CHAPTER - 1
INTRODUCTION

1.1 Background of the Study
The universe of knowledge is altering its direction and dimensions indefinitely. It is giving birth to new themes and also creating diverse types of relationships amongst a large variety of subjects. This continuous change in the structure of knowledge has led to the classification, organization of documents and relevant information to enable library professionals to transform their techniques in accordance to the changing times. Hence, the research in library classification is a continuous process which has resulted in the universe of knowledge becoming multi-dimensional, dynamic and maintaining continuity as embodied in documents in a helpful sequence for effective and efficient document retrieval. Hence, the cycle of research in classification will be infinite.¹

Librarianship consists of the selection, acquisition, organization and dissemination of knowledge presented in the forms of books, periodicals, films, photographs, maps, audio, video etc. For the purpose of dissemination, knowledge must be properly organized in the libraries and ‘classification’ is a technique of organizing knowledge in the libraries.

1.2 Library Classification
The word classification is derived from the Latin word “classes” which, is a process of grouping.² It involves putting together like entities and separating unlike entities and pervades all the various activities of our life. Library classification aims to create a system out of disorder and provides a comprehensive view of the documents on a subject. Once an orderly arrangement has been achieved, it will save the time of successive reader as well as of the librarian. Dr. S. R. Ranganathan³ has defined classification in five senses as mentioned below:
Sense I  “Division” which means grouping of same characteristics.

Sense II  “Assortment” which is the process of division of a universe of knowledge into groups, in addition to arranging the groups in a definite sequence that is assigning a range to each resulting group.

Sense III  “Ordinal Numbers in a Filiary Sequence” which is practiced on a wide scale.

Sense IV  “Filiary Sequence Coupled with Class Numbers”. In a filiary sequence, each multiple class formed in the process of complete assortment is incorporated in its filiary sequence.

Sense V  “Each Class has Unique Class Number representing it”.

1.3  Need for Library Classification

A service library acquires books for use, which are arranged in a manner so that their utility increases to the optimum level and library classification aims to achieve the same objective. If the collection in the library is small, running into few hundreds only, a librarian would be able to lay his hand on a required document immediately without any problem. There would be no need for a systematic arrangement. When the collection grows beyond a few hundred, a librarian would find it difficult to lay his hand on a required document.

Due to the varying forms and purpose of documents, it becomes all the more essential to arrange them systematically on shelves. A user would be in a better position to help him if the shelves are provided with an adequate number of shelf guides whereby he would require less assistance from the reference staff. In order to provide an effective reference service, it is essential that documents are arranged systematically which would also save the time of the reference staff and that of readers themselves.

The basic objective of librarianship is to bring the user in contact with a specific document or information. Library Classification is a technique, which helps in the
organization of the documents and information so that the user can use the resources of information effectively. Library Classification is a necessity in a service library and it is becoming more and more complex as well as more and more sophisticated in nature.4

1.4 Library Classification Schemes
The collection in the libraries of any appreciable size is organized according to some system, and this arrangement is generally referred to as classification. Classification provides formal and orderly access to the shelves. No matter what scheme is chosen or how large the library, the purpose of classification is to bring related items together in a helpful sequence from the general to the specific. Ease of access is especially important if the collection is heterogeneous. The ultimate aim of any classification system is to lead the patron to the information packages required.

According to ALA Glossary of Library and Information Science5, Classification Schemes is defined as “a particular series or system of classes arranged in some order according to some principles or concepts, purpose or interest or some combination of such”.

The evolution of the schemes of classification is not a new phenomenon. Ancient and medieval philosophers also divided human thought to organize it systematically. Classification schemes for knowledge may themselves be classified according to purpose. A complete map of any area of knowledge, displaying all its concepts and their relationships is known as classification schemes or systems.

In the present study the major library classification schemes which are undertaken are as follows:

1. Dewey Decimal Classification (DDC)
2. Universal Decimal Classification (UDC)
3. Colon Classification (CC)
1.4.1 Dewey Decimal Classification (DDC)

Dewey Decimal Classification was devised by Melvil Dewey in 1876. The first edition of DDC published in 1876 consisted of only 44 pages, of which twelve pages were devoted to introduction, twelve pages as table or schedule and eighteen pages for index. A second greatly enlarged edition of DDC brought in 1885, consisted of 314 pages. DDC has played a vital role in giving direction and shape to the modern librarianship. The 21st edition of DDC published in 1996 is in four volumes, consisting of 4115 pages. The 22nd edition published in mid 2003 is also in four volumes. The most important factor behind the success of Dewey decimal classification is the revision and publication of different editions at regular intervals.6

DDC is a hierarchical scheme, which proceeds from general to specific, using the decimal principal for the sub-divisions of knowledge. The basic plan in DDC is to divide the whole universe of knowledge into ten main divisions each of which is divided into ten subdivisions. Further each of these subdivisions has been divided into ten sections. These divisions are known as the first summary, second summary and third summary.

Dewey decimal classification is an almost enumerative scheme of classification. Since 1876 to 2003 (22nd edition) this scheme did not look back and it gained immense popularity grew day by day throughout the world. DDC has been translated into many languages such as Chinese, Spanish, Danish, Turkish, Japanese, Hindi, Portuguese, Sinhalese, etc. Dewey introduced the idea of using notation for the subjects in his scheme and applying the notation to the book and not to the shelves. The continuous revision policy enjoyed by the DDC system has no doubt made the scheme one of the most important internationally used classification systems in the world. DDC is in use in more than 135 countries in some 200,000 libraries and is published in about 30 languages, speaks volumes of its utility and popularity.7
DDC 23rd Edition, earlier scheduled to be published in 2010, was delayed by about a year since it was to be released in May 2011 in the 135th year of its publication in 1876. The four volumes of DDC 23 forming a total of 4271 pages, has been divided into eleven sections marked A/K. Edition 23 that is the product of a new approach towards the development of print editions of the DDC. In its similarity to its predecessor edition 22, it was prepared in the context of the web; however the edition 23 is the first to be produced as a by-product of the underlying database instead of being as the sole focus of editorial development. Editorial development efforts since the publication of edition 22 have emphasized on short-term and long-term updates. The long-term updates have been held for simultaneous introduction in the print and web versions of edition 23, yet most of the short-term updates have been continuously distributed to users.

1.4.2 Universal Decimal Classification (UDC)
Universal Decimal Classification was developed by Paul Otlet and Henry La Fontaine in 1895. UDC is peculiar in the sense that it consists of a combination of both enumerative and faceted character of schemes and hence is designated as almost faceted scheme of classification. UDC basically derived from DDC is universal in the sense that it encompasses the whole field of knowledge. It is the most popular and multilingual general classification tool for organizing all sorts of recorded knowledge in the library.

The UDC was first published in French by International Information de Bibliography and had 33,000 sub-divisions from 1904 to 1907. The second edition was also published in French during 1927 to 1933 containing 70,000 sub-divisions. The third edition in German was published in 7 volumes of tables and 3 volumes of alphabetical index from 1934-51 consisting of 140,000 sub-divisions.

The 1st completed edition of UDC in English was actually the third edition being prepared and published by the British Standard Institute (BSI) with joint request of British society for International Bibliography and ASLIB. The UDC was brought out in
different languages and which is estimated 30 different languages of the world. But the
official language of UDC is English, French and German.

The development and maintenance of UDC is achieved by FID through its Central
Classification Committee, which comprises of Secretary General of FID, editors of UDC
and representatives from National Committees. The UDC is an International
classification system which has the provision for classifying all universe of knowledge
such as books, periodicals, reports, patents, reference documents, and other material such
as Audio-visual, CD’s, databases, computer files etc. in more than 28 different
international languages. ¹¹

UDC was designed keeping in view the following purposes:

1. To provide a method for arranging books on library shelves in an order which
would be helpful to the users i.e. shelf arrangement.
2. To provide a method of arranging sub-titles of the books themselves in a card
catalogue and printed bibliographies.
3. To classify the recorded knowledge.
4. To retrieve the document or locate the document.

1.4.3 Colon Classification (CC)
Shiyali Ramamrita Ranganathan (1862-1972), a mathematician turned librarian and the
father of library science in India was the creator of colon classification. The first edition
of colon classification was published in 1933. Subsequently the other editions appeared
major changes in the scheme. With the result only few libraries even in India could adopt
this scheme. Ranganathan developed the theory of facet analysis, demonstrating that
analysis and synthesis could be applied to every basic class.
The continuous research from 1924 to 1932 led to the publication of the first edition of CC in 1933. The second edition of CC was published in 1939 which has four parts. The third edition of CC incorporating the developments in the classification theory was published in 1950. The fourth edition of CC was published in 1952 incorporating the further developments in the theory of classification presented in ‘Philosophy of Library Classification’ (1951). Continued research in the theory of classification, as evident by the book entitled ‘Classification and Communication’, and by several articles published in ‘Annals in Library Science’, led to the publication of edition-5 in 1957. The sixth edition of CC was published in 1960 did not have many additions. The much awaited seventh edition of CC which was supposed to be ready for publication and use as early as 1971, could actually see the light of the day in 1987. It was entitled, ‘Colon Classification’ by S.R. Ranganathan, edition–7 (Basic and Depth Version) Vol. I; Schedule for Classification; revised and edited by MA Gopinath; 1987, Sarada Ranganathan Endowment for Library Science, Bangalore.’12

CC is a relatively new scheme in at least two respects, i.e. first with regard to its period of origin and second with regard to its methodologies. As the scheme was first published in 1933, it is comparatively younger than some of the most famous schemes like DDC, UDC and Bliss bibliographical classification. Rather, it is interesting to observe that certain methods used in CC have been influenced considerably by the improvement work of other schemes.

1.5 Statement of the Problem
Since long, the Indian classifiers have been expressing their concern at the inadequacies and shortcomings of the schemes of classifications in use in their respective libraries. There are various scholarly treatises on the subject of classifications that have been undertaken by eminent scholars pertaining to the diverse Indian libraries which have led to the following problems relating to classification schemes:
1. How the classifiers are resolving the problems created by the new knowledge having new types of complexities;
2. The method used by various libraries to resolve classificatory problems, modifications, extensions, depth schedules, special schemes, use of two schemes together etc.;
3. The utility of such modifications, extensions, etc. for general use after necessary improvements;
4. The reasons why a suitable scheme is not selected or changed than available;
5. Whether DDC should adhere to enumeration or it should provide devices to overcome classificatory problems;
6. If CC can be rejuvenated and be made an effective tool for classifying documents, especially for Indian libraries; and
7. If there is a need for new general scheme of classification to overcome the inadequacies of the existing schemes in use in Indian libraries.

1.6 Objectives of the Study

The objectives of the Study are:

1. To identify the most popular schemes of classification used in the libraries;
2. To determine the modifications carried out in the schemes of classification used in the libraries;
3. To explore the problems faced in classifying the library material;
4. To measure the satisfaction level of library professionals with the schemes of classification being used by them;
5. To explore Library professionals’ preference to online classification systems;
6. To identify the future of colon classification, Dewey decimal classification and universal decimal classification in the respective libraries.
1.7 Scope of the Study

The study is entitled “Use of Library Classification Schemes in the ICT Environment in the Selected Libraries in National Capital Region: A Study”. As there are numerous classification schemes being used in various libraries, based on the pilot study conducted, it was found that the following schemes have been undertaken for the study:

1. Dewey Decimal Classification (DDC)
2. Universal Decimal Classification (UDC)
3. Colon Classification (CC)

1.7.1 Geographical Coverage of the Study

The geographical coverage of the study covers the population from selected libraries situated in the national capital region.

1.7.2 National Capital Region (NCR)

The national capital region is the metropolitan area of Delhi which encompasses satellite cities like Faridabad, Gurgaon, Ghaziabad and Noida. The origin of NCR can be traced to the recommendation of first ever master plan of Delhi, way back in the year 1962. The primary objective for the creation of NCR was to reduce the flux of the already teeming population in the city of Delhi and the growing demand for more space owing to large scale industrialization. Therefore, the neighboring states like Rajasthan, Haryana and Uttar Pradesh came into consideration for developing satellite towns of Gurgaon, Noida, Ghaziabad and Faridabad were the names that came up for developing the whole NCR region.13
The study covers the following areas in National Capital Region:

1. National Capital Territory Delhi
2. Faridabad
3. Gurgaon
4. Ghaziabad
5. Noida

To conduct the survey, around 343 questionnaires were distributed among the respondents, of which 236 complete responses were received back, and there are 42 libraries where no scheme is being used in their libraries.
1.7.3 Categories of Libraries

The study covers the following categories of the libraries:

1. **Academic Libraries** - An academic library is essentially an education-oriented library, which serves an institution of higher learning, such as colleges, educational institutions and university libraries.

2. **Special Libraries** – A special library often has a more specific clientele than libraries in traditional educational or public settings and normally deal with only a specialized or particular type of information.

3. **Government Organizations** – Libraries in the government are constituted by the Government of India for their ministries, educational and research institutions and various other governmental organizations in order to meet the requirements of the specific needs of their staff members.

4. **Non-Governmental Organization (NGO)** - A non-governmental organization library is meant for non-governmental organizations that are legally constituted organizations created by a group of people well versed in legal operations and operate independently without any interference from any government body.

5. **Public Libraries** – A public library is a basically a library which is accessible to the general public and is usually funded from public sources and are operated by the elected members from the public communities.

The study would further focus on the issues related to the ICT environment. The word “ICT environment” has been used for the purpose of comprehending the changing perception of the libraries and not otherwise as to study the ICT based classification systems and their application as such. This has been done especially considering the shift of libraries in the recent past from traditional environment to the ICT based information services and the classification system such as Web Dewey is available to them for use. Therefore, the term,” ICT environment” is justified wherever possible, however, the
application of Web Dewey for the purpose of classification has been studied for the purpose of the present research.

A list of selected libraries has been appended in the Appendix – II and III.

1.8 Hypotheses of the Study
The term hypothesis is derived from the Latin word ‘Hypo’ which means ‘less than or less certain’ and ‘thesis’ means generally ‘held view or belief’. It is regarded as a tentative guess or supposition with the aim of providing directions to the researchers in its process. Hypothesis is the prediction of the results of a study in advance of actual collection of data. In formulating a hypothesis, one should follow the guidelines laid down for the purpose. A good hypothesis opens new areas of research. The hypothesis should represent researcher’s thinking about the problem before starting the study. Keeping in view the objectives and scope of the study the following hypothesis has been framed:

1. Library professionals are satisfied with the schemes of classification currently in use in the libraries;
2. Library classification schemes are used only as a tool for classifying the collection in the library;
3. LIS professionals are adequately trained in the usage of the schemes to classify the library material;
4. Dewey decimal classification is widely used schemes in the libraries; and
5. The online version of the classification schemes are adequately used in the libraries.
1.9 **Research Methodology**

For a systematic study of any concept, methodology is extremely important and a most indispensables step. In order to conduct the present study “Use of Library Classification Schemes in the ICT Environment in Selected Libraries in National Capital Region: A Study”, several issues have been grouped, discussed and analyzed.

The most imperative tool, while conducting any research is “planning” as it acts as a guideline to investigate the problem. Different strategies are required to be employed to tackle various research problems which relate to the idea which is known as research design. According to Adams and Schvaneveldt,\(^\text{16}\) “A research design refers to a plan, blueprint, or guide for data collection and interpretation, sets or rules that enable the investigator to conceptualize and observe problems under study”. It includes an outline of what the investigator will carry out from writing the hypothesis and their operational implications to the final analysis of data.

1.9.1 **Selection of the Topic**

The present study is an attempt to study the use of library classification schemes in the libraries of national capital region in the ICT environment. Library classification schemes are an important tool or technique for libraries to organize the collection of library material on the shelves. In the present scenario, there are several schemes of classification that are in existence, and there are very few persons who have taken the step to study about the schemes used in the libraries. Through this research, a sincere effort has been made by the researcher to find out the future trends and fate of library classification schemes in their respective libraries.

1.9.2 **Selection of the Libraries**

The selection of libraries for data collection has been done on the basis of the following sources:

5. Websites pertinent to various libraries located in Delhi and NCR on the internet.

1.9.3 Literature Search
A literature search is an organized search for all of the literature published on a topic. A well-structured literature search is the most effective and efficient way to locate sound evidence on the subject on which one is researching. Evidence may be found in books, journals, government documents and the internet. The literature has been reviewed from various primary and secondary sources such as: (i) Databases - Emerald, LISTA, LISA (ii) Printed Journals (iii) Books and (iv) Conference Papers in order to collect the most relevant articles on the research topic. The detailed description on the reviewed study is discussed in Chapter – 2 Review of Related Literature.

1.9.4 Questionnaire Method
A questionnaire is a means of eliciting the feelings, beliefs, experiences, perceptions, or attitudes of some sample of individuals. As a data collecting instrument, it could be structured or unstructured. The questionnaire is most frequently a very concise, preplanned set of questions designed to yield specific information to meet a particular need for research information about a pertinent topic. The research information is attained from respondents normally from a related interest area. A questionnaire is a written or printed form used in gathering information on some subject or subjects consisting of a list of questions to be submitted to one or more persons. They are a valuable method of collecting a wide range of information from a large number of respondents.17
While designing the questionnaire an attempt has been made to:

1. Analyze the research problem minutely;
2. Formulate the questions clearly to elicit maximum response and information;
3. Request the respondents for information which can be easily be provided and is not of a confidential nature;
4. Formulate questions which are conceptually valid which promote understanding and accuracy and encourage the respondents to participate in research.

All the above pre-requisites were taken into consideration while designing the questionnaire.

1.9.5 Designing of the Questionnaire

Before designing the questionnaire, a thorough survey of literature related to the research topic was conducted to get a complete understanding of the problem and objectives and hypothesis of the research were formulated. It was on the basis of these objectives and hypothesis that the questionnaire was designed. A structured questionnaire was designed and distributed to the selected libraries to collect relevant data. The purpose of the questionnaire was to elicit accurate knowledge with regard to use of library classification schemes in their respective libraries. Most of the questions consisted of multiple choices where respondents were asked to tick mark (√) their answers, while other questions were to be answered with a Yes/No. Provisions were also made to give them the opportunity to express their views by leaving some questions open-ended.

1.9.6 Pretesting of the Questionnaire

Even after the researcher has proceeded along the lines suggested, the draft questionnaire is a product evolved by one or two minds only. Until it has actually been used in interviews and with respondents, it is impossible to predict whether it is going to achieve the desired results. For this reason, it is necessary to pre-test the questionnaire or conduct
a pilot study before it is used in a full-scale survey, to identify any mistakes that need any correction.

To test the validity of the questions, the questionnaire was pretested before being finalized. The main objective of the pre-testing/pilot study was to find out the respondents’ opinions and the language used, to rule out the ambiguities and doubts, so as to get accurate results and responses. During the pre-testing/pilot study, several suggestions were received and in the light of these suggestions some questions were revised and some new questions were also added in the final draft. The pilot study was conducted in the 11 Libraries covering all the categories around NCR. The libraries who participated in the pilot study were not included for the final survey. The following are the 11 libraries where pilot study was carried out:

**Academic Libraries**

1. National School of Drama (NSD), Delhi  
2. Lingaya's University, Faridabad  
3. Shyam Lal College (Evening), Delhi  
4. Dronacharya College of Engineering, Gurgaon  
5. Bharati Vidyapeeth’s Institute of Computer Applications and Management, Delhi  
6. Institute of Cytology and Preventive Oncology, Noida

**Public Libraries**

7. Bharatiya Vidya Bhawan Delhi Kendra, Delhi

**Government Organizations**

8. Council of Advancement of People’s Actions and Rural Technology, Delhi  
9. National Museum of Natural History, Delhi
Special Libraries

10. South Asia Human Rights Documentation Centre, Delhi
11. Institute of Nuclear Medicine & Allied Sciences, Delhi

1.9.7 Administering of the Questionnaire

For the main study, the questionnaires were distributed in the selected libraries between September 2011 to March 2012 through email and post besides visiting them personally. Data was collected through personal visits with the respondents, as a follow up measure, several phone calls and personal visits were made to the individual respondents wherever necessary. In order to maximize the response rate, reminders were sent at regular intervals.

About 343 questionnaires were distributed among the respondents, of which 236 completed responses were received back, resulting in a response rate of 68.80%. There were still 42 (12.24%) respondents which confirmed that they were not using any scheme in their respective libraries. The given tables show the statistics of distributed questionnaires and the responses from the covering NCR and various categories of libraries.

Table 1.1: Area-wise Distribution of Questionnaires

<table>
<thead>
<tr>
<th>Area</th>
<th>Distributed</th>
<th>Received</th>
<th>Not Received</th>
<th>No Scheme Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delhi</td>
<td>264</td>
<td>185</td>
<td>47</td>
<td>32 (12.12%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(70.07%)</td>
<td>(17.81%)</td>
<td></td>
</tr>
<tr>
<td>NCR</td>
<td>79</td>
<td>51</td>
<td>18</td>
<td>10 (12.65%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(64.56%)</td>
<td>(22.79%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>343</td>
<td>236</td>
<td>65</td>
<td>42 (12.24%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(68.80%)</td>
<td>(18.96%)</td>
<td></td>
</tr>
</tbody>
</table>
### Table 1.2: Category-wise Distribution of Questionnaires

<table>
<thead>
<tr>
<th>Category</th>
<th>Distributed</th>
<th>Received</th>
<th>Not Received</th>
<th>No Scheme Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Libraries</td>
<td>203</td>
<td>150</td>
<td>36</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>(73.90%)</td>
<td>(73.90%)</td>
<td>(17.73%)</td>
<td>(8.37%)</td>
</tr>
<tr>
<td>Special Libraries</td>
<td>54</td>
<td>38</td>
<td>07</td>
<td>09</td>
</tr>
<tr>
<td></td>
<td>(70.38%)</td>
<td>(70.38%)</td>
<td>(12.96%)</td>
<td>(16.66%)</td>
</tr>
<tr>
<td>Government Libraries</td>
<td>59</td>
<td>34</td>
<td>18</td>
<td>07</td>
</tr>
<tr>
<td></td>
<td>(57.63%)</td>
<td>(57.63%)</td>
<td>(30.50%)</td>
<td>(11.87%)</td>
</tr>
<tr>
<td>Non-Government Organization</td>
<td>15</td>
<td>10</td>
<td>0</td>
<td>05</td>
</tr>
<tr>
<td></td>
<td>(66.66%)</td>
<td>(66.66%)</td>
<td>(0%)</td>
<td>(33.34%)</td>
</tr>
<tr>
<td>Public Libraries</td>
<td>12</td>
<td>04</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td></td>
<td>(33.33%)</td>
<td>(33.33%)</td>
<td>(33.33%)</td>
<td>(33.34%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>343</strong></td>
<td><strong>236</strong></td>
<td><strong>65</strong></td>
<td><strong>42</strong></td>
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<td></td>
<td><strong>(68.80%)</strong></td>
<td><strong>(68.80%)</strong></td>
<td><strong>(18.96%)</strong></td>
<td><strong>(12.24%)</strong></td>
</tr>
</tbody>
</table>

1.12.8 Interview Method

Interviews are a far more personal form of research than questionnaires. Interviews are generally easier for the respondent, especially if what are sought are opinions or impressions. Interviews can be very time consuming and they are resource intensive. The interviewer is considered a part of the measurement instrument and interviewers have to be well trained in how to respond to any contingency. Interviews are among the most challenging and rewarding forms of measurement. They require a personal sensitivity and adaptability as well as the ability to stay within the bounds of the designed protocol. The interview technique is a verbal method of securing data. It involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses (oral stimuli – oral responses).\(^{18}\)

The interview approach involves a person designated the interviewer asking questions on a face-to-face contact to the other person or persons, designated the interviewee(s), who gives answers to these questions. It affords a “portrait of human personality” that is information about the social background which governs one’s scheme to life, one inner strivings, tensions, wishes and the changes in one’s behavioral relations. The interviewing of librarians by a researcher through personal interaction and a face-to-face conversation has been adopted for supplementing the information regarding the libraries.
1.12.9 Analysis and Interpretation of Data

Data analysis and interpretation is the process of assigning a connotation to the collected data and determining the conclusions, significance, and implications of the findings. Statistical data has no meaning unless it is analyzed and interpreted to draw results from it. The data received through these filled up questionnaire from the libraries has been analyzed and interpreted. For analyzing of data, the entire questionnaires received from the respondents were thoroughly scrutinized, organized and tabulated by using two simple software:

1. MS Excel, 2007 for tables and graphs;
2. Statistical Packages for Social Sciences (SPSS), Version 19.0 for applying techniques and analyzing the data.

In the SPSS software, for entering the data variable has been created in the “Variable View”
Further, data has been entered in the “Data View”

After the creation of variables and entering the data, the different statistical techniques have been applied which are as follows:

1. **Cronbach’s Alpha** - Cronbach's alpha is the most common measure of internal consistency ("reliability"), how closely related a set of items are as a group. It is most commonly used when you have multiple Likert questions in a survey/questionnaire that form a scale, and you wish to determine if the scale is reliable. Technically speaking, Cronbach's alpha is not a statistical test - it is a coefficient of reliability (or consistency).\(^{19}\)

2. **Cross Tabulation** – Cross-tabulation is one of the most useful analytical tools and a main-stay of the market research industry. Cross-tabulation analysis, also known as contingency table analysis, is more often used to analyze categorical (nominal measurement scale) data. A cross-tabulation is a two (or more) dimensional table that records the number (frequency) of respondents that have
the specific characteristics described in the cells of the table. Cross-tabulation tables provide a wealth of information about the relationship between the variables.  

3. **Chi-Square Test** - Chi-square is a statistical test commonly used to compare observed data with data we would expect to obtain according to a specific hypothesis. It is a test that is always testing what scientists call the null hypothesis, which states that there is no significant difference between the expected and observed result.  

The same has been represented in Chapter - 4 ‘Data Analysis and Interpretation’. On the basis of the analysis, the findings and suggestions on various aspects have been drawn and presented.

1.13 **Operational Definitions of the Terms**  
**Abridged Schedules** – Abridged schedules are shortened or concise versions of classification systems derived from the full editions by defined policies.

**Analytico-synthetic Classification** – A classification system which first analyses a subject into pre-defined categories and facets and synthesizes the class number based on postulates and principles. It is an advanced stage of faceted classifications, as every faceted classification is not analytic-synthetic.

**APUPA Pattern** – APUPA is an acronym for Alien, Penumbral, Umbral, Penumbral and Alien region of subjects in a systematic arrangement.

**Auxiliary Tables** - In library classification, a separate list of classes (with their notations) that serves only to subdivide the classes listed in the main schedules, for example, the standard subdivisions listed in Table 1 of Dewey Decimal Classification.
**Book Number** - The portion of the call number following the class notation, added to distinguish a specific item within its class. A book number is composed of an author mark appended by the cataloger to sub-arrange works of the same class by name of author, followed by a work mark added to sub-arrange works of the same author by title or edition.

**Call Number** – The combination of letters and numbers used to label each book and give it a unique "address" on a library shelf. Books are arranged on the shelf by call numbers, so that books on the same subject are shelved together.

**Classification** – Classification is a procedure of grouping similar items and objects and is essential in formulating groups that is known as classifying which results in Classification. This process helps the user to arrange, organize and make a logical sense of articles which also assists the user to locate them in an easy manner.

**Dewey for Windows (DfW)** – The electronic version of DDC-21, named Dewey for Windows was released simultaneously with print version in 1996 and is a Microsoft Windows or UNIX based LAN compatible system.

**Enumerative Classification** – A species of library classification which lists readymade classification numbers of subjects of the past, present and foreseeable future in a single sequence under different main classes.

**Facet Analysis** – Breaking a subject into consistent elements according to postulates and principles stated for the purpose. It is identifying predefined categories and facets and putting them in a postulated facet sequence as per syntax of the system.

**Faceted Classification Scheme** - A faceted classification scheme is on the other extreme of the scale since instead of listing all the classes and the corresponding numbers, it lists
the various facets of every subject or main class and provides a set of rules for constructing class numbers through facet analysis.

**Filiatory Sequence** – An arrangement of entries according to their affiliation to one another; or collating related subjects in proximity. It ultimately results in arrangement in arrays and chains.

**Form Divisions** - The numbers representing the forms of books are called form divisions. They are also known as common sub-divisions or common-isolates.

**Index** – An ordered reference list of the contents of a file or document together with reference for identification or location of these contents. Indexes are essential tools in knowledge organization and retrieval and form the core and traditional part of information studies, research and teaching.

**Library Classification** – A library classification is a system of organizing various library materials such as books, serials, audiovisual materials, computer files, maps, manuscripts etc. according to their subject and assigning a number to that information resource.

**Library Classification Schemes** – Library classification schemes are tools that allow us to allocate a class mark – an artificial notation comprising alphanumeric characters and punctuation marks to every item based on its subject content so that the library staff can preserve all the related items together on the shelves of the library. They are the logical arrangements of subjects plus a system of symbols representing those subjects.

**Mnemonics** – Mnemonics are aids to memory. A mnemonics notation is designed to help the users memorize the call number for a short while during his/her passage from catalogue to the library stacks.
Notation - The set of characters (numerals, letters of the alphabet, and/or symbols) used to represent the main classes and subdivisions of a classification system. In library cataloging, the class notation assigned to a bibliographic item represents its subject and is the first element of the call number, determining its position on the shelf relative to items on other subjects.

Phase Relation - A fruitful random associations of two concepts at three hierarchical levels comprising main classes, facets and arrays. The term phase relation is reserved for the interdisciplinary relations at the main class or above levels.

Reclassification – Reclassification is the process of giving new class numbers to an already classified library or part thereof either with a new edition of the same classification system or with an entirely different one.

Relative Index – It is an index to a classification system in which all relationships and aspects of the subject are brought together under each index entry. It is a supplementary, thus an additional, topical approach to classification by discipline. In a relative index subjects are collocated by discipline.

Schedule – A printed, otherwise recorded lists of subjects and their subdivisions arranged in a systematic order with notation given for each entry.

Summary – A listing of chief subdivisions of a class providing an over view/ one glance structure of a subject. Summaries at all levels provide an overview of the subject and help arrive at a desired number without much flipping of the pages to save time and to save the printed pages from much wear and tear.
**Taxonomy** - The science of classification, including the general principles by which objects and phenomena are divided into classes, which are subdivided into subclasses, then into sub-subclasses, and so on.

**Vocabulary Control** - A controlled vocabulary is an established list of standardized terminology for use in indexing and retrieval of information. An example of a controlled vocabulary is subject headings used to describe library resources.

**Web Dewey** - An enhanced version of the full Dewey Decimal Classification (DDC) database available to full members and partial users of OCLC in conjunction with the CORC online cataloging project. Web Dewey can be used to generate proposed Dewey class numbers for Web pages and other electronic resources. The system is also available in an abridged version.

### 1.14 Bibliographic Style for References

The style used for citing the text and references in the study is ISI 2381-1978 (with slight modifications) bibliographical style developed by Indian Standards Institution now Bureau of Indian Standards (BIS). The Bibliography in the appendix has also been prepared using the same format. There are various kinds of entries like single author, two authors, three or four authors, editorial publications, journal articles, conference proceedings and thesis/dissertations have been described below:

#### For Books:

**Single Author**

Two Authors

Three Authors

Four or More Authors

For Journal Articles:
Single Author
SINGH (K P). Growth and development of agricultural education, research and libraries in India. DESIDOC Journal of Library & Information Technology. 32, 1; 2012; 5-14.

Two Authors
SINGH (K P) and GULATI (Dipti). Agricultural associations in India: A study. DESIDOC Journal of Library & Information Technology. 32, 1; 2012; 45-52.

Three Authors
SINGH (K P), Bebi and GULATI (Dipti). Technological march from web 1.0 to web 3.0: A comparative study. Library Herald. 49, 2; 2011; 146-157.

Four or More Authors
KUBLIK (Angela) and others. Adapting dominant classifications to particular contexts. Cataloguing & Classification Quarterly. 37, 1; 2003.

Conference Papers:
Chapter in a Book:

Thesis/ Dissertation:

Online Article:

Editorial Work:

1.15 Organization of the Study
The study is organized into five chapters. A brief outline of the each chapter is given below:

Chapter One: Introduction - Covers the basic information of the study which includes background information of library classification and its schemes, objectives of the study, scope of the study, statement of the problems, hypotheses and research methodology used in the research.
| Chapter Two: Review of Related Literature | Enumerates the details of the work that has already been done in this area. For review various online and printed sources of information have been reviewed. |
| Chapter Three: Library Classification Schemes: An Overview | Provides a comprehensive detail about library classification and its schemes. It further includes concept and definitions of library classification, functions, purposes, library classification schemes and its comparative study. It also includes the role of classification in the ICT environment. |
| Chapter Four: Data Analysis and Interpretations | Deals with analysis and interpretation of the responses received supported with tables and figures. |
| Chapter Fifth: Findings, Suggestions and Conclusions | Reveals the findings, suggestions and conclusion. |
References

1. SHARMA (Shashi) and SINGH (Satnam). India’s contribution towards library classification. *International Library Movement*. 16, 3; 1994; 201-208.


12. MAHAPATRA (Piyush Kanti) and CHAKRABARTI (Bhubneshwar). Organizing information in libraries. 1V. 1999. Ess Ess Publication; New Delhi. p 129-130.


