CHAPTER I

INTRODUCTION

1.1 PREAMBLE

A textile is a flexible material consisting of a network of natural or artificial fibres often referred to as thread or yarn. Yarn is produced by spinning raw wool fibers, linen, cotton, or other material on a spinning wheel to produce long strands known as yarn. Textiles are formed by weaving, knitting, crocheting, knotting, or pressing fibres together.

The concept of the Indian textile technology is intricately related to both, the manufacture and decoration. This may therefore be researched in an chronological framework starting from archaeological past to the contemporary times. Regional developments have been very typical to certain styles of manufacture and decorations in textiles. There are many studies available describing the technique/design/form of textile making. Few studies also focuses on the details of contemporary processes of singular decorative technique. However, no systematic study has been undertaken for presenting the growth of literatures on textiles.

1.2 BIBLIOMETRICS

Bibliometrics is the study of published literature and its usage. This includes studies of impact, diffusion of innovation, bibliographic coupling, citation and co-citation patterns and other statistical regularities in scientific and scholarly productivity and communication.
Pritchard (1969) emphasized that the purpose of bibliometrics is “to shed light on the processes of written communication and of the nature and course of development of a discipline, by means of counting and analyzing the various facets of written communication.”

Bibliometrics is a set of methods used to study or measure texts and information. Citation analysis and content analysis are commonly used bibliometric methods. While bibliometric methods are most often used in the field of library and information science, bibliometrics have wide applications in other areas. In fact, many research fields use bibliometric methods to explore the impact of their field, the impact of a set of researchers, or the impact of a particular paper. Bibliometrics are now used in quantitative research assessment exercises of academic output which is starting to threaten practice based research.

1.3 TEXTILE RESEARCH

The word 'textile' is from Latin, from textilis, meaning 'woven', and textilis is from textus, the past participle of texere, or 'to weave'.

Meanwhile, the word 'fabric' also derives from Latin, most recently from the Middle French fabrique, or 'building, thing made', and earlier as the Latin fabricka 'workshop; an art, trade; a skillful production, structure, fabric', which is from the Latin faber, or 'artisan who works in hard materials', from PIE *dhabh-, meaning 'to fit together'.

The word 'cloth' derives from the Old English clāð, meaning a cloth, woven or felted material to wrap around one, from Proto-Germanic kalithaz (compare O.Frisian 'klath', Middle Dutch 'cleet', Dutch 'kleed', Middle High German 'kleit', and German 'kleid', all meaning "garment"). There are several different types
of fabric from two main sources: manmade and natural. Inside natural, there are two others, plant and animal. Some examples of animal textiles are silk and wool. An example of plants is cotton.

"Cotton has been spun, woven, and dyed since prehistoric times. It clothed the people of ancient India, Egypt, and China. Hundreds of years before the Christian era cotton textiles were woven in India with matchless skill, and their use spread to the Mediterranean countries. In the first century Arab traders brought fine Muslin and Calico to Italy and Spain. The Moors introduced the cultivation of cotton into Spain in the 9th cent. Fustians and dimities were woven there and in the 14th cent. in Venice and Milan, at first with a linen warp. Little cotton cloth was imported to England before the 15th cent., although small amounts were obtained chiefly for candlewicks. By the 17th cent. the East India Company was bringing rare fabrics from India. Native Americans skillfully spun and wove cotton into fine garments and dyed tapestries. Cotton fabrics found in Peruvian tombs are said to belong to a pre-Inca culture. In color and texture the ancient Peruvian and Mexican textiles resemble those found in Egyptian tombs."

During the industrial revolution, fabric production was mechanized with machines powered by waterwheels and steam-engines. Production shifted from small cottage based production to mass production based on assembly line organisation. Clothing production, on the other hand, continued to be made by hand. Sewing machines emerged in the 19th century streamlining clothing production.

In the early 20th century workers in the clothing and textile industries became unionised. Later in the 20th century, the industry had expanded to such a degree that such educational institutions as UC Davis established a Division of
Textiles and Clothing, The University of Nebraska-Lincoln also created a Department of Textiles, Clothing and Design that offers a Masters of Arts in Textile History, and Iowa State University established a Department of Textiles and Clothing that features a History of costume collection, 1865–1948. Even high school libraries have collections on the history of clothing and textiles.

Alongside these developments were changes in the types and style of clothing produced. During the 1960s, had a major influence on subsequent developments in the industry.

Textiles were not only made in factories. Before this that they were made in local and national markets. Dramatic change in transportation throughout the nation is one source that encouraged the use of factories. New advances such as steamboats, canals, and railroads lowered shipping costs which caused people to buy cheap goods that were produced in other places instead of more expensive goods that were produced locally. Between 1810 and 1840 the development of a national market prompted manufacturing which tripled the output’s worth. This increase in production created a change in industrial methods, such as the use of factories instead of handmade woven materials that families usually made.

1.4 NEED FOR THE STUDY

Output of global textile production rose over the years in comparison to the previous one due to higher output in Asia, Europe and South America while production in North America was reduced. It has to be pointed out here that Asia's production is traditional significantly higher in the second quarter compared to the first one as a result of fewer working days in China in the first quarter due to the
Chinese New Year holidays. Also in comparison to last years second quarter global yarn production rose in all regions apart from North America.

The research that is performed on a daily basis is disseminated to the entire textile industry in a variety of ways. Research reports and technical bulletins provide information in a concise manner for immediate industry application. Industry visits are vital for both the collection and distribution of information. And technical service support is provided not only to mills, brands and retailers, but to chemical and machinery companies as well.

In this density populated world, food, shelter and cloths are very essential one. Textile research is a mixed field of many subjects viz Agriculture and Engineering. Textile research gave us a remarkable improvement in cloth production. The literature study on the Textile research is most important.

1.5 STATEMENT OF THE TITLE

“ANALYSIS OF GLOBAL LITERATURE OUTPUT ON TEXTILE RESEARCH: A SCIENTOMETRIC STUDY”

1.5.1 Explanation of the Concepts in Title

1.5.1.1 Bibliometric Analysis

Bibliometrics is the study and measurement of the patterns of all forms of published knowledge. It is coined to describe the studies dealing with the quantification of written communication.

Bibliometric analysis is the quantitative study of a subject growth by using bibliometric indicators and statistical tools and techniques.
Bibliometric analysis throws light on the pattern of growth of literature, inter-relationship among different branches of knowledge, productivity, authorship pattern, degree of collaboration, pattern of collection building, and their use. Gradually bibliometric studies are attaining the status of inter-disciplinary in nature. Bibliometric analysis typically utilizes documents – primarily publications or patents – to analyze trends in science and innovation. A variety of data analysis methods are employed during bibliometric analysis, including: co-authorship analysis, co-citation analysis (i.e., papers or authors that are often cited in tandem), and co-word analysis (i.e., words that are frequently used together in titles, abstracts, or lists of keywords) (Callon & AL., 1986; Callon & AL., 1991; He, 1999; Leydesdorff, 1997; Peters & Van Raan, 1993A, 1993B).

1.6 OBJECTIVES

Main objectives of the study are

1. To examine the worldwide research production in textile research.
2. To identify the document type of the publications in textile research.
3. To examine the authorship pattern of the research production in textile research.
4. To identify the organizations conducting the research in textile research.
5. To identify the organisations providing fund for textile research.
6. To study the citation analysis on literature produced in textile research.
7. To compare and measure the growth rate of literature published.
8. To identify and analyses of the research contribution in the subject field of textile research.

9. To identify the top source titles those carry the research productions in textile research.

1.7 HYPOTHESES

The following hypotheses will be formulated for this study based on objectives.

1. There exists substantial literature on textile research.

2. Growth of publications in textile research is comparatively higher in developed countries.

3. There exists domination of collaborative research in textile research.

4. The research productivity in textile research is dominated by English language.

5. Journals are major source of publications for textile research.

6. There exists steady growth in publication production in textile research.

1.8 LIMITATIONS

The following are the limitations to the study:

1. This study is confined to the Scopus database alone.

2. Publications data published from 1983 to 2012 only taken up for the study.
1.9 METHODOLOGY

The investigator has adopted the following methodology in this study.

Step 1: Review of Literature

The literature on textile research has been studied and reviewed which provides the progress on identifying the growth of literature.

Step 2: Database Selection

This study uses the SCOPUS database which includes Science Citation Index Expanded (SCI-EXPANDED), Social Sciences Citation Index (SSCI) and Arts & Humanities Citation Index (A&HCI) database for drawing publications data on ecology. The ISI Web of Knowledge is an international multidisciplinary database indexing over 15000 international peer reviewed journals in science and technology, besides more than 500 international conference/seminar proceedings.

Step 3: Collection of Publications Data

For this study, the literature on textile research data has been downloaded from ‘Scopus’, multidisciplinary online database, which is an international indexing and abstracting database, using the search term “textile”. For this study, publications commencing from 1983-2012 (30 years) has been downloaded from the database. A total of 96360 data has been identified.
Step 4: Data Analysis

The collected data has been classified by using Excel and the same was loaded into SPSS (statistical package for social sciences) for the purpose of analysis.

Statistical tools such as frequency distribution and percentage analysis and Scientometric techniques such as Authorship pattern, Relative Growth Rate (RGR), Doubling time (dt) citation analysis etc will be used for the study.

1.10 CONSPECTUS

The thesis has been presented in five chapters.

Chapter 1 highlights the need, proposed research, objectives, hypothesis, limitations, significance of the study and methodology adopted in the data collection and analysis.

Chapter 2 Deals with the review of related literature.

Chapter 3 presents a brief note on Textile.

Chapter 4 deals analysis of data along with discusses the results of the analysis of the data and inferences description of the source database and explanation about the bibliometric laws and statistical tools/techniques adopted in the study.

The last Chapter provides the summary of the major findings and observations in the study and enumerates the resulting byproducts of the study.
Offers suggestions and recommendations and provides direction for further research.

The thesis concludes with a list of bibliographic references and appendices.
REFERENCES


