Chapter - 2

Costing and Cost Benefit Analysis of Academic Libraries : A Review
CHAPTER – 2
COSTING AND COST BENEFIT ANALYSIS OF ACADEMIC LIBRARIES: A REVIEW

2.1 INTRODUCTION

The purpose of this chapter is to focus on the scanned literature on costing and cost benefit analysis of academic libraries. Accordingly present chapter is divided into following headings.

- Library
- University Library
- Library Processes
- Library Users
- Manpower
- Library Building
- Library Equipments and Furniture
- Financial Management of Universities
- Characteristics of Library Finance
- Library Budget
- Budgeting
- Price and Cost
- Costing
- Accounting
- Cost Accounting
- Cost Analysis
- Auditing
- Depreciation
- Unit Cost
- Cost Effectiveness
- Cost Benefit
- Cost Benefit Analysis
The process of reviewing literature was started by referring the bibliographies of research on the subject. A bibliography is a basic information source for finding out research carried out in the subject of library and information science. Different bibliographies are available for this purpose. Association of Indian Universities published bibliography of doctoral thesis in social sciences can be a basic material in this regard. All the bibliographies published since 1980-81 to 1993 published in 1997 and 1998 to 2001 were referred. In support to this, the bibliography of research in library and information science in India compiled by Pathak and Ramaiah (1986) and Kumar (1987) were scanned as they have covered research conducted at M.Lib I.Sc. and Ph.D. level.

The website of INFLIBNET (2010) and Vidyanidhi (2011) were searched for thesis database and it was found that the research on the cost effectiveness was conducted by Kumar (1999); Shirur (2005); Kaur (2002); Saraf (1996). The research on Financial Management was also done by Premchand (1999); Saxena (2002); Qureshi (1986); Naidu (1989). The research on Cost Analysis was covered by Kamini (2002); Saikia (2006). The research on Cost Benefit Analysis of Textbook Section in BAMUL was conducted by Basole (1992) at M.L.I.Sc.Level which indicates that no research on the topic Costing and Cost Benefit Analysis has been covered, hence the researcher has undertaken the study entitled “Costing and Cost Benefit Analysis of Academic Libraries”.

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In addition to this few books and large number of research articles related to present study have been reviewed by the researcher, starting from definitional analysis, need for costing and cost benefit, which was treated as a basis for the study.

2.2 LIBRARY

Library is an essential part of the research and development effort in any research institute (Bhatia, 1967). Libraries are the temples of learning, the doors of which are open to all without any distinction of caste, creed, sex, age or class (Mittal, 2007). With a few exception library is regarded as a service institution, its aim is to enable the users to make the most effective use of the resources and services of the library (Kumar, 1991). Library is an important intellectual resource of the academic community and helps to an academic library’s members for their self development to fulfill the curriculum requirements and to promote studies and student’s research (Dhiman and Sinha, 2002; Bhatia, 1967). It is a dynamic instrument of education (Jambhekar, 1972). It is a collection of books, periodicals and/or other materials, primarily written and printed (Navalani and Trikha, 1999; Rawat and Kumar, 2002). It is an organized entity designed to provide the best possible services with limited resources (Vajifdar and Kulkarni, 1966; Sehgal, 1998; Yuse, 1960; Rawat and Kumar, 2002). Library is the heart or nerve of any university (Kabir, 1988). The library as an institution exists for the benefits of a particular social group. It may be the citizens of a community, members and students of an
educational institution or some larger or more specialised group; the library is a resource learning centre and it is a service oriented organization (Deivanai and Selvam, 2010).

2.2.1 Academic Libraries

Libraries attached to institutions of learning are the academic libraries (Gour, 1980; Chopra, 1999; Dhiman and Sinha, 2002; Campbell, 1974; Martell, 1983; Saunders, 1966; Josey, 1975). Academic libraries come under wide and very different ranges including small colleges, polytechnics, universities and special research institutions with teaching programmes at different levels, such as diploma and degree courses, post-graduate studies and research work (Ganguly, 1997).

An academic library is a central service or unit of operation set up to provide a location, materials and facilities for the study, teaching and research being carried out in the institution overall (Baker, 1997).

2.2.2.1 Objectives of Academic Libraries

- To serve the needs of the academic community.
- To provide reference materials at appropriate levels.
- To provide an active information service.
- To provide staff to conduct literature search.
- To provide study areas for users.
- To provide the quick access to accurate information (Koli, 1987).
2.2.1.2 Functions of Academic Libraries

Functions of academic library include -

- A high degree of relevance of its collection for needs of the university community.
- Ensuring that maximum use is made of the resources and facilities it provides.
- Making use of its resources on integrated part of educational process (Samuel, 2008).

2.2.2 Types of Academic Libraries

There are three main types of academic libraries which include:

2.2.2.1 School Library

2.2.2.2 College library

2.2.2.3 University Library

2.2.2.1 School Library

An organized collection of books placed in a school for the use of teachers or pupils, but usually for pupils. It may comprise books of reference and/or books for home reading, and be in the care of professional librarian, teacher or teacher-librarian (Sehgal, 1998; Sayers, 1967).

2.2.2.2 College Library

A library established, maintained and administered by a college to meet the needs of its students and faculty (Sehgal, 1998; Fla, 1965).
2.2.2.3 University Library

Considered as a power house of information, knowledge, acts as a transformer and transmits this power to the students, scholars and teachers (Varlakshmi, 1996; Dhiman and Sinha, 2002; Dutta, 1978; Fla, 1965; Singh, 1997). A library or group of libraries established, maintained and administered by a university to meet the needs of its students and members of the academic staff (Sehgal, 1998; Shukla, 1987). It is the hub of the wheel whose spokes reach into every department of the institution (Aldrich, 1946).

As the scope of the present study is limited to university library hence detailed description of university library is given.

2.2.3 Components of University Library

- Inputs: staffing, budgeting, collection, accommodation, materials and facilities (Saunders, 2003).

- Processes: collection development, organization and management.

- Outputs: reference services, usage of finding, tools, catalogues, collections and document delivery services.

- Continuous training of users and service providers through direct contact (Verma, 2005).
2.2.4 Objectives of University Library

Primary objectives of University library can be

- To maximize accessibility of materials to users.
- To maximize exposure of users to materials (Kaula, 1994).
- Conservation of knowledge amassed from times immemorial.
- Dissemination of knowledge through teaching, publication and extension programmes.
- Extension of the bounds of knowledge through research work by teachers and other research workers.
- Helping the teachers and taught to achieve the highest academic honours and a lifetime good reading (Deshpande, 1985; Ojha, 1980; Saini, 1976).

Apart from these objectives of university library as per Maharashtra University Act (1994), are to disseminate create and preserve knowledge and understanding by teaching, research, extension and service to promote acquisition of knowledge in a rapidly developing and changing society.

2.2.5 Functions of University Library

The functions of university libraries are essentially

- To acquire material suitng to the need of a particular user populating, actual or potential.
- To store, organise and display the material.

- To provide resources, necessary for research in fields of special interest to the university.

- To aid the university teachers in keeping abreast of a development in his field.

- To provide library facilities and services, necessary for the success of all formal programmes of instructions.

- To open the doors to the wide world of books that lie beyond the borders of one's own field of specialization and

- To bring books, students and scholars together under conditions which encourage reading for pleasure, self discovery, personal growth and sharpening of intellectual curiosity (India Education Commission, 1971).

2.3 LIBRARY PROCESSES

2.3.1 Acquisition

Acquisition work is the beginning of all library processes which ultimately result in the service which gives to the library's clientele the desired materials. Acquisition can improve the services rendered to library's users if it maintains a close liaison with reference and circulation departments (Vajifdar and Kulkarni, 1966; Hingwe, 1982).
2.3.1.1 Objectives of Acquisition Section

The acquisition of books and periodicals is a pre-requisite for a library. This work is so important that it should be organized in such a manner that the reading material of maximum utility is acquired without any delay and at the minimum cost. This can be ensured only if a suitable section is organized. The first and foremost essential of an acquisition programme is to decide the general objectives of an acquisition programme of a library.

1. A library should acquire and provide all the relevant reading materials to its clientele so that the basic functions of the library are fulfilled. For example, a university library should procure all the reading materials needed by its research scholars for their research projects, besides books to fulfil curricular requirements.

2. A library should acquire all books on the related topics. A university library must procure books on borderline subjects also so that comprehensive reading material for research and study is made available.

3. A library should contain all the reading materials pertaining to the history and culture of a particular country, city, place or institution, as the case may be.

2.3.1.2 Functions of Acquisition Section

The librarian’s job is to select, acquire, process and make available books and other kindred materials to the existing and prospective clientele. In fact, acquisition of the reading material is one of the important functions
that a librarian in enjoined to perform. The following are the functions of an Acquisition Librarian in addition to his general duties:

- To develop procedures to meet the needs of the library.

- To handle personally difficult or important correspondence or problems relating to the ordering of books, serials, documents, periodicals, maps, pamphlets, films and other materials.

- To make recommendations to the faculty concerning book selection.

- To consult with heads of other departments and divisions concerning book orders.

- To notify the faculty of the non-expenditure of books funds.

- To watch carefully auction, rare books and second-hand dealers’ catalogues for opportunities to purchase items on desiderata lists.

- To have materials filmed or otherwise reproduced when they are out of print or otherwise unavailable in original.

- To interview publishers’ representatives, book dealers, collectors, and others who are interested in building up the university’s book collection.

- To read, appraise books, other materials and make recommendations for their acquisition.

- To supervise the handling of all gifts and exchanges coming into the library.
The following may be the additional functions of an Acquisition Section:

- Maintenance and use of bibliographic aids peculiar to acquisition work (e.g. dealers’ catalogues, trade lists, etc.).
- Maintenance of order files, “In process” files, desiderata lists, and other records essential to acquisition work.
- Making up, dispatching; and filing of orders for books Library of Congress Cards and other materials ordered through the department. (The necessity of ordering Library of Congress cards or printed catalogue cards of some other central agency arises if the library in question has adopted unit card method for cataloguing).
- Receipt handling and inspection of incoming shipments,
- Packing and shipment of returns an exchange materials.
- Any preparation of materials ordinarily done by the department (e.g. stamping, perforating, and plating of books).
- Preparation of bills for payment, book keeping, and other financial activities assigned to the department.
- Preparation of accession lists.
- Informing individuals recommending the purchase of books about the status of such recommendations.
- Ordering and checking of periodicals.
- Following up on items not promptly received.
Though Acquisition Section of library has a pivotal position in the organization, yet, “effective acquisitional organization, requires not only that the physical surroundings be planned to speed the flow of work, but also that the principles of administration relating to centralization of homogeneous activities, direction, supervision and control be applied to its functioning”.

2.3.2 Technical Processing

Technical section or processing section is established in all libraries. This section is generally known as cataloguing section or technical section. The processing section of a library is the pivot round which all its activities revolve. The work of the processing section is basic to other sections of a library. This is the section which help in the transformation of a collection of books into serviceable articles. The work of a processing section is mainly divided into two part (1) Classification and (2) Cataloguing.

2.3.2.1 Classification

Classification plays a very important part in retrieval of knowledge from its collection. The effectiveness of the services of the library will depend much upon the classificatory methods employed (Vajifdar and Kulkarni, 1966; Hingwe, 1982).

2.3.2.1.1 Personnel

Classification work is not only a technical job but it needs scholarship also. A sound subject background is essential for good classification, since the most important job in classification is the determination of specific
subjects. It can be done only by subject experts because they know their subjects minutely. It is therefore, essential that in the classification section of a library, section should include at least one person each for Sciences, Humanities, Languages and Social Sciences. In case of special libraries, the classifiers must be well-versed in the subject of specialization. The classifiers, in general, must have advanced education in various subjects. Besides, the classifiers should have advanced training in the art of classification. They should have an aptitude for classification.

2.3.2.1.2 Tools for Classification

The schedules of the classification scheme used in a particular library are the major tools of the classifier. In order to interpret the schedules of particular scheme, other aids as given below can also be helpful for ensuring uniform class number for particular books.

- Code for classifiers by W. S. Merrill, 1939.
- Indian National Bibliography 1957.
- The National Union Catalog (U.S.), 1945.
- American Book Publishing Record 1906.

The classifiers can rely safely upon the above-mentioned standard tools because expert classifiers are responsible for classifying the books
listed in these bibliographies and catalogues, it would be economical if class numbers are taken directly from these tools.

2.3.2.3 Classification Procedure

The books are received from the Order Section after accessioning. The following jobs are performed for classifying the books:

- Duplicate checking.
- Determining specific subject of the book.
- Allotting class number by referring to the Classification schedules.
- Assigning Book Numbers.
- Assigning Subject Headings.
- Checking of class numbers and subject headings by the chief classifier.
- Maintenance of staff manual.

2.3.2.3.1 Duplicate Checking

The under-mentioned procedures are followed for duplicate checking.

- All the books are divided into two main groups i.e. fiction and non-fiction. The latter group is further divided into various sub-groups representing various subjects.
- Books in each group/subject are arranged alphabetically by author.
• These books are taken to the public catalogue for checking, if official catalogue is not maintained.

• The Assistant first checks the books with the main entry/author entry. If many title cards representing same author are found in the catalogue, then edition and year of publication are checked. In case of doubt, other entries are also checked. For pseudonymous authors, cards giving their real names are also looked for.

• The word ‘Add’ is written in pencil on the fly leaf of those books for which the catalogue cards are found in catalogue, Call numbers for these books are written on the verso of the title page.

• The words “Main & Shelf” or letter “M & S” are written in pencil on the fly leaf of those books of which earlier editions are available in the library catalogue.

• The remaining books are taken back to the classifier for classification.

2.3.2.3.2 Determining the Specific Subject

The books, the cards which are not found in the catalogue, are taken over by the classifiers. They, first of all, find out the specific subject of each book by going through the following parts of the book in a successive manner.

• Title.

• Sub-title.

• Foreword.
• Preface.
• Table of Contents.
• Book Jacket’s flaps.
• The thought content.
• Book Reviews.

Generally, the specific subject can be found out by reading the title of a book bit in cases where the specific subject is not clear from the title because of its misleading nature, the other parts of the book as given above are gone through.

2.3.2.3.3 Allotting Class Numbers

After determining the specific subject of each book, the classification schedules and other aids are used for allotting proper class numbers. The indexes attached to the classification schedules are also used to find out the class numbers.

The Class Numbers are given in pencil on the upper half portion of the verso of title page.

2.3.2.3.4 Allotting Book Numbers

After allotting the Class Numbers, the classifier assigns the Book Numbers. The following are the systems of allotting Book Numbers.

• Cutter’s Author Table.
• Cutter-Sanborne Author Table
• Merrill's Authors Table.

• Author Tables of L. Stanley Jast.

• Biscoe Time Numbers.

• Ranganathan’s Book Numbers System.

Generally, author marks constitute a Book Number. Cutter’s Table or Cutter-Sanborne Tables are generally used to allot author marks.

2.3.2.3.5 Assigning Subject Headings

Subject headings are assigned by the classifier so that the cataloguer may prepare catalogue cards for the same. A classifier is in a better position to assign subject headings because he knows the subject of the book minutely.

For assigning subject headings, the following tools may be used.

• Library of Congress List of Subject Headings.

• Sear’s List of Subject Headings.

• A.L.A. List of Subject Headings.

• Ranganathan’s Chain Procedure.

• Library of Congress Subject Headings, 1972.

Out of the above-mentioned tools the Chain Procedure method is most scientific and comprehensive one for deriving proper subject headings.
2.3.2.3.6 Checking by Chief Classifier

If there is more than one classifier, as they are bound to be in bigger libraries, the classification work of the juniors must be checked by the chief classifier, so that consistency is ensured. After that the chief classifier checks class numbers etc, the relevant books are sent on to the Cataloguing Department.

2.3.2.3.7 Maintenance of Staff Manual

If some modifications are effected in the schedules of classification scheme in use, these decisions should be properly recorded in a staff manual.

2.3.3 Cataloguing

The approach of catalogues afforded by a special library will regulate its user flow. It is necessary to develop a strong subject approach as the users need literature on a specific topic rather than by a particular author or title (Vajifdar and Kulkarni, 1966; Hingwe, 1982).

2.3.3.1 Cataloguing Department

Classification determines the place of a book on the shelves. Physically, book can be placed only at one place according to the subject contents of the book. But the readers seek book through various approaches such as author, title, series, and other collaborators like translators, editors, etc. Classification is not capable of fulfilling these varied approaches of the readers. The catalogue comes to the rescue of the readers. The catalogue is
a guide to the blind alley. As a city without a map is difficult to be known about, so is a library without a catalogue.

2.3.3.2 Cataloguing Tools

The Cataloguing Department needs various tools for effective and correct cataloguing. These tools include the Cataloguing Code in use and various important biographical dictionaries, dictionaries of names and dates besides the following.

- Indian National Bibliography.
- British National Bibliography.
- American Book Publishing Record.

2.3.3.3 Personnel

The Catalogue Department should be manned by a capable, punctual, hardworking and intelligent staff otherwise the catalogue instead of serving as a guide will become a hindrance. For this purpose, the personnel should be well-qualified and experienced in the art of cataloguing. The staff of the department should have good handwriting. It should prepare the entries with as much accuracy as is possible because accuracy is the essence of cataloguing.

Stanely L. Jast emphasize the need of accuracy in cataloguing. Their implication is that the cataloguers should be very accurate in preparing entries. The handwriting should be as impersonal as is possible. It is better if
training is imparted in a particular kind of handwriting. This handwriting should be disjointed one so that every letter used in words and phrases in transcribing the entries is crystal clear. There should be no ambiguity. The cataloguers should have practical training in cataloguing work. Unexperienced and untrained raw hands should not be employed in the cataloguing department.

2.3.3.4 Kinds of Catalogues and Catalogue Codes

There are many kinds of catalogues. The need of each library differ. It is also to be decided as to which kind of catalogue a library will use i.e. whether classified catalogue is to be practiced or dictionary type catalogue is to be used. This also differs from library to library.

2.3.3.5 Cataloguing Procedure

The cataloguing of books is an arduous job. It must be planned intelligently if it has to serve its purpose. Proper job analysis should be done and only those persons who can put their heart and soul into this work should be entrusted with this job. The following are the jobs which are involved in the cataloguing department.

2.3.3.5.1 Preparation of the main entry.
2.3.3.5.2 Preparation of shelf list.
2.3.3.5.3 Preparation of added and reference entries.
2.3.3.5.4 Label pasting.
2.3.3.5.5 Label writing and assigning location marks.
2.3.3.5.6 Checking of the catalogue cards by the chief cataloguer.

2.3.3.5.7 Alphabetization of cards.

2.3.3.5.8 Card filing.

2.3.3.5.9 Maintenance of staff manual and authority file, and

2.3.3.5.10 Preparation of list of additions.

2.3.3.5.1 Preparation of the Main Entry

In accordance with the rules of the cataloguing code in use, one of the cataloguers prepares the main entry card. This main entry card contains maximum information about the book. On the back of this card, tracing is done in pencil so that it can be changed without any damage to the card. By writing it on the back of the card, the readers are also saved from unnecessary confusion. This tracing provides guidance to the junior cataloguers as to how many and which added and reference entries are to be prepared. It is also useful at the time of withdrawing the cards of a book which is either lost or otherwise withdrawn from the stock of the library.

2.3.3.5.2 Preparation of Shelf List

A shelf list card is duplicate copy of the main entry card. For each book, one shelf list card is prepared.

2.3.3.5.3 Preparation of Added and Reference Entries

Division of labor and specialization of work are the order of the day. By specialization, quantity and quality of the work are improved. So is the
case with the library work. Moreover, preparation of a main entry is a responsible job and the other added entries are merely duplication of the main entry with minor alterations and/or deletion etc. So it is better if this repetitive job is assigned to junior staff members. The tracing given on the back of the main entry card provide instructions to the juniors for preparing added and reference entries without any difficulty.

2.3.3.5.4 Label Pasting

After the preparation of all the catalogue cards, the books are handed over to semi-professionals or unskilled workers who paste the labels in the books. The following labels are generally pasted in the books.

1. **Spine Label**: Gummed white cloth is cut into round or square pieces of about 1.25” each. This label is pasted two inch above the bottom of the spine of the book. This is done so that the call number may be properly visible to the readers when the book is shelved in a book rack. Symmetrical arrangement can also be ensured, if the width of the book is much less and the spine label cannot be pasted on the spine, it should be pasted at the same level on the front card board.

2. **Ownership Slip/Mark**: (a) One ownership slip is generally pasted on the inner side of the front card board at left hand on the inner side of the front card board at left hand top most corner. The size of this slip may be about 3”x2.5”. The slip may be made of glazed paper.
(b) Other ownership marks are put at various places of the book by rubber stamps or embossing machines. A stamp which contains the name of the library is put on the title page and another on the secret page, to be decided by each library. Third stamp may be put at the end of the book.

3. **Date Slip**: One date slip is pasted on the top most portion of the front or back fly-leaf of each book. But for reference books, manuscripts and other books which are not be issued, this slip is not pasted, otherwise this would be a sheer wastage of time, energy and stationery. The size of the date slip may be 5”x3”.

4. **Book Pocket**: On the bottom of the inner right side or the front or back card-board cover, a book pocket of 5x3” size is pasted.

   For reference and other non-issuable books, this pocket is not pasted.

5. **Book Card**: One printed book card of 5”x3” size is put in the book pocket of each book. But in case of reference and other non-issuable books, this card is not slipped in the book pocket.

   The size and shape of the book card may be reduced and changed in form, in case Browne Charging System is to be followed, because in that system, no issue or return dates are marked on the book card.

2.3.3.5.5 **Label Writing and Assigning Location Marks**

   The pasted labels are written in ink. Superior type of ink and nibs are used for this purpose, junior staff members are deputed for this repetitive job. But this job is very important one because if the labels are not
accurately written, the book is likely to be misplaced. So the employees who are entrusted with this job should have a good handwriting and should be accurate enough. The spine labels contain the call number and the location mark of the book. These are written on the left-hand upper portion of the label. Such marks may be either reference, rare, text book, reports etc. These words are abbreviated and followed consistently.

2.3.3.5.6 Catalogue Cards Checking by Chief Cataloguer

All the cards along with the catalogued books are submitted to the chief cataloguer for scrutiny and checking. In case of mistakes, the assistants are asked to correct the same. The chief cataloguer find out as to whether all the cards have been properly made or not. Similarly, he has to satisfy himself to the effect that the label writing is done in an impersonal handwriting. It is better if the books are sent to the librarian or other senior staff member for further checking. The books are, thus, ready to be shelved and the catalogue cards are ready to be filed in the catalogue and shelf list cabinets.

2.3.3.5.7 Alphabetization

The catalogue cards to be filed in the public catalogue are alphabetized. For alphabetizing, there are two accepted method i.e. word by word or letter by letter.
2.3.3.5.8 Card Filing

The shelf list cards are merged in the shelf list. Other catalogue cards are merged in the public catalogue. ‘A.L.A. filing rules’ should be followed for filing catalogue cards if some other filing rules are not being followed already. A revised version of the ‘A.L.A. filing rules’ has been published recently.

2.3.3.5.9 Maintenance of Staff Manual and Authority File

Modifications made in the cataloguing code rules are noted down in the staff manual. The rules for alphabetization and filing are also be noted in this manual.

Another important document maintained in the cataloguing section is the authority file. It contains the complete information about the adopted names of authors and subject heading. In this way, consistency and uniformity are maintained.

2.3.3.5.10 Preparation of List of Additions

Generally, every good library publishes periodically a list of additions. It is a list of books added to the library from time to time. Its main purpose is to inform the clientele of the library about the reading material acquired by the library.
2.4 LIBRARY SERVICES

The facilities provided by a library for the use of books and the dissemination of information (Sehgal and Sethi, 1998; Hingwe, 1982; Raina, 1997).

2.4.1 Reference service

2.4.2 Documentation Service

2.4.3 Circulation service

2.4.4 Inter library loan service

2.4.5 Bibliographic Services

2.4.6 Current Awareness Services

2.4.6.1 Selective Dissemination of Information service (Vajifdar and Kulkarni, 1966).

2.4.1 Reference Service

Reference service is the process of establishing contact between a reader and his document in a personal way (Kumar, 2004; Sehgal, 1998; Hingwe, 1982; Raina 1997; Krishna, 1993).

Reference service includes reader guidance, ready reference, retrospective document list and referral service (Seetharama, 1997).

2.4.2 Documentation Service

The documentation service, consists of bringing to the notice of the research scholars the relevant information and of providing the copies of the
requisite reading material in mimeographed form, micro card, photostat or micro-film form. This means that the documentation lists are published and the research scholars requiring particular article send a request to the documentation centre for supplying them a copy of the requisite material (Sehgal, 1998; Hingwe, 1982; Raina, 1997; Bhattacharjee, 1979).

2.4.3 Circulation Service

Circulation service is a service by which loans of books are recorded (Sehgal, 1998; Ramesha and Kumbar, 2004; Hingwe, 1982).

2.4.4 Inter Library Loan Service

The cycle can be described as covering free areas. The part where the user identifies the title and submits request is the first or “Front” end. In the second or “Middle” Process the ILL order is submitted to supplier and the request is tracked on for fulfillment. The third “End” step includes the procedures to receive and process the material for the users (Bopp and Smith, 2005; Mitchell, 1978; Hingwe, 1982; Raina, 1997).

2.4.5 Bibliographic Service

The facilities, procedures and device which are employed to produce a bibliography consisting of a continuing series of publications or bibliographical information as requested (Sehgal, 1998; Raina, 1997; Tejomurty, 1987; Bhattacharjee, 1979).
2.4.6 Current Awareness Service

Current awareness service aims at bridging the time lag between the publication of a primary document and its coverage in an indexing / abstracting periodical (Kumar, 2004). A system and often a publication for notifying current documents to users of libraries and information centres e.g. selective dissemination of information bulletin, indexing service, current literature (Sehgal and Sethi, 1998; Dawra, 2004; Raina, 1997).

Current awareness service includes notification of current papers, notification of research in progress, SDI, notification about conferences, newspaper clippings, patents information and standards information etc. (Seetharama, 1990).

2.4.6.1 Selective Dissemination of Information

SDI is an automated system of information retrieval utilizing a computer for disseminating relevant information to users. An interest profile depicting and defining each area of interest is complied for each user; it consists of terms which are likely to appear in relevant documents key words representing documents are matched with these interest profiles (Sehgal, 1998; Raina, 1997).

2.4.7 Common Services

According Seetharama common services includes translation services, reprography, exhibition organization, editorial and technical writing, preparation of charts, maps, etc. and organization of seminars, workshops etc (Seetharama, 1990).
2.5 LIBRARY USERS

Real users are many faceted individuals with real requirements, determined by real problems, requiring real solutions (Vajfdar and Kulkarni, 1966).

2.5.1 Types of Users

In University Library, mostly four types of users use the library viz, post graduate students, research scholars, faculties and non teaching staff.

2.6 MANPOWER

Library is an organization and it consists of four components according to Leavitt, (1997) a) Structure b) task c) technology d) people or manpower. Manpower is one of the most important and vital inputs in the economic development of a country. Manpower is the sum of knowledge, abilities and skills. The work force possesses and the quality of work, they are capable of carrying out. Effectiveness of library services depend heavily on the effectiveness of personnel deployed to perform library functions (Murali Krishna, 1993). Manpower may be classified into Professional-senior and junior, Semi-professional, Clerical or Secretarial and Unskilled (Mittal, 2007).

2.7 BUILDING

A library building is a specialised structure with specific functions, so the furniture for library has to be custom designed for each function. The
needs of furniture and equipment of individual departments and sections should be given careful consideration so that the users and the staff experience ease, comfort, convenience and efficiency in their work (Dhiman and Yashoda Rani, 2005; Sharma, 1970; Thompson, 1973; Landau, 1963; Kaula, 1971).

According to John Rusking “We require from buildings, as from men, two kinds of goodness: first, the doing their duty well: then that they be graceful and pleasing in doing it which last is itself another form of duty.”

2.7.1 Principles of Library Building

- Building should be designed on functional basis;
- Physical design should be governed by the functions for the library;
- Interior details should be planned interior to the exterior construction:
- The building should provide economy in administration and operations;
- The main study areas should be close to the book shelves and stacks;
- The building should represent simplicity in character;
- Consideration should be given for expansion and anticipated development in the future;
- Physical conveniences should be in proportion to the number and nature of the clientele;
• The details of library should be worked out based on the existing data and the proportional future growth;

• Physical conveniences should include the conveniences for the library personnel responsible for managing the activities of the library; and

• The plan of the building should be adaptable to the future growth and development (Dhiman and Yashoda Rani, 2005; Sharma, 1970; Thompson, 1973; Landau, 1963; Kaula, 1971).

2.7.2 Functions of Library Building

The library building should be able to cater the following functions

• The effective technical operations of the library

• The efficient and rapid production of information and material on demand

• The provision of quiet, comfortable and attractive areas for study

• The provision for individual and collective studies for researchers

• The provision of facilities for developing reading habits

• The provision to facilitate the contact of the readers with the contents of the library

• The storage and preservation of reading materials and

• A prompt accessibility of the users to reading materials vice versa without loss of time (Tejomurty, 1987).
2.8 EQUIPMENTS AND FURNITURE

2.8.1 Equipments

The equipment in the library should be suitable for use by the staff and the users. The library should be provided with equipment of standard size and specifications. The kinds of equipment usually found in any library includes –

- Record keeping equipment
- Filing cabinets
- Photo copiers
- Computers
- Fans
- Air coolers
- Water coolers
- Air conditioning equipments
- Fire extinguishers

2.8.2 Furniture

The standard furniture is usually made of metal whereas the ordered furniture is made with wood. The kind of furniture is to be acquired is either,

- Stock standard available from manufacturers who specialize in library furniture, or
• Custom-built or made to order with specification provided by the library.

Some of the furniture items required by a library are

• Stack Room Racks
• Periodical Display Racks
• Catalogue Card Cabinets
• Charging Desk / Issue Counter
• Tables and Chairs
• Other Furniture Items
• Display rack for newly acquired books
• Book trolleys for moving books from one part of the library to the other
• Stands for over-sized books
• Notice Board,
• Almirahs for storing new books
• Computer tables,
• Foot stools for users in stack room for picking books from upper shelves,
• Newspaper stands with sloping top,
• Side racks (3-4 feet high) for keeping books, files, etc, for use by the staff, and

• Property counter or racks for keeping users belongings (Dhiman and Yashoda Rani, 2005; Sharma, 1970; Thompson, 1973; Landau, 1963; Kaula, 1971).

2.9 FINANCIAL MANAGEMENT OF UNIVERSITY LIBRARY

Financial Management is a diagnosing technique for detailed analysis of future oriented activities of persons and groups of persons responsible for administration (Dhiman, 2008; Dhiman and Sinha, 2002; McKee, 1989; Gopinath, 1982).

2.9.1 Principles of Financial Management

For effective financial management some guiding principles are necessary, the understanding of which is useful. These are -

• Effective control
• Simplicity
• Regularity and Farsightedness
• Economy (Dhiman, 2008).

2.9.2 Characteristics of Library Finance

2.9.2.1 Spending Institution

Libraries are public welfare nation building institution. Unlike other public sector departments, these are spending agencies rather than revenue
fetching ones. Libraries spend on staff, documents, and introduce new services to satisfy their information needs. About 50% of the funds is spent on the staff only.

### 2.9.2.2 Growing Institutions

As a result of continuous investment the libraries grow constantly. The fifth law of library science, `Library is a growing organism` implies that library grows multifocally i.e. in documents, staff, building and furniture.

### 2.9.2.3 Financial Demands

Establishing a well-equipped library with sufficient funds only ones is not sufficient. The financial demands of libraries are of two types viz. recurring and non-recurring. It requires continuous, recurring grants time to time for continuing the ongoing services handsomely.

### 2.9.2.4 Price-Rise

Though libraries get constant recurring and non-recurring grants yet these become insufficient due to many reasons. Price-rise is one of the most important points among them which must be kept in mind before allocating the funds to a university library. Price-rise in respect of periodical subscription, books, furniture, equipments etc are the pointers.

### 2.9.2.5 Devaluation of Rupee

Devaluation of rupee is another reason which contribute shrinkage of the existing funds. Library has to pay more money for same documents due to devaluation at different stages (Dhiman and Sinha, 2002).
2.10 LIBRARY BUDGET

A library budget is an estimate of expected income and expenditure of the library for coming year (Dhiman and Sinha, 2002). The dual purpose of budget are to limit expenditures to income and to assure wisely planned spending (Mittal, 2007). Budget is a comprehensive set of programmes of services for a future period of time, usually one year, representing the financial costs together with their justification (Karnade, 1988; Strauss, Strieby and Brown, 1964).

2.11 BUDGETING

Budget is an estimate only for the next year is an estimate of revenue and expenditure for the coming year. Estimates of possible income and expenditure of future year/ years are reckoned and proper means for providing the requisite amounts are tapped. The dual purpose of a budget are to limit expenditure to income and to assure wisely planned spending.

Budgetary expenditure can be classified on the following three patterns-

2.11.1 Classification by character.

2.11.2 Classification by Object.

2.11.3 Classification by departments (Mittal, 2007).
2.11.1 Classification by Character

Character refers to the period of time for which the budget is prepared e.g. one year, two years, or current year, next year etc. On this analogy, the expenditure can be classified as current expenditure, capital outlay and debt repayments. Current expenditure is a sort of recurring and regular expenditure. It can be termed as an amount which is ‘used up during the year. Salaries, office and stationery supplies, heating, cooling, telephone and postage charges etc. are included under this head. Other items such as the purchase of books and periodicals, furniture and equipment and the erection of buildings etc. are included in ‘capital outlay’.

2.11.2 Classification by Object

The second type of expenditure classifications based on the services rendered or materials acquired by libraries. One of the main item is salaries and wages of the regular and past time staff employed for providing technical and public services. The materials, services or objects include the provision for books, periodicals and other kindred materials, their maintenance and binding, building, furniture and fittings and equipment for housing them and for putting them to best use. The third item includes the expenditure on administration and routine matters i.e. heating, cooling and lighting charges, postage, ‘contract contingencies’. These are provided for rendering special providing documentation services etc. In India, generally this type of classification of expenditure is followed.
2.11.3 Classification by Departments

The third type of expenditure classification is done department-wise as follows.

2.11.3.1 Technical Section which may further be divided into –

2.11.3.1.1 Acquisition.

2.11.3.1.2 Classification

2.11.3.1.3 Cataloguing

2.11.3.2 Reference and Circulation Section.

2.11.3.3 Periodical Section.

2.11.3.4 Office, etc.

In this type of classification, provision is made for various activities of each department. This method gives an opportunity to the heads of the various library departments to gauge their requirements and watch their expenditure.

The Budgeting is a process of preparing a statement of income and expenditure for a particular period of time, termed as financial year (Dhiman, 2008; Srivastava and Verma, 1980).
2.11.4 Budgeting Techniques

The important budgeting techniques

2.11.4.1 Line-Item Budgeting

2.11.4.2 Lump sum Budgeting

2.11.4.3 Formula Budgeting

2.11.4.4 Performance Budgeting

2.11.4.5 Programme Budgeting

2.11.4.6 Planning Programming Budgeting System (PPBS)

2.11.4.7 Zero based Budgeting (Dhiman and Sinha, 2002; Karnade, 1988).

2.11.4.1 Line Item Budgeting

It is most common type of budget that divides items of expenditure, line by line, into broad categories such as books and journals, salaries and allowances, equipment, supplies, capital expenditure, contingencies, etc. with further subdivisions for each of these broad categories. This is the usual traditional method which, by taking into account past expenditure on each item, prepares the current budget, hence called historical budgeting.

The budget is prepared with small increase in the previous year’s allocation, summing that all current programmes are as good and necessary. It is also called incremental budgeting (Dhiman and Yashoda Rani, 2005; Mittal, 2007).
2.11.4.2 Lump Sum Budgeting

In lump sum budget a certain amount of money is allocated to the library. The library is given the necessary freedom to decide as to how the amount is going to be allocated to different categories. The apportioning of the budget is responsible of the person handling the information institution (Dhiman and Yashoda Rani, 2005).

2.11.4.3 Formula Budgeting

Based on some financial norms and standards this method tries to relate some inputs like users served, academic programmes supported and ratio of book stock to total funds of parent body. The formulae are used for financial estimation as well as budget justification (Dhiman and Yashoda Rani, 2005; Mittal, 2007; Seetharama, 1997).

2.11.4.4 Performance Budgeting

It is similar to programme budgeting but the emphasis shifts from programmes to performance. The expenditure is based on the performance of activities and the stress is laid upon operations efficiency.

This method requires careful accumulation of quantitative data on all the activities over a period of time. It emphasizes the performance and operational efficiency of the programmes (Dhiman and Yashoda Rani, 2005; Mittal, 2007).
2.11.4.5 Programme Budgeting

Extended from the line-item budgeting this method tries to answer the questions for “what purpose the money is being spent?” and “how have the resources to be deployed for each programme?” and more suitable for contracting economy.

According to financial plan is presented as programmes and subprogrammes built upon work units and work loads. The focus in this method of budgeting is on the library’s activities and the funds are to be earmarked for programmes or services that the library plans to provide (Dhiman and Yashoda Rani, 2005; Mittal, 2007).

2.11.4.6 Planning Programming Budgeting System

This budgeting system provides an analytical approach to budgeting where the three elements of planning, programming and budgeting are integrated. The following major steps are used to accomplish this task

- Identifying library goals and objectives
- Relating broad goals to specific programmes
- Relating programmes to resource requirements
- Relating resource inputs to budget dollars

The performance budgeting is based on functions, activities and projects, It is financial plan prepared analyzed, and interpreted in terms of the services and activities (Dhiman and Yashoda Rani, 2005; Mittal, 2007).
2.11.4.7 Zero-Based-Budgeting

It was developed by Peter Phyor to achieve greater effective planning and fiscal control. It is not concerned with what happened previously but rather with what is required to be done in future.

Steps involved in preparation of ZBB are –

- Activities/programmes are grouped at lowest level entity
- Objectives and activities of each programme examined and alternative methods evaluated
- Programmes are then grouped into a series of “decision packages” with their statement of purpose.
- Ranking of the “decision package”
- Cut-off point corresponds to the total budget allocation.

ZBB improved the plans and budgets of libraries and helps to develop good management teams (Dhiman and Yashoda Rani, 2005; Mittal, 2007).

2.11.5 Sources of Income / Finance

Sources of income in the university libraries can be: recurring grants from the respective university authorities viz,

2.11.5.1 UGC Grants

In India central universities get different grants from central government i.e. Ministry of Human Resource Development through UGC. The state universities depend for maintenance grants on the state
government, but they also get different types of grants directly from UGC or other central government agencies like CSIR, ICSSR etc. These provide finance for establishing collection for a newly started department (Mittal, 2007; Dhiman and Yashoda Rani, 2005; Karnade, 1988; Hingwe, 1982; Srivastava and Verma, 1980).

2.11.5.2 Fees for Provision of Services

Education in India is a social welfare activity but now the concept seems to be changing slowly. UGC suggested universities to raise their own finance. Concept of free library services is vanishing and soon marketing of library services like in west will start. Academic libraries should also charge for some special services (Mittal, 2007; Dhiman and Yashoda Rani, 2005; Hingwe, 1982; Srivastava and Verma, 1980).

2.11.5.3 Fees and Fines

Almost all university libraries charge fees from their students for its use. The fines are charged in library for late return of books or against losses or misuse of books (Mittal, 2007; Dhiman and Yashoda Rani, 2005; Karnade, 1988; Hingwe, 1982; Srivastava and Verma, 1980).

2.11.5.4 Self Sustained Education

Many institutions were charging capitation fees which were banned by Supreme Court. They have introduced new scheme `Self Paying Education` which has got government approval (Mittal, 2007; Dhiman and Yashoda Rani, 2005; Hingwe, 1982).
2.11.5.5 Endowment and Gifts

Actually these are not permanent sources of finance and libraries cannot depend on these. The libraries may encourage passing out students and research scholars and retiring and desirous teachers to donate their books which are of permanent use (Mittal, 2007; Dhiman and Yashoda Rani, 2005; Hingwe, 1982; Srivastava and Verma, 1980).

2.11.5.6 Caution Money

Many libraries receive caution money from its readers. It is refundable when a reader ceases library membership. But its interest may become a handsome source of income (Mittal, 2007; Dhiman and Yashoda Rani, 2005; Hingwe, 1982).

2.11.5.7 Miscellaneous Sources

Along with the above sources of finance libraries have some more areas of making funds. Libraries help university in bringing out some publications and some more areas of making funds. Libraries help university in some publications and some libraries have their own publications. Their sale may help library in fetching money to some extent. Similarly libraries do charge subsidized rates for translation and reprographic services. In some universities prices recovered for lost books, for lost readers’ ticket, unclaimed library security are transferred to university funds which should be treated as library income (Dhiman and Sinha, 2002; Srivastava and Verma, 1980; Dhiman, 2008; Hingwe, 1982).
2.11.6 Sources of Expenditure

Academic Libraries’ Budget Allocation

The UGC’s Library committee, (1957) in its report seems to have suggested that 50% of the total expenditure of a university library should be spent on books, periodicals and other kinds of reading materials while the other 50% should be spent on staff.

Dr. S.R. Ranganathan suggests that the proportion of expenditure of university library budget on various items should be as under:

- Staff -50%
- Books and other reading material -40%
- Other expenditures including PF, binding & other contingencies -10%

In view of the recommendations of various library experts and University and Education Commissions, the allocation of expenditure amongst various heads may be done on the following lines:

- Salaries and wages 50%
- Books 20%
- Periodicals 13%
- Binding 7%
- Lighting, Heating and cooling etc. 3%
- Library supplies and other miscellaneous charges 7%

(Mittal, 2007; Hingwe, 1982).


2.12 PRICE AND COST

2.12.1 Price

An estimation of the value of an economic good in terms of money (Abrol and Sharma, 1994). It is a matter of strategic decision (Kumar, 2003). Price is the amount of money for which something can be bought or sold. The price states the worth in money of a unit of a certain good or service (Groman, 1992). Price is the amount of money pay to the seller by the purchaser of the property (Patil, 1988).

2.12.2 Cost

Cost can be defined as cost is what it costs to do something (Kumar, 2003). A measurement for the purposes of accounting of the cash value of whatever a firm has parted (or is liable to part with) when marking an expenditure (Pande and Mithani, 1995). It is also an estimate of the value of such expenditure that is to be made in the future or is hypothetical (Pande and Mithani, 1995). Cost refers to expenditure and not the price (Dasgupta, 1994; Shimmon, 1976). Out lay or expenditure of money, time and labour is a cost (Random House Dictionary, 1983; Wood, 2001; Abrol and Sharma, 1996; Madden, 1980; Nair, 1992). Cost usually involves all operating costs plus interest payments, the accumulation of reserves for depreciation and other expenditures such as taxes, some of which are typically not involved in governmental accounting. Cost is defined as the total expenditure involved in accomplishing a specific activity, completing a
unit of work or specific job, or acquiring a specific asset (Wight, 1943; Sidney and Weil, 1978; McCabe, 1982). Amount of expenditure incurred on or attributable to a given thing i.e. expenditure on tangible goods and services, like material, plant, equipment, labour and electricity (Vaishnav and Basole, 1992). The cost represents the minimum value to the purchaser, because a shrewd purchaser pays less than maximum value to him to acquire his property (Patil, 1988).

Cost is an essential part of the finance. The beginning of the twentieth century, during and after the first World war (1914-1918), the cost term was developed. During the second World war many Government brought down legislation placing to control over prices (Varma and Agarwal, 2001).

The fulfillment of the performance of persons in the organization, it requires the data about the costs incurred and benefits obtained should be collected and developed into useful reports and the statements. Cost provides such information which is necessary to take effective and efficient decisions for cost control.

2.12.2.1 Types of the Cost

The primary method of classification of cost is to break them into three distinct level according to the factors upon which expenditure is made viz.
2.12.2.1.1 The Material Cost

The cost of all commodities supplied to a business. The costs associated with the acquisition and maintenance of published material i.e. the library stock its selection, purchase, cataloguing, binding (Hutchins, 1997).

2.12.2.1.2 Operations Cost

The cost associated with the exploitation the library (i.e. circulation, shelving, inquiry service) and external resources (i.e. access to other libraries and data bases, inter library loans) (Hutchins, 1997).

2.12.2.1.3 Overhead Cost

The costs of administering the library buildings (i.e. janitors, cleaners, heating, lighting), purchasing and maintaining equipment and furniture and general administration of library staff and services (Hutchins, 1997).

2.12.2.1.4 Labour Cost

The cost of all remuneration of the employee including wages, salaries, commission, etc. Labour cost per productive hour = Salary Cost + Additional Cost / Number of hours actually devoted to productive work (Dougherty and Heinritz, 1966).

2.12.2.1.5 Service Cost

The cost of all services provided into business and rational cost of the use of asset (i.e. depreciation).
2.12.2.1.6 Document Storage Cost

The total cost of stacking depends upon certain variables like -

(a) determination of area required per section of stacks, (b) number of volume per section and (c) unusable area. The storage model, according to Metcalf estimates the area in square feet required to store and average book (Rout, 1992).

2.12.2.1.7 Acquisition Cost

Average cost per volume in each type of reading materials i.e. books, periodicals, pamphlets, reports, etc. in given subject area can be calculated from the individual average price of the type of reading materials of a given subject weighted by the proportion of the type published in that category (Rout, 1992; Suriya and Malathi, 1987; Report of the National Libraries Committee, 1969).

2.12.2.1.8 Technical Processing Cost

Major costs in technical processing involve cataloguing and classification of documents. The overall cost of cataloguing can be calculated by the summation of a) cost of cataloguing materials, cards, stationeries, documents, equipments, etc. b) cost of personnel, professional and non professional and total time spent by them for activities of cataloguing. From these average personnel cost for cataloguing single volume can be determined. By dividing the summation of cost of cataloguing
material and personal cost by the total number of volume catalogued, the average cataloguing cost per volume can be calculated (Rout, 1992).

2.12.2.1.9 Maintenance Cost

It includes lighting, heating, power, water, cleaning, guards and supervision (Raffel and Shishko, 1969; Dougherty and Heinritz, 1966; Lahiri, 1996).

2.12.2.1.10 Supply Cost

The cost of supply item for the given period is cost of supply = Unit Cost x Number of units (Dougherty and Heinritz, 1966).

2.12.2.1.11 General Cost

General cost are those which are not ordinarily charged directly as belonging exclusively to the particular part of the library operation being costed. Salary, depreciation and supply cost be considered as a general cost (Dougherty and Heinritz, 1966; Fussler and Simon, 1969).

The allocating method most commonly used to classify cost into two main groups.

2.12.2.1.12 Direct Cost

Direct cost of a product or activity can be accurately determined (Schmid, 1980; Cohen and Cohen, 1982; Lancaster, 1978). Direct cost can be measured into two groups.
2.12.2.1.13 Direct Labour Cost

Direct labour cost is cost of labour involved in a job.

2.12.2.1.14 Direct Material Cost

It is related to a particular job or services or purchase of material.

2.12.2.1.15 Indirect Cost

Indirect cost have to be appropriated as certain assumption as regards their incidence (Schmid, 1980; Cohen and Cohen, 1982). Indirect cost can be measured into four groups,

2.12.2.1.16 Departmental Cost

Cost incurred on indirect labour involved in a particular job is the departmental cost.

2.12.2.1.17 Administration Cost

Cost incurred on accounts and general management etc is the administrative cost.

2.12.2.1.18 Depreciation Cost

Depreciation or use value of different furniture, building, equipment and machinery etc is the cost of depreciation.

2.12.2.1.19 Stationery Cost

Cost of stationary used in various sections of library is the stationery cost (Deo, 1991).
It may prove useful to classify costs into four main different categories – (1) costs related to maintaining the information stock (selection, acquisition) processing, classification, cataloging and storing of information, (2) costs related to accessing to remote information (host fees, telecommunication, costs). (3) personnel costs (salaries, training, benefits). (4) overhead expenses (computer infrastructure, facilities, utilities, rents, taxes, marketing) (Comella, 1994).

2.12.2.1.20 Support Cost

The cost incurred to support the software products in the field is the support cost (Krishnan, 1998).

According to Jo Ann Bing, the majority of the costs can be identified in five major categories, development, personnel, materials, delivery and facilities (Bing, 1997).

The components of each cost are

- Personnel Cost: It includes planning staff and administration
- Materials Costs: It includes job aids, website, collection
- Delivery Costs: It includes postal, phone, reproduction
- Facilities: It includes library shipping and receiving.

King categories library costs into three general parts
2.12.2.1.21 Fixed Costs

Most library materials or services have one time fixed costs associated with them. These costs are fixed because they are incurred whether or not any use takes place. e.g. cost associated with acquisition, annual maintenance, storage and weeding. Fixed cost do not change as the level of output changes regardless of the level of production and service or number of customers, within a specified time period fixed costs can not be changed. Fixed cost also called as non-recurring cost (Vaishnav, 2005).

2.12.2.1.22 Variable Costs

Variable cost are related to each use of library materials or services, e.g. photo copying. Variable cost increases as the level of output increases within a given period of time. The cost of employees and many types of supplies are typically variable costs (Kingma, 2005; Dictionary of modern economics, 2000; Mandelbaum, 1992). Variable cost also called as recurring cost (Vaishnav, 2005).

2.12.2.1.23 Indirect Costs

Indirect cost are insensitive to amount of usage. These include rent, administration and other overhead items (Dhiman and Sinha, 2002; Kingma, 2005).

2.12.2.1.24 Marginal Cost

Marginal cost is the cost that results from increasing output by one unit. Marginal costs are the costs of variable outputs that must be employed to increase output (Kingma, 2005; Dictionary of modern economics, 2000).
2.12.2.1.25 **Opportunity Cost**

It is the highest value of alternative opportunities forgone by consuming a good or service. Opportunity cost differ from financial or monetary costs because they include not only the money spent purchasing a good but also the value of time spent and opportunities lost when a good or service is consumed (Dictionary of modern economics, 2000).

- Direct cost;
- Indirect cost
- Overhead cost (Kingma, 2005).

According to Saracevice and Wood, 1981 the types of costs are –

2.12.2.1.26 **Planning Costs** - It includes

- Feasibility studies
- Users studies – Marketing research and analysis
- Design.

2.12.2.1.27 **Launching Costs** - It includes

- Development of functions, products and services
- Development and testing
- Development of market and marketing
- Investment in facilities, tools and equipment
- Staffing and staff training and education.
2.12.2.1.28 Operating Costs - It includes

- Salaries of director, professionals and supporting staff
- Fees for consulting experts
- Cost of procurement or access to necessary information sources
- Expenses incurred in given functions
- Marketing expenses
- Continuing education expenses for staff (Seetharama, 1990; Hart, 1997).

2.12.2.2 Elements of Costs

The constituent elements which build up the cost of a unit are broadly divided into three distinct elements those are –

2.12.2.2.1 Materials

2.12.2.2.2 Labour

2.12.2.2.3 Expenses.

These three elements of cost should be grouped into two forms as (a)Direct categories (b) Indirect categories. These terms can be explained as follows:

2.12.2.2.1 Materials

Materials is a substance from which a product is made. It may be in a raw state or in a manufactured state. Materials can be direct or indirect forms.
i) **Direct Materials**

Material which becomes the integral part of the finished product and which can be identified in the product. It should be conveniently measured and can be assigned to a specific physical unit and can directly be charged to the product.

Material forms the part of the product, the cost of such material is so insignificant that it is very difficult to assign it to the cost unit, such cost is not treated as direct materials cost.

ii) **Indirect Materials**

This is the material which cannot conveniently be identified with individual cost unit, such materials are minor in value and important. Following two types of materials may be included in the indirect materials those are – (i) Items of small value which form the part of the finished product. (ii) Items which cannot be assigned physically to a cost unit.

2.12.2.2.2 Labour

Labour converts the materials into finished product. It can also be direct or/and indirect labour as –

i) **Direct Labour**

Direct labour cost consists of wages to workers directly engaged on machine for producing commodity. Such labour cost can conveniently be assigned to a particular cost unit. For example wages paid to a machine
operator are direct labour cost. Direct labour cost is also called, productive labour, manufacturing labour or operating labour, etc.

ii) **Indirect Labour**

Such labour cost cannot be conveniently identified with the specific product. Indirect labour is not directly engaged in the production operations. Such labour is paid for engaging to operations incidental to main productive operation. For example wages to store keeper, watchman, supervisor, production manager etc.

2.12.2.2.3 **Expenses**

All the costs of materials and labour are called ‘expenses’. According to ICMA, expenses may be defined as the cost of services provided to an undertaking and the national cost of the use of owned assets.

Expenses can be classified as –

i) **Direct Expenses**

Such expenses can be directly, conveniently and wholly allocated to the specific cost unit or particular job. These expenses form part of the product cost.

ii) **Indirect Expenses**

Expenses other than direct materials and labour may be termed as indirect expenses. These expenses are not directly related to a particular product or job or order.
All these cost elements can be depicted in the following chart.

**Figure – 2.12.1**

**Elements of Cost**

![Diagram of cost elements]

2.12.2.3 **Overheads**

All indirect costs, indirect materials, indirect labour and indirect expenses are termed as ‘overheads’.

Such overheads can be classified as follows:

1. Manufacturing overheads: Work or production or factory.
2. Administrative overheads: Office or general
2.13 COSTING

Costing is the technique and process of ascertaining costs. According to Wheldon, costing is the classifying, recording and appropriate allocation of expenditure for the determination of costs of products or services and for the presentation of suitably arranged data for purposes of control and guidance of management (Dasgupta, 1994). Cost analysis in libraries can be divided into two categories; macro costing and micro costing. Cost analysis on a work done basis is done by dividing the actual cost needed to perform a service or to elaborate a product by the number of services or products done during a year (Comella, 1994). Cost analysis referred as productive hour-system is based on the idea that only some hours of the daily activity will be productive, that is to say they will be involved in the elaboration of a service or product for client who will pay for it (Comella, 1945; Bakewell, 1969; Jayaswal, 1990).

2.13.1 Macro Costing

The purpose of macro costing is to examine a system such as a library in order to determine its present costs and from these costs to estimate trends and make inferences concerning future system costs. Macro costing studies are mostly based on quantitative studies.

2.13.2 Micro Costing

These studies attempt to obtain measures by which specific management decisions may be judged. Micro costing techniques focus upon
unit cost and therefore prove to be an effective tool to determine the cost of providing a specific or even a single unit of that service (Dutta and Chowdhury, 1986; Nachlas and Pierce, 1986).

2.13.3 Aspects of Costing

Costing can be considered from two aspects

2.13.3.1 Routine Costing

To provide regular financial and management information. Routine costing information come from a cost accounting system that provides required data for use of management.

2.13.3.2 Special Exercise Costing

Special exercise costing are concerned with particular activities or groups of activities and will generally be concerned with costs of current operations and estimated costs of alternation methods (Clements, 1988).

2.13.4 Steps of Costing

The steps involved in the procedure of costing of an information packages are as follows:

2.13.4.1 Calculation of Man Hours Required

The approximate time required to complete a package is calculated in man-hours.
2.13.4.2 Calculation of Manpower Cost

These packages have been prepared by professionals. The number of working hours in a month has been calculated based on the number of working hours in a day and the total number of working days in a month. In relation to each package, the manpower cost has been estimated by using the following formula:

\[
\text{Manpower cost} = \frac{\text{Man-hours for the preparation of package}}{\text{Number of working hours in a month \times salary of the professional}}
\]

2.13.4.3 Calculation of Material Cost

The materials required for the production of the package. Since this cost is common for all the packages.

2.13.4.4 Calculation of Final Cost

The final cost of each package is calculated by adding the respective manpower and material cost (Arpana, 1998).

2.14 ACCOUNTING

2.14.1 Factors and Purposes

In accounting, the following factors are taken into consideration:

- Kind of financial information required
- Kinds of financial records which are to be maintained
- Preparation of financial records.
The main purpose of maintaining financial accounts is to ensure accurate and adequate information. It is helpful for determining the efficiency of the administrative machinery. These purposes may be –

- To serve as an aid in the preparation of annual budget
- For controlling the budget operations
- For studying internal efficiency
- For conserving the assets
- For planning future activities
- For reporting to the Local Government and the public
- For having comparisons with other libraries.

2.14.2 Cost Accounting

Cost accounting is a branch of accounting and has been developed due to limitation of financial accounting (Jain and Narang, 1997). Any work or business cannot be successfully launched, if costs of preparing a certain article or providing a certain service are not found out. The planning would be haphazard and budget allocations would be faulty without cost accounting. Cost accounting enables an administrator to gauge and record all the constituent elements of cost involved in manufacturing a particular unit of an article or providing a particular service (Mittal, 2007).

Cost accounting involves the collection of costs for every job, process, service or unit, in order that suitably arranged data may be
presented as a guide in the control of an organization (Clements, 1988). It is the classifying, recording and appropriate allocation of expenditure for the determination of the costs of products or services and for presentation of suitably arranged data for purposes of control and guidance of management (Jain and Narang, 1997).

It enables an administrator to gauge and record all the constituent elements of cost involved in manufacturing a particular unit of an article or providing a particular service. It is essential if adequate and standard library service is to be provide through out the country and if efficient running of a library is to be ensured (Mittal, 2007). It refers to a method of accounting designed to find out the total cost of units of a finished product. This is done by allotting a proportionate amount of fixed costs to each units, in addition to the variable costs incurred in its production (Abrol and Sharma, 1996).

The process of accounting for cost which begins with the recording of income and expenditure and ends with the preparation of periodical statements and reports for ascertaining costs (Dasgupta, 1994). It is a system of accounting designed to show the actual cost of each separate article produced or service rendered from time to time, as distinguished from the ordinary system of accounting which aims only at showing the working results of a business as a whole, or sometimes of each separate department of a business (Encyclopaedia Britannica, V 6, 1960). It is concerned with planning and controlling costs in great detail often at the unit cost level (Avale, 1996).
Cost accounting enables the libraries to improve the unit cost. The cost accounting mainly concerns with the determination of cost and this theory is easily used to find out unit cost of industrial products. It is the basis of modern selling practice. By taking into consideration every little detail that goes into the manufacture of a given article, including all overheads such as heating, lighting, cleaning, accommodation, transport, materials, wages of staff, salesmen, tools, etc, the complete cost of production is arrived and a selling price fixed in relation to the amount of profit to be achieved (Corbett, 1966; Levine and McClain, 1998).

It involves isolating costs, tabulating relevant costs and determining relative cost effectiveness (Schmid, 1980; Srivastava and Verma, 1980).

Cost accounting is a method of accounting which provides for searching out and recording all the elements of cost incurred to attain a purpose to carry on an activity or operation or to complete a unit of work or specific job (Wight, 1943).

2.14.2.1 Objectives of Cost Accounting

- To ascertain the cost per unit of the different products manufactured by a business concern
- To provide a correct analysis of cost both by process or operations and by different elements of cost
• To disclose sources of wastage whether of material, time or expenses in the use of machinery, equipment and tools and to prepare such reports which may be necessary to control such wastage

• To ascertain the profitability of each of the products and advise the management as to how these profits can be maximized

• To reveal sources of economy by installing and implementing a system of cost control for materials, labour and overhead

• To advise management on feature expansion policies and proposed capital projects

• To present and interpret data for management planning, decision making and control

• To help in the preparation of budgets and implementation of budgetary control

• To organize an effective information system so that different levels of management may get the required information at the right time in right form for carrying out their individual responsibilities in an efficient manner

• To guide management in the formulation and implementation of incentive bonus plans based on productivity and cost saving

• To supply useful data to the management to take various financial decisions such as introduction of new products, replacement of labour by machine etc
To find out costing profit or loss by identifying with revenues the costs with revenues the costs of those products or services by selling which the revenues have resulted (Jain and Narang, 1997; Dasgupta, 1994).

### 2.14.2.2 Advantages of Cost Accounting

Cost Accounting is useful in the following spheres of library work.

- In making policy decisions on reliable account records.

- In fixing the charges for a hired labour or to determine the cost of lost books etc.

- Inefficiency and waste are eliminated because by comparing the alternative means of providing a particular service a lot of money can be saved and cheaper means are adopted.

- An accurate budget is prepared on sound data. The estimates of expenditure must be accurate so that adequate amount may be provided for the services. Statistical data is a very convincing medium for influencing authorities especially when an increased grant is asked for a particular department or purpose.

- It provides faithful reports to the public and the authorities. It prepares them for paying willingly increased taxes, if necessary (Mittal, 2007).

According to Jain and Narang the advantages of cost accounting are as follows –
• Profitable and unprofitable activities are disclosed and steps can be taken to eliminate or reduce those activities from which little or no benefit is obtained or to change the method of production in order to make such activities more profitable.

• It enables a concern to measure the efficiency and then to maintain and improve it. This done with the help of valuable data made available for the purpose of comparison.

• It provides information upon which estimates and tenders are based. In case of big contracts or jobs, quotations cannot be given unless the cost of completing the contracts can be found out.

• It guides future production policies. It explains the cost incurred and profit made in various lines of business and processes and thereby provides data on the basis of which production can be appropriately planned.

• It helps in increasing profits by disclosing the sources of loss or waste and by suggesting such controls so that wastages, leakages and inefficiencies of all departments may be detected and prevented.

• It enables a periodical determination of profits or losses without resort to stocktaking.

• It furnishes reliable data for comparing costs in different periods, for different volumes of output, in different departments and processes
and in different establishments. This helps in maintaining costs at the lowest point consistent with the most efficient operating conditions.

- The exact cause of decrease or an increase in profit or loss can be detected. A concern may suffer not because the cost of production is high or prices are low but also because the output is much below the capacity of the concern. This fact is revealed by the cost accounts only.

- Cost accounting discloses the relative efficiencies of different workers and thereby facilitates the introduction of suitable plans of wage payment to reward efficiency and to provide adequate incentive to the less efficient workers. A good system of costing promotes prosperity of the business and thus ensures greater security of service and adequate reward to workers.

- It enables the creditors and investors to judge the financial strength and creditworthiness of the business. A sound business concern with a good system of costing can attract more investors than a similar concern without an adequate system of costing (Jain and Narang, 1997).

2.14.3 Methods of Cost Accounting

The following three methods may be utilized in finding out the cost of a unit of work or service or an article
2.14.3.1 Theoretical Cost

Theoretical cost to be arrived at by assessing beforehand the following:

- The service or work to be performed
- The cost of goods, services and equipment essential for doing a particular job

2.14.3.2 Ideal Standard Cost

Ideal standard cost to be found out by actually doing a certain job and thus finding out the cost per unit of work or service.

2.14.3.3 Practical Cost

Practical cost to be found out by actually doing a certain job and thus finding out the cost per unit of work or service.

Cost accounting is essential if adequate and standard library service is to be provided throughout the country and if efficient running of library is to be ensured.

2.15 COST ANALYSIS

Cost analysis define as, “breaking down the cost of same operation and reporting on each factor separately as an investigation of component parts of a whole and their relations in making up the whole.”
2.15.1 Cost Allotment

An appropriate allotment of cost is made from the total emoluments drawn by each personnel responsible in the process during the sample years.

2.15.1.1 Cost per Activity

The total activity actually performed by a single person during the sample years was calculated. Then cost per activity was determined by dividing the total cost allotment of each person during a particular year by the total activities actually performed by that person.

2.15.1.2 Cost per Bill

The actual activities required by each person processing a single bill. By multiplying the cost per activity and the total number of activities, cost for processing a single bill is determined (Samantaray and Mahapatra, 1986).

2.15.2 Functions of Cost Analysis

The cost analysis assists the management functions in the following seven ways:

- It provides accurate cost data.
- Accumulation and utilization of cost data for cost control.
- Estimate budget, norms, standards for management control over costs, i.e. control of materials cost and labour cost.
To determine the costs, sales and profit of a business, products, services, divisions and other units of activity in order to evaluate the operating efficiency.

To ascertain profitability by matching the cost and revenue.

To distinguish the fixed and variable items of costs.

Cost analysis helps to management in the area of planning, policy making, pricing, production and services for the purpose of profit maximization (Rath, 1988).

2.16 AUDITING

Auditing means the examination of the account books, the relative documentary evidence and vouchers in order to ascertain the accuracy of the figures appearing there in.

The objects of an audit are -

- Verification of financial statement
- To detect clerical errors and errors of principle
- To detect fraud, if any exists, and
- To prevent fraud and errors.

Now the auditing has become an important and integral part of library’s financial administration (Dhiman, 2008).
2.17 DEPRECIATION

Depreciation is the loss of value. Building, machines, vehicles and other property depreciate (loss value) through use or accident, because they grow older or because a new, better product replaces them. The term depreciation is also used to describe the loss of value (Groman, 1992). Depreciation may be defined as loss (in value or utility of property), not restored by current maintenance, which is due to one or more of the forces operating to bring about the ultimate retirement of the property. The forces operating include wear and tear, decay, inadequacy and obsolescence (Patil, 1988).

2.17.1 Calculation of Depreciation and Use Value

The concept of depreciation expense has been developed to cope with the situation where as source of services which will last over several future accounting periods is acquired for lump-sum, for example the use of building, furniture, books and journals.

The depreciation expenses problem is therefore three fold, to estimate the effective life of an asset; to estimate any residual or scrap value, and to devise a formula which will enable a proper proportion of the original cost to be debited as current operating expenses.

In libraries depreciation expenses of three components are essential in any cost accounting studies. They are - (i) the cost of building or required space, (ii) furniture, (iii) books and journals, both current and back volumes.
According to Page and Canaway depreciation formula is

\[ D = \frac{C-S}{N} \]

Where C is original cost

S is the estimated scrap value

N is the number of years of estimated useful life and

D is the annual depreciation expense.

To express the depreciation expense as a fraction of cost (Mahapatra, 1986).

\[ \frac{D}{C} \times 100 \] is taken in percentage.

In the above formula the original cost of the component can be known, its useful life can be fairly easily estimated, only problem is to estimate the scrap value. This requires a policy decision at the top management.

Raffel and Shishko has applied another method of estimating the depreciation value of space requirement, based on the engineering norms in India that the annual depreciation value of any building is up to 2% depreciation value of original cost is converted to current market value based on the amount of interest provided by State Bank of India Reinvestment Plan.
Depreciation can also be defined as -

Allowances made for decreases in value of equipment due to obsolescence, wear, or deterioration.

Amount of Depreciation per year = purchase price – Salvage value of item at time of replacement / Number of years between purchase and replacement (Dougherty and Heinritz, 1966; Schmid, 1980).

Due to use of fixed assets, the value declines. Shrinkage in the book value of fixed asset is of permanent and continuing nature. Such, the permanent and continuing decline in value of fixed asset is depreciation. “Depreciation means decline in the value or gradual and permanent decrease in the value of fixed assets is called depreciation. It is permanent and continuing diminution in the quality and quantity of the value of as asset” (Pickles, 2009).

Depreciate means – (i) To diminish in series capacity or utility, (ii) To reduce a fixed asset cost by entering in the accounts.

Depreciated Cost

- Last usefulness, expired utility, the diminution of service to a fixed asset or fixed asset group.
- The cost of last usefulness.
- Accumulated depreciation.
- The process of estimating and recording last usefulness (Kohler, 1972).
Need of Depreciation

The need of depreciation is due to –

- To provide funds for replacement of such assets.
- To ascertain true profit or loss.
- To present true financial position.
- To ascertain proper cost of the product.

Causes of Depreciation

The causes of depreciation are due to –

- The value of the asset declines due to its wear and tear.
- Due to changing fashions or new developments or new inventions, the asset may become obsolete.
- Due to passage or afflux of time.
- Due to depletion of resources.
- Due to natural hazards, such as fire or earthquake, etc.
- Due to lower market price.

Methods of Depreciation

Depreciation may be calculated by following two methods -

- Fixed Installment Method (Straight Line Method)
- Reducing Balance Method (Diminishing Balance Method or Written Down Value Method).
Fixed Installment Method

It is also known as straight line method or equal installment method. Under this method the amount of depreciation remains same during life time of an asset. A fixed percentage on original cost of asset is calculated and deducted from such asset every year till the balance of asset account reduces to zero or to its scrap value at the end of the estimated useful life.

Depreciation is calculated by the formula –

\[
\text{Depreciation} = \frac{\text{Original cost of assets} - \text{scrap value}}{\text{Estimated life of asset}}
\]

Reducing Balance Method

It is also known as diminishing balance method or written down value method. Under this method the amount of depreciation reduces year after year. The depreciation is charged on the assets value which is in the beginning of the year (Kokitkar and Bhende, 2008).

2.18 UNIT COST

Unit costing is also knows as output costing or simple output costing. This is the method of ascertaining cost of production in industries where only single or one type of product or two or three types of similar products using the same type of materials with variations only in size, shape, quality etc. are produced. The units produced are identical and similar in size and quality. The production is made in large scale by continuous manufacturing process. Under this method, cost per unit is ascertained by dividing the total cost of production by the number of units produced.
Unit costing or output costing is a system of cost accounting in which total cost is worked out by analyzing the different elements of expenditure. The analysis of total expenditure is made so as to find out the factory cost, office cost and total cost (Varma and Agarwal, 2001).

Unit cost can be defined as cost to an organisation (like library) per unit of accomplishment. A unit cost is thus an average cost. The formula of unit cost is $\text{Unit Cost} = \frac{\text{Cost of producing N units of work}}{N}$

$N$= number of units (Dougherty and Heinritz, 1966; Vashist, 1977). It is a cost of an unit of activity or service (Mishra and Phadke, 1986; Lahiri and Mahapatra, 1986; Graugh and Shri Kantaiah, 1996; Lahiri, 1996; Chakrabarty, 1987).

According to Roberts (2000), in the library management unit concept in costing are important in following areas –

- Establishing unit time for job task and process elements for further analysis and synthesis.
- The development of ‘standards’ and ‘norms’, value of jobs, tasks and processes either in time and cost terms.
- Relating factor inputs consumed to output produced, in time or cost terms. This is the commonest form of unit cost per specific unit or output in monetary or time terms.
- Calculating actual performance rates in time or cost terms for a given sub unit of the system.
2.19  COST EFFECTIVENESS

Cost effectiveness refers to the relationship between the level of performance and the costs involved in achieving this level (Kent and Lancour, 1972).

It can be defined as an indicator of how efficiently a job gets done (Narayana, 1991). It is also a measure of performance or effectiveness of a service or activity executed in relation with costs involved in achieving that effectiveness (Narayana, 1991; Emery, 1975; Reddy, 1981; Mittal, 2007; Brophy, 1986; Panwar and Vyas, 1986). It is a quantitative measuring technique for evaluating the effectiveness and efficiency of information services offered by libraries to their users (Vashisht, 1997; Clayton, 1987). Cost effectiveness is a method of finding either (a) the cheapest means of accomplishing a defined objective or (b) striking a balance between the cost of developing and operating a system and the benefit derived from the system or (c) achieving maximum results or value at least cost (Kashyap, 1999).

Any instructional media approach that is cost effective represents the least expensive method which satisfies all stipulated objectives and is judged by local authorities to be worth of the expenditure (Schmid, 1980). Cost effectiveness refers to relationship between level of performance (effectiveness) and the costs involved in achieving this level (Lahiri, 1996).
2.20 COST BENEFIT

Stern defines cost benefit as the ratio of the amount of money collected from customers to the total funding for the information service. He assumes at least a token charge for most services, which would make the user more likely to demand what he really needs. The approach to justification of benefit by demonstration that the funds provided have been used to provide specific information inputs, essential to the clients, could be a powerful argument to obtain the funds to supply these inputs. The benefit measure they assessed from the difference between the cost of the present service and the cost of an alternative (Roychoudhury and Choudhury, 1986; White, 1979; Brophy, 1986). User satisfaction as a measure of library benefit was also conceived by Dillia.

Appraisal of comparative benefits which are then related to cost of achieving them (Pande and Mithani, 1995). It is a quantitative measuring technique for evaluating the effectiveness and efficiency of information services offered by libraries and their users (Vashist, 1997; Nair, 1992). Cost benefits refer to the relation between the benefits of a particular product or service and the costs of providing it (Lahiri, 1996; Chakrabarty, 1987). Cost benefit refers to the relationship between the benefits of a particular product or service and the costs of providing it (Kent and Lancour, 1972).
2.21 COST BENEFIT ANALYSIS

It refers to the relationship between the benefits of a particular product or service and the costs of providing it (Vashist, 1997). It attempts to relate the cost of providing some service to the benefits of having the service available. Two aspects are particularly important while evaluating the benefits of a library service i.e. (i) users attitude and responses and (ii) participative assessment (Baliarsingh and Mahapatra, 1986). Cost benefit analysis is defined as cost accounting tool which helps to evaluate what each programme will cost, in terms of magnitude of service required (Baliarsingh and Mahapatra, 1986; Pande and Mithani, 1995; Lancaster and Cleverdon, 1988; Young, 1976; Groman 1992). It is a formal procedure for resource allocation in which all the relevant costs and benefits of a public investment decision or course of action are analyzed (Rout, 1992; Emery, 1975). Cost benefit analysis is a procedure provides economic information as an aid to decision making, aims at identifying and comparing the difference in economic cost and economic benefits to society resulting from choosing between alternative decisions or policies (Rout, 1992; Greenwald, 1982; Mane, 1993). It is a accurate, useful tool for guiding decisions about information systems (Clayton, 1987; Hu, Booms and Kaltreider, 1975; Rao and Abbulu, 1990).

Cost Benefit Analysis being an extension of the capital budgeting technique takes into account not only the direct benefits and costs manifesting in the cash in flows and out flows, but also the indirect benefits
reaped and the indirect costs borne, by the society in general (Abrol and Sharma, 1996). Cost Benefit Analysis can also defined as, a measure that helps to determine how the benefits of product or service compare to its costs (White and Crawford, 1997). It is the measurement of the positive effect of an operation that can be attributed to a particular cost (Prytherch, 2000). It is one of the accounting method, for ensuring that funds are well spent (Cohen and Cohen, 1979; Magill, 1997). Cost benefit analysis is a technique of control, used in management to measure effectiveness (Trucker, 1982; Stuart and Moran, 2004). It is a set of procedure to measure the merit of actions in monetary terms (Stuart and Moran, 2004; Cohen and Cohen, 1981). It is a study to determine the proper allocation of resources for public expenditure (Rath, 1996). It is also used as being synonymous with system analysis (Kulshreshtha, 1988).

While cost benefit study is one that tries to justify that existence of the activity by demonstrating that the benefits outweigh the costs (Lancaster, 1978). Cost benefit clearly refers to a relationship between the cost of some activity and the benefits derived from it (Lancaster, 1988). Cost benefit evaluation relates the benefits (outcomes) of a service to the cost of providing it. The cost benefit relationship can be improved by increasing benefits without increasing costs or by reducing costs without reducing benefits (Lancaster, 1988). Cost benefit analysis provides a set of theoretical and empirical tools for making the best choices in each of these circumstances. It is a technique for estimating the pay off to be expected
from an information system. It helps to establish whether the benefits received from a proposed information system will outweigh its cost (Zwass, 1992). It is a cost accounting tool which helps to evaluate what each program will cost in terms of magnitude of service required (Vaishnav and Basole, 1991; Basole 1992). It is one that attempts to relate the costs of providing some service to the benefits of having this service available (Lancaster, 1977; Bing, 1997; Bertot, 1996). It provides a set of theoretical and empirical tools for making the best choices in each of these circumstances (Kingma, 2005). It is a tool for better fiscal control (Svenningsen, 1998).

Cost benefit analysis refers to Academic Library Outcomes: Does the use of library resources and services:

- Assist students to achieve academic success?
- Assist faculty to improve their teaching?
- Assist scientists in their research? (Matthews, 2006).

**Intangible Benefits of Information Systems**

- Improved Customer Services
- Achieving specific-strategic advantage in the market place
- Availability of higher quality information
- Higher utilisation of assets
- Improved work co-ordination
- Improved planning
• Improved resource control
• Assimilation of promising new technology
• Increased organisational flexibility
• Higher quality decision making
• Streamlined operations
• Increased reliability
• Satisfying legal requirements (Zwass, 1992).

2.21.1 Model of Cost Benefit Analysis

The cost benefit of library can be calculated by the formula given by Cohen Jacob –

\[ \text{SAT} = aU^b \]

Where \( \text{SAT} = \) Total utility

\( a = \) Total Circulation of Sample Years
\( U = \) Total Transaction

\( b = \) Coefficient <1 which can be calculated as –

\[ = \frac{\text{Total circulation of books purchased during purchase year included in sample}}{\text{Total Transaction of books (of which benefit is to be calculated)}} \]

\( \text{TB} = c\text{SAT} \) \hspace{1cm} (Cohen, 1977; Vaishnav, 2005).

\( \text{TB} = \) Total Benefit, \( c = \) Average Variable Cost, \( \text{SAT} = \) Total Utility.
2.22 CONCLUSION

The reviewed literature shows that scanty literature was available on cost, types of cost, cost analysis, cost accounting, depreciation, unit cost and cost benefit analysis. The research on cost benefit analysis was conducted at M L Isc level only. Considering the cost benefit analysis of academic libraries with special reference to BAMUL, the brief history of BAMU and BAMUL alongwith different sections have been described in Chapter–3, entitled “Brief Profile of Dr. Babasaheb Ambedkar Marathwada University”.

REFERENCES


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