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## **Scientometric Analysis of Doctoral Dissertations in Physical Education in Kerala and Tamilnadu**

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**Abstract:** The paper presents the results of a study of bibliographies compiled from the theses submitted in physical education and sports sciences in the states of Kerala and Tamil Nadu. The bibliometric characteristics including state wise, university wise, area wise, year wise break-up, gender analysis of research scholars and guides, and most number of theses supervised, collaboration in authorship, etc. has been presented. The study provides salient features of account of theses awarded in the field up to 2010.

**Key Words:** *Scientometric, Doctoral Dissertations and Physical Education.*

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### **Introduction:**

Scientometrics is the branch of science that describes the output traits in terms of organizational research structure, resource inputs and outputs, develops benchmarks to evaluate the quality of information output. Scientometric studies characterize the disciplines using the growth pattern and other attributes. These studies have potential, particularly in assessing the emerging disciplines.

Physical Education and Sports Sciences has been emerging as an academic discipline, with professional preparation courses being conducted in most of the universities in the country. The application of theories, issues, problems and methods from a range of disciplines has the potential to enrich our understanding of physical education as an educational phenomenon. No doubt that the field of research in physical education has experienced substantial growth in the past few decades, with the sub-disciplines of sport and exercise sciences dominating. Researchers in the field of physical education and sports sciences use various methods and methodologies combining techniques and ideas from various fields, although there seems to be no hard-line between these disciplines in terms of content and technique. Science and scientific research have been growing at a faster rate during recent years. In India at present

around 75,000 students are enrolled in research and nearly 11,000 are awarded PhDs every year, of which 50 percent are from science and technology disciplines. Theses and dissertations not only reflect the scholarly communication process, but the number of PhDs produced might be useful as an indicator of the growth of scientific advancement in a profession.

A large number of scientometric studies have been conducted on dissertation citations in various subject fields in India and abroad. Ardanuy, Urbano, and Quintana (2009) studied the situation of research on Catalan literature between 1976 and 2003 by carrying out a bibliometric and social network analysis of PhD theses defended in Spain. Citation analysis of PhD dissertations in plant biology and zoology at Southern Illinois University, Carbondale, was done by Nabe and Imre (2008). An analytical study of master of library and information science dissertations at the University of Maiduguri, Nigeria was conducted by Aliyu and Abba (2009).

Pillai (2007) in his citation study comprised 690 journals containing 11412 references collected from 71 doctoral theses awarded by the Indian Institute of Science, Bangalore during 1999-2003. Waugh and Ruppel (2004) had conducted a study of citation analysis of dissertations, thesis and research paper references of Southern Illinois University Carbondale (SIUC).

Several studies on theses citation have been done by different authors in various subject fields. Sudhier and Kumar (2010) in biochemistry; Sam and Tackie (2007) in information studies; Chrzastowski and Joseph (2006) in engineering; Srivastava (2002), Gooden (2001) carried out a citation analysis study of dissertations in chemistry; Tonta and Al (2006), Mahapatra, Sahoo and Jyotshna (2004) in LIS; Krishna and Kumar (2004) studied agriculture and veterinary sciences theses; Biradar and Thippeswamy (2004) studied paediatric dissertations; Haycock (2004), Beile, Boote and Killingsworth (2004) and Okiy (2003) investigated the use of dissertation citation analysis in education; Naidu, Chauhan and Prasher (2003) in biological science; Gobbur, Kamble and Jange (2003) in English; Chandrakumar and Sritharan (2003) in Sanskrit; Cano and others (2003) in mathematics education and Mangla and Seema (2002) conducted a study on economics.

No account of such analysis has been done in the field of physical education and sports sciences. Hence the present study. The purpose of the present study is to determine the bibliometric characteristics of the research in physical education and sports sciences in the universities of Kerala and Tamil Nadu, including state wise, university wise, area wise,

year wise break-up, gender analysis of research scholars and guides, and most number of theses under guides, collaboration in authorship, etc.

### **Objectives of the Study:**

The objective of the present study is to examine the PhD theses awarded in Physical Education and Sports Sciences in the states of Kerala and Tamil Nadu up to 2010, and to determine the following:

1. To discover the state wise and university wise distribution of theses.
2. To discover the year wise growth of PhD theses in the field.
3. To discover the type of research and the main areas of research.
4. To find out the number of theses awarded under guides
5. To identify gender wise analysis of researches and guides of theses awarded.

### **Method:**

The bibliographic account of the theses awarded in physical education and sports sciences was collected from the universities libraries of all the universities in Kerala and Tamil Nadu offering PhD in Physical Education. The theses were also studied with respect to the type of research and area of research. A total of 249 theses from 10 universities of Kerala and Tamil Nadu which were awarded during the period up to 2010 were subjected for the present study. The theses were examined to collect data on relevant features required for the study.

### **Results:**

The data analysis and discussion of the study are given below. State wise distribution- In order to determine the state wise distribution of Phd theses in physical education and sports sciences, the number of PhD awarded from the universities of Kerala and Tamil Nadu were categorized and the results are shown in table 1.

**Table 1**  
**State-wise Distribution of Ph.D. Theses Awarded**

<b>S No.</b>	<b>State</b>	<b>Frequency</b>	<b>Percent</b>
1	Kerala	36	14.5
2	Tamil Nadu	213	85.5
	Total	249	100.0

It is evident from table 1 that 85.5% of PhD theses in Physical Education and Sports Sciences are awarded from Tamil Nadu as compared to 14.5% only from Kerala.

**University Wise Distribution-** In order to determine the university wise contribution in the number of Phd theses in physical education and sports sciences, the number of PhD awarded in the universities of Kerala and Tamil Nadu were categorized and the results are shown in

**Table – 2**

**University-wise Distribution of Ph.D. Theses Awarded**

<b>S No.</b>	<b>University</b>	<b>Frequency</b>	<b>Percent</b>
1	Kerala	24	9.6
2	Mahatma Gandhi	1	0.4
3	Calicut	7	2.8
4	Kannur		1.6
5	Madurai Kamraj	12	4.8
6	Bharadidasan	1	0.4
7	TNSPE&S	2	0.8
8	Madras	10	4.0
9	Alagappa		
W	Annamalai	88	35.3
	<b>Total</b>	<b>249</b>	<b>100.0</b>

*(Bharathiar University, Coimbatore was not included in this preliminary study since the list was not completely obtained).*

It is evident from table 1 that the highest number of theses awarded was from Alagappa University Karaikudi with 100 (40.2 %); the next being Annamali University with 83 theses (35.3%). The least theses awarded was from Mahatma Gandhi University Kottayam and Bharatidasan University, Trichy with 0.4%.

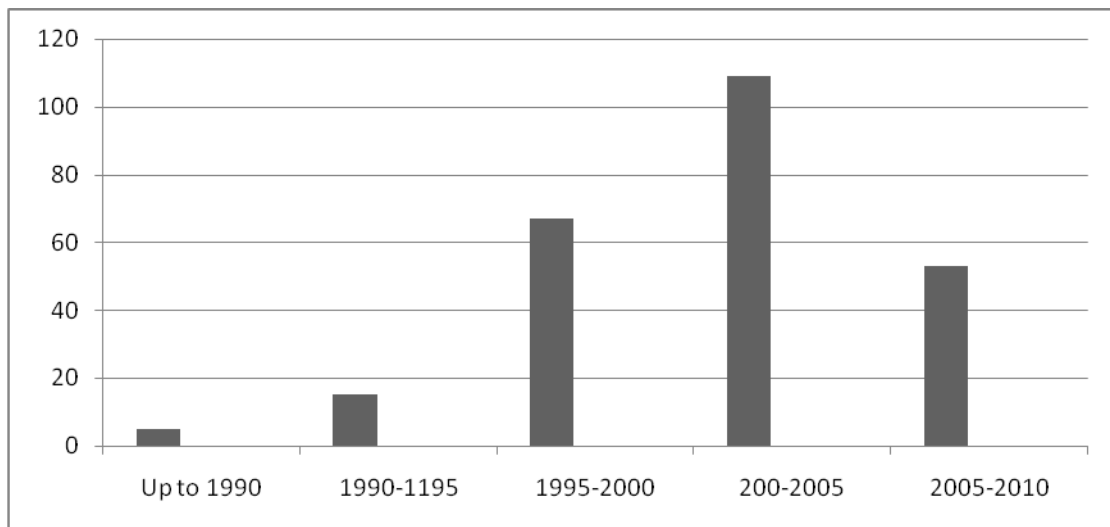
**Table 3**

**Year-wise Distribution of Ph.D. Theses Awarded**

<b>S. No</b>	<b>Year</b>	<b>Frequency</b>	<b>Percent</b>
1	Up to 1990	5	2.0
2	1990-1995	15	6.0

3	1995-2000	67	26.9
4	2000-2005	109	43.8
5	2005-2010	53	21.3
Total		249	100

Year wise analysis of theses reveals that up to 1990 only 5 (2%) theses were awarded. There has been an increasing trend of theses awarded since 1995 onwards. Maximum contribution was made during 200-2005 (109; 43.8%). During 1995-2000 and 2005-2010, the number and percentages of theses awarded were 67 (26.9%) and 53 (21.3%) respectively.



**Figure: 1. Year wise distribution of PhD theses awarded**

**Table 4**

**Distribution of Theses on the Basis of Type of Research**

S. No	Type of Research	Frequency	Percent
1	Descriptive	89	35.7
2	Correlational	21	8.4
3	Experimental	139	55.8
Total		249	100

The distribution of theses on the basis of type of research indicated that 35.7% of the theses were descriptive studies, 8.4% were correlational studies and 55.8% were experimental studies.

**Table 5**  
**Distribution of Theses on The Basis of Area of Research**

S. No	Year	Frequency	Percent
1	Health & Fitness	90	36.1
2	Exercise Physiology	57	22.9
3	Sport Psychology	38	15.3
4	Sports Biomechanics	4	1.6
5	Sports Medicine	4	1.6
6	Sports Sociology	2	.8
7	Sports Management/History	16	6.4
8	Others (mixed)	38	15.3
Total		249	100

Area wise analysis of theses reveals that dominant area of research was health and fitness with 36.1%. 22.9% of these were in exercise physiology, and 15.3% was in sports psychology. Another 15.3% belonged to others category with mixed areas.

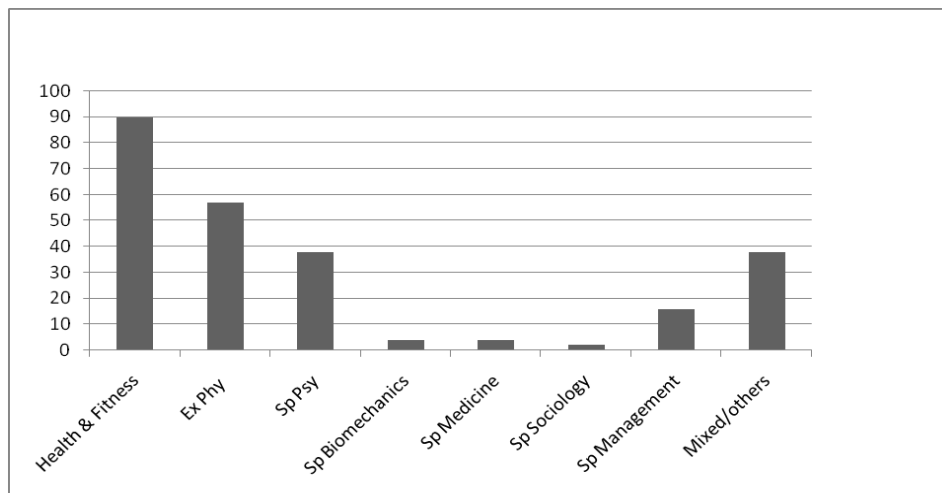


Figure 2. Distribution of theses on the basis of area of research Table 6: Most number of theses guided

S. No.	Year	Frequency	Percent
1	Moorthy, A M	39	15.7
2	Tirumaliswamy, R	26	10.4
3	Powan Radha, K	20	8

4	Vaidyanathan, K	21	8.4
5	Ravindran, G	16	6.4
8	Others	127	51.0
Total		249	100

The analysis of most number of theses guides indicates that Dr A M Moorthy had supervised the most number of theses (39, 15.7%). Next was Dr Tirumaliswamy with 26 theses (10.4%), Dr K Vaidyanthan with 21 theses (8.4%), Dr K Powan radha with 20 theses (8%), and Dr G Ravindran with 16 theses (6.4%).

**Table 7**

**Gender Wise Analysis of Researchers**

S. No	Gender of Researcher	Frequency	Percent
1	Male	206	82.7
2	Female	43	17.3
Total		249	100

Gender wise analysis of theses completed indicates that 206 theses (82.7%) was completed by male researchers, whereas only 43 (17.3%) was completed by female researchers.

Table 8: Gender wise analysis of Guides

S. No	Gender of Guide	Frequency	Percent
1	Male	223	89.6
2	Female	26	10.4
Total		249	100

Gender wise analysis of guides indicate that 223 theses (89.6%) was completed under the supervision of male guides, whereas only 26 (10.4%) was completed under the supervision of female guides.

**Table 9**

**Analysis of Guideship Pattern**

S. No	Guideship Pattern	Frequency	Percent
1	Single	244	98.0
2	Co-guide	5	2.0
Total		249	100

Gender wise analysis of guideship pattern indicates that 244 (98%) theses had only single guide, whereas only 5 theses (2%) had a co-guide.

### **Conclusions:**

The study provides interesting and important findings with regard to salient features of theses completed in physical education and sports sciences in the states of Kerala and Tamil Nadu. The study permits inferences regarding trends of research approach in the field. While the findings of the present study are a preliminary account of only two states, it is helpful to researchers who want to identify primary sources of information. Studies of such kind will be highly beneficial to library and information professionals in providing suitable information services to users and researchers.

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