

Research Trends in Commerce: A Citation Analysis of Ph.D. Theses Submitted to the Bharathidasan University, Tiruchirappalli

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Introduction

The research performance evaluation systems revolve around the concept of quality. The purpose for evaluation research performance is to identify areas for improvement in the quality of research. Citation analysis is one among the several methods that have been proposed and used to complement the traditional research performance evaluation measures. A citation is a bibliographic reference or a footnote listed at the end of a paper. It expresses a connection between the citing document and cited document. The purpose of citation analysis is to evaluate and interpret those references in terms of the types of documents, authors, institutions and the subjects etc. The citations are an indicator of the use of previously published documents and the relative merit of the cited paper. The purpose of the present study is to explore the citation pattern of information resources referred in Ph.D. theses submitted in the discipline of Commerce at Bharathidasan University, Tiruchirappalli during 1986-2014.

Review of Literature

Review of related literature reveals the existence of a large number of bibliometric and quantitative studies on citation analysis of Ph.D. theses.

Chikate and Patil (2008) examined citations appended to 27 theses submitted to university of Pune in the discipline of library and information science during 1982 and 2005 and analyzed 6,257 citations. They found 42% of the citations journal articles. Three quarters of the journal articles were from LIS journals and the remaining from other 33 subject areas.

Arockiasamy and Dorairajan (2015) in their study they found that the Journal articles were most preferred source of citations. The most frequently cited journal was Journal of Indian History and Journal of History of Tiruchirappalli. The study covers 84 doctoral theses submitted to the Department of History in Bharathidasan University, Tiruchirappalli. This study will serve a purpose in the collection development policy of the library to cater the needs of the research scholars. The period of the study was 1988-2011.

Vallmitjana and Sabatywe (2008) used citation analysis as a tool for collection management in an academic chemistry library. The analysis covered 46 doctoral theses presented at the Institute Quimic de Sarria (IQS) from 1995 to 2003. The

results obtained from the 4,203 citations revealed that the most frequently used documents were scientific papers, which accounted for 79 percent of the total.

Kumar and Mallikarjun (2011) investigated citations of 49 doctoral dissertations submitted to Indian Institute of Management, Ahmedabad during the period 2004 to 2009. The study revealed that journals are the most cited sources.

Kumar and Reddy (2012) examined citations that were used in dissertations submitted to the department of Library and Information Science of the Sri Venkateshwara University, Tirupathi during the period 2000-2007.

Objectives of the Study

- To determine the principal forms of literature used in Doctoral theses submitted in Commerce to Bharathidasan University
- To understand the most productive guides and affiliating agencies in the subject of Commerce.
- To verify the authorship pattern in citations made, most frequently cited journals in the theses of commerce.
- To have a detailed analysis on citations used by the doctoral researches in the Bharathidasan University.
- To know the expected level of growth of literature for Commerce subject and its doubling time.
- To verify the geographical distribution of research in Commerce.

Need for the Study

The research and publication productivity in both print and electronic form has given quantitative jump in both Science and Humanities literature from the challenge to librarian to find better ways to access the different user requirements. Therefore the research and publication output is expected on further increasing trend in the universities publication and production of quality documents is possible with higher stands in different areas of arts and science disciplines.

Statement of the Problem

Citation analysis is one of the techniques that give potentially valuable information in the management of library resources. It is also very much useful to understand the knowledge structure in various subjects. The theme of the study is under the title "Research Trends in Commerce: A Citation Analysis of Ph.D. Theses Submitted to the Bharathidasan University, Tiruchirappalli".

Methodology

The researcher began his study with the survey of details about the subject, title; guide, number of pages, journals cited, books referred etc. were extracted from each and every thesis in the subject of Commerce submitted and available in the Central library of the Bharathidasan University. Since the University is being the hub of affiliated institutions engaging in research and hence it is appropriate to do the study on the theses submitted to Commerce Department of

Bharathidasan University, Tiruchirappalli, and Tamil Nadu for his study. The study covers Ph.D. theses submitted in the subject of Commerce in Bharathidasan University for the award of doctoral degree.

The period of study ranges between to 1986 to 2014 to obtain the data to researcher went to the University Library and gone through the theses manually and noted the details of citations appended to each theses and the data was entered in work sheet and further the details were fed into the computer in MS EXCEL. Various attitude of analysis include the subjects, different types of documents used, the ranking of documents particularly journal on the basis of usage.

Scope and Limitations

From the establishment of Bharathidasan University, Tiruchirappalli in the year February 1982, with the encouragement of Government of Tamil Nadu to affiliate many colleges, the number of colleges today affiliated is 138. The growth results of Arts and Science colleges in Tiruchirappalli area, the enormous growth of research and development by productivity, submission of Ph.D. theses in quite large numbers. It is also found that majority of the colleges affiliated by this university. This university is having more research departments.

Hence the research output is impressive in these colleges. Since more number of theses are submitted the researcher limited his scope of the study by restrict to the research work done in Commerce only. The researcher has further depended upon the availability of the theses physically available in the library.

Analysis

A research publication in a university is of great importance to the promotion of further research. Counting, measuring, comparing qualitatively, analyzing quantitatively is perhaps the main tool of publication productivity. In the university, the output of research activities is subjected to evaluation in the present decade as a policy across the world. It is important to observe that the theses submitted to the Department of Commerce are comparatively higher than other departments.

Out of 360 theses submitted by the faculty and research scholars from the Department of Commerce from 1986 to 2014 was carried out. While referring the thesis uploaded in Shodhganga, INFLIBNET site it is found that 55 theses were uploaded in Commerce as on 19th August 2015. Among this, 48 theses each were submitted in the years 2011 and 35 these were submitted in the year 2010 and 33 theses were submitted in the years 2002, 2009 respectively. During the period of study only one thesis was submitted during the years 1986, 1991 and in 1994, 4 theses was indicated in the table for the year 2014 is due to the fact that the theses submitted after evaluation will be given to the University Library and many theses were awaiting for evaluation.

Table 1: Trend analysis and Doubling time of the Research Trends in Commerce

Year	No. of Thesis submitted	Cumulative records	W1	W2	R	Mean	DT	Mean DT
1986	1	1	-	0	0		0	
1987	1	2	0	0.69	0.69		1.00	
1988	1	3	0.69	1.09	0.40		1.73	
1989	1	4	1.09	1.38	0.29		2.38	
1990	1	5	1.38	1.60	0.22	0.32	3.15	1.65
1991	1	6	1.60	1.79	0.19		3.64	
1992	3	9	1.79	2.19	0.4		1.73	
1993	2	11	2.19	2.39	0.2		3.46	
1994	1	12	2.39	2.48	0.09		0.77	
1995	11	23	2.48	3.13	0.65	0.306	1.06	2.13
1996	3	26	3.13	3.25	0.12		5.77	
1997	2	28	3.25	3.33	0.08		8.66	
1998	7	35	3.33	3.55	0.22		3.15	
1999	13	48	3.55	3.87	0.32		2.16	
2000	7	55	3.87	4.00	0.13	0.174	5.33	5.01
2001	11	66	4.00	4.18	0.18		3.88	
2002	33	99	4.18	4.59	0.41		1.69	
2003	12	111	4.59	4.70	0.11		6.3	
2004	16	127	4.70	4.84	0.14		4.95	
2005	17	144	4.84	4.96	0.12	0.192	5.77	4.51
2006	14	158	4.96	5.06	0.10		6.93	
2007	25	183	5.06	5.20	0.14		4.95	
2008	19	202	5.20	5.30	0.10		6.93	
2009	33	235	5.30	5.45	0.15		4.62	
2010	35	270	5.45	5.59	0.14	0.126	4.95	5.67
2011	48	318	5.59	5.76	0.17		4.07	
2012	32	350	5.76	5.85	0.09		7.7	
2013	6	356	5.85	5.87	0.02	0.09	34.65	15.47
2014	4	360	5.87					
	360	360				1.20		34.44

The above table indicates the Relative Growth Rate and also the doubling time for further growth. It could be observed by the Relative Growth Rate for all the theses submitted in Commerce have decreased from 0.69 in 1986 to 0.02 in 2013, the mean Relative Growth Rate for the periods 1991 to 1995 and 2010 to 2013 are 0.30 and 0.09 respectively. The overall study period has witnessed a mean Relative Growth Rate as 1.20 Contrastingly the doubling time for research productivity in Commerce has increased from 1.00 in 1987 to 34.65 in 2013.

2013 the mean doubling time for research publication for the year 1990 was 1.65 and it has increased to 15.47 in the year 2013. In general the research output in Commerce has shown a declining trend as for as publications concerned inversely Doubling time has increased progressively.

Table 2: Ranking of Guides in Commerce

Guide Name	Thesis	Rank
Dr. Hariharan, (National College)	34	1
Dr. Shaik Mohamed (Jamal Mohammed College)	21	2
Dr. Rajkumar.S (Naina Mmohamed College)	17	3
Dr. Nazer.M (<i>Khadir</i> Mohideen College)	15	4
Dr. Sekar S (Urumu Dhanalakshimi College)	14	5
Dr. Srinivasan T (A V C College)	13	6
Dr. Subramani N (Urumu Dhanalakshimi College)	12	7
Dr. Nakiran S (TBML College)	11	8
Dr. Suriyamurthy (J J College of Engn. and Technology)	11	8
Dr. Mubarak Ali L (Jamal Mohammed College)	10	10
Dr. Frank Ratnakumar (Bharathidasan University)	9	11
Dr. Selvaraj V (Nahru Memorial College)	9	11
Dr. Victor Louis Anthuvan (St.Joseph's College)	9	11
Dr. Ganesan (Poompuhar College)	8	14
Dr. John G (St. Joseph's College)	8	14
Dr. Alexander Pravin Durai (St. Joseph's College)	7	16
Dr. Francis Gnanasekar (St.Joseph's College)	7	16
Dr. Mohamaed Mohideen M (<i>Khadir</i> Mohideen College)	7	16
Dr. Mohan S (SKSS Arts College)	7	16
Dr. Cristy Selvarani D (Urumu Dhanalakshmi College)	6	20
Dr. Joseph Xavier S (St.Joseph's College)	6	20
Dr. Savarimuthu(TBML College)	6	20
Dr. Seenivasan K (Bharathidasan University)	6	20
Dr. Selvachandran M (ADM College)	6	20

It is very important to understand the research guides who have guiding the scholars to complete their work within the period. The above table shown the guide wise distribution of PhD theses in the subject of Commerce Out of 360 theses submitted by the scholars 34 PhDs theses were guided by Dr.Hariharan of National College, occupying the first rank. Next to him Dr.Shaik Mohamed of Bharathidasan University helped his 21 scholars to submit the theses in this University occupying the Second Rank. Dr. Raj Kumar of National College, of the Department of Commerce have supervised and guided 17 scholars ranked in third position. Dr.Sekar guided 14 scholars and Dr. Srinivasan guided for 13 scholars were helped to complete their research work.

Table 3: Ranking of cited journals in Commerce

Journal Name	Theses	Rank
The Economic Time	52	1
Economic and Political Weekly	46	2
Southern Economist	31	3
Indian Journal of Agricultural Economics	28	4
Indian Development report	22	5
The Management Accountant	20	6
Indian Journal of Political Science	18	7
Yojana	13	8
Indian Co-operative review	11	9
Kurukshetra	11	9
Kisan World	11	9
Health Technology Assessment	10	12
International Journal of bank marketing	10	12
Journal of Productivity	10	12
Journal of applied psychology	9	15
Marketing Management	9	15
Indian Journal of Industrial relations	8	17
Journal of rural development	8	17
Journal of Marketing Management	6	19
Financial Management	6	19
Tourism policy	6	19
Transport Policy	5	20
The Hindu Survey	5	20
The Journal of Insurance	5	20

With reference to Bradford's law, most of the articles on a certain subject are published in a few numbers of journals. The analysis of the studied references reveals that core journals referred in most of the theses in Commerce are listed in the table. It is found that the maximum of 52 theses were used the citations in the journal, "Economic Times" occupied the first rank in the list. It is also found that Economic and Political Weekly was cited in 46 theses placed in the second rank. 31 theses were used the citations of the journal of Southern Economist occupied the third rank in the list of journals

Indian Journal of Agricultural Economics with the use of its articles in 28 theses was placed and occupied fourth rank. Indian Development Report and other journals are placed in few theses. It is inferred that 360 theses analyzed in the subject Commerce used only 20 core journals repeatedly in its citations. Thus the Bradford's law of scattering is proved.

Table 4: Author wise distributions of Citations in Commerce

S. No.	No. of Authors	No. of Citations	Percentage
1.	One Author	12144	53.55
2.	Two Authors	6521	28.55
3.	Three Authors	3124	13.77
4.	Four Authors	633	2.79
5.	Five Authors	132	0.58
6.	More than Five Authors	121	0.53
	Total	22675	100.00

It is obvious from the above table that single authored citations with 53.55 percent. Next to this, 28.55 percent of the citations were available in the two authors in the references of theses submitted in the Commerce department of Bharathidasan University. It is also found that 13.77 percent of the citations were made by three authors. Rest of the citations was made by more than three authors. To analyse the nature of researcher's participation in research activity, the author productivity is tested. In this context, the researcher aims at analyzing the degree of collaboration in the references cited in the theses submitted.

Table 5: Degree of Collaboration in Commerce

S. No.	No. of Authors	No. of Citations	Percentage	Cum
1.	Single Author	12144	53.55	53.55
2.	Multi Authors	10531	46.45	100.00
	Total	22675	100.00	

Various methods have been proposed to calculate the degree of research collaboration. Here in this study the formula proposed by Dr. Subramaniyam (1983) has been used.

$$\text{The Degree of collaboration } C = \frac{Nm}{Nm+Ns}$$

Where, C = Degree of collaboration

Nm = Number of multi authored papers in the discipline

Ns = Number of single authored papers in the discipline.

Here Nm = 10531

Ns = 12144

$$C = \frac{10531}{12144+10531} = \frac{10531}{22675} = 0.46$$

It is found that the nature of dominance of sole authorship over the joint authorship. Thus the degree of collaboration for the thesis submitted in the Department of Commerce, Bharathidasan University for the references made is analyzed.

Table 6: Form-wise distribution of Citations in Commerce

Document Type	Sum	%
Reference Book	16770	46.50
Conference Proceeding	1919	5.32
Government Report	3479	9.64
National Journal	7979	22.12
International Journal	4236	11.74
Thesis referred	1680	4.68
Total	36063	100.00

It is obvious from the above table that the books contribute the highest number of citations accounting for 46.50 percent. Indian Journals are the second highest group accounting for 22.12 percent. International Journals are the third highest accounting for 11.74 percent. Government Reports accounting for 9.64 percent in total citations is fourth place.

Table 7: Distributions of illustrations used in theses of Commerce

Document Type	Citations	Percentage
Tables	26736	78.03
Figures & Graphs	4759	13.89
Photos	744	2.17
Maps	2022	5.91
Total	34261	100.00

It is found from the table that maximum numbers of tables were used as the Illustrations made for analyzing the research theses in Commerce submitted in Bharathidasan University. The maximum of 78.03 percent of the Illustrations were explained through the tables. And next to this, 13.89 percent of Figures and graphical representations were explained. It is also found that 5.90 percent of the illustrations were made through the Maps attached in the theses. Only 2.17 percent of the theses were illustrating the details with Photographs.

Table 8: Chronological Distribution of Citations in Commerce

Year	No. of Citations	Percentage	Rank
1986-1995	3225	10.65	3
1996-2004	12101	39.96	2
2005-2014	14953	49.39	1
Total	30279	100.00	

The above table explains the chronological distribution of citations made in the PhD thesis submitted by the scholars in the Department of Commerce, Bharathidasan University. The total periods were divided in 3 different periods as 1987 to 1995, 1996 to 2004, and 2005 to 2014. Among the different periods most, of the references made during the period of 2005-2014 stood in first rank where 49.39 percent of the citations were published. Next to this 39.96 percent of the articles published and references were made during the period 1996 to 2004. Publications during the period of 1987 to 1995 with 10.65 percent of the references were made in the theses submitted in the Department of Commerce. It is inferred that the latest Publications were cited in the maximum number of (49.39%) Commerce Theses submitted.

Table 9: Geographical distributions of theses submitted in Commerce

Place	No. of theses	Rank	Percentage
Trichy	150	1	41.66
Tanjore	50	2	13.88
Tamilnadu	42	3	11.66
Chennai	15	4	4.16
Nagapattinam	11	5	3.05
Pondicherry	10	6	2.77
Karur	8	7	2.22
India	7	8	1.94
Pudukottai	7	8	1.94
Coimbatore	5	9	1.38
Poraiyar	5	9	1.38
Kerala	4	10	1.11
Kumbakonam	4	10	1.11

Geographical analysis of distribution of thesis provides information of the range of areas studied active in the field and their relative work. It was found in this present study that the maximum of 150 theses (41.66 percent) analyzed the various Commerce indicators of Trichy area ranked in first place. Next to this, 50 theses studied about the Thanjavur area occupies second place. Thesis concentrated on Tamilnadu ranks third place with 42 PhD theses.

Findings

- The study reveals that journal articles were the most preferred sources of citations.
- Authorship pattern indicates that single authored articles were cited mostly.
- Books published from India are more referred than the other countries.
- In the discipline of Commerce, St. Joseph's College, Tiruchirappalli and Bharathidasan University, Trichy is producing more number of Ph.D.s

- The mean relative growth rate for the theses submitted in Commerce is 1.20 and the mean doubling time is 34.44. There is an increasing trend in the productivity of Commerce research.
- It is obvious from the above table that the books contribute the highest number of citations accounting for 46.50 percent.
- It is found from the table that maximum numbers of tables were used as the Illustrations made for analyzing the research theses in Commerce submitted in Bharathidasan University. The maximum of 78.03 percent of the Illustrations were explained through the tables.
- It was found in this present study that the maximum of 150 theses (41.66 percent) analyzed the various Commerce indicators of Trichy area ranked in first place.

Conclusion

In this paper, an effort has been made to analyze the bibliographical details of the theses submitted to the Bharathidasan University, Tiruchirappalli. It is suggested that the University has to improve the infrastructure facilities and motivating the research scholars to produce more number of papers in reputed and peer reviewed journals and also to encourage them to submit their theses by completing the research work in time.

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