CHAPTER – III
METHODOLOGY

Universities are always instrumental in the process of research productivity. The measurement of research productivity performance has become a routine affair in most of the developed countries. The Library and Information Science field is well equipped with analytical theories like Scientometric and Bibliometric Laws. This chapter describes the methodology adopted in the Bibliometric analysis of the research productivity of Bharathidasan University.

Statement of the Problem

The study is an attempt in the direction of applying the Bibliometric Law in the analysis of research productivity and performance measurement of Bharathidasan University, Tiruchirappalli, Tamilnadu.

Today applying the Bibliometric principles to measure the research performance has become an accepted practice in the absence of any other suitable alternative mechanism. The topic of investigation is Bibliometric Analysis of the Research Performance of Bharathidasan University: A Case Study.

The present study is carried out after reviewing the research work done in similar areas and after reviewing the available literature, an attempt is made to apply the Bibliometric analysis to the research output of Bharathidasan University. The study period is set to cover between 1996 and 2010. The study encompasses
all the schools of Bharathidasan University for a period of 15 years without any break in between. The approach of the study is on an institutional basis in terms of different schools of the same university. To fulfill the objectives, a set of hypotheses is formulated.

**Hypotheses**

- There is significant growth in academic research output from faculties of various schools of Bharathidasan University.
- There is significant difference between number of years and their number of Ph.D awards.
- There is significant difference between number years and their number of grants.
- There is significant difference between number of years and their number of guides.
- There is significant relationship between the publications of articles and the number of Ph.D completions.
- The numbers of awards to male candidates are more than those of the female candidates.
- There is significant difference between the research outputs of Life Sciences compared to the other three clusters.
Data and Descriptive Analysis

The taken study consists of all the Ph.D completions and all the publications of articles produced at Bharathidasan University, one of the largest state funded universities in Tamilnadu. The University carries out research in all fields, its activities ranging from basic research to technological development. It is organized under 16 schools under the broader categories of subject clusters namely, Faculty of Arts, Faculty of Indian & other Languages, Faculty of Science, Engineering and Technology and Faculty of Management. Apart from counting data for each individual departments and schools, subject clusters are also considered for analysis.

Sample Population

The population covered by the survey is drawn from the Annual Reports of the Bharathidasan University between 1996 to 2010. Faculty members who either would have articles publications, books and Ph.D completions or all would be covered in this study. Excepting the individual performance taken for assessment through application of statistical principles the performance is analysed. A further issue analysed in this study is the analysis of Gender wise individual research productivity.

Data Collection

The data required for this study are the bibliography of

- Ph.D completions
The statistics needed for the above cannot be covered from a single source. Various sources have been consulted and among all the sources tried, it was the Annual Reports that provided the maximum of information regarding the Ph.D awards, publication of books and journal articles and guides. The Convocation Reports provided information towards the projects and grants received. The Annual Report covering the events of a calendar year of a University is a printed record of information source for authentic data related to the University centered activities. Annual Reports published by the Bharathidasan University served as the principal data collection source.

**Data Validation**

The entire data has been collected from the Annual Reports and Convocation Reports of the Bharathidasan University. These two reports are the primary sources and this proves its authenticity.

**Period of Coverage**

The investigation covers a period of 15 years spanned between 1996 to 2010. For certain schools which were started in later years, the period of study
changed accordingly. Like for the Department of Library and Information Science the output was nil because it was started in the year 2008. The output from the Department of Marine Biotechnology was for a year only, 2010, in which the department was established. The output period was from 2005 for the departments of Marine Science, Biochemistry and Environmental Management, the year in which these departments were established. The School of Marine Science and Computer Science were started in the year 2004 and hence the duration was from 2004 to 2010. The period of study for the departments of Geography and Geology was between 2001 and 2010. The department of Environment Biotechnology became a full-fledged one in the year 2006 and hence the period of study covered only five years. The period of study was between 2000 and 2003 in the department of Engineering Technology.

Statistical Tools Used

The study encompasses various modes of analysis such as tabular analysis, percentage analysis, diagrammatic and statistical analysis. Statistical tools used in this study include

- Percentage analysis
- Mean
- Standard Deviation
- One way ANOVA test
- Correlation test
• Oneway ANOVA test
• Student ‘t’ test
• Karl Pearson Coefficient correlation
• Inter correlation Matrix
• Chi-square test

Bibliography has been provided at the end in a consolidated and alphabetic arranged manner. The methodology followed is according to American Philosophical Association (APA) format.

Limitations

The study has taken into account the Ph.D awards conferred on the basis of the research work carried out after proper registration and guidance under a research guide and articles published under the aegis of Bharathidasan University. The Ph.D awards taken for the study is strictly restricted to the candidates of Bharathidasan University. The awards conferred by any other university though they carried out the research work under the guidance of faculty of Bharathidasan University have not been taken into account.

The data collection taken for the study commences from 1996 only. Data prior to 1996 and after 2010 do not form part of the analysis.

The data analysed is quantitative to reveal the contribution of each school in promoting the research performance and its research productivity. It in no way analyses the data to identify whether a school is better than the other and no such comparison is made.