Chapter-1

Introduction
1.1 Introduction

Since the attainment of independence, India witnessed a considerable progress in almost all the fields of knowledge especially in Science and Technology (S&T). Information was being generated before independence also, but the volume of new researches and the number of scientists was considerably less. The number of scientific institutions was also very small. The post-independent period saw an increase in the number of researchers, researches and formation of Learned Societies also. This led to the increase in the number of journals in various fields.

Journals are vital resource for scientific research and development. These are widely used by R&D workers. Infact, research and technical journals all are an essential input and lifeblood of any organization. Primary journals are the main source of research communication. The growth of periodicals has kept pace with the growth of knowledge, which in turn has grown to the extent that researchers find it difficult to keep pace with the latest developments in their own fields. Even some of them are not aware of the total number of journals published in their specific fields. So keeping all these things in view, it is of paramount importance to make an analysis of the growth and development in the number of S&T journals in India.

1.2 Statement of the Problem

"Growth and development of Science and Technology Journals in India since independence: An evaluative Study."
1.2.1 Terms Used in the Statement of Research Problem

1.2.1.1 Growth

i) The process of growing.

ii) An increase in size, number etc.

iii) Something produced by or in the process of growing. (Webster Illustrated Contemporary dictionary, 1978, p.315).

1.2.1.2 Development

i) The process of developing or being developed a specified state of growth or advancement.


1.2.1.3 Science

i) The intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment.

ii) A systematically organized body of knowledge on any subject. (Concise Oxford English dictionary, 2004, p.1287)

1.2.1.4 Technology

i) The practical use of scientific knowledge in industry and everyday life.

1.2.1.5 Journals
i) A record of the proceedings of a legislature, club etc.
ii) Any periodical or magazine.

1.2.1.6 India


1.2.1.7 Since
i) from the time that; seeing that
ii) from that time onwards. (Merriam-Webster’s Collegiate dictionary, 2001, p.1164).

1.2.1.8 Independence

The state, condition, quality or process of being independent (Chambers 21st Century dictionary, 2004, p.687)

1.2.1.9 Evaluative (Evaluate)
i) To determine or fix the value.
ii) To determine the significance, worth or condition of usu. by careful appraisal and study. (Merriam-Webster’s Collegiate dictionary, 2001, p.400).

1.2.1.10 Study
i) Application of the mental faculties to the acquisition of knowledge.

1.3 Objectives

The main Objectives of the study are:

1.3.1 To determine the growth of Indian journals in the various fields of S&T since independence (1947-2004).
1.3.2 To trace the year-wise growth of Indian journals in S&T.
1.3.3 To find out the total output of various publication agencies at the start of each decade.
1.3.4 To analyze the frequency of journals at the outset of each decade.
1.3.5 To find out the State-Wise output of journals at the point of commencement of each decade.
1.3.6 To identify the growth of Indian on-line journals.

1.4 Hypotheses

The following hypotheses were formulated for the study:

1.4.1 Various socio-economic, political compulsions during the post-independent India are responsible for an initial slow growth rate of periodicals.
1.4.2 Establishment of Scientific research during neo-independent India later on provided an impetus in scientific research during the last quarter of 20th century.
1.4.3 The growth of scientific periodicals is exponential in the 21st century.
1.4.4 Certain socio-economic and political factors have contributed faster growth-rate in subjects like Agriculture, Medicine and Engineering.
1.4.5 Advent of information technology during the last decade of 20th century has contributed to a steady increase in the on-line journals.

1.5 Scope and Limitations of the Study

The scope undertaken covers a period of 58 years (1947-2004). The growth of journals, bulletins, reviews, scholarly and academic publications in print and digital form have been undertaken for consideration where as the Newspapers, Magazines, Annual budget reports, Almanacs, Bibliographies, Indexing and Abstracting Services and Standards have not been included.

1.6 Research Methodology

In order to identify the growth of S&T journals in post-independent India various sources of national and international repute were consulted. These are: -


Using Dewey Decimal Classification Scheme (DDC), as a basis of subdivision of the classes 500 and 600 for S&T respectively, the following subjects were selected conveniently: -

a) Agriculture

b) Building & construction

c) Chemistry

d) Engineering
e) Home science
f) Life science
g) Management
h) Mathematics
i) Medical sciences &
j) Physics

1.6.1 Decade-wise growth of S&T journals (1947-2004)

For the purpose of study, the time period starting from 1947-2004 has been conveniently divided into the following decades:

<table>
<thead>
<tr>
<th>Decade</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Decade</td>
<td>1947-56</td>
</tr>
<tr>
<td>2nd Decade</td>
<td>1957-66</td>
</tr>
<tr>
<td>3rd Decade</td>
<td>1967-76</td>
</tr>
<tr>
<td>4th Decade</td>
<td>1977-86</td>
</tr>
<tr>
<td>5th Decade</td>
<td>1987-96</td>
</tr>
<tr>
<td>Remaining Period</td>
<td>1997-2004</td>
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</tbody>
</table>

1.6.2 Growth of S&T journals

A year-wise table of each decade indicating the growth of S&T journals in India has been given. Only the first year of each decade has been made the basis of study. Using the data, thus collected, following studies have been conducted:
1.6.2.1 Publication Agency-wise distribution

As the publication agencies play an important role in the growth of periodicals following types of agencies have been taken into account:

- Societies
- Associations
- Universities
- Institutions
- Government
- Commercial firms
- Individuals &
- Others

1.6.2.2 State-wise distribution

The study relates to the state-wise distribution of S&T journals in each decade, thus giving an indication of the most productive states and also the subjects producing most journals.

1.6.2.3 Periodicity-wise distribution

The study aims to find out the most favored periodicity of the journals in relation to the subjects. For the purpose, periodicity of each journal was recorded and categorized into the following groups:

- Weekly (W)
- Fortnightly (Fortn)
- Monthly (M)
Bi-monthly (BM)
Quarterly (Q)
Three-per year (3/yr)
Five-per year (5/yr.)
Ten-per year (10/yr.)
Fifteen per year (15/yr.)
Semi-annual (SA)
Annual (A)
Biannual (BA)
Irregular (Irr)

1.6.3 Growth of Indian On-line S&T Journals

Advent of computer and communication technologies has resulted into the emergence of on-line journals in late 80’s. In S&T subjects, the Indian on-line journals started since 1986, that too in some specific areas only, e.g. Medical Science and Engineering. Since then it got increased and at present the number has grown considerably.

1.7 Data Analysis and Presentation

The data collected was analyzed and presented into tabular form. The main purpose behind it was to draw inferences and prove/disprove the hypothesis and fulfill the stated objectives of the study. The data was analyzed into following manner: -
1.7.1 Decade – Wise growth of S&T journals (1947-2004).

1.7.2 Growth of S&T journals.

1.7.2.1 Publication Agency – Wise distribution.

1.7.2.2 State – Wise distribution.

1.7.2.3 Periodicity – Wise distribution.

1.7.3 Growth of On-line journals.

1.8 Standard Used for Bibliographical References

For providing the bibliographical references, American Psychological Association (APA, 2001) format has been followed. Some examples are given as under: -


1.9 CHAPTER ISATION

The study comprises of seven chapters. Each chapter deals with different aspects of the research work, which is explained below: -

CHAPTER 1: INTRODUCTION

This chapter introduces the whole study undertaken. The chapter begins with the introduction explaining the background behind the research. It explains the terms used in the statement of the problem taken from renowned dictionaries. In addition, objectives, hypothesis, scope and limitation of the study, and
research methodology used for the data collection and interpretation has also been explained. Special features and findings of the study further assist the chapter.

CHAPTER 2: DEVELOPMENT OF SCIENCE AND TECHNOLOGY (S&T) –HISTORICAL PERSPECTIVE

This chapter presents the historical development of various fields of S&T. It explains the developments that occurred across the globe since 15th century. It also explains the part played by different civilizations in the march of development. It highlights the historical development of Science in India before and after independence. The various strategies and need to promote S&T in the national development are also explained.

CHAPTER 3: REVIEW OF THE RELATED LITERATURE

This chapter reviews the literature that was scanned to study the various trends of the study. It deals with the various aspects of growth pattern of journals with respect to the country of origin, language and subject.

CHAPTER 4: SOURCES OF INFORMATION

The chapter deals with the importance of information in S&T and the various primary, secondary and tertiary sources of information. It also provides the examples of various types of sources.

CHAPTER 5: GROWTH AND DEVELOPMENT OF S&T PERIODICALS WITH SPECIAL REFERENCE TO INDIA

The chapter discusses the historical growth of journals and the developmental stages, which the journals underwent. It discusses the origin of
Scientific Periodicals in general and with special reference to India and various factors responsible for the development. The chapter also outlines the historical development of Electronic journals, their providers on Internet and the initiative steps taken by various Indian organizations to provide access to e-journal content on net. In the end various advantages and disadvantages of e-journals have also been discussed.

CHAPTER 6: COLLECTION, ANALYSIS AND INTERPRETATION OF DATA

It interprets the data, which was collected from various national and international sources. Data analysis and interpretations are also provided in the chapter. Various bar graphs have also been presented to explain the growth trend.

CHAPTER 7: FINDINGS AND RECOMMENDATIONS

This chapter provides the summary of findings and recommendations needed for improving the status. The findings are deduced from the study undertaken and are based from the results of the data.
References


