Table 3. Guide-Ship Pattern

While 1205 supervisors are guiding only a single scholar, a single supervisor is also found to guide 27 scholars at the maximum. Further it is also found that 16 to 27 scholars are found to be guided by a single supervisor which is very remarkable.

6.4. Year-wise Distribution of Synopses

There are synopses uploaded in the repository which were prepared in 1984 for which thesis might have been awarded. The following table-4 and figure 2 indicates the year of preparation of the synopses submitted for research programme in different university departments and later submitted for uploading to the repository. The single synopsis found in the ShodhGangotri against the period "Up to 2000" is found to be prepared in the year 1984. From the table, it is also understood that the period 2011-2015 is the most productive year during which 63.64% of the synopses were submitted to the Indian Universities followed by the period 2016-2019 with 24.87%. So till the year 2005, the number of synopses submitted for research programmes is very minimal.

Year of the synopsis	Number of Research Synopsis	Percentage
Upto 2000	1	0.02
2001-2005	3	0.05
2006-2010	751	11.42
2011-2015	4184	63.64
2016-2019	1635	24.87
Total	6574	100

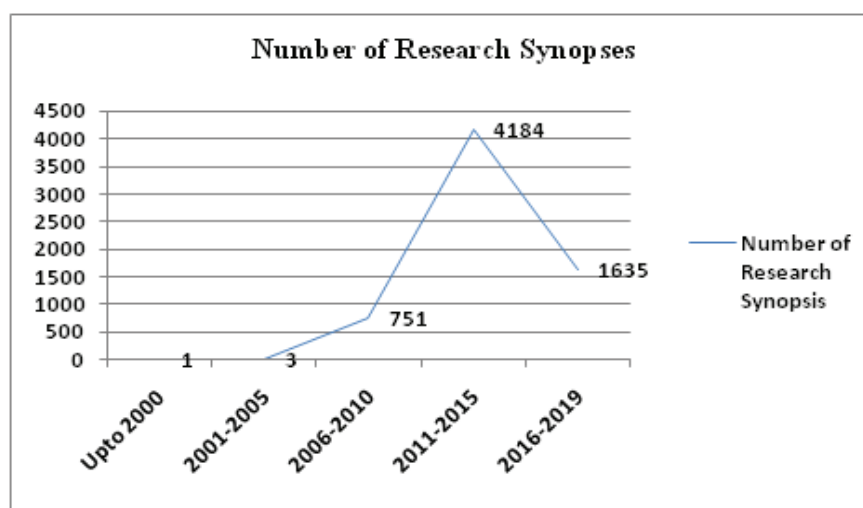Table 4. Year-Wise Distribution of Research Synopses

Figure 1. Year-Wise distribution of research synopses

7. Findings and Discussion

The ShodhGangotri of INFLIBNET serves as an important repository of research synopses of various doctoral research programmes conducted in Indian Universities which contains 6574 such synopses. The year of the synopses ranges from 1984 to 2019 of 70 Universities of the country contributed by 449 out of 481 departments in 34 disciplines of these Universities. The top 5 subjects in which maximum synopses contributed in the repository are: Commerce and Management; Education; Applied and Physical Science; Medicine and Pharmacy; and Literature and Language Studies. Concerning the guide ship of the research a total of 6573 scholars are found to be guided by 2800 supervisors. It is also observed that in some exceptional cases a supervisor is found to be assigned with 16 to 27 scholars. However, majority of the supervisors, 1205 in numbers are guiding only one scholar. Research synopses accepted by Indian Universities during 2011-2015 are highest (63.64%) in number submitted to the Repository followed by the year 2016-2019(24.87%). Such synopses of the period till 2000 are very few (0.02%) for which degree might have been awarded.

8. Conclusion

The present status of the ShodhGangotri, a Repository of Indian Research in Progress is satisfactory. Although, lot of research work is presently going on in several Universities, they don't get a global exposure in the E-thesis repositories due to lack of proper system and stringent rules and regulations for maintaining their records. ShodhGangotri, being the only Research in Progress Database of Indian Universities must get a nationwide submission of synopsis of on-going doctoral

research work in order to avoid duplication of research and to let the researchers know about the trends of research. It will help to understand the emerging trends of Indian Research without which scholars & guides may work on similar projects across the universities. The fear of plagiarism might be one of the reasons due to which universities and institutions do not submit their synopsis. But, keeping in mind the benefits of such databases and with the help of software to avoid plagiarism, these hindrances can be tackled. The increase in the number of submission of synopsis in ShodhGangotri is possible only when all universities, affiliated colleges and institutions abide by the UGC Circulars issued from time to time. As the number of synopsis and contributing Universities would be gradually increasing, the repository will serve its purpose fully in the near future showing the detailed trends and progress of research in various fields of studies in the country.

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