

**DOCTORAL THESES AWARDED AT BABASAHEB  
BHIMRAO AMBEDKAR UNIVERSITY, LUCKNOW: A  
BIBLIOMETRIC STUDY**

**ABSTRACT**

Submitted for the Award of the Degree of

**DOCTOR OF PHILOSOPHY**

IN

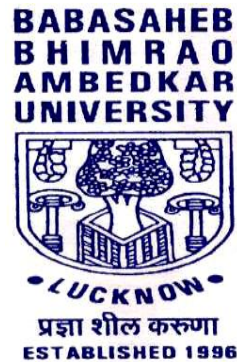
**LIBRARY AND INFORMATION SCIENCE**

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**Enrolment No. 996/14**

**Year- 2018**

## **ABSTRACT**

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A Bibliometric Study is of benefit for every nation. This is due to the fact that the wealth and economic progress of the nation depends on the extent of research carried out in that country. The emergence of new subjects due to interdisciplinary research, fission and fusion of subjects has compounded the problem of acquiring the relevant literature. As a result, the number and the quality of research have to be done carefully, keeping in view of its importance.

Bibliometric is one such technique which has the realistic applications in ensuring the coverage and quality of books, journals and other reading materials. Bibliometric study assists the subject specialists, researchers, information officers, and scientists to evaluate the existing study of theses, library collection and suggest some interventions which are helpful in future research work and collection for researchers/user. Keeping in view of the relevance of bibliometric technique the present study on ‘doctoral theses awarded at BBAU Lucknow: A bibliometric study’ has been taken as research topic.

The present study includes all the doctoral theses i.e. 195 awarded during the period from 1996 till June 2015 in BBAU in order to find out year-wise productivity of theses, Supervisor-wise analysis, gender-wise contribution and discipline-wise numbers of doctoral theses /degrees awarded.

### **OBJECTIVES OF THE STUDY**

The following are the research objectives:

- To know the chronological growth of Theses awarded at Babasaheb Bhimrao Ambedkar University, Lucknow.
- To find out the Department-wise doctoral Theses awarded.
- To identify faculty (Supervisor) wise numbers of doctoral Theses/ degrees awarded.
- To find out the most common discipline in topics of Theses.

- To find out the percentage of male and female award of doctoral Theses.

## **RESEARCH METHODOLOGY**

The present study is a combination of theoretical and empirical evaluation. For this study data is collected from 8 schools which consist of 22 departments till the period June 2015 which is before the restructuring of schools and department policy of the University. The University underwent restructuring in the year 2017. After restructuring some departments have been transferred from their previous school to the restructured school. It is collected, observed and each of the 195 theses are analysed manually and with the help of excel sheet the collected data has been presented. An analysis has been done by applying various statistical tools, techniques and bibliometric laws in various fields i.e. Sociology, Economics, History, Political Science, Mass Communication and Journalism, Library and Information Science, Information Science, Computer Science, Human Development and Family Studies, Environmental Science, Environmental Microbiology, Applied Animal Science, Applied Plant Science, Law, Human Rights.

To make an extensive view of schools with its respective department a tabular form of data of school wise departments has been given below.

### **Schools wise Departments**

For the present research, bibliometric analysis of Doctoral theses awarded in various Departments under science and social science disciplines of Babasaheb Bhimrao Ambedkar University, Lucknow.

**Table : Schools-wise Departments**

<b>Sl. No.</b>	<b>Name of School</b>	<b>Department</b>
1.	School for Ambedkar Studies	Department of Economics
		Department of Sociology
		Department of History
		Department of Political Science
2.	School for Legal Studies	Department of Human Rights
		Department of Law
3.	School for Environmental Science	Department of Environmental Science

		Department of Environmental Microbiology
4.	School for Information Science and Technology	Department of Computer Science
		Department of Information Technology
		Department of Library and Information Science
		Department of Mass Communication and Journalism
5.	School for Bio Science and Bio Technology	Department of Applied Plant Science
		Department of Applied Animal Science
		Department of Biotechnology
		Department of Pharmaceuticals
6.	School of Home Science	Department of Human Development and Family Studies
7.	School for Physical Sciences	Department of Applied Mathematics
		Department of Applied Chemistry
		Department of Applied Statistics
		Department of Applied Physics
8.	School for Management Studies	Department of Rural Management

Apart from this, extensive literature survey on bibliometric framework of research has been done.

### **FINDINGS, CONCLUSION AND SUGGESTIONS**

Findings of the present study on the basis of analysis and interpretation of the data of research work.

#### **Finding of the study**

##### **Bibliometric analysis of doctoral theses (main findings)**

1. Table and figure 5.19 indicate that the highest contribution of male and female scholars were 84 and 55 respectively during 2011-2015. Next contribution of male and female were 41 and 13 respectively during 2006-2010, only 2 Theses were contributed by male scholars during 2001-2005 and no contribution was recorded during 1996-2000 as the research was on its progress stage in the University. Percentage of Male contribution shows 65.13 while the percentage of female contribution shows 34.87.

2. Table and figure 5.20 indicate that the highest number of theses i.e 139 (71.28%) were awarded during 2011-2015, followed by the years 2006-2010 in this duration total 54 (27.69%) theses were awarded. It also indicates that no thesis was awarded during 1996-2000 as the University on its growing stage and had just introduced research work in some departments. The study (table 5.29.1) shows that the Mean value increases per five years. The mean value of Doctoral theses awarded during 2011-15 is maximum i.e. 27.40.
3. Table and figure 5.21 indicate that out of 195 theses, the School for Biosciences and Biotechnology has awarded maximum number of doctoral degrees i.e. 62 (31.79%), followed by the School for Environmental Science i.e. 49 (25.13%), School for Information Science and Technology has awarded doctoral degrees i.e. 41 (21.03%); School for Legal Studies i.e. 20 (10.26%); School for Ambedkar Studies i.e. 19 (9.74%); School for Home Sciences and School for Physical Sciences respectively awarded the least number of doctoral degrees i.e. 2 (1.03%). However, the School for Management Studies has not awarded any doctoral degrees during the study period as the 'SMS' introduced in the University in the year 2010.
4. Study depict that out of the 195 theses, maximum number of Doctoral theses i.e. 127 (65.13%) were awarded to male scholars under different schools whereas 68 (34.87%) Doctoral theses were awarded to female scholars. The percentages of the female were almost half of the male students. The table also shows that maximum number of Doctoral degrees were awarded to the Male Scholars i.e. 40 as compared to female scholars i.e. 22 by the School for Bioscience and Biotechnology followed by male and female i.e. 31 and 10 respectively by the School for Information Science and Technology. 28 Doctoral degrees to male scholars whereas 21 doctoral degrees to female scholars were awarded by the School for Environmental Sciences. Doctoral degrees to males and females were

15 and 5 respectively by the School for Legal Studies. 11 to male and 8 to female scholars degrees awarded by the School for Ambedkar Studies, only 2 Doctoral degrees awarded to female scholars by the School for Home sciences and 2 Doctoral degrees awarded to male scholars by the School for Physical Sciences.

5. Study shows that the highest number of theses were awarded in 2014 i.e. 56 (28.72%) followed by 2015 i.e. 42 (21.54%), whereas the least number of Theses were submitted and awarded during the years 2005 and 2006. During the years 2007, 2008 and 2009 respectively awarded theses i.e. 8 (4.10%), 10 (5.13%) and 18 (9.23%). The output of Doctoral theses during the year 2013 was 21 (10.77%).
6. Study shows that out of 195, 186 (95%) Doctoral theses were awarded in English language and only 9 (5%) Doctoral theses were awarded in Hindi language, which indicates that more scholars are taking interest in English language for their research work in BBAU rather than Hindi language.

Above study, also indicate that 'research work is dominated by English language'

7. Study indicates that the maximum number i.e.49 theses were awarded by the Department of Environmental Science followed by the Department of Applied Animal Science with 23 theses, next Department of Applied Plant Science with 21 theses. The Department of Biotechnology awarded 18 theses whereas the Department of Computer Science awarded 17 Theses. The Department of Human Rights awarded 15 theses.
8. The maximum number of research is carried out in the discipline Microorganisms, fungi & algae i.e. 20 (27.78%), followed by 'Computer programming, programs & data' i.e. 14 (19.44%); in discipline 'Geology, hydrology & meteorology' 13 (18.06%) research is carried out. Next is 'Biochemistry' discipline with 12.50%. Furthermore, Doctoral research is carried out in 'Plants noted for characteristics & flowers' and 'Garden crops (Horticulture)' i.e. 8.69% in each discipline. The high percentage of discipline also shows that research scholars are taking more interest for selection of research areas for their research in discipline 'Microorganisms, fungi & algae'; Computer programming, programs & data; Geology, hydrology & meteorology and Biochemistry.

## **Findings (Department-wise):**

### **Bibliometric study of doctoral thesis in the School for Ambedkar Studies (SAS)**

#### **Department of Economics**

- The highest numbers of theses i.e. 03 in Economics were awarded in 2015 which shows the highest percentage of research output in Department of Economics i.e. 42.86%.
- Under the guidance of Professor N.M.P. Verma, 06 Doctoral theses have been awarded which is 86% of total theses awarded in the department of Economics.
- Research output of Doctoral theses of male were 3(42.86%) while female were 4 (57.14%) in the Department of Economics.
- Larger portion of research is carried out in 'Economics Finance' i.e. 57%.

#### **Department of History**

The highest numbers of theses i.e. 03 were awarded in 2008, which shows the highest percentage of research output in the department of History i.e. 42.86%.

- Under the guidance of Dr. L. Karunyakar, (71.43%) Doctoral theses have been awarded in the Department of History.
- Male contributed in research output of Doctoral theses in the department of History were 4 (57.14%) while female contributed 3 (42.86%).
- larger portion of research is carried out in the discipline 'Kind of person's treatments' i.e. 57.14%.

#### **Department of Sociology**

- 66.67% of doctoral these awarded in 2015.
- Dr. Bibhuti Bhusan Malik supervised all 3 Doctoral theses awarded in the Department of Sociology.
- Male percentage of research output of Doctoral theses is 100%, while female is 0%.
- Maximum research is carried out in the discipline 'Social welfare problems & services' i.e. (66.67%).

### **Department of Political Science**

2 Doctoral theses awarded in the Department of Political Science during the year 2015.

- Dr. Sartik Bagh and Dr. Ripu Sudan Singh, supervised 50% each Doctoral theses in the Department of Political Science.
- Male percentage of research output of Doctoral theses is 100% while female is 0%, in the Department of Political Science.
- Research is carried out in the discipline 'Relation of State to organized groups' in the Department of Political Science.

### **Bibliometric study of doctoral thesis in the School for Legal Studies**

#### **Department of Human Rights**

- Highest research output in the Department of Human Rights in 2015 were 5 (33.33%).
- Maximum number of Doctoral theses i.e. 47.67% have been supervised by Dr. Priti Sexena.
- Male research scholars contributed 12 (80%) of Doctoral theses.
- Larger portion of research is carried out in discipline 'Labour, social, education & cultural law' i.e. 8 (53.33%) theses in which research is carried out.

#### **Department of Law**

- The highest numbers of theses i.e. 4 were awarded in 2014 which shows the highest percentage of research output i.e. 80%.
- Professor Sudarshan Verma supervised 3 Doctoral theses i.e. 60% of total theses awarded in the department of Law.
- Male contributed 03 i.e. 60% research output while females contributed only 02 i.e. 40% of total research output in the Department of Law.
- Larger portion of research is carried out in the discipline 'Constitutional & Administrative law' i.e. 60% .

## **Bibliometric study of doctoral thesis in the School for Environmental Science**

### **Department of Environmental Science (DES)**

- The highest numbers of theses in the Department of Environmental Science were awarded in 2014 i.e. 10 which shows the highest percentage of research output i.e. 20.41 %.
- Professor D.P. Singh and Professor R.P. Singh, a well known persons in the field of Environmental Science supervised 14- 14 each Doctoral theses, i.e. 28.57 %.
- Male percentage of research output of Doctoral theses were 28 i.e. 57.14% while female contributed 21 i.e. 42.86%.
- Larger portion of research is carried out in the discipline Microorganisms, fungi & algae i.e. 28.57% and its DDC No. is 579.

## **Bibliometric study of doctoral thesis in the School for Environmental Science**

### **Department of Computer Science (DCS)**

- The highest number of theses in the Department of Computer Science were submitted and awarded in 2014 i.e 5 (29.41%).
- Dr. Vipin Saxena supervised 11 Doctoral theses i.e. 64.71%.
- male performance were higher in research i.e 13 (76.47%) while female contributed in research only 4 (23.53%) of total research carried out in the Department of Computer Science.
- The larger portion of research is carried out in Computer programming, programs & data i.e. 8 (47.06%)7 with DDC No. 005.

### **Department of Information and Technology (DIT)**

- Total 4 (66.67%) Doctoral theses were awarded in 2013.
- Out of 6, Professor R.A. Khan supervised/ guided all 6 theses in DIT.
- Research output of both male and female are respectively 6 i.e. 50% each.

- that larger portion of research is carried out in Computer programming, programs & data i.e. 83% with DDC No.005.

#### **Department of Library and Information Science (DLISc)**

- The highest numbers of theses were awarded in 2011 and 2015 respectively i.e. 3 (30%).
- under the guidance of Professor K.L.Mahawar 80% of Doctoral theses were awarded in the Department of Library and Information Science.
- Males contributed in Doctoral research 8 i.e. 60% while females contributed only 2 i.e. 40%.
- The larger portion of research is carried out in the 'Library operations' i.e. 60%, with DDC No. 025.

#### **Department of Mass Communication and Journalism**

- During the year 2014 and 2015 respectively 4 (50%) Doctoral theses were awarded each year.
- Professor Govind Ji Pandey and Professor Gopal Singh respectively were guided/ supervised 3 (37.50%) each.
- The larger portion of research is carried out in 'Communications; telecommunication' i.e. 37.50% with DDC no. 384.

#### **Bibliometric study of Doctoral theses in the School for Biosciences and Biotechnology (SBBT)**

##### **Department of Applied Plant Science**

- The highest in the year 2014 showing 7 (33.33%) of total research output in the Department of Applied Plant Science.
- Out of 21 theses, Professor R.B.Ram supervised/ guided 14 (67%) Doctoral theses in the Department of Applied Plant Science.
- Contribution of male in research were 14 (66.67%) while female were 7 (33.33%) of total research output in the Department of Applied Plant Science.
- larger portion of research is carried out in discipline Garden crops (Horticulture) i.e. 38.10% with DDC no. 635, followed by Field and plantation crops 23.31%

with DDC No. 633. Discipline Orchards, fruits & forestry 19.05% with DDC No. 634 and disciplines Microorganisms, fungi & algae and Plants noted for characteristics & flowers respectively 9.52% each and their DDC No. 579 and 582 each in the Department of Department of Applied Plant Science.

### **Department of Applied Animal Science**

- The year 2014 shows the highest research output of the theses 12 (52.17%) in the Department of Applied Animal Science.
- Dr. Kamal Jaiswal guided/supervised 8 (43.78%) theses awarded in the Department of Applied Animal Science.
- 13 (56.52%) Doctoral theses contributed in research output by male scholars while female scholars contributed only 8 (43.48%).
- A large portion of research was carried out in discipline 'Insect culture' i.e. 38%, followed by 'Pharmacology and Therapeutics' 19%. In disciplines 'Agriculture & related technology', 'Ecology' and 'Plant injuries, diseases & pests' respectively 14.29% each.

### **Department of Biotechnology**

- The highest research output during the years 2013 & 2014 respectively 5 (27.78%) each year of total research output in the Department of Biotechnology.
- Under guidance of Professor M.Y.Khan 7 (39%) of total (18) theses awarded in the Department.
- Male percentage of research output of Doctoral theses is 72.22% while female is 27.78%.
- Larger portion of research were carried out in discipline 'Diseases' 5 (28%) with DDC no.616.

### **Bibliometric study of doctoral thesis in the School for Human Development and Family Studies**

- In the year 2014, 02 Doctoral theses is awarded in HD&FS and both are guided by Professor Sunita Mishra and both the research are contributed by female scholars.

- Research is carried out in the discipline ‘social processes’ with DDC no. 303 in the Department of Human Development and Family Studies.

### **Bibliometric study of doctoral thesis in the School for Physical Science**

- Study shows that 01 Doctoral thesis submitted and awarded in May 2015 by male scholar under the guidance of Professor B.S. Bhadauria in discipline ‘Mathematics’, in the Department of Applied Mathematics.

**In addition to the above findings, the following trends have been noticed in different schools under study.**

- Maximum number of doctoral research has been done during the 56 (28.72%) where as 42 (21.54%) has been done in the year 2015. The percentage of theses during the period 2005 and 2006 is only 1.03% indicating a microscopic (marginal) number.
- After almost a decade the percentage of theses from 1.03% in 2005 rose to 28.72% in 2014 and 21.54% in 2015.
- It can be anticipated that the increase in the percentage of theses during the years 2014 and 2015 due to gradual growth of the University with increasing number of Departments and students. This could be cited as a period of the growth and expansion of the University.

**Conclusion:** The study concluded that the outlook of the research activities in different streams of Babasaheb Bhimrao Ambedkar University, Lucknow. A total of 195 Doctoral Theses were selected for the study from various departments under schools. This study reveals that the percentage of female scholars’ contribution to Doctoral Theses is just half

of the percentage of male research scholars which shows the need to encourage more females for research.

The chronological output of Doctoral Theses shows that the highest number of theses awarded during the period 2011-2015, followed by the years 2006-2010.

School for Bioscience and Biotechnology has awarded maximum number of doctoral degrees followed by the School for Environmental Science, School for Information Science and Technology, School for Legal Studies, School for Ambedkar Studies and the minimum number of Doctoral degrees awarded by the School for Home Sciences and School for Physical Sciences.

Maximum number of doctoral degrees awarded to Male Scholars as compare to female scholars by the School for Bioscience and Biotechnology.

The highest number of theses was awarded in 2014 followed by the year 2015, where as the least number of theses were submitted and awarded during the years 2005 and 2006.

It is observed that the minimum number of thesis was awarded by the Department of Applied Mathematics and Department of Applied Chemistry followed by the Department of Human Rights, Department of Computer Science, Department of Biotechnology. Department of Applied Plant Science and Department of Applied Animal Science were awarded the same number of Theses and the maximum number of Theses were awarded by the Department of Environmental Science.

In comparison to languages, the study shows that most of the research scholars preferred the English language whereas few scholars selected the Hindi language for their research study. This may be due to reason that most of the Books, journals and other study resources are available in the English language.

The result of the study enlightens the fact that apart from other discipline maximum number of research is carried out in the discipline Microorganisms, fungi & algae followed by 'Computer programming, programs & data', 'Geology, hydrology & meteorology', 'Labour, social, education & cultural law' and 'Biochemistry'.

To proof the study scientifically, Bradford's law is applied on departments and Zipf's law applied on the top five most words taken from the title of the Theses and ranked them in decreasing order, according to the frequency of the words.

This type of study shall be helpful to concerned users, students and research scholars for the record, need of knowledge and expansion of the study.

## **Suggestions**

In the light of the above analysis and the findings of the study the following recommendations can be made for future research.

- There is a need to motivate more female scholars towards the doctoral research work.
- The research scholars should cite the correct and full references and also apply it in a standard reference style. They should avoid to cite incomplete and inaccurate references.
- The GBL should have all the awarded theses in hard copy for further consultation and soft copies in case of availability of Institutional Repository.

## **Recommendations for future research**

- More bibliometric study should be carried out by research scholars in the discipline of sciences and social sciences.
- Informetrics, Scientometrics, Webometrics and Cybermetrics studies should be encouraged at large scale to identify the emerging research trends.
- The GBL should organised orientation programme for research scholars, faculty and staff to aware them about the new arrivals of books/ journals, resources available in library and also aware them how to refer the information sources.

- The University should organise refresher/ research methodology programme time to time for research scholars.

The present study has been divided into following six chapters:

**Chapter 1: Introduction**

This chapter highlights the need of the study, statement of the problem, objectives, scope of the study, hypotheses, research methodology and Bibliographic standard.

**Chapter 2: Review of Literature:** This chapter covers various literatures on bibliometric studies, conducted in India and abroad.

**Chapter 3: Conceptual Frame work of Bibliometrics:** This chapter explores the definition, Historical Growth of Bibliometrics, Range of Bibliometrics, laws of bibliometrics some other useful metrics.

**Chapter 4: An Exploration of Academic Profile of Babasaheb Bhimrao Ambedkar University, Lucknow:** This chapter explores the 8 schools and their 22 academic departments offering subjects and Ph.D.

**Chapter 5: Analysis and Interpretation of Data:** This chapter provides the analysis and interpretation of data collected and tabulated in excel sheets.

**Chapter 6: Findings, Conclusion and Suggestions:** This chapter explores the conclusion of the study. It also gives the suggestions for advanced study.

A comprehensive bibliography is listed at the end of the thesis used in the research study.