

# **BIBLIOMETRIC STUDY OF COMMERCE PH.D THESES SUBMITTED IN PERIYAR UNIVERSITY DURING THE YEAR 1989 to 2012**

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**Abstract:** *This Paper presents a bibliometrics study of commerce PhD theses. The conclusions drawn in this paper are based upon the said evidence of periyar university Salem, T.N. The study period has been selected 23 years (1989 to 2012) covering 106 PhD these factors considered for the study are Illustrations, Length of chapters along with the study of Authorship patterns of total 1951 citations.*

**Keywords:** Bibliometrics, Commerce, Citations, Theses, Illustration.

## **1. Introduction**

Bibliometrics study is a quantitative method for analyzing various aspects of written documents. Over the years, bibliometrics study has been growing and gaining ground in libraries and informatics centers all over the world. The subject is also very popular among research scholars for research, because in every field of knowledge the research scholars are interested in doing research and find out the utility of their contribution through citations. Current trends are a major vehicle for reporting significant research findings and for publishing papers on the theory and practice of knowledge. It is playing a key role in research work because it contains the latest information about current developments in any field of knowledge.

The Bibliometrics is a type of analytical method, which analyzes and explores the knowledge to the society. It is a quantitative study of various aspects of documents used to identify the pattern of publications, authorship, citations and coverage of journals etc. This consequently leads to the better organization of information resources, which is essential for effective and efficient use. The bibliometric study also involves the process of collection, counting, analysis and interpretation of citations given in the printed documents.

It has wide applications in other areas also, just application of bibliometric laws for the study of science materials known as scientometric, application for social science material study known as sociometrics, web-based study is known as webometrics and cyber metrics and the like. "Bibliometrics can be used with advantage to achieve – productivity counts of literature, comparative studies of literature, types and amount of publications scatter and pattern of scatter of literature, impact of literature and identification of social changes".

## **2. Laws of Bibliometrics**

The three most commonly used laws in bibliometrics are:

1. Lotka's law
2. Bradford's law
3. Zips law

### **2.1. Lotka's Law**

Lotkas Law describes the frequency of publication by authors in a given field. It states that “the number of authors making  $n$  contributions is about  $1/n^2$  of those making one; and the proportion of all contributors, that make single contribution, is about 60 percent”. This means that out of all the authors in a given field, 60% will have just one publication, and 15% will have two publications ( $1/2^2$  times 60). 7% of authors will have three publications ( $1/3^2$  times 60), and so on. According to Lotkas Law of scientific productivity, only 6% of the authors in a field will product more than 10 articles.

## **2.2. Bradford’s Law**

The statistical regularity pointed out by Bradford’s law provides an objective means of determining zones of relative richness or value to a given kind of library collection. It states that journal in a single field can be divided into three parts, each containing the same number of articles:

1. A core of journals on the subject, relatively few in number that produces approximately one-third of all the articles.
2. A second zone, containing the same number of articles as the first, but a greater number of journal, and
3. A third zone, containing the same number of articles as the second. But a still greater number of journals.

The mathematical relation of the number of journals in the core to the first zone is a constant  $n$  and to the second zone the relationship is  $n^2$ . Bradford expressed this relationship as  $1:n:n^2$ . Bradford formulated his law after studying a bibliography of geophysics, covering 326 journals in this field. He discovered that 9 journals contained 429 articles, 59 contained 499 articles, and 258 contained 404 articles. 5 times 9, or 45, to produce the next third, and 5 times 9, or 225, to produce the last third. As may be seen, Bradford’s Law is not statistically accurate, strictly speaking. But it is still commonly used as a general rule of thumb (potter 1988).

## **2.3. Zipf’s Law**

Zipf’s law is often used to predict the frequency of words within a text. The law states that in a relatively lengthy text, if you “list the words occurring within that text in order of decreasing frequency, the rank of word on that list multiplied by its frequency will equal a constant. The equation for this relationship is:  $r \cdot f = k$

Where  $r$  is the rank of the word,  $F$  is the frequency, and  $K$  is the constant

Zipf illustrated his law within an analysis of James Joyce’s. “He showed that the tenth most frequent word occurred 265 times, the 200 word occurred 133 times, and so on. Zipf found, then that the rank of the word multiplied by the frequency of the word equals a constant that is approximately 26500” (petter). Zipf’s law, again, is not statistically perfect, but is very useful for indexers.

### **3. Research Design**

The research design provides an opportunity to plan the overall study a research design is the arrangements of conditions from collect and analysis of data in a matter that aim to combine relevance to the research purpose with economy in procedure. A research design is the programme that guides the investigator in the process of collecting, analyzing and interpreting observations. It is important part of every research activity determines the format of the purpose and its outcome.

#### **3.1. Problem**

- Bibliometrics study does not include the informal publications and communications. Therefore; the scientific development cannot be predicted properly.
- In case of collaborated authors, the cited articles appear only under the name of the first author as listed in each article. Here one must determine the names of individual contributors who have collaborated the work to get the actual rank of the authors. This is very difficult and tedious process.

### **4. Objectives**

- ❖ To know the various form of information sources used by research scholars in the subject Commerce
- ❖ To find out the major subject areas of research over the period 23 years (1989-2012).
- ❖ To know illustration used in citations.
- ❖ To know authorship pattern.
- ❖ To determine year wise distribution.

### **5. Hypotheses**

- It is an assumed that the year wise contribution in commerce
- It is assumed that the books are the most favored category of documents of the users.
- There is an association ship illustrations used in commerce PhD theses.
- That there is an association ship length of chapters.

### **6. Importance of the present study**

- ✓ That there has been no attempt made in quantification of the literature in such specific branch of the study i.e. commerce.
- ✓ That there has been no quantitative analysis to indicate how much is the growth of literature in the branch and how fast it has grown.
- ✓ That such as a quantitative analysis would help to know the publishing trends in the subject of commerce.

### **7. Methodology**

In the study, the Bibliometric feature of the theses collected to in Periyar University between the 1989-2012 examined in order to reveal the differences among discipline in scientific

communication. Accordingly the references cited in the Ph d theses have been taken as the sources of data. The Ph d theses submitted Periyar University during the 23 years (1989-2012) in commerce has been studied. Theses wise various worksheet diagrams have been designed and generated for the purpose of data collection. Data is collected from primary sources and secondary sources. The data were collected, organized and analyzed using the MS-Excel 2007 software. Data collection on the basis of different factor and analysis of the different aspects such as length of articles authorship pattern, ranking of journal etc. the data has been presented in the various table and graphical forms.

## 8. Data Analysis and Interpretation

Application of Bibliometric techniques selecting for the most important journal in university librarians have become a most bibliometric studies reveal the nature of the information used by researchers. This assessment will enable the librarian plan for and better collection development and better information services. Commerce PhD theses have been selected for 106 in a study. The following table enter excel and the data has been analyzed the theses.

1 year wise Distribution of Ph D theses

Sl. No	Year	No. of Theses	Percentage	Rank
1	1989	2	1.87	IX
2	1992	4	3.77	VIII
3	1993	1	0.94	X
4	1994	4	3.77	VII
5	1995	4	3.77	VII
6	1996	4	4.72	VI
7	1998	2	1.87	IX
8	1999	1	1.87	IX
9	2002	1	0.94	X
10	2004	1	0.94	X
11	2005	2	1.87	IX
12	2006	3	2.83	VIII
13	2007	5	4.72	VI
14	2008	10	9.43	IV
15	2009	21	19.81	I
16	2010	16	15.09	III
17	2011	19	17.92	II
18	2012	6	5.66	V
	Total	106	100	
	Mean	4		
	Median	20		
	Mode	4		

Table no. 1 year wise distribution of Ph d theses

This shows that year wise distribution of total 106 commerce Ph D theses. This table shows that the highest numbers of theses submitted in the year 2009, 21 theses. The second

highest number of theses submitted in the year 2011 in 19 theses. The third position goes to the year 2010 this year 16 theses submitted. The fourth position goes to the year 2008 this year 10 theses submitted. The lowest number of theses submitted in the year 1993, 1999, 2002, and 2004, per one thesis. The mean of tables of total 106 Ph D theses is 4, median is 20.

#### Length of chapters

Sl. No	Length of chapters	Total no. of theses	Percentage (%)
1	100-150	3	2.83
2	151-200	14	13.21
3	201-250	55	51.89
4	251-300	30	28.30
5	301-350	3	2.83
	total	106	100

Table no. 2 length of chapter

#### Chi-square test

Calculated the chi-square	DF	p-value
71.32	4	0.001(S)

Ho: There is no association ship between lengths of chapters

#### Length of chapters

The table shows that length of chapters/papers in 106 commerce Ph D theses in Periyar University, Salem (Tamil Nadu) during 1989 – 2012 of length of theses. The highest number of using length of chapters 201-250, 55 theses. The second position goes to 251-300, 30 theses. The third position goes to length of chapter is 151-200, 14 theses. The last position is 100-151 and 301-350 using the chapter is per 3 theses.

The length of theses is a “Study on non – performing assets of scheduled commercial Banks”, author by denial Santhosh raj of 2010 having 311 pages. The Lowest length is “Divided practice – a study with reference to select computer in India”, author by periyasamy.M.N of 2010 having 143 pages.

It is inferred from the above chi-square test the calculated P-value is significant.  $P < 0.01$ . So the null hypothesis is rejected and alternate hypothesis is accepted. So it is concluded that there is an association ship lengths of chapters.

#### Illustrations used in commerce Ph D theses

Sl. No	bibliography	citation	Rank	Percentage
1	Tables	9877	I	85.35
2	Graph	1460	II	12.62
3	Chart	147	III	1.27
4	Map/Atlas	71	IV	0.61
5	Photographs	18	V	0.12
	Total	11573		100

Table no.3 illustrations used in commerce Ph d theses

Calculated the chi-square	DF	p-value
0.20	4	0.001(S)

Ho: There is no association ship between illustrations used in commerce Ph D theses.

### Illustration used in Ph D theses

Table no.5 shows the use pattern of different types of illustrations. After the analysis of all samples it's found that total 11573 illustrations have been used. This table shows that table is 9877 are to the first rank. It covers more the 80% of the illustration. Graph occurring the second Rank with 12.62 illustration used. Chart 1.27 Map/atlas 0.61 and other photos 0.12. The theses have highest illustration is 11573 and having lowest illustration is 18 of photos.

It is inferred from the above chi-square test the calculated P-value is significant.  $P < 0.01$ . So the null hypothesis is rejected and alternate hypothesis is accepted. So it is concluded that there is an association ship between illustrations used in commerce Ph D theses.

### Authorship pattern of the Reference

Sl. No	Authorship	Total citations	%	Rank
1	Single Authors	1234	63.25	I
2	Double Authors	464	23.78	II
3	Three authors	203	10.40	III
4	Four Authors	33	1.70	IV
5	More than four author	10	0.51	V
6	Corporate Authors/others	7	0.36	VI
	Total	1951	100	

Table no.4 Authorship pattern of the Reference

### Authorship pattern of reference use

The Authorship pattern is analyzed to determine the type of research and their percentage. It is found from the table shows that single authors accounting 1234 numbers contribute highest numbers of journal and the percentage is 63.25. The second author's journals contributes 464 numbers (23.78%) and occupies the second position followed by the three author journals contributing 203 numbers (10.40%) and occupy third position. The four author contribution is 33 numbers (1.70%) followed by more than four authors contributing 10 numbers (0.51%). And corporate author is 7 numbers (0.36). It is seen from the table that after single author, the number of contribution of publications the number of author increase for the publication.

### 9. Major Findings of Study:

- a) The data explains 23 years (1989-2012) total 106 theses have published during the period 1989 to 2012.the highest number of thesis is submitted in the year 2009, 21 Ph D theses. The lowest number of theses submitted in the year 1993, 1999, 2002, and 2004, per one thesis.
- b) During the period 1989-2012 the length of thesis is of 2010 having 311 pages where as Lowest paper covered in the thesis 2010, 143 pages.

- c) In the case of authorships single author papers were highest following by second author, third author papers. This single authorship constitutes 63.25%. It shows that collaborative research predominant in this field.

## **10. Testing of hypotheses**

In the beginning of the research hypotheses have been formulated. There is having been collected and analyzed from 106 Ph D thesis submitted in Periyar University during the year 1989-2012.

### **1. There is an association ship illustrations used in commerce PhD theses.**

It is inferred from the above chi-square test the calculated P-value is significant.  $P < 0.01$ . So the null hypothesis is rejected and alternate hypothesis is accepted. So it is concluded that there is an association ship illustrations used in commerce Ph D theses.

### **2. That there is an association ship length of chapters.**

It is inferred from the above chi-square test the calculated P-value is significant.  $P < 0.01$ . So the null hypothesis is rejected and alternate hypothesis is accepted. So it is concluded that there is an association ship lengths of chapters.

## **11. Conclusion**

Researcher adopt various techniques in search information in search of literature like source books, journals etc. but research has certain limitations of time, limitations of subject material, limitation of language etc. The authors of Ph D scholar should be encouraged to cite latest references. The presented the theses have undertaken to trace the development of commerce research at doctoral level for 23 years (1989-2012) of Periyar University, Salem. The Periyar University the above details it found that highest number of theses 2009 (20 theses) the lowest in the year of 1989, 1993, 2002, 2004 (per 1 theses). The study reveals that the books are the most preferred forms and journal of reference by research scholars in commerce, while journals are consider as the primary sources of information.

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