RE-ENGINEERING OF COLLEGE LIBRARIES: A STUDY OF PRESENT SCENARIO IN THE MUMBAI REGION

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December 2017

DECLARATION

I hereby declare that the thesis entitled “Re-engineering of College Libraries: A study of Present Scenario in the Mumbai Region” completed and written by me has not previously formed the basis for the award of any degree or other similar title upon me of this or any other Vidyapeeth or examining body.

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CERTIFICATE

This is certify that the thesis entitled “Re-engineering of College Libraries: A study of Present Scenario in the Mumbai Region” which is being submitted herewith for the award of the Degree of Vidyavachaspati (Ph.D) in Library and Information Science Faculty of Moral and Social Sciences o Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by Ms. Parita M. Desai under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this thesis has not formed the basis for the award of any degree or similar title of this or any other university or examining body upon her.

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Date : _____ Research Guide

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LIST OF ABBREVIATIONS

Sr. No.	Short form	Full Form
1	AICTE	All India Council for Technical Education
2	AISHE	All India Survey of Higher Education
3	B.A.	Bachelor of Arts
4	B.A.F.	Bachelor of Accounting and Finance
5	B.B.I.	Bachelor of Banking and Insurance
6	B.COM	Bachelor of Commerce
7	B.F.M.	Bachelor of Financial Management
8	B.M.M.	Bachelor of Mass Media
9	BPR	Business Process Reengineering
10	B.S.C.	Bachelor of Science
11	CBCS	Choice Based Credit System
12	CD	Collection Development
13	CIBER	Center for International Business Education and Research
14	CPE	College with Potential for Excellence
15	DBT	Department of Biotechnology
16	DDC	Dewey Decimal Classification
17	DST	Department of Science and Technology
18	DVD	Digital Versatile Disc
19	EBSCO	Elton B. Stephens Co
20	EISs	Electronic Information Sources
21	FIST	Fund for Improvement of Science and Technology
22	FORSA	Forum For Resource Sharing in Astronomy
23	GER	Gross Enrolment Ratio
24	GIS	Geographic Information Systems
25	GSDL	Greenstone Digital Library Software
26	HE	Higher Education

27	ICT	Information Communication Technology
28	IFLA	International Federation of Library Associations and Institutions
29	ILMS	Integrated Library Management System
30	INDEST	The Indian National Digital Library in Science and Technology
31	IOLS	Integrated Online Library System
32	IPG	Informatics Process Group
33	LC	Library of Congress
34	LISP	Library & Information Science Professionals
35	MBO	Management By Objectives
36	M.COM.	Master of Commerce
37	MHRD	Ministry of Human Resource Development
38	M.Phil.	Master of Philosophy
39	M.S.C.	Master of Science
40	NEP	National Education Policy
41	NCTE	National Council for Teachers Education
42	NCRT	National Council of Educational Research and Training
43	N-LIST	National Library and Information Services Infrastructure for Scholarly Content
44	OPAC	Online Public Access Catalogue
45	OPALS	Open Source Automated Library System
46	OSS	Open Source Software
47	NSL	National Science Library
48	PDAM	Process Analysis and Design Method
49	RFID	Radio Frequency Identification
50	SSRN	Social Science Research Network
51	UDC	Universal Decimal Classification
52	UGC	University of Grant Commission
53	XML	eXtensible Modeling Language

CHAPTER 1

Introduction

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CHAPTER 1
Introduction

Library should be like a pair of open arms.

- Roger Rosenblatt

1.1. Introduction

The aim of education is to develop human being for better survival in his life. Mahatma Gandhi, has rightly pointed out that "Education not only molds the new generation, but reflects a society's fundamental assumptions about itself and the individuals which compose it in the stages of growth of a nation", (Burke, 2000). Higher education is playing an important role in socio-economic development of the nation. Higher education in India is experiencing exceptional growth, by educating students and institutions are performing their role more prominently.

Higher education is an optional final stage of formal learning, which is after completion of secondary education. It is also termed as post-secondary education, or third level education. It is carried out at universities, academies, colleges, and institutes of technology. Higher education is also available through certain college-level institutions. (https://en.wikipedia.org/wiki/Higher_education)

1.2 Higher Education

The term, Higher Education is defined as "the education, which is obtained after completing 12 years of schooling or equivalent and is of the duration of at least nine months (full time) or after completing 10 years of schooling and is of the duration of at least 3 years. The education may be of the nature of General, Vocational, Professional or Technical education." (Ministry of Human Resource Development Department, 2016)

As per the AISHE report the higher education institutions status in India, is (as on 2015-16) is reported in the table 1.1.

Table 1.1: Higher Education Institutions in India: 2015-16

Universities	799
Colleges	39071
Stand Alone Institutions	1192

(Source: Ministry of Human Resource Development: All India Survey on Higher Education; http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/AISHE2015-16.pdf)

From the table it is noticed that till 2016, 799 universities have been established to promote higher education in India. Around 39071 colleges are imparting in higher education system. Along with these independent institutes participate in HE are 1192. The number is always growing every year. It is also observed that there is unprecedented growth of enrollment in higher institutions especially in Arts, Science and Commerce institutes. As per AISHE Survey Report 2015-16 (http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/AISHE2015-16.pdf), 36.24% of the students enrolled for Arts/Humanities/Social Sciences, 14.13% students enrolled for Commerce and 16.04% students enrolled for Science. In total 66.42 % of students have enrolled for Arts/Humanities/Social Sciences, Commerce and Science education. The remaining 33.58 % students are engaged in professional education like engineering, medicine, architecture, law etc

In the higher education system new trends are also visualized due to impact of ICT, along with formal education system, e-learning system is being introduced slowly in the art and commerce disciplines. This is due to availability of electronic reading, learning and teaching material. The role of the library is very prominent in the higher education system. Libraries are backbone in the education system.

The role of college library in higher education is significant. In higher education, the Gross Enrolment Ratio (GER) has increased from 20.8% in 2011-12 to 24.5% in the academic year 2015-16. As per FICCI survey report, (http://ficci.in/spdocument/20657/FICCI-EY-Report-2015%20.pdf) India might be amongst the youngest nations in the world by end of 2030. It is also noticed that in the

world, one in every four graduates is from Indian higher education system**.** Youth education is more important and also a valuable assets of the nation which plays greatest role in socio-economic development of the nation. About 80% students are enrolled in education system at undergraduate levels.

1.2.1. College Education

Under Section 12A(1)(b), college means any institution, that is engaged in provision for a course of study for obtaining any qualification from a university and is abiding by the rules and regulations of the university. There are two types of colleges one which is established and maintained by the university and other, which are affiliated to the university (Ministry of Human Resource Development Department, 2016).

Colleges are the institutions, where degree, diploma and post graduate courses are offered to students in different disciplines. Colleges are entry to higher education. The main objectives of the colleges are to prepare and develop students for the workplace, citizenship, and daily living. In India education system is very strong since ancient period, Taxila and Nalanda universities were famous in imparting education in different languages. But in the British regime more colleges and universities were established for the higher education system in India and since then the number of educational institutes like colleges and universities are growing fast to cope up the need of information society. Some of the oldest colleges established before 1857 are Serampore College in Howrah (Estd. 1818), West Bengal, Wilson College (Estd. 1832), Bombay, Christian College (Estd. 1837), Madras, Indian Institute of Technology, Roorkee (Estd. 1847) and St. John's College (Estd. 1850), Agra. In 1857, number of colleges established were 27. During British rule 1857, colleges were established by East India Company and Christian Missions. The number of college increased in India since independence during last five years, are 32974 in 2011-12 to 39071 in 2015-16. Growth of number of college in Maharashtra from 2011-12 to 2015-16 are as follow:

Table 1.2: Growth of College in Maharashtra from 2011-12 to 2015-16

Sr. No.	Year	Number of College
1	2011-12	4566
2	2012-13	4369
3	2013-14	4498
4	2014-15	4646
5	2015-16	4569

(Source: http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/AISHE2015-16.pdf

As per AISHE 2015-16 survey there are total 334 college in Mumbai which are spread throughout the city as well as the suburbs. At the undergraduate level, B.A., B.Sc., and B.Com are popular courses in these colleges. Along with these conventional courses, many colleges also offer professional courses which concentrate on a specialized field. The overall vision of the college education is to develop leaders known regionally, nationally, and internationally for expertise and excellence in research, teaching, outreach, and solutions for education and human well-being. The efforts are to improve the lives of the citizens of nation. The main function is to develop national citizens enrich in all essential qualities of human life to perform different activities.

1.3 College Libraries

The colleges are important link in every educational system and libraries associated with colleges are the heart of the institutes. College libraries plays prominent role in the growth of higher education and also the personality of youths in any country. A well-equipped library as well as the better informed librarian is valuable assets to colleges of any disciplines. P.N. Gaur (1960), defines the term “College Library” as a “Library organized and administered by a college for the use of its students and members of staff”
In information-rich environment, teachers alone cannot manage and deliver knowledge, the college library also plays central role in achieving the objectives of the educational institutions. According to Bhatt (2009), college libraries and its services plays a prominent role in ensuring quality at higher education especially at graduate level. Information technology has significantly affected the teaching and learning process in

academic institutions in last few decades. The influence of technology on learning is evident in every education institution, to a lesser or larger extent. To make the nation self-sufficient, it is necessary to introduce reforms in educational structures. Information technology has converted the world into a global village, where anyone can access the information from anywhere either free or with a nominal cost.

Over the years, the form of information resources have been changed from primitive stone slabs – clay tablets-papyrus- palm leaves -vellum-printed books to interactive electronic and multimedia. Simultaneously, majority of students and faculty members prefer to access information with the use of personal computers, mobiles, and tablets etc. in the ICT age and also with the help of internet. With these modern gadgets the libraries' role is changing from serving on premises to reaching out to the information seekers, to ensure that they can retrieve and access the required information efficiently and effectively. The college libraries therefore, need new service paradigm that is user-centered.

Due to technological developments and current trends of higher education teaching and learning techniques are changing drastically. To achieve the objectives of teaching and learning successfully the parent organizations of colleges and college libraries / librarians need to reengineer libraries to cope up with the changes adapting ICT. Resources, information products and library services are more essential to the users. The challenges of information overload and supply of quality information to users is not possible without use of modern tools. This demands for changing role of college libraries / librarians, which currently is more philosophical than technical.

The overall objectives of any college libraries are:

- **To support mission, vision, goals, and continuous improvement of colleges**

Every educational institute has their mission and vision, the main task of libraries / librarians is to ensure, the best library resources and services offered to users and contribute to achieve mission and goals set by the colleges or parent bodies. Irrespective of the courses offered by any college, their mission and/or goals are focused around teaching and learning techniques and progress of the students. Teaching and learning process depends on the information available and access to it through libraries. It is the

responsibility of the librarian to collect, organize and disseminate the information to the right person at the right time through right mode.

- **To support teaching faculty in creative and effective teaching**

According to Dewey (1915), teaching is a co-operative enterprise in which teacher and librarian play equal roles. Library is the central hub of the teaching and learning process. Library needs to support the teaching faculty to plan curriculum, update on instructional units, teaching-learning strategies and activities by providing latest information on the subjects and also on the teaching methods and techniques. The library ensures that the textbooks and reference books prescribed in the curriculum are made available in enough quantity for teaching and learning. Effective collaboration between library and teaching faculty may help colleges to provide the students with total academic experience, raising the academic standard of institution. Librarians have to orient faculty by way of interaction through organizing demonstrations, lectures, trainings, etc for using library resources and services at the highest point.

- **To ensure maximum utilization of resources**

The key role of the college libraries is to acquire, process, disseminate and preserve the resources irrespective of their form and formats. It is the function of the college library that it balances print and non-print resources and makes the users aware about available resources and infrastructure for optimum use of resources.

- **To promote knowledge creation activity than knowledge consumption.**

Instead of providing just books and research materials, the college libraries are required to provide reading room, discussion room, internet and chat rooms, at the same time carrels for serious research reading for the faculty and scholars.

- **Library as community centers**

College libraries plays valuable role in bringing the world of information to the information community. Libraries have to focus even more on bringing the community to library or even outreach to the users by extending services to users on college campus. Library needs to develop an intellectual and social space on campus, where users can come freely, use library facilities, share their ideas and discuss in groups on various important issues for supporting education system.

The Kothari Commission has suggested that each academic institution should develop a long range plan for development of library with regard to anticipated increase in number of students, courses, subjects and needs of research (Education Commission, 1964-66). Recent changes in educational philosophy, reforms in examination system, use of advanced technology, enhanced expectations of users, knowledge explosion are the challenges for college libraries. This is the main reason to reengineer libraries to match the demands of users, and satisfy user needs at any time, at any place and in any form. Successful re-engineering of college library might facilitate the effective educational reforms.

1.4 What is Re-engineering

According to Hamer and Champy (1993) the term re-engineering is 'the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service and speed'.

Re-engineering in library means, going to the root of the constitution of the library, its goals, and mission, beginning with the clean slate and redesigning the library processes in response to new technology, ever-growing information and constantly changing needs of user.

Re-engineering leads to the improvements in the college libraries which results in quantum leaps in performance, achieving breakthrough which can be measured in getting maximum user satisfaction, maximum utilization of available resources, at reduced costs, increased speed and accuracy depending upon the requirement of the college library.

1.4.1 Re-engineering College Libraries

In the era of competitive and ever changing information networked society, the college library needs to be focused on quality services and user satisfaction. To quickly respond to internal and external changes, the college library has to be creative and innovative in its functions and services and must be committed to continuous learning. Over the years libraries have modified and adopted many management tools that originated in business,

industry and government, to make their organizations more successful (Moran et.al 2013). Some of these are Total Quality Management (TQM), Quality Circle, Just in Time (JIT), Continuous Improvement, Business Process Re-engineering (BPR), Benchmarking, etc.

"Re-engineering is alive and well. In fact it is little misleading to say re-engineering is back:" (Hammer and Champy, 1993). This is true in case of college libraries. College libraries are being reengineered from the beginning, from chained and closed access libraries to open access, hybrid, digital and virtual libraries. Even the role of librarian have been changed from custodian, to disseminator; cybrarian; to information expert etc. According to Hammer and Champy, (1993) "Re-engineering is go-getting, rule-breaking, enabled by the creative use of technology, and oriented towards processes" and it has become necessary in library because of new environment in which users are changing, competition has intensified, and change is constant. In an academic setting, three dimensions that enforced library to adopt re-engineering process are:

Customer (User): The customers / users of college libraries are teachers, students, and researchers. In the present era of "knowledgeable customers" library cannot afford any compromise on provision of services, as compromise may lead to loss of valuable clientele for library. The users need change in process so as to get the information fast and accurate, library has to establish appropriate priorities and initiatives to achieve these. To satisfy user needs, library / librarian need to identify and adopt the knowledge, skills and techniques required for re-engineering.

Competition: "Competition" in digital era is growing and has becomes inevitable. College library has to compete with commercial information providers while managing services. With advent of electronic publishing, communication technologies like intranet, and internet; commercial organizations like Amazon, FlipKart and others making available free online resources, and modern gadgets like smartphones, and tablets providing easy access to information. The college library is required to demonstrate the users that the library remains central to academic effort by providing authentic information in the competitive era. The college library therefore needs to adopt re-engineering process to sustain and grow in competitive information world by providing user need based services.

Change: The pace of "change" today is like never before reported and the rate at which such changes are happening are phenomenal. It is indeed true that only one thing which is constant, is "change". The libraries have to be able to respond quickly and amenably to political, social, economic and technological changes. Effective management of change while focusing on future may help the library to survive in this competitive information world and helps the parent organization in achieving its objectives and goals.

In digital competitive world, libraries have to incorporate changes in their system of functioning as libraries have to move towards an uncertain future by adapting technologies.

1.5 Statement of Problem

The statement of problem for present study is fixed as "Re-engineering of College Libraries: A study of the present scenario in Mumbai Region". The main purpose of the study is to assess the present status of the college libraries with respect to library collection and services provided to users, staff status, process followed for management of collection, services and staff, status of automation, use of ICT, initiative towards digitization, re-engineering strategies used by college libraries, and finally to integrate the wealth of information into a model, that can be easily applied by the college librarian.

The college libraries are heart of the educational institutions. College libraries always play a vibrant role in teaching-learning, research and several other activities of the college. Due to the development of technologies, there is a vast increase in number and forms of publications, prices of information sources which have also increased rapidly day by day. The methods and ways of storing, organizing, analyzing and retrieving information and information sources have also been affected due to constant changes in technologies. Information seeking behavior of users have changed drastically, which demands more investment in technologies and human resource development. These issues are challenging for the college libraries rather than a problem or a threat. These challenges are to be met by re-engineering the college libraries by satisfying user needs, optimum utilization of resources acquired, and job satisfaction to staff. Re-engineering is the only way out for the college libraries to survive in technological advanced world and can be able to offer a "visible, identifiable and physical image" for the institution. Re-

engineering helps libraries to perform the same functions using different methods and technologies and provide better services to the users.

Since the researcher is a librarian of the college, the gravity of the challenges and demands of the users in the ICT era are facing. Now the college libraries have different role to play and the functions of the libraries need to be changed by using management tools and technologies to provide effective library collection and services in limited resources. Re-engineering is the possible solution at the moment for changing the libraries and hence the researcher decided to survey the status of re-engineering in the college libraries in Mumbai region.

1.6 Significance of the Study

Dr. Ranganathan's fifth law of library science states, "Library is a growing organism" which is universal. Change is constant in all libraries including college libraries. The primary objective of college library is to provide resources and services to support the academic program, and to inculcate reading habit for lifelong learning, for exploration, and recreation. Information revaluation, Internet and Intranet, web publishing, innumerable publications, rising cost of publications, budget constraints, cutthroat competition, together with the increased emphasis on quality assurance process, have created challenges for college libraries and librarians. There is a need to re-engineer the college libraries due to acceptance of technologies and management techniques. This study has focused on the present status of libraries and re-engineering them keeping in view the three important aspect of the college library viz. Library collection and services, application of ICT infrastructure and human resources. The model of re-engineering developed may help to re-engineer college libraries effectively and receive the accrued benefits out of it.

1.7 Scope and Limitations of the Study

- The present study is limited to Government and Government fully and partially aided Arts, Science and Commerce Colleges in Mumbai Region.
  (http://www.dhepune.gov.in/ and https://jdhemumbai.maharashtra.gov.in)

- This study is limited to re-engineering of library products and services, ICT infrastructure and facilities and human resources of college libraries of Mumbai Region.
- Target audience for the study are college librarians and library users of Government and Government fully and partially aided Arts, Science and Commerce Colleges in Mumbai Region.

1.8 Objectives of the Study

Researcher has fixed the following objectives for this study

1 To identify the problems encountered by librarians in providing library services.

2 To identify the need for the re-engineering in college libraries

3 To find out the status of library collection, services, ICT infrastructure & facilities, and human resources of college libraries.

4 To find out the strategies adopted by college libraries for re-engineering process.

5 To propose a formal model for re-engineering College Libraries.

1.9 Hypotheses

1 College libraries in Arts, Science and Commerce colleges are weak in their collection, services and staff.

2 The application of Information Communication Technology in libraries is not so strong.

3 The college libraries inadvertently adopts a flawed or incomplete re-engineering strategy.

1.10 Research Methodology:

Selection of research method is based on research problem. Research methodology explains, research design, target population, sampling, data collection instruments, data analysis instruments, etc. According to Kombo & Tromp (2006), research design is considered as the blue print of research work, which enables researcher in accomplishing the objectives of research and countering research questions. This study has adopted descriptive research design, as it considers the various aspects of the problem and

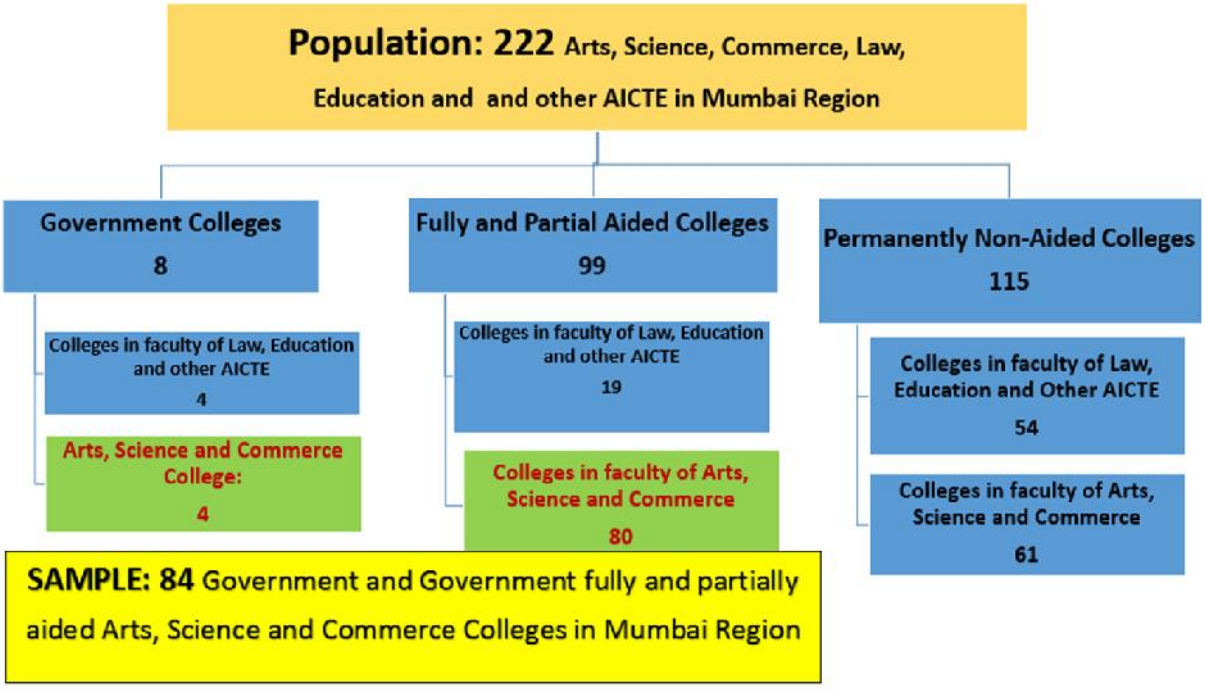
exhausts the possibilities of collected data. This research is based on the survey method and describes the characteristics of the college libraries under study, including nature, problems and the strategies adopted by them for re-engineering.

Hence for this research study, research method selected is the descriptive research which is more appropriate. Data collection tool is questionnaire for librarians, and users (to understand their needs and demands)

1.10.1 Target Population and Sample Size of the Survey

In the present research study, survey was carried out on college libraries and surveyed librarians and library users from Arts, Science & Commerce colleges in Mumbai region.

Figure 1.1: Sample for Government and Government fully and partially aided Arts, Science and Commerce Colleges in Mumbai Region

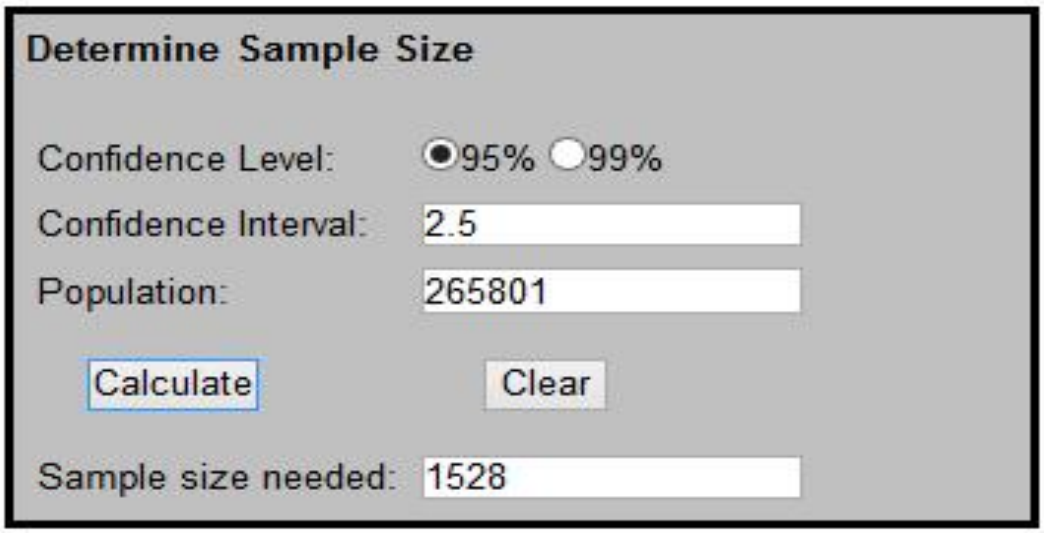


There are total 107 Government and Government fully and partially aided colleges in Mumbai region, out of which, there are 84 Government and Government fully and partially aided Arts, Science and Commerce colleges. (Appendix III). Researcher

surveyed all the libraries and hence the sample size selected is also 84, and questionnaires were distributed to all the 84 college librarians from Mumbai Region.

There is a total population of 265801 library users from these colleges, sample size was determined using sample size calculator:

Figure. 1.2. Sample Size Calculator for Library Users



(Source: https://www.surveysystem.com/sscalc.htm)

For calculating sample size, researcher has taken confidence level as 95% and confidence Interval at 2.50, which resulted in sample size of 1528. Keeping in mind the non-responses and incomplete responses total 1800 sample size were decided, which comes to 21 respondents from each college.

Use of Morgan Table for Sample:

The researcher has also referred to the Morgan Table for verifying the sample selected for the survey.

Figure 1.3 Sample as per Morgan Table for Library Users

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

(Source: Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 1970.)

The sample size as per the Morgan Chart comes to 384 as, the population between 75000 to 1000000, the sample size is 384. Hence the selected sample for the survey 1800, which is higher than the value and therefore selected to assess more users for getting proper feedback.

1.10.2 Data Collection methods

The researcher has collected data using questionnaire technique. The Questionnaire is prepared for college librarians and library users separately. It is comprised of open and closed ended questions to obtain qualitative and quantitative data. The questionnaires were administered to 84 college librarians of the colleges under survey through email and through personal visits to libraries.

For library users the questionnaire was handed over to college librarians of respective colleges and also through personal visit to colleges. The sample selection was random.

- **Questionnaire for College Librarians:**

Librarians' questionnaire is divided into eight parts.

Part I comprises questions on general information of college librarians with respect to name, gender, contact details, and qualification. Part II comprises questions based on college / institute profile covering, college name, establishment year, number of students, courses offered, and accreditation status. Part III deals with questions concerning libraries, which covers the present status of the library comprising opening hours, collection development process, library collection, services and library staff. Part IV deals with the status of automation of housekeeping activities in college libraries. Part V is based on use of ICT in libraries. Part VI deals with efforts towards development of digital libraries and status of digitization. Part VII, covers problems faced by libraries in satisfying user needs. Part VIII, covers the re-engineering efforts carried out by the librarians. It also includes questions about adoption of re-engineering, area and objectives of re-engineering, strategies adopted by college libraries for effective implementation of re-engineering process like re-engineering committee, communication method adopted, ,use of ICT, marketing strategies, challenges faced by college libraries and suggestions for effective implementation of re-engineering process in college libraries. At the end librarians opinion was sought to say anything not asked in the survey.

- **Questionnaire for Library Users**

Questionnaire for library users contains the questions regarding their frequency of library visits, use and preferences for library products and services, and their opinion about availability of quality library collections and services, ICT infrastructure, other library facilities and library staff. This is a supportive survey to librarians' view and also to assess the users' opinion about the library functions and services.

1.10.3 Data Analysis Method and Presentation

The primary data was analyzed using descriptive statistics and coded to convert into numerical information. The data was analyzed using MS-Excel and Mega State. The results of data were presented using tables, charts, and graphs.

1.10.4 Pilot Study

A Pilot study was conducted to overcome the weakness of the questionnaire and to ensure reliability and consistency of the questions. Mugenda and Mugenda (2003), recommended 1% - 10% of the actual sample size for a successful pilot study. The researcher has used 6% of sample size for pilot study. Accordingly, the questionnaire was sent to seven (7) college libraries, the errors detected were corrected and the questionnaire was restructured and sent for data collection.

1.10.5 Duration of study

The study was conducted from early 2013 to 2017 and the required data was collected during 2015-16.

1.11 Structure of the Study

The present study is presented in following six chapters:

Chapter 1: Introduction : deals with the introduction describing the higher education in India, role of college libraries, re-engineering in college library, statement of the problem, significance of the study, objectives, hypothesis, and scope of the study, limitations, research method, and chapter scheme i.e. structure of the study.

Chapter 2: Review of Literature: covers the review of related literature with regard to need, and challenges for re-engineering, strategies for success of re-engineering, role of Information technology and role of librarian for re-engineering college library.

Chapter 3: Re-engineering of College Libraries: presents the theoretical concept of re-engineering – needs, principles, methodologies, benefits, strategies for re-engineering college library, and role of librarian in re-engineering.

Chapter 4: Profiles of Colleges in Mumbai region: discusses a brief history and the accreditation status of Government and Government fully and partially aided Arts, Commerce and Science colleges in Mumbai Region. It also includes details about library and its facilities.

Chapter 5: Data Analysis: Presentations and Interpretations analyzes the results from the data collected through questionnaire

.

Chapter 6: Findings, Suggestions and Conclusion: It includes findings based on observations, and suggestions made on observation. It also highlights the proposed model which can be useful for implementation of Re-engineering process in College Libraries. Finally, it emphasis on conclusion and future area of research.

The appendices and bibliography is appended at the end of the study.

1.12 Summary:

College Libraries play a central role in the excellence of higher education. The advent of information technology and changing information seeking behavior of the users have made it obligatory to reassess the functioning of the college libraries and to adopt the re-engineering process in the college libraries to enable them to achieve the goal of the institution. Effective implementation of re-engineering process may lead the libraries into the impending of unending rapid developments in information technology, current fiscal restraint, and continuing increase in user expectations.

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CHAPTER 2

Review of Literature

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CHAPTER 2

Review of Literature

"I not only use all the brains that I have but all that I can borrow"

-Woodrow Wilson

2.1 Introduction

The research is not imaginable without review of related literature and studies conducted in the past. According to Adams, Khan, and Raeside (2007), for any research, it is obligatory or essential to know what has already been done on any specific topic by others. Without literature search, research may not be foolproof. For this research study researcher has scanned and reviewed the literature published in different form in print and e-form, internet resources and analyzed it The researcher has reviewed total 111 publications related to the research topic that focuses on the various aspects of the re-engineering of the college library. The reviews of publication have been presented in six headings as under:

1. Re-engineering
2. Need for re-engineering the library.
3. Reasons for the failure of the re-engineering process.
4. Strategies for effective implementation of re-engineering process.
5. Role of Information Technology in the re-engineering process.
6. Role of the librarian in the re-engineering process.

2.2. Re-engineering

Balasubramanian (2006), in his communication states that the term Business Process Re-engineering indicates the dramatic change which is connected to the restoration of various organizational structures, the style of management, managing of human resources, and the usage of information technology to develop the excellence and qualitative performance.

Linden (1994), defined BPR as “the critical analysis and radical re-design of existing business processes to achieve breakthrough improvement in performance measures”.

BPR can also be defined as “a total transformation of a business, an unconstrained reshaping of all business process, technologies and management systems, as well as organizational structure and values, to achieve quantum jumps in performance throughout the business” (Venden 1994).

Rasoulian, et al. (2013), defined the concept BPR as, “Business Processes Re-engineering (BPR) is a procedure in which organization’s current tasks are replaced by main business processes, causing a task-oriented organization to move to a process-oriented organization, resulting in accelerating business procedures, cutting costs, and consequently making the organization more competitive”

According to Stoica, Chawat, and Shin (2004), Re-engineering is well-defined as, the appraisal and enhancement of plan, process, know-how, and association. One of the fundamental components of this process is discontinuing institutional goals that are no longer valid.

United States General Accounting Office (1997), has also defined the process of business re-engineering and states that, Business process Re-engineering was initiated as a private sector technique which helps the organizations to think from scratch about their working style to dramatically improve their services, at reduced cost and be able to face the world-class competition. And the key factor for successful Re-engineering continuous improvement and utilization of information systems and networks.

Davenport & Short (1990), stated that Re-engineering is a combination of the radical change approach and the discipline of continuous process improvement. They refer business process re-engineering as, "the analysis and design of workflows and processes within and between organizations".

Hammer (2009), in his book “Beyond Re-engineering” states that it is processes and not products, which will ultimately provide companies with a new form of competitive advantage. He reiterates that the word ‘process’ suggests a complete end-to-end collection of activities designed to create value for the customer. The three main types of Re-engineering are Goal-oriented re-engineering, Crisis re-engineering, and Life-cycle re-engineering. While the first type consists of planning new

objectives, in the second type changes in operations are made due to internal and/or external pressures. Life-cycle re-engineering is strategic and an ongoing process (Bitzer 1997).

Devi and Haditha (2010), pointed out that, Re-engineering is actually re-inventing the method by which one conduct business, by examining standards, objectives and the method of processes that are considered in order to meet these goals. It is noted that process re-design is often an outcome of such a sort of evaluation.

Graves and Martin (1997), in their study at the University of Illinois in Chicago, they recognized that change is an opportunity and re-engineering is an ongoing process. According to them it was tough to isolate technical services from public services, and hence they re-designed processes in public services areas which required continuous data collection and scrutiny, and observing of series for current process as well as the new ones.

Rasoulian, M. et al. (2013), investigated the pattern for re-engineering management processes at Iran's Aviation Industry. The findings of the research shows that:
According to 36.7% respondents, a setting of goals and visions in projects is of high value. 66.7% is of opinion that the utilization of ICT in very low in the BPR projects. 46.7% are of opinion that matrix organization is attained at a medium level. Majority of them reflected balanced planning in projects was high. 90% of respondents argued that re-engineering is functioning in their ventures, 83.4% of participants recapped that level of continuous improvement of performance of the processes were at the medium and low level, 83.3% of the respondents have applied ICT based services at a reasonable level to achieve the project objectives. Finally, 100% respondents said that culture and the spirits of the employee/individuals are an important factor in achieving the objectives of the organization.

In a case study on Re-engineering of Acquisition process in the library, Devi and Haritha (2010), stated that the process re-design is often an outcome of the evaluation of values, objectives, and processes defined to meet goals of the organization. The acquisition is one of the main processes that can be looked into in order to re-engineer the library since it has many repetitive tasks which can be compartmentalized and

modified as per the requirements. Automated Acquisition system and online library catalogue will allow the library to operate more smoothly and effectively thus benefiting library users.

Kalita et al. (2010), says that replacement of traditional system with computer system does not mean it is re-engineering. Actually, it means a radical change in the system either by replacing computer system with manual or manual with a computer, if deemed necessary, whose main aim is to achieve the objective of the re-engineering process.

Masumi (2013), indicates that, BPR is a popular management approach, which enables the organization to create higher customer satisfaction, increase productivity, build higher flexibility and steadily improve organizational integrity which will result in competitive advantage for the firm.

Masumi (2013), in the study indicates that BPR is a management tool, which helps the organization to earn maximum customer satisfaction, increased productivity, flexibility and steadily improve organizational integrity which will result in competitive advantage for the firm.

Roy (n.d.), assets that BPR is aimed at reformation processes, decreasing costs and process time. It helps to earn increased income, better cooperation, and administration of functional interdependencies, quality improvement. Most importantly it helps in improving the knowledge and skill of the employees. In today's life use of BPR techniques have increased in all areas of operations.

Summary:

From the published literature it is very clear that Re-engineering is essential to change the practices for the better output. Re-engineering is nothing but re-inventing the method and practice the business, by rechecking standards, aims and the method of processes that is considered in order to meet the goals of institution. It is noted that process re-design is often an outcome of such a sort of evaluation practices to overcome the problems. In short Re-engineering means leaving the old system and creating a new one with fresh concepts and rules. Re-engineering creates the opportunity to introduce changes in librarians' duties, readers' services, budgeting, or

in different areas of library activities. Re-engineering is a continuous process. Re-engineering is about inventing new approaches to the process structure that has no resemblance to the previous one. Fundamentally re-engineering is a revolution. It is the search for new models of organizing work

2.3. Need for Re-engineering in Libraries

While discussing the need of re-engineering process in libraries or any organization, Dahibhate et. al.(2009) pointed out various factors like information explosion, increased cost of resources, changing users' need, isolated information for research, dwindling budgets, increased research, changed role of library professional and competition, which enforced library to go for re-engineering in libraries.

Bennett (2003), responding to changing patterns of student learning was, in fact, one of the most powerful motivators for library construction and renovation in the 1990s. Whereas, Barman & Thakuria (2010), in their study of Re-engineering in technical institute libraries in Assam, revealed that maximum problems faced by the users were due to an inadequate and irrelevant library collection, and also an inability to access the same. Hence re-engineering of library services should focus on the availability of infrastructure, ICT infrastructure, qualitative library services and adequate, relevant and balanced print and non-print library collection.

Paramaswaran and Vimal Kumar (2008), noted that there is quite a gap between needs of the current users and provision of library services. Users prefer to avoid library visits and depend on the internet and other sources to meet their educational needs. Therefore to attract non-traditional users, libraries should reform their services in such a way as to meet the challenging needs of today's ICT literate users.

Veer, Kadam, and Chavan, (2010), pointed out in their communication that, there is an urgent need for re-engineering the library, in order to face the challenges posed by information explosion as well as to satisfy the multi-faceted needs of the users, to redesign library services and to provide to the point comprehensive information to the users.

Ptak-Danchak (2012), in his presentation, he observed their users expectations and their information seeking behaviors. His observations revealed that libraries were facing problem in building the desired collection within their limited budgets. Acquisition librarians need to adopt a new collection development policy, to interact with library users as there is a great revolution in their information seeking behavior. Today's user believes that everything is available on the Internet. Texting is their way of communication. Time is a very precious commodity in the context of information dissemination. Users are looking for social, collaborative spaces, refreshment areas as well as quiet reading space under one roof. Transparency and management of users' expectations are compelling librarians to ascertain different innovative strategies to support the fundamental aim of the university

In the case study conducted by Das & Baruah (2010), it was found that college libraries of the present age are facing new types of challenges, which they could not have imagined a decade ago. From the survey, it is found that the colleges under study had a library collection of fewer than 10,000 books and very few journals and newspapers. Also, 53.21% of the users were not satisfied with the library collection while 51.85% users were not satisfied with library services and 28.32% were not satisfied with the opening hours of the library. Only 28.5% of students and 31.57% of staff visited the library regularly. 55.55% libraries have just initiated the automation process. No college library is providing interlibrary loan and internet facility. However, all the colleges provided reading room facility and circulation facility. 22.22% of libraries provided photocopying services, 11.11% had bibliographic services and 33% were providing other extension services.

Tang et.al. (2009), in their study of Hong Kong University Library's perspectives on e-books, found out that, due to the shift in forms of collection policy from print to non-print, it has become critical for the library to effectively acquire, organize, manage and provide access to its library collection. So there is an urgent need for the library to overhaul and redesign their existing library processes, review the job profiles and knowledge of their existing staff so as to for service their e-book collections to users.

Rajendra, and Panage (2010) noted that electronic publishing and its easy accessibility have greatly affected the role of traditional reference librarians. There is a radical change in types of services desired by users and librarians have to think of different ways to cope with this change. Hence there is a need to apply the philosophy of Re-engineering. Reference librarians should redesign the reference services with the application of IT, keeping users' need and their information seeking behavior. Librarians can make use of web 2.0 applications like blogs, RSS feed, Whats App Facebook etc. to reach out the users with timely and quality services. In their opinion libraries have to re-engineer the process of 'Reference Service' in the context of the Internet, with an aim to provide personalized reference services keeping pace with the changing environment.

Bhattacharya (2004), pointed out that, digital world forced to change practices in librraies. The Great Cultural Revolution in civilization and digital environmental has replaced the "book centered" culture of the library with "user-centered" culture. Users need have been shifted from "library services" to "information services" asking for access to information via information technology.

Mack (2003), affirms that the challenges faced by college libraries include budget reduction, rising cost of materials, an advent of ICT and explosion of digital information. Hence the library should shift its collection development philosophy from just-in-case to just-in-time. There should be a change in job profile of the library staff as per the need of the user, competency, and eligibility of the library staff. At service counter, the staff with knowledge of library application and having the skill to understand the need of the user must be placed not the paraprofessional staff. The library should organize training programs with different modules depending upon skills needs to be improved for library staff. Redesigning of the library services will help the libraries to expand the library services and will provide learning opportunities and will help to meet the challenges by library staff.

Konnur and Bhandi (2004), have also commented on the challenges faced by the college librarians. The devaluation of currency has further affected the acquisition policy of academic libraries. Librarians are challenged by limited budgets, and it has become very difficult to plan goals and achieve objectives. To deal with the problem

of limited budgets and diversity of users, the library must take the advantage of consortia like MHRD, CSIR Consortium, and UGC's INFONET. There is also a need to develop innovative ways of thinking about services, collections, information access, and also the roles as academic librarians According to EBSCO Library Survey, (2010 and 2011), 83% of librarians reported either budget cuts or no budget growth during the year 2009-2010. ARL libraries were especially hard hit with 64 percent reporting budget decreases. In 2010-2011, a total of 85% respondents expected decreased or flat budgets. To cope with this situation 37% of libraries reduced staff and 57 % froze new hires. Libraries also tried to solve their budget problems by moving to electronic content or canceling databases that contained duplicate content and negotiating multi-year deals with vendors and re-negotiating or "breaking up" bigger packages.

Grosvenor (1997), indicated in their communication that the current digital era has affected the role and identity of libraries. The economic situation also expects the libraries to be responsible for the services and the utilization of funds. In such situation, a library needs to reassess the strategies and processes followed to provide the services and fulfill the objectives of the library by making necessary changes in its operations and optimally utilizing the fund allotted by the funding agencies. Many possible solutions are suggested, one such solution may be the re-engineering of library services to take advantage of, and cope with, the effects of the digital age.

Pandya & Pandya (2010), insist that due to various challenges like globalization, digitization and preservation, migration from conventional to digital formats, changes in scholarly communication and information technology, libraries have to undertake to re-engineer of their collection, cataloguing, library staff, services, and infrastructure in order to adapt to continuous environmental change.

ACRL (2007), suggested that the objectives of academic and research libraries are greatly affected by the changes that are occurring in technology, research, teaching, and learning. In this digital age, libraries are facing problems of management, preservation, and expansion of their role in the information market. In order to keep pace with technology and to survive in the competitive market, there is a critical need

to re-mold identities in relation to the changing methods of knowledge creation and dissemination.

Raitt (2005), is of the opinion that the development of technology has changed the pattern of users' access and retrieval of information. Academic libraries are facing challenges in satisfying the needs of users as it is highly demanding and dynamic in nature. Most of the college libraries are lacking adequate staff and also sufficient funds. None of the libraries have semi-professional staff. Some of the college libraries even do not have support from higher authorities. It demands the college libraries re-invent their traditional process for organization and dissemination of knowledge in order to satisfy the today's' users' need.

Kalita, et al. (2010), discussed that due to rise in the application of technology, a library has turned from the repository of books and manuscripts to a people's center. It is perceived that the mushrooming of literature in varied forms has created problems for library staff as well as users and requires the re-engineering of the manual library system

Mishra and Saxena (2008), in their studies indicated that Models of electronic publishing like electronic books, journals, databases, Electronic Publishing on CD-ROMs, Print on Demand, Digital Content, Electronic Ink, email Publishing, Web Publishing etc. have a direct impact on information systems and services. It has also affected the producers and distributors of information.

Lars Bjørnshaug (1999), is of the opinion that, Electronic Publishing helps to provide fast and easy access to information with simple, powerful search and retrieval capabilities. Librarian have to play a crucial role in handling electronic models by accepting and adopting these new technologies A number of constraints, pressures, and developments like zero growth funding, multiplying of new technology in publishing, hasty growth in prices of publications, heavy investments in new technology infrastructure. There is a problem with human resource management and diversified needs of the users, which appeal for rather intense changes in library management. In order to survive in such situation, academic libraries need to adopt innovative practices in their process and functioning.

Sukula and Shukla (2010), is of the opinion that the Internet and web technology has changed the way people communicate, interact, acquire, share knowledge, search, investigate and participate in the creation and re-use of content. Libraries should re-design it's processes, keeping in view the changing information technology that is widely used by its stakeholders, permitting users to conduct their research, study, and job in different and better ways. Redesigning of Information System & Services in the Era of Web 2.0 requires development of problem-solving technique, consisting of a series of interrelated activities

Parikh and Pandya (2004), indicated that the development of computer networks such as the Internet and digitization of information is posing new challenges like Fair Information Practices and Property Rights. Digitization has opened the doors for recording and compressing all sorts of data, reproduction in multiple copies, manipulation of data, images etc. This situation calls for re-evaluation and restructuring of policies with respect to Information rights and obligations, Property rights, Accountability and control, and System quality

Schaffler (2004), in a survey of the re-engineering process at Bavarian State Library in Munich, Germany, the findings shows that digital resources had an abundant influence on the role of the libraries and also on the organizational structure of the library. To deal with this situation the library had implemented the re-engineering process.

SLA (2003), also discussed on the re-engineering of libraries. In the digital era cutthroat competition, an advent of technology and need for productive staff have resulted in used electronic media, increased accountability and new forms of work culture, which have created great challenges for special libraries. To manage these shifts, the special librarian should take a holistic view of information needs and the contexts in which they occur. Therefore the librarian should identify, retrieve, organize, repackage and present information in an actionable form so that the potential for goal attainment is maximized

Nicholas & Rowlands (2010), in their study of university colleges of London, revealed that in the past decade, the total staffing of UK academic libraries has grown by only 15%, whereas library users have doubled. There is a possibility of a further cut in library staff based on surveys conducted by the CIBER team. So in order to ensure the speedy delivery of the information and services, there should be proper alignment between services, expenses and its impact on the performance of the library. Hence many library directors are already in line of adopting restructuring and re-engineering in their libraries.

Francis & Kabir (2008), pointed out that, though the Education Commission, as well as other high-level committees, had re-affirmed the important position of libraries and their professionals. The state universities and affiliated colleges are still lagging behind in establishment of standard libraries capable of a proper provision of services to its users. The critical issues which need to be addressed are the management of human resources, which has a crucial role in enhancing the quality of education and research. There is need to implement the re-engineering of library services and human resources to deal with the current situation

Matthew (2011), has listed out six challenges that today's librarian is facing: Wide range of library customers; Information literate futuristic customers; Computers; Shift to digital content; Diminishing library benefit to the community; and personal development of new skill sets. Therefore it is imperative that the librarian imbibes the vision of 21st-century library and librarianship and achieve these before the year 2020. The library must reinvent itself to be more relevant to its community, if it expects to survive, and certainly if it hopes to thrive.

ACRL (2010), identify in its comprehensive report on the value of academic libraries, that libraries have to start working towards gaining attracting more potential users, retaining existing users, convenience higher authorities for more and continuous grants, and achievement of academic excellence of educational institutions. Instead of relying on the old myth that library has enough collection and if users need the services of the library they themselves will come to the library. It is important to establish healthy repo with the goals and objectives of the educational institution and needs of the library users.

Bloss & Lanier (1997), in their study at the University of Illinois at Chicago, listed that significant organizational changes at academic libraries are directly affecting the library department head. Traditionally, the only head of the library was responsible for the administration of the department with proper policies and functions of the library, proper coordination with vendors and higher authorities who allocates the resources to carry out the mission of the institution and accomplish its objectives. This traditional view of the responsibilities of department heads contrasts with some current attempts to include team management concepts and matrix organization patterns into library operation. Re-engineering and total quality management are necessary to evaluate organizational models and effect changes. Thus the role of the department head in the library is being challenged and redefined as these changes are being implemented.

Venkataiah, and Sagi (2013), is of opinion that the basic factors influencing any company which seeks to re-engineer is to fight increasing competition, to reach the market faster, and to build good relationships with its customers and suppliers

VenkataRamana (2006), in his paper, identified major challenges faced by the libraries in the 21st century, which includes the following –

1. Information eruption,
2. ICT uprising,
3. Growth and usage of digital resources,
4. Dwindling library budgets,
5. Growth in prices,
6. Demanding use of electronic resources,
7. Varied and growing users' expectations,
8. Interactive learning atmosphere,
9. Growth of online education,
10. Diverse and enlarged information resources,
11. New forms of scholarly publications,
12. Varied forms of libraries (Digital, Virtual, and Hybrid),
13. Changing Information Environment,
14. Online Bookshops & Information Services.

These challenges call for re-orientation, re-engineering, transformation and great changes in the information environment, library functions and the roles of library and information service professionals.

Summary:

From the literature review the opinion of the scholars and different librarians is that, there is an urgent need for re-engineering the library, in order to face the challenges posed by information explosion as well as to fulfill the multi-dimensional information needs of the users, to redesign information services and to provide pin-pointed exhaustive information to the end-users.

It is found that college libraries of the present age are facing new types of challenges, which they could not have imagined a decade ago. The librarians have to manage information growth, scarcity of budget, rising needs of users, increased use of ICT and need of resource sharing etc. there is a need to re-engineer the libraries to adapt new technologies and techniques in managing libraries in different ways. Re-engineering is the need of the present environment

2.4. Reasons for the Failure of Re-engineering

Al-Mashari, Irani, &Zairi, (2001), in their international survey of BPR process, they come to conclusion that, 70% of failure in implementation of re-engineering process is due to lack of understanding of the concept of re-engineering by the management of the organization.

Abdolvand, Albadvi, & Ferdowsi (2008) in assessing the readiness for business process re-engineering found out that the high rate of failure experience in BPR program in other sectors and resistance to change are preserved as the main failure reason.

Ligus, (1996), while discussing the limitations, pointed out that Organizations are finding very difficult to implement radical changes mainly due to resistance from the employees pointing out "we've always done it this way" argument. Resistance is mainly experienced in organizations, whose organizational culture is rooted in a classical hierarchy. It becomes very difficult to introduce IT applications and making

radical changes in its process, resulting in failure of re-engineering project. Obsolete cultures, ineffectual management flairs, administrative red tape, or an out-of-date reward system create organizational inertia

Masumi (2013), in his paper, stated that the failures of BPR may be attributed to; either implementation process, ITC facilities, technologies, human factors and company's organization structure or mixtures of all.

Al-Mashari and Zairi (1999) advocated that an organization's culture is the mainstay of the organization which governs the attainment or disaster of the BPR. The unwillingness of the organization, lack of proper communication, resistance to cultural change, an absence of organizations' initiative for an organization of training and lifelong learning culture art need to eradicate such problems for the success of BPR.

Sutevski (2012), has identified a total of 28 factors which cause resistance to change , these include - danger of power; undue control on staff; financial issues; status; reputation; job security, interpersonal relations; inadequate resources, effect on personal interest, reliance on outsiders; misinterpretation of the process; uncertainty of change, hitches with evaluation, unidentified threat, change in process, previous bad experience with BPR; unplanned future plans; restricted resources; bureaucratic inertia, lack of proper feedback, ambiguity about the change; increase in job profile; and lack of time.

Das (2004), affirms that in this digital era there is a wide impact of technology on collection development method of libraries i.e. there is a gradual shift to digital high-tech from traditional methods, but simultaneously there is no provision for training programs or continuing education programs for successful implementation of newer collection development methods.

McNamaraa(2002), highlighted the known fact that employees always hesitate to accept the change; accept new start over and also people are scared of the indefinite change. According to Muhammad Nauman Habib (2013), the main factor responsible for a failure of BPR is resistance from employees and the main reason behind

resistance is a communication gap, lack of commitment, lack of coordination among levels of management and cross-functional groups and mainly it is treated as a threat to middle management. Palmer (2004), agreed that resistance from staff for re-engineering process is mainly due to ambiguous future instigated by BPR changes that include a threat to their jobs, their position, power, authority, comfort zone etc.

Kannappanavar and Mathad (2000), in the survey of the college library in Karnataka, the result shows that main reason behind the failure of reshaping library services are the status of library staff in the college library in Karnataka is highly unsatisfactory. 78% of college libraries have inadequate staff. 29.46% of library staff have only bachelor's degree in library science and 49.46% librarians have master's degree in library science. Only one college librarian has a Ph.D. degree in library science.

Yadav (2010), in his study of human resource development (HRD) aspect of the libraries in the present digital environment, he highlights the obstacles such as Economic, Personal, Political, Curriculum of universities, passive role of associations, and lack of tools and techniques to be used in education, training and development of skilled manpower. Choi & Chan (1997) highlighted some causes which lead to failure of BPR projects, which are incompetency of the staff and higher authorities to identify the benefits of BPR; ignorance of existing staff and over-dependence on external experts; lack of proper model and misconception about BPR among staff.

Mlay, Zlotnikov, and Watundu (2013), have identified certain factors which are responsible for failure of BPR like technical incompetency of staff and team members in planning and implementation BPR; irony of the challenges; poor internal communication system, poor goals and objectives of the organization, improper management of resources, lack of control over implementation process, traditional philosophy of the management, failure in identifying the needs of the user, lack of initiative from higher authorities for awareness programs, lastly project failure to meet the objectives of the organization.

Summary:

From the literature review it is observed that in many cases the decision of re-engineering of libraries could not be materialized due to following factors:

1. Support of the management

2. Non availability of additional funds for re-engineering
3. No Staff for managing additional task
4. Insufficient ICT infra-structure

Due to these many libraries could not manage Re-engineering.

2.5. Strategies for Effective Re-engineering

Muthu, Whitman, & Cheraghi (1999), pointed out that organizations need to turn back and re-assess ancestries of the organization before commencing a BPR project. Possible obstacles must be properly identified in advance and try to overcome for effective implementation of BPR project. Laudon and Laudon (2006), emphasized the fact that to let BPR project work effectively, there is need to distinguish the deviations that are required to be managed efficiently and effectively.

Ahmad et al. (2007), found 7 factors accountable for the success of BPR. They are cooperation and team management, quality culture and management style, effective reward system, effective change management, less administrative and participative, information technology, effective project management, and sufficient finance.

Hammer (1990), Re-engineering involves a number of changes, not just of the business process itself. Job designs, organizational structures, management systems etc. must all be re-looked at in an integrated way. In other words, Re-engineering is an immense endeavor that demands change in different areas of the organization. Maharana and Panda (2001), in the case study of Stanford University Library (SUL), and University of Illinois, researchers identified the factors which lead to the success of re-engineering process in academic libraries are of proper well-planned re-engineering plan and efficient and effective implementation process of re-engineering.

Champy (1993), has presented a revised version of re-engineering known as 'X-engineering', or cross engineering with the institution of the Internet. This revised version focused on transparency, calibration of processes and technology, an alliance between companies. Wal-Mart and Dell Computer Corporation have adopted X-engineering model, working with suppliers that are integrated into their operations.

ACRL (2007), discussed three important engagements that libraries required to undertake for effective transformation and remain vibrant forces in future ahead are:

a). They must headway from the institution as the domain of book to one providing pathways to high-quality information resources and services.

b). The culture of libraries must undergo a change of ownership and control to service provider and supervisor of needs of users.

c). Libraries must affirm their embryonic roles in further dynamic ways, both in the relation to their parent organization and in this competitive information markets.

Cleeve (1995), focus on management of human resources for implementing change process in a library. People react in different ways to the whole concept of re-engineering process, and it is imperative that the library should manage the staff according. The key is to understand that human resources are the main influential factor of success in re-engineering library and information services. According to Christine (1997), for effective use of IT in BPR projects, there is need to address the human factor to achieve the potential of project success. Some of the guidelines given by him are proper assessment of employees' need, skill and attitude; assist the employee to avoid the technological discomfort, motivate employee for the use of IT; empower the employee by their active participation in planning and decision process for new technology; provision of effective training program and seek the feedback for making necessary correction, if required to be done in training program.

Nisar, Ahmad, & Ahmad (2014), in their paper, they have explored various factors which are a prerequisite for successful implementation of re-engineering program like A). Organization culture: proper communication, motivation and reward system, training and development program and collaborative working environment. B). Management Support: strong and committed leadership, risk management and support of top management. C). Organization structure: proper job design and allocation of responsibilities, D). BPR process: proper alignment of BPR strategies and organization structure, vision, mission and proper planning, E). IT capabilities: proper infrastructure and IT functions in accordance with BPR process.

Petrozzo & Stepper (1994) in his book Successful Re-engineering, they stated that successful implementation of re-engineering program is needed for elimination of

consumer dissatisfaction, inefficiency, and problem of high cost. Proper planning empowerment, team management, and continuous improvement must all combine together while implementing re-engineering program. Kalita, Mazumdar & Deka (2010), Computerization of the library is the primary step to be undertaken. As the customary library is moving towards a digital library, it is imperative that the traditional system should be restructured with an application of information technology to cope with this changing environment. Hence, Das (2010), Technology has transformed the people's way of thinking and communication. Today internet facility is must for all the libraries to meet the needs of the users. The advent of e-Book and e-Publishing has challenged the existence of traditional book vendors and charisma of library and information services. The library has to provide the internet as an extension of service as it has impacted significantly the library's primary role of creation and dissemination of new knowledge.

Doherty and King (1998), underlined the organizational issues like a) organizational alignment with BPR program, b) organizational contribution in effective implementation of BPR program with respect to required resources and moral support c) human issues like proper job design, training, concern for health and safety d) consideration of organizational traditional culture and e) integration of system like development and dissemination of information needs to be taken care for effective implementation of BPR program.

Kettinger, Teng, & Guha, S. (1997), proposed total 11 strategies for accepting and implementing the wisdom of re-engineering, which can also be used as "primary index". These important 11 strategies include proper diagnosis and management of re-engineering program, analysis of users need, method and modeling, measurement, prototyping and simulation of re-engineering process, system analysis and design, proper planning, innovative and creative ideas, organizational culture, change management and proper assumption and coaxing techniques.

Konnur and Bhandi (2004), the librarian needs to acquire more perspectives and new proficiencies in order to be able to manage the diversity of people, their views, and global thinking. The college library should subscribe to consortia like INDEST, CSIR, INFONET-NLIST as digital technology is more about access than ownership. Lars

Bjørnshauge (1999), in his study of 'Re-engineering Academic Libraries and Information Services at Technical Knowledge Centre and Library of Denmark', found that there is a lack of entrepreneurial attitude in the library staff. The steps taken by the library to bring about major changes in staff attitude include thoughtful reserves in further education, training, and distance learning activities, and development of a flat and cross-departmental team, which are crucial prerequisites for successful re-engineering.

Frances, Fletcher and Harmer et al. (2011), with the introduction of electronic publishing and multiplying e-resources, the academic libraries need to be more flexible so that information resources can swiftly move between projects. The library needs to restructure its services with the support of IT and human resources, to satisfy the needs of the users and also to build a stronger relationship with its user community. The need of professional development of library staff is also identified as library professionals now need to have a new set of skills like web development, communication, planning, soft skills etc.

Hoadley (1999), discussing on Re-engineering the library for the 21st century has received a lot of attention. There is a need to adopt a new approach to look at the library, its roles, and responsibilities. One of the most important steps is to conduct a SWOT analysis of the library. The next step is to re-engineer the functions of the library. The library must simultaneously re-engineer the structure of the organization alongside the decision-making process, otherwise, the re-engineered job will only be half done and cannot be deemed as successful.

Sia and Neo (1997), in their case study of re-engineered processes of varying structuredness at the Inland Revenue Authority of Singapore (IRAS), an analysis revealed that the policy of the re-engineered processes and organizational control are devoted. For achieving success there must be proper alignment between design and organizational control. There is also a need for proper evaluation of the efficacy and productivity of the existing management controls in BPR projects.

McNicol (1999), For the sustainable success of re-engineering, the organizational culture has to change, so that people are actively and enthusiastically involved, take

tenure and charge for their own work and are dedicated to ceaseless enhancement. To achieve the staff needs to spend some period of time per year for keeping informed and sanitizing their skills by way of on-the-job training, attending courses, reading or study and importantly formation of a team spirit. There is also a need to foster healthy partnerships with key vendors and suppliers to achieve a noteworthy upgrading in quality, cycle times, and technology with little or no added expense.

Varalakshmi (2003), pointed out that in the library, there is a need for professionals who have skills in knowledge organization, exploration, communication and presentation, Information Technology and those who can take on varied responsibilities. To cope with these demands LIS schools or/ departments need to reassess their goals, subject jurisdiction and courses, and programs.

Pandya (2010), To act on the new dome of Library 2.0 and 3.0 atmosphere, information authorities must be equipped to face the challenges of digital know-how, 24/7 information access, networked information sources, shifting economic situations, new education and research systems. Thus change management and human resource development should go simultaneously.

Saha, Ghosh and Mondal, (2007), suggested the two major human components of the library are its staff and its users. For the staff, there is a need to offer enduring exercise and advance programs so that they can easily adjust with the regular progression of technology and changing user needs. At the same time, user education and information literacy programs are must for library users for optimum utilization of resources else there will be a sheer wastage of man, money, time and resources. Manpower needs a service prediction for the right number and people with right caliber at the right places at right times to perform activities that will benefit both the work as well as the employee.

McGregor (2004), in his study on implementation of change management projects at the University of Wollongong Library, which aimed to improve overall organizational performance stated that technological change was an inevitable driver for many initiatives such as the automation of processes, implementation of integrated library management systems and also the integration of online resources and services into its

main business processes. Sur et al., (2007), stated that library staff should have a conceptual skill, administrative skill, human relation skills, communication and IT skills, information skill, presentation skill, evaluation skill, search and dissemination skill, in this digital environment of the library which is intrinsically unstable. Skilled staff will boost the user satisfaction and confidence in the use of the library.

According to Weicher, et al. (1995), the success of re-engineering is impossible without re-education and re-training of staff for a newly re-engineered process. Higher authorities must empower and encourage staff to work with the new process. Manage must play a dual role of coach, colleague, and counselor. More emphasis should be on people rather than process. Re-engineering advocates implore management to extract all the stopovers and implement transformation on a magnificent scale. BPR must be 'owned' throughout the organization, not driven by a group of outside consultants.

Stoica, Chawat & Shin (2004), examined various methodologies of business process re-engineering (BPR) and it was concluded that companies need holistic and systematic approach towards BPR methodology. Different companies adopt different business process and methodology to be adopted should be as per the needs of the individual business process of the companies. Majority of the companies adopt BPR strategies when there is a threat to its survival and radical change is required.

Jha and Kumar, (2010), noticed that the emergence modern technology has affected the working set-up of the library and as a result, users have become high-tech and they expect the library to provide data in the digital or electronic form. So there is a need for re-engineering processes to create flexible platforms with open interfaces within the overall organizational structure of the library.

According to Janson (1994), the three fundamental ideologies that offer the substance for service organizations to re-engineer their processes are:

1. The focal point in any re-engineering process is its customers, there is need to identify the expectations of the customers from the organization and accordingly create the infrastructure to justify these expectations.
2. Work processes should be planned in the light of organizational goals

3. Restructure concept should be undertaken to support front-line performance

Kim and Perreault (1997), suggested a 3 stage planning framework for the success of BPR namely Unfreezing for goal seeking, Strategies for moving and Plans for re-freezing. In the early planning stage authors have stressed upon various social and technical aspects such as developing a vision, input from all stakeholders, top management support, effective communication, use of IT tools, training project team, and providing support to workers. Leth (1994), has identified and prioritized five critical factors, namely Anticipation of obstacles, Identification of company objectives, Skilled manpower, SWOT analysis and Support of top Management. Venkatraman (1994), suggested that Information Technology can be used as an enabler, facilitator, and implementer in BPR projects. The author has divided IT-enabled business transformation into five levels namely Localized utilization, internal incorporation, business process re-design, Business network re-design, and re-definition of scope of business. Each organization must first identify the level at which the benefits are in line with the costs or efforts of the needed changes and then go for the higher levels as the battle for survival in a competitive world and increased customer satisfaction.

Pamela & Paul (n.d.), in their essay on 'How process enterprises really work' has given a success formula for BPR, namely a) Place should be valued, b)process owner role should be assigned to high-level executives with responsibility and authority for the success of processes, c) organization should associate the process initiative with other strategic organizational initiatives, d) measurements/evaluation should be allied with compensation to process goal initiatives, e) Govern the factual combination of process standardization and diversification, f) there should be proper collaboration between functional areas and process teams and also it should be flexible enough for further evolution.

Effective BPR models help in achieving reduced cost and process time, improved quality, satisfactory customer services and fulfillment of organizational purposes. Seven segments of a process for a success of BPR project, given by Balasubramanian (2006), are: -

Phase 1: Begin organizational change

Phase 2: Build the re-engineering organization

Phase 3: Identify BPR opportunities

Phase 4: Understand the existing process

Phase 5: Re-engineer the process

Phase 6: Blueprint the new business system

Phase 7: Perform the transformation

Zuidema (1999), in his case study of Re-engineering technical services at the University of Illinois at Chicago, come to conclusion that, the re-engineering project of technical services includes the procedure like, mapping of workflows, analysis, redesign, and implementation of a notification, and slip book ordering process. The re-engineering process enabled staff to evaluate and implement new practices, products, and services available to technical services, allowed the library to adopt flexibility in controlling and planning for changing technology, to conduct a survey of the surrounding environment and to know itself better. They have developed new knowledge and new skills and are better equipped to respond to additional change, which realizes for the library part of the adaptability it seeks for the future.

Saha and Das (2006), in his paper, reiterates that fact that any library is made up of two important constituents – resources and people. It is therefore imperative that library personnel are trained and motivated to use these resources to provide effective services to the users. Various practices like library orientation, refresher courses, continual professional development programs, promotion, awards, and rewards should be considered and applied.

Worpole (2004). The restructuring of libraries and library services has to catch the right symmetry between five important key factors: people, program, partner, place and physical attributes. : The people for whom the library service is envisioned and the staff who provides such services. The program of services, dealings and functions obligatory to fulfill that commitment, the partners with whom the library undertakes such program of services, the place is the library itself and physical attributes like user-friendliness and attractiveness of service.

Troll (2001), Academic libraries must understand their changing roles in the current learning and research environment to prepare themselves for future or position themselves visibly on the campus. And for this, they must identify and evaluate the usage patterns of students and faculty members. They need to develop strategies in response to widespread, rapid changes in higher education.

Zaidifard (1998), According to him, in the arena of re-engineering, there is a great prominence on technical issues, whereas the behavioral aspects are often ignored. However, it must be realized that consideration of only technical issues is the widespread disappointment with BPR. He further suggested that the management of human-related issues is important in deciding whether the re-engineering has succeeded or not. Hence, library management personnel should look into these concerns in a systematic and detailed manner.

Natrajan (2009), in his study of exploring Business processing re-engineering at NSL, concluded that re-engineering is not the only adoption of new technology, changing the role of professionals and organizational culture. But the real success factor of re-engineering is the rationalization of work process and greater responsibility for individuals.

Zahoor, Ijaz, and Muzammil (2015) pointed out that for effective implementation of BPR, there is need to focus on the development of human resources, as manpower is the real strength of any organization. An effective implementation of HRD policies like employee empowerment, quality of life at work, performance appraisal, reward system, and strategic quality planning for staff, plays a vital role in motivating staff towards innovative and creative contribution in BPR process.

Kamila (2009), have suggested significant changes for a survival of Library and Information centers in Information and Communication Technology era, which are as follows:

a) management philosophy like focus on quality goals, provide necessary resources, job oriented training to staff, stimulate quality improvement in daily activities and regular review of the process, recognition of staff;

b) Structural changes like work design, departmentalization, policies and procedures, and alignment among authority and responsibility of line staff and functional staff;

c) Technological changes like procurement of new technological devices; effective use of technology to modify the existing process and techniques to more creative work,

d) Task-related changes like identifying task, analyzing the steps to perform the task, significance to task and the skills required for performing the task and finally contribution of task in fulfilling the objectives of organization; and

e) People related change like a change in a training program and change in attitude and value of the employees.

Summary:

From the literature analysis it is noticed that for the successful implementation of re-engineering process there is a need of many factors to be considered like organizational and user needs, cooperation and quality culture, effective leadership, empowerment to staff, proper reward system, effective management practices, less administration, use of ICT, effective project management and sufficient finance. Some more strategies include proper diagnosis and management of re-engineering program, analysis of users need, method and modeling, measurement, prototyping and simulation of re-engineering process, system analysis and design, proper planning, innovative and creative ideas, organizational culture, change management and proper assumption and coaxing techniques. In short it is suggested that proper planning, system analysis and SWOT analysis to be managed well.

2.6. Role of Information Technology in Re-engineering

Davenport& Short (1990), In olden days Information Technology was used to escalate the quickness of work, mainly for automation but not to transform work in a new process, Re-engineering is about using Information Technology to do the work differently. Thus, Information technology is an integral part of re-engineering. Whereas Davenport (1993), is of the opinion that, information technology is helpful in reduction of cost, performance improvement, provision of quality services and facilitates sharing and exchange of information and knowledge.

Hammer (1996), is of the opinion that use of process streamlining and computerization have not generated major developments as desired by companies simply because companies tend to use technology to automate older and often manual processes. They use computers simply to speed up the existing process. But

fundamental performance deficiencies remain intact only. Instead of embedding the outdated processes, companies should eliminate them and start all over again. There is a prerequisite to 'reengineer' the business by using the modern information technology to fundamentally re-design the complete process.

According to Rooge (2011), in order to ensure the success of BPR there must be strategic planning and leveraging IT as a competitive tool. According to Guha, Kettinger and Tang (1993), Association of business strategy with IT applications, adequate IT infrastructure, software and proper training to employees to deal with the IT applications are vital for the fruitful implementation of BPR projects.

In the view of Gunasekaran and Nath (1997), Technologies like World Wide Web, Multimedia, the Internet, CAD/CAM, etc., are dominant in incorporating the various serviceable capacities in BPR. ICT can be the main source of re-engineering tool to re-structure the association and expedite a cultural change. ICT also helps to develop the healthy communication and supportive enough to improve productivity and quality. It is important to standardize and simplify processes before automation. IT also has an important role in increased productivity and quality. IT can also be used in identification and mapping of a process to be re-engineered and elimination of unwanted activities, developing proposed model and evaluation of model with respect to its efficiency and effectiveness.

Sardana and Hawan (2005) have also discussed in their article that ICT has a great impact on networked informative society and worldwide co-operation. Knights & Willmott (2000), in their book, stated that, in BPR, advanced information technology is recommended as a means of breaking the existing rules of organizing and enabling new organizational arrangements, such as informal and flexible work arrangements, to emerge, imply de-bureaucratization and the empowerment of employees. Information technology is thus ascribed to emancipatory effects. Weicher et. al., (1995) also of the opinion that, IT permits retrieval of same information at many places simultaneously. The success of BPR mainly depends on both the centralization and decentralization structure of information handling.

Summary:

From the literature analysis it is noticed that ICT application is the major tool for the re-engineering of libraries. Networking of libraries, resource sharing etc. are the other techniques for managing re-engineering libraries. Advancement in information technologies and constant reduction in its costs have shaped prospects to the revolution and progress in the business approach. IT is the most operative empowering equipment for BPR. The main benefits of IT in BPR are that it provides information crosswise practical levels, establishes transparent and smooth communication, and improves the performance. IT helps the re-engineering process by modeling, optimizing and assessing its consequences. But, it is concluded that the role of IT will be ineffective without a visionary leadership.

2.7. Role of the College Librarian in the Re-engineering Process

Edward and Mbohwa, (2013) indicated that in any organization considering or undergoing the re-engineering process, the leader must assume a leadership style which combines a task-oriented as well as people-oriented approach. While the former stresses on the goals and objectives of the organization, the latter takes into account the requirements of the staff, their skills, and attributes. It must be mentioned that abilities such as self-reliance and forging relationships are deemed necessary for successful re-engineering.

According to Dahibhate ((2009), in reengineering the library, librarian being the partner in the reengineering needs to assent new methods for collection, services and other library functions with adequate technological skills.

Gillingham (2013), pointed out a well-known fact that the library of today has upgraded itself from a mere information collector and disseminator to assisting teachers, students and researchers. The library supports the creation of new information, management of data, data analytics, workflow tools, bibliometrics, writing for the web, relationship management, research policy and planning, marketing, and etc. These put new demands on librarians which will require re-skilling or up-skilling so as to keep pace with new tools and techniques.

Attis, et al. (2011), in this article, suggested that, when a person is appointed to head the library or information Centre, skills such as technical knowledge, good

communication and a spirit of entrepreneurship should be taken into account. This is because the role of the librarian has changed from static to dynamic. If the various library processes are simplified, then libraries will save time and money. The streamlining of technical processes and reference services to utilize their knowledge and skills for teaching and research.

According to Elmuti and Kathawala (2011), the findings of the study indicated that one of the key issues faced by the organization was the reluctance of the middle management to accept change and implement the same. Various management techniques like team building, problem-solving attitude, employee participation, supportive leadership and quality circles are deemed necessary. It is also considered necessary that the leader should have a good vision and good communication. A leader should not only support and encourage but should also motivate the employers to put in their best efforts. Change happens when the leader is dedicated and shows a strong commitment to this cause.

Madeline (1998), in the case study on 'Are academic institutions reshaping re-engineering?' in Mount Holyoke College, experienced that restructuring has today become a part of our culture and lifestyle. According to him, institutions should be attractive to consumers; they must be strongly positioned as 'promoters' and 'leaders'. They must consider re-engineering as a part of their job responsibility and must take care their staff. It is deemed necessary that staff should be given proper orientation about the fundamentals of re-engineering, its need and advantages, use of Information Technology for re-designing and implementation of new processes and staff motivation in order to accept the change as well as provision for adequate funding for the re-engineering process.

According to Matthew (2011), in order to create a 21st-century library, there is a need for a 21st-century librarian. This librarian must possess modern day technical and technological skills combined with good communication, an astute business insight, innovative nature and flexibility to adapt to change. Besides this, the librarian needs to master skills related to social networking and flow of information, strategies for collaboration, customer tagging, and a problem-solving attitude. The librarian as a leader should direct and govern and should be able to persuade, teach and coach. As a

through professional all these skills and attributes will go a long way in regaining the significance of the library in the community at large.

Roitberg (1998), has conducted a detailed research into various aspects of the library with regard to re-engineering and leadership roles. He believes that Information Technology is must for re-engineering if it has to benefit the user community, but at the same time, importance needs to be laid on effective leadership and creative thinking. It is imperative for any leader to conceive a thought and build a vision. Coupled with that there is also a need to design and implement a strategic plan so that the vision can become a reality.

Sutcliffe (1999), undertook a study on the impact of leadership on BPR outcomes of 30 projects. He concluded that there is a deep and embedded relationship between leadership behavior and BPR results. It is imperative that the leader adopts a leadership style that strikes a balance between the task to be executed, the needs of the employee and the requirements of the organization.

Summary:

From the literature review and its analysis it can be concluded that while re-engineering libraries the role of the librarian is very crucial. Librarian and allied staff have to work in team, develop the advanced skill sets to manage re-engineering process successfully.

2.8. Review of Previous studies and Gaps

The researcher has read and reviewed in detail the literature available in various formats on the different aspects of re-engineering and the following gaps have been observed.

1. It is observed that a vast amount of literature in the field of re-engineering is devoted mainly to public and private enterprises. There is also some mention of the same in public and university libraries in India and abroad. However, not much mention has been made of the college library environment. The academic sector differs from the corporate environment. The know-how of enterprises and university libraries may not be the same as that of college libraries in India.
2. It is perceived that there was a serious dilemma faced by libraries as they struggled to resolve issues like automation, development of library resources and

services, and benefits of the process to users and staff. Also, no specific re-engineering methodology was seen to be adopted by libraries for its positive implementation.

The gaps identified as a result of the literature study has prompted the researcher to undertake research on the topic "Re-engineering of College Libraries: A study of the present scenario in Arts, Science and commerce Colleges in Mumbai", which is different than the previous studies and also there is a need to re-engineer the college libraries in coming future to provide better services to user community.

2.9 References

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CHAPTER 3

Re-Engineering of College Libraries

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CHAPTER 3

Re-Engineering The College Libraries

"Re-engineering is new, and it has to be done"

- Peter F. Drucker

3.1 Introduction

Re-engineering a college library involves rethinking the needs of the user in the digital era, achieving radical change in our thinking, organization, process, products and services, management of human resources and finally adoption of suitable technology to increase user satisfaction, efficiency, effectiveness, and economy to gain reputation, and recognition.

Change is constant, which is predictable, incremental and evolutionary, now has become unpredictable, rapid and revolutionary. Re-engineering helps college libraries to remain as a viable and respectable unit in the educational institution.

3.2 History of Re-engineering

The history of re-engineering is long and rich. Its roots are in Adam Smith's theory, (Mohapatra, 2013) during the 18th century. Adam Smith's theory recommends that an organization should divide its work into the simplest and most basic chores. It means splitting up of actions into distinct sections. Manufacturing facilities and production factories got outstanding benefits from this system. But, the organizations, which were instituted on a theory of Adam Smith, were facing the problem like lack of enough supervision.

Frederick Taylor came out with the concept of work measurement during the period 1856-1915, which is known as Industrial Engineering. Taylor recommended that managers have to identify the best processes for the effective performance of the work and redesign them to optimize productivity. During this period, even large companies were lacking the adequate technology to redesign the process in a cross-functional or cross-departmental manner.After the Second World War, the three important driving forces that are customers, competition, and change made Taylor's system non-functional or ineffective and gave rise to management techniques like Total Quality Management, Z theory, Downsizing, and automation, which was often used for gradual improvement. (Mohapatra, 2013)

The concept of Business Process Re-engineering programs (BPR) first materialized in the early 1990s, with two important papers:

1. Michael Hammer -"Re-engineering Work: Don't Automate, Obliterate"
2. Thomas Davenport & James Short - "The New Industrial Engineering: Information Technology and Business Process Redesign".

(Light, 2000)

In the early 1990s, American and European companies adopted BPR to improve the performance of the companies. It has helped the companies to receive the competitive edge and to gain better market position. Later, Hammer and Champy (1993) came out with a book "Re-engineering the Corporation: A Manifesto for Business Revolution" and in 1993 Davenport wrote a book, "Process Innovation: Re-engineering Work through Information Technology". BPR rebounds the traditional belief that there is one best way to perform the tasks. The main purpose of re-engineering is to design the best process for the paramount success of the organization.

In today's world re-engineering is of great importance as several organizations managed to achieve an unprecedented result in development and improvement, where the whole process is studied, starting with planning and ending with goals achievement in order to redesign its implementation.

3.3 Re-engineering

The Microsoft Computer Dictionary defines 'Re-engineer ' as "To rethink and redefine processes and procedures".

Hammer et al. (1993) and they have defined BPR as the "fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed". According to them, the business process re-engineering is the restructure of business processes in order to vividly expand performance with respect to cost, quality, service, and speed.

Davenport (1993), also defined term Re-engineering as - "Re-engineering is only a part of what is necessary for the radical change of processes, it refers explicitly to the design of the new process. The term process innovation encompasses the envisioning of new work strategies, the actual process design activity & the

implementation of the change in all its complex technological, human organizational dimensions".

According to Petrozoo and Stepper (1998), "Re-engineering is the concurrent redesign of processes, organizations, and their supporting information systems to achieve a radical improvement in time, cost, quality, and customers' regard for the company's products and services".

Al-Mashari & Zairi (2001) states that re-engineering is a swift and fundamental restructuring of processes, services, plans and the organizational structure of an institution. It is an art of altering an organization's philosophy and getting the things done in a different fruitful way. The final goal of this process is to provide satisfaction to the consumers by providing value-added services. It also helps to establish a concrete full proof process for the institution.

Sage (2014), Re-engineering is 'the application of technology and management science to the modification of existing systems, organizations, processes and products in order to make them more effective, efficient and responsive'.

Kumar (2014), while defining re-engineering term indicated that, Re-engineering is the use of technology and managerial skills to the revision of present organization system, work processes, and products in order to achieve the objective of efficiency, effectiveness, and responsiveness. Re-engineering is about designing new work process. Basically, re-engineering is a revolution. It is the exploration of new models of establishing work process.

Whereas, with relation to library, Roitberg (1998), indicated that Re-engineering denotes leaving the old system and creating a new one with fresh concepts and rules. Re-engineering creates the opportunity to introduce changes in librarians' duties, readers' services, budgeting, or in different areas of library activities

In, Essays, UK. (2013), Re-engineering is defined as redesign library services to support learning, teaching, research, and other developmental activities, with the help of technological advances.

Dawar (2009), Re-engineering in library is rethinking the library work, and change the process in logical and efficient ways, which is driven by library's core competencies.

Dahibhate et.al. (2009), defined Re-engineering as, it is a procees of rethinking, redesign and restructuring the existing library system, organization, process, products, services etc. to achieve dramatic improvement in performance of the library using modern developing trends and technology, resulting into reduced cost, quality library services and spped for the better service to users.

Dahibhate (2009), has used different terms for re-engineering library process: that are reorganizing, retooling, restructuring, regenerating, redesigning, reshaping in short, reframing the library process for maximum benefit to users.

From the above definitions to survive in this information world, the college library needs to focus on needs of the library users instead of the library products and the services to gain a competitive edge. Re-engineering advocates to dig into the origin of processes. The college library has to focus on the process not on any particular department, as in library process all the departments are interlinked and dependent on each other. The various departments in the college library are an acquisition, technical processing, circulation, reference, human resource and IT department. Library process is a series of activities involved from procurement of resources to provision of services to its users to meet their needs. No library process is complete without the support of any of these departments. Re-engineering of college library must, therefore, focus on the overall performance of college library.

3.4 Need for Re-engineering in College Libraries

In this contemporary era, cost, quality, services, and speed due to the changes taking place in an internal and external environment are the challenges, the college libraries have to face very often in achieving its objectives. The challenges faced by the college libraries are as follows –

3.4.1. Changes in Societal needs and expectations

Changes in contemporary society are extremely fast and dynamic, which leads to a big generation gap. Society has undergone the change from an agrarian to industrial society, from an industrial society to networked information society (Juchnevič, 2014). This transformation of society has brought the changes in family structure, attitudes towards education, choice of profession, need for vision and planning for future. Now a day's colleges especially Arts & Commerce are facing an increased pressure from shifting societal trends and Industry expectations. Business

globalization requires highly skilled staff to face and survive in the competitive globalized business world. Colleges, therefore, should focus on overall development of the students by developing their social and labor skills, which will enable them to work with people from various sectors, (Harris & Kayes, 1995). The college library is the inherent department of the college and plays an important role to match with the needs of changing society. The college libraries need to re-engineer its activities for this purpose.

3.4.2 Changes in technology

The pace of changes and advances in technology are less predictable and faster than before. The advent of Internet was the paradigm shift in the history of networks and communications. Web versions like 1.0, 2.0 and 3.0 are regarded as a first, second and third generation of Web development. Web tools like chat, messaging, email, video, blogs, MySpace, Del.icio.us. Flicker etc. facilitates communication, secure information sharing, interoperability and collaboration on WWW (Sultana, 2016). Broadband, Wi-Fi, smartphone have also contributed to the increased speed and direct communication. (Khambayat, 2015). The new developments in ICT have opened fresh perspective for life-long learning, teaching and research approaches.

There are a variety of ICT tools such as Blended Learning, Web-Based learning, MOOC, Podcasting, Blogs, Wiki, e-learning, m-learning, u-learning, E-books, Social Networking, use of iPad, etc. being integrated and adopted diversely into the present educational system. In today's life use of desktop is already a matter of history, as it is rapidly replaced by the laptops, notebooks, tablets and smart mobile phone. In this inclination, there is an urgent need for change, not only in teaching methods of the institution but also in learning resource center (Library) to re-engineer its activities and services and grasp innovative ideas.

The digital age has a great impact on the characteristics of information i.e. profusion of information, a currency of information and convenience of access. College library needs to determine what resources are required. Development of appropriate bibliographic control mechanisms and preservation of resources that provide permanent access to the information is necessary. Technological changes have transformed the traditional method of acquisition, storage, and accessibility of information into the electronic acquisition, storage and open and free accessibility of information. To grasp the opportunity of an abundance of information, libraries need

to manage World Wide Web, database, digital images, audio video files, and library automation and so on. They must adopt the schemes like interlibrary loan, resource sharing, and consortia to ensure wide subject coverage locally.

The currency of information is the basic characteristics of the digital world. The advent of a desktop publisher and word processor has enabled a wide growth of E-publishing. It has resulted in a gigantic growth of e-resources in the information market. Under such circumstances, Library has to play important role in verifying the e-resources in respect to the authenticity of information. The library should promote the need for rational scholarly communication models and also should consider the changed copyright laws for fair-use in a digital context (Hisle, 2002). The advent of E-publishing has a great impact on library collection policy. The objective of a library is shifted from acquisition to accessing of information. The library should make use of latest technology according to their requirements, computerization and networking of all library processes, services and balanced collection of print and non-print resources. Even library professionals need to learn these new technologies including Web 2.0 technologies and its application in the library. In short, every area of library activities needs to be fundamentally reordered.

3.4.3 Changes in economic environment

Dramatic changes in the economic environment have compelled the libraries to be more answerable for funds allotted to the library and the services rendered by them. This compelled libraries to discover, inspect and, execute necessary changes in the systems and procedures, to obtain continuous sufficient funds. from funding authorities (Grosvenor1997). The economic crisis and devaluation of currencies have affected the spending trends of the library, publisher prices, pricing models and vendor strategies (Collins, 2012). Whereas the budget of the libraries are more or less constant, there is a marginal increase in the budget of library whereas the cost of materials and technology is rising constantly. It has compelled college libraries to reallocate internal resources, re-evaluate existing purchases, protecting existing human and financial resources, and successively adding to the workload of everyone to achieve greater results with fewer resources.

3.4.4 Educational Reforms

Higher Education in India is in process of paradigm shift. Educational thinkers of India, particularly those connected with various Inquiry Commissions, like the

Radhakrishnan Commission (1948-49), the Mudaliar Commission (1952-52), the Kothari Commission (1964-66), members of National Education Policy (NEP) (1968-86), Members of the POA (1986-90), Acharya Ramamurthy Committee (2000), the National Knowledge Commission by Sam Pitroda (2005-2009), Committee for the Renovation and Rejuvenation of Higher Education by Prof Yashpal (2009) and other statutory agencies and consultative bodies like MHRD, UGC, NAAC, AICTE, NCERT and others have consistently advocated the reforms in educational system of India to match with global educational system and the requirement of the industry. The main objective of educational reforms is to have better quality education and research, highly motivated students, innovative faculty, increased industry –education collaboration and high ranking in world educational institution. During last 2 decades, the education system has witnessed monumental changes like right based education, open and distance learning and online learning, interdisciplinary courses, and skill-based courses (Patel, 2015). The focus has been shifted from theory to practice.

India is progressively moving towards becoming a "knowledge-based" economy, it becomes increasingly important to impart the right knowledge and adequate skills to emerging workforce. The importance of good faculty, infrastructure, and role of libraries cannot be underestimated. Educational reforms have called for accountability qualitative and quantitative measures. In the success of education reformation library's contribution plays a major role in all aspects academic activities. This calls for re-engineering in college libraries.

3.4.5 Changing needs and expectations of users

Today's user expects clear, precise, comprehensive, compatible, authentic, easily accessible and most importantly timely information from the college library (Laloo, 2002). Students are accustomed to an integration of modern technology into their everyday life, sprung of the electronic publishing has changed the expectations of users from academic libraries (Nyamache). Students increasingly view themselves as customers and expect high-quality facilities, put more emphasis on information rather than resources and expects access facility at their doorstep. There is more demand for e-resources, online services, e-document delivery, direct borrowing, and self-checkout. Students prefer multitasking and prefer studying together whether they are working on same project or assignment (Dawar, 2014). Traditionally, to satisfy the needs of the user library provides the services like Borrowing facility, ILL, SDI, CAS,

Indexing, Abstracting etc. but due to diverse information seeking behavior of user, it has become essential that the library work environment is competitive, effective and innovative, at the same time library staff is well informed and is able to gather, assimilate and create the complex flow of information.

3.4.6 Identity Crisis of college libraries

With the changes in all over developments information is generated in abundance and made available on the internet, a library has a threat of losing its identity. College Library is a heart of the institution. In an Academic institution, it is considered a symbol of pride. But when it comes to acknowledging the role and importance of libraries, in the growth and development of education and knowledge, the words are never minced.

However, when it comes to providing infrastructure and moral support, many times top management has been found to remain insensitive. Even, they do not get a due place in the institutional hierarchy. College libraries are not on the radar of many staff and students and researchers. Today libraries are having a bit of identity crisis. Users are not even fully aware of the library products and services. According to them, everything is available on the internet, hence there is no need to visit the library. There is an urgent need to communicate the value of college library to it users. College library should take necessary measures to promote the role and values of a library in the overall development of students and researchers. There is a need to increase their presence through digital services, mobile apps and so on. Advancement in technology has resulted in the decentralization of access to information, and libraries are facing competition with computer labs in college campus. There is need to demonstrate to users that library is central place in the institution. There is a need to continually prove that library is valuable and essential in academic effort of the institution.

3.4.7 Changing role of College Libraries

Traditional role of college library is to acquire, organize, preserve and serve the knowledge. But now the role has been changed apart from its traditional role, there is need to make knowledge accessible when, where and in varied form required by the users (Troll, 2001). The advancement in technology have distorted the library operation and services. Traditionally, Library collection referred to what library physically owned and catalogue means objects in the collection. Now the catalogue

has been expanded to include electronic resources also. The catalog of the library has records with license and URLs, which can be linked with librarys' Web site for easy and convenient access to users. In this manner one can say that role of the college library have been shifted from content management to service management. There is urgent need for libraries to adopt new document delivery practices.

Many times users are not even aware about the resources and services of college libraries, and how to access them. Library need to orient and guide the users about availability and use of print and non-print resources. Instead of acting as storehouse of books, there is need to act as learning and research centers. Librarians are expected to educate the users about how to retrieve the information, use and evaluation of resources, and providing a competitive advantage for the parent organization.

The traditional role of the college library is at risk, it needs to be rethought and redirected. The library must redesign the strategies to the effective provision of library services towards information skill development. There is a need for college library to stimulate the beliefs, expertise, and leadership of the profession throughout the organization to ensure acknowledgment of the role played by the librarian in the academic progress of the institution. It must play an integral role in supporting the academic progress of the college in achieving its core mission of education and research.

3.4.8. Competition

In this digital world, College Library is not the only provider of information. The internet and the World Wide Web (WWW) have made it possible for teachers, researchers, and students to locate what they need without getting into the library (Rait,2005).College libraries are facing competition from search engines like google, yahoo, AltaVista, Dogpile, Netscape etc., from the large vendors as technology has consolidated the information industry under a few large vendors, who are directly providing their online services to the users like amazon.com, flipcart.com etc, also, social networking sites like Youtube, Twitter, Facebook, Myspce.com, Ning, blogger, flicker and so on. Students, researchers, and faculty members try to get information on the internet by using their smartphones, laptops, tablets instead of visiting a library. College library must demonstrate to the management, teaching faculty, students and researchers that the role of a library in academic excellence of the institution is vital, which cannot be ignored. And to achieve this, the library and

the librarian need to re-engineer its products and services to attract the users to the library with innovative services and products to reach all its users and to serve them better.

Library and Information Centers need to accept and adopt the re-engineering approach, as a means of providing maximum satisfaction to user's needs and encourage the use of library products and services by its users for teaching, learning and research purposes. The management concept, Re-engineering is widely applicable in Library and Information Centres as a means for providing maximum satisfaction to user's needs and encouraging the use of library products and services by its users for teaching, learning and research. It is very important to understand the need of the re-engineering, otherwise, the results of the re-engineering process may spearhead to the trail of failure.

3.5 Principles of Re-engineering

Hammer (1990), outlined seven principles that managers can follow, in order to ensure a success re-engineering process in any type of organization:

1. Organize around outcomes, not tasks.
2. Identify all the processes in an organization and prioritize them in order of redesign urgency.
3. Integrate information processing work into the real work that produces the information.
4. Treat geographically dispersed resources as though they were centralized.
5. Link parallel activities in the workflow instead of just integrating their results.
6. Put the decision point where the work is performed, and build control into the process.
7. Capture information once and at the source.

These principles can be applied in the library also as they expose the requirements of a networked information age, that is user-centric and competitive organizations.

3.5.1 Organize around outcomes, not tasks.

The principle states that Library should design the job of library personal around an objective instead of assigning a single task. One person should be able to perform all the tasks related to particular outcome. For example to satisfy the needs of the user,

librarian/assistant librarian who is responsible for satisfying the information needs of the user must be able to identify the needs of the user, translating it into product information, searching and assembling it into type and form of information required, delivering it and getting feedback from the user. This will help a user to have only one contact.

3.5.2 Identify all the processes in an organization and prioritize them in order of redesign urgency.

This principle proposes library to assess all the processes in the library and rank them in order of redesign urgency. No library can re-engineer all its process simultaneously. The library must identify and prioritize the process on the basis of three criteria: dysfunction, importance, and feasibility.

3.5.3 Integrate information processing work into the real work that produces the information.

This principle recommends to assimilate information processing work into the real, to maintain consistency and to reduce repetitive information process. In-library, procurement, and processing of the information usually take place by a different department. The library should combine all the task in a process and integrated into to single job performed by a single person or to a team. The library should assign the collection development process that is procuring information and processing the procured information to one team only. This principle helps to eliminate hand-offs, errors, delays and rework and reduce the overheads.

3.5.4 Treat geographically dispersed resources as though they were centralized.

Decentralization gives individual units self-sufficiency over their own resources and activities. Flexibility and empowerment of unit are the important qualities of a decentralized approach. Also, there is greater scope for motivating and involving users. But, at the same time, decentralized systems lack a central control and results in conflicting ideas and clashes. In the library, decentralization refers to information dispersed geographically. It helps to serve the users centrally in the library using network LAN, WAN, telecommunication network, and social media to serve the purpose of circulation and reference to meet the demand for information needs of the user. Therefore library with using technology can adopt both centralized and decentralized approach simultaneously for making its services most effective and user-friendly.

3.5.5 Link parallel activities in the workflow instead of just integrating their results.

In the library, many activities are performed separately in a linear manner, which must eventually come together. In college library processing department, different individuals are performing separate activities like accessioning, classification, cataloguing, and so on. This principle put emphasis on integrating formerly distinct jobs linked in such a way that there is no redundancy in accessioning, cataloguing and classification. The department or team is responsible for the whole process to minimize departmental deliveries and to ensure a clear accountability. It requires coordination between parallel activities in a process while performing that task. Coordination between individual groups is possible with the help of Communications networks, shared databases, and teleconferencing. The integrated process will reduce the process administration expenses and library will be able to achieve the objective of quality and timeliness as less number of people are involved and monitoring their performance is easier. It eliminates the hand-offs, allied errors, delays, and duplication of work.

3.5.6 Put the decision point where the work is performed, and build control into the process.

A majority of college libraries follow the hierarchical management structure. The person who actually performs the tasks does not have the scope to make decisions about it. According to the principle, the staff who perform the tasks should be allowed to take decisions relating to his task. The process itself should have integral controls. There is a need to change the management structure from hierarchical to flattered. Information technology can help the different departments of a library for acquiring, processing and storing information for quick and easy access, enabling concerned staff to make their own decision. This principle will enable to take benefit of customer responses, and greater empowerment for library staff as they now will be more self-managed and self-controlled and will also reduce bureaucracy in the library

3.5.7 Capture information once and at the source.

A piece of information should not be collected repeatedly by every department in the library. It should be once collected and stored for all stakeholders, who need it. With the help of technology, now it is possible to collect and preserve a piece of information in an online database, for all the stakeholders who need it anywhere at

any time. Re-engineering ensures easy accessibility of information. It will help the library to overcome the challenges of associated delays, entry errors and cost overheads, even relational databases, and electronic data interchange (EDI) make it easy to collect, store, and transmit information.

3.6 Re-engineering Methodology

Various management practitioners have stated Re-engineering Methodology, few of them are narrated as follows –

3.6.1 The Hammer / Champy's Re-engineering Methodology

According to Hammer and Champy (1993), Re-engineering brings radical changes in four important aspects of the organization that is, people, jobs, managers, and values, which are interlinked. Hammer and Champy put more emphasis on creativity, innovation, and new thinking than the past and present experiences

Hammer and Champy's Re-engineering methodology consist of six phases:

1. Introduction
2. Identification of Processes
3. Selection of Processes
4. Understanding of Selected Processes
5. Redesign of the Selected Processes.
6. Implementation of Redesigned Processes

According to them theses phases have to be covered systematically for re-engineering process.

3.6.2 Davenport's and Short's Re-engineering Methodology

Davenport and Short (1990), acknowledged the important role of Information Technology and establishes a relationship between IT capabilities and BPR. He considers the use of experiences in re-engineering, the importance of organization, human resource issues and management tactics like planning, decision-making and communication for the success of BPR.

Davenport and Short suggested five essential steps that involved for effective implementation of BPR.

1. Develop Business Vision and Process Objectives
2. Identify Processes to Be Redesigned
3. Understand and Measure Existing Processes

4. Identify IT levers

5. Design and Build a Prototype of the Process

These five steps are essentially considered according to Davenport and Short for BPR

3.6.3 Process Analysis and Design Method (PADM)

Informatics Process Group (IPG) introduced Process analysis and design methodology (PADM), a charter of tools and techniques. PADM is a descendant of Process Modelling Cookbook, which can be used for business process (re)engineering. An important characteristic of PADM is, it also provides an outline for continuous improvement. There are four major phases involved in this process, which focuses mainly on analysis and design of process.

1. Process Definition
2. Baseline Process Capture and Representation
3. Process Evaluation
4. Target Process Design

3.6.4 Samuel's Re-engineering Methodology

According to Samuel K Ho (2002), in order to maximize efficiency and productivity of the business, there is need to adopt BPR for fundamental restructuring of the business process as a whole or an individual process. For effective implementation of BPR, it is necessary to have a favorable climate in the organization. He has recommended top-down approach to Business Process Re-engineering and suggested seven steps, which are:

1. Gain top-level commitment
2. Identify vision, mission and change required
3. Define measurable objectives as being the quantifiable indicators of Success
4. Develop mission into Critical Success Factors (CSFs)
5. Break down the CSFs into critical business processes
6. Breakdown critical business processes into subprocesses
7. Redesign, monitor and adjust the processes

3.6.5 Kotter's Re-engineering Methodology

Kotter (1996), deeply studied the change process of more than 100 companies and common mistakes made by them. Author developed a systematic approach for implementing change and suggested eight steps for the successful implementation of a radical change in any business organization.

1. Create a sense of determination
2. Form an authoritative alliance
3. Formation of vision
4. Communication of vision
5. Authorize the act on the vision
6. Plan for short-term wins
7. Consolidation to crop more change
8. Institutionalize new methodologies

3.6.6 Fitzgerald and Murphy's Re-engineering Methodology

Fitzgerald and Murphy (1996) have conducted the study in detail, rational action of the process, and how the process is adopted. He adapted the structured approach like:

1. Selection of the process to be re-engineered: "Where are we going to start?"
2. Building a re-engineering team: "Who is going to do it?"
3. Understand the current process: "Where do our stakeholders see us now?"
4. Develop a vision: "Where do our stakeholders want us to be?
5. Determine the activities needed for the new process: "What do we need to achieve?"
6. Execution of plan: "How will we achieve it"

3.6.7 Kettinger's Re-engineering Mythology

Kettinger (1997), outlined the re-engineering methodology by preparing a classified framework of the various methodologies, tools, and techniques, that enables the project leader to solve their unique organizational problems with existing methodologies, techniques and tools. In present scenario, Kettinger's re-engineering methodology is widely used. Author has suggested various steps for effective implementation of Re-engineering methodology.

1 Perspective: Formation of vision, mission, and commitment of management; identification of re-engineering prospects; level of IT leverage; selection of processes to be redesign

2 Initiation: analysis of organizational factors; formation team; development of re-engineering plan; identification of potential customers and their needs; and setting goals and plans

3 Selection and mapping of an existing process to be redesigned.

4 Redesign of the process comprising identification, analysis, and designing of new processes and information systems; restructuring HR department.

5 The rebuilding of HR policies and rules, use of information systems and users' training.

6 Continuous evaluation and improvement programs.

Thus, there is a number of methodologies developed by the management practitioners to face the challenges of the competitive world. Majority of methodology have same features. But, not a single one is capable of solving the problems of all the - organizations. One has to select the methodology, that is best suited to its organizations, considering its goals and objectives, existing environment and available resources.

3.7.Re-engineering of the College Library

The following are important steps for re-engineering the college library.

1. Identify the Need of Re-engineering
2. Composition of the Re-engineering team
3. Setting objectives for the Re-engineering process
4. SWOT Analysis
5. Identification and Selection of Process to be Re-engineered
6. Understand (Mapping of) the selected process
7. Redesign of New Process (Re-engineering Plan)
8. Pilot study of New Process
9. Implementation of redesigned process
10. Evaluation of Re-engineering Process

3.7.1. Identify the Need of Re-engineering

To achieve the objectives of the college library it is necessary for the college library to identify changing needs of the library users and the challenges faced by the library in satisfying the needs of the library user and also it is important to consider the future need of the institution and its potential users. In short the college library has to identify gap between user's need and current performance of the college library. This helps the college library to identify the need of re-engineering in college library.

3.7.2 Composition of the Re-engineering team

Formation and composition of re-engineering team is an acute factor for the success of re-engineering process. The important factors of an effective re-engineering team

are competency of members, motivation for creative and innovative ideas, effective leadership, and empowerment for decision making, awareness about the re-engineering technique, proper accountability and responsibility.

Re-engineering team must include:

1. Student Representative
2. Representative of teaching faculty
3. Representative of Non-teaching staff
4. Representative of Library staff (one professional and one non-professional)
5. I.T. expert
6. External Member (Experience Librarian or Management Consultant) having management skill and re-engineering experience.
7. Management Representative
8. Librarian is required to be the leader of the re-engineering team, as he is the senior most person in the library and aware of all the processes of the library.

3.7.3 Setting objectives for the Re-engineering process

The re-engineering team have to figure out the need, ways, methods etc and then undertake radical change process by establishing and clearly articulating objectives of Re-engineering. This is a first critical step in re-engineering. Everyone participating in the process has to agree and stick to objectives of re-engineering and maintain the necessary vision throughout the project till it's completion.

3.7.4 SWOT Analysis

A SWOT analysis helps in smooth and productive functioning of re-engineering. The re-engineering team have to conduct a proper SWOT analysis, mainly focusing on the library processes, human components of the library, needs of users, various forms of resources and services as well as technologies and methods. On the basis of SWOT Analysis, each library must first decide whether there is an actual need for re-engineering process. The re-engineering decision mainly depend on capacity of library to manage the users' need, large infrastructure, support of management and staff and operational requirements.

3.7.5 Identification and Selection of Process to be Re-engineered

The librarian has to identify the processes, which can be re-engineered based on SWOT analysis. Not everything can be done and not everything needs to be done. Maharana and Panda (2001) has suggested two important approach namely high impact approach and exhaustive approach. High impact approach enables re-engineering team to select that process, which might have a great impact on library vision, mission and objectives. Whereas in case of exhaustive approach, college library has to analyze all the processes of the library and prioritize on the basis of its importance in order to achieve the objective of the library and its parent organization. In this phase, library processes are identified and studied in detail, with its impact on user and library. Identifying the Library processes to be re-engineered is an indispensable part of re-engineering.

The important area which might need re-engineering are:

1. Library Collection and Services
2. ICT infrastructure and facilities
3. Management of Human Resources

While selecting the process, re-engineering committee should work out Return on Investment in terms of improved performance and reduction in time and cost.

Points to be considered for selecting the re-engineering process are:

- Its contribution to institution's objectives
- Impact of reengineered process on and staff and users,
- Budget Provision.

3.7.6. Understand (Mapping of) the selected process

The re-engineering team have to understand the selected process in order to redesign a library process. The best method to understand the process is to look at the process from user's point of view. Understanding the process does not require one to describe every single process, it requires the understanding of what the process does, what are the shortfalls and reasons for it, and how it could be overcome.

The points to be considered for understanding of selected process are:

- What they do,
- How well or how poorly they perform,
- Its impact on users and organization, and
- The critical issues that govern their performance.

After mapping the existing process, their performance is measured against the specific re-engineering objectives. Detailed analysis and documentation of current processes will help the re-engineering team to have clear idea to create a totally new and superior design without any redundancy

3.7.7 Redesign of New Process (Re-engineering Plan)

Kim, Chung and Perreault, (1997), has defined the term planning as formulation of a scheme for attaining the level of desired change. Re-engineering Plan is a blue print of re-engineering process in library. Plan nrequires outline objectives, scope, and direction of new process. And most importantly it is essential to be flexible enough. Comprehensive planning is a key to successful implementation of re-engineering project. This phase require imagination and creative thinking. Redesign process needs the use innovative ways instead of just depending upon the analysis of current process. Key factors and tactics to be considered in process design are use of IT as a tool and knowledge of broad design criteria.

Table 3.1. Points to be considered for re-engineering of Library Process

Library Process	Points to be considered
Collection Development	Availability of Types of Resources, Acquisition, selection, processing, storage and weeding out process.
Library services	Types of Services and Mode of Provision of Services
ICT infrastructure and facilities	Availability of ICT infrastructure and application of ICT in provision of digital facilities.
Human Resource Management	Recruitment, selection, Availability of skilled Staff, HRD programs.

Other important factors needs to be considered for redesign of the process are:

- **Users' Need**: The focal point in the effective re-engineering plan is Users' need.

- **Alignment with Institution Objectives:** Objectives of the re-engineering plan has to be in line with objectives of parent organization.
- **System integration:** It is required to find out how new process interfaces with existing system for smooth implementation of re-engineering plan.
- **Time Frame**: Time frame needs to be specified in which re-engineering process required to be completed; otherwise the team may lose the support and momentum necessary to achieve objective of the re-engineering process successfully.
- **Information Technology:** Re-engineering committee has to identify the application of IT in re-engineering process. According to Motwani & Akbulut (2009), Information Technology is a critical factor and usual companion of re-engineering, and overlooking the role of I.T.is bound to be detrimental to the whole process. Any library implementing re-engineering needs to have a good I.T. support and technology infrastructure necessary to implement the new system and integrate the entire library processes into one complete and workable system. as, IT act as an enabler in re-engineering process in digital era.

3.7.8 Pilot study of New Process

Before implementing new designed process, it is necessary to conduct pilot study of new process for identifying the impact of the process on all stakeholders to ensure that new process works in defined pattern and produce results as expected. A pilot study provides the opportunity to share the process with the actual staff and users, who are going to use and benefit from the new process. It helps the staff and users to know about the changes made and steps to be added, eliminated and redirected. Library has to make a note of the issues and concerns raised by the staff and users and incorporate the same into the new process to achieve the complete objectives of re-engineering. Effective pilot study helps in building the enthusiasm for successful implementation of redesigned process.

3.7.9 Implementation of redesigned process

The effective implementation of new process depends on the properly performed identification, selection, mapping, redesign and pilot study of new process. To prevent implementation pit- falls and to manage the required changes from as-is to the future situation, library needs to consider the various important aspects like:

- **Management support:** First and foremost thing, the re-engineering committee has to do, is to gain the support of the management starting from the approval of re-engineering decision to deal with the resistance of the staff and users. It is important to have moral support for success of re-engineering process.
- **Organization Culture:** The culture of the organization should be open and transparent enough where library staff can admit their frustrations, question the strategy of the higher authority, and offer suggestions for changes needs to be done in new process freely. Organizational authorities should encourage all its stake holders to come out with innovative ideas and should reward the best innovative idea, which can be adopted in new process. This helps to overcome the resistance from staff for new process to be implemented.
- **Allocation of Resources:** It is must for any institution to provide the adequate and regular resource – finance, ICT, skilled staff- to its college libraries, for successful implementation of re-engineering process.
- **Communication of redesigned process to its stakeholders:** The communication of change to all those involved in the process is one of the useful tools for managing the change. Effective communication is the key factor for success of re-engineering process. In the process of re-engineering, library staff may have the fear of loss of job, status, comfort, etc., at the same time library users may have the fear of loss of leisure and these anxiety may lead to resistance form staff and users. So concerned stakeholders, who are affected with the re-engineering process have to be properly informed about the new redesigned process and its impact. Communication of re-engineering process is necessary at all levels and for all the stakeholders whether they are affected by it directly or indirectly. It helps to gain early support from library staff and users and is considered a major key to a success of re-engineering process.
- **Training to library staff and library users:** In newly redesigned process there may be change in task, responsibility of staff, use of new technology and may also require new skills to perform task. So for effective implementation of redesigned process there is need to provide proper training to library staff about the new process. At the same time library needs to orient library users

for new redesigned process so that users take optimally use the service provided by the library.

- **Marketing of redesigned process:** Library should use various communication tools like help desk, face-to-face user group meetings, newsletters, online messaging, the library's own website, exhibitions etc. to make all the stakeholders of library like user, suppliers, publishers, government agencies, aware about new reengineered library services.

3.7.10 Evaluation of Re-engineering Process

Evaluation enables to identify the efficiency and effectiveness of redesigned process. It is required to measure the extent to which the pre-defined goals of the re-engineering process have met and helps to modify the changes if required. For productive evaluation points to be considered are users' feedback, staff feedback, meeting the objective of library and benefit to institution and lastly completion of process within time and budget

3.8. Benefits of Re-engineering

Re-engineering has many benefits. These can be grouped in to three parts:

3.8.1 Benefits to the library,

3.8.2 Benefits to the library staff and

3.8.3 Benefits to the library users.

3.8.1. Benefits of re-engineering to the library

The benefits of re-engineering to the library can be viewed in terms of the following criteria, namely

- **Cost Reduction. (cost-effectiveness):** Re-engineering the library with the application of information technology in the library processes and services ensures the cost-effectiveness. Re-engineering library process intends to combine the related activities to achieve the result of the job. During the process, cost involved in library functions, get reduced due to integration of activities and also with proper management of information, quick dissemination, the cost of information management is reduced and results in cost saving for long run.

- **Saves processing time :** Re-engineering helps in saving the time of the staff in terms of processing, organizing and disseminating information. Re-engineering promotes parallel activities in place of serial activities which involves lots of time in completion of a task and involved physical movement of documents. Use of technology in Re-engineering helps to cut the average cycle time required to complete the process.
- **Better use of existing staff**: Re-engineering facilitates the library to maintain existing staff expertise and can extend new required skills through training during the process. Re-engineering never advocates downsizing or hiring new staff which increases the loyalty of staff towards the organization and reduces staff turnover.
- **Reduce checks and control:** In library lot of time and labor is utilized for checking and controlling the process, which adds no value. In library majority of work is designed with checking and controlled activities, e..g in acquisition of information product, the library use to verify the membership of the person (authorized) to order the item, availability of budget and verifying availability of item in the inventory. Re-engineering in acquisition process helps to avoid rechecks and saves the time as automation of housekeeping activities are fully functional, and helps to provide information about the membership and information database. This may help the library to take the decision for purchase of information product quickly and efficiently without wasting time.
- **Competitive advantage:** Niche competition has changed the face of a library. Information can be made available by different competitors on basis of price, quality, easy accessibility, and convenience. Now it has become difficult to survive and thrive for this long.Re-engineering helps the library to develop library products as per the need of the user, create awareness about the same to the users and offer resourceful services to the user, whilst at the same time, maximizing utilization of available resources and job satisfaction to staff and hence, a library can gain competitive advantage.
- **Attract new readers while retaining existing users:** Re-engineered library products and services improve the quality of products and services, which helps the institution to attract and retain the students and also inspire for frequent visits to the library and increase use of library products and services.

- **Improvement in an organizational image with maximum user satisfaction:** Re-engineering of library process facilitates an increase in flexibility and adaptability for change, which has improved the effectiveness and efficiency of library services. It creates a better environment for staff through empowering them and proper training, leading to employee satisfaction. Successful implementation re-engineering results in the improved quality library products and services, leading to optimum user satisfaction. Re-engineering needs, staff to work for their users, and focus to maximizing users' satisfaction. Re-engineering has changed the library management approach, there is an increase in flexibility and adaptability for change and most important measurement of performance of staff is based on user's satisfaction which may definitely improve the image of a library in an institution.
- **Elimination of bureaucracy:** Re-engineering minimizes delays by combining operations, eliminating unnecessary steps, balancing workloads, or automation. It minimizes red-tape by empowering staff to take a decision in their own area, it also reduces the reviews and approval by standardizing the process.
- **Flexibility:** The main focus of Re-engineering is towards users satisfaction and assessing their needs to provide effective services. Re-engineering enables to cultivate and develop awareness of new apparatuses and also identify the lacuna in process and adapt new technologies to meet requirements of the library users.
- **Coordination and cooperation:** Re-engineering improves coordination and cooperation and by improving internal communication between the different departments of library and assimilating the individual functions to speed up the process and delivery of services to meet the needs of users.

3.8.2. Benefits of re-engineering to library Staff

The benefits of re-engineering library gives more benefits to the library staff as the use of technologies have lessen the work culture as well other benefits are:

- **Job Satisfaction:** Re-engineering awards library staff with a greater sense of completion, closure, and accomplishment from their jobs. Re-engineered

library process, enable staff to perform a whole process or sub-process, which results in a product or service which satisfy the needs of the user. It gives recognition to the staff.

- **Growth of Knowledge:** Re-engineering provides scope for personal development of staff working in a process team. A staff can get a knowledge of the whole process and as a result expertise and experience of staff will grow. It increases the confidence of the staff and staff can perform the job most effectively and efficiently, which improve the quality and productivity of library services.
- **Empowerment:** Re-engineering helps to empower people by providing the adequate training, free flow of information, conducive environment and authority to take decisions pertaining to their work area. Re-engineering gives the responsibility of performing the entire process and at the same time gives the authority to make the decisions needed to get it done. In traditional library system, employees were not allowed to make decisions on their own, for every decision they have to consult their immediate superior. It permits the staff to think, interact, use judgment and make decisions. Empowerment is an obligatory magnitude of the re-engineered process. The library cannot be re-engineered without authorizing staff, which increases the creativity and staff can develop an innovative process to provide better services to users. Thus process might be benefited from fewer adjournments, better user comeback and enhancement of the confidence of staff.
- **Compensation:** The staff involved in re-engineering process have to work extensively and develop new system and for this purpose the staff might be awarded incentives for their contribution. The incentives may be in the form of motivation by awarding promotions, certifications, advance increments and awards etc as per the institute procedure.

3.8.3. Benefits of re-engineering to library users

The main objective of re-engineering library is to maximize user satisfaction. Due to successful re-engineering, users might be more benefited by getting proper information from libraries.

- Reduced cost, energy and time for access to information

- Quality service,
- Awareness about Library products and services.
- Become self-directed learners
- Select the college to apply for further education

The users becomes self-sufficient in searching information from different information products and online / offline data bases. Users oriented in information literacy and they are the expert searchers and users of the library.

3.9. Role of the librarian in re-engineering the college library

For implementing successful re-engineering in libraries, most important aspect is driven from the top most position of the library, and that is the librarian of the college library to the bottom. The role of the librarian is not to only supervise the process, but to help the staff to solve the problems in process. Librarian is generally very close to library tasks and hence librarians assist to their staff in their work. The role of librarian has shifted from supervisor to facilitator, enabler and coach, whose priority is to accept advanced technology, new trend in library, management techniques, reengineer collection, services ICT facilities and the development of staff and their skills to perform value added process. Re-engineering of library process needs proper coaching. The quality of the librarian is an absolute predictor in re-engineering process success. Some of the desirable qualities of college librarians required are:

- **Vision of a successful library:** The librarian have a clear idea of what is library's mission, the overall vision of the institution and have to achieve within the framework of the bigger depiction. This enables leaders to find a balance between the vision of institution and the objective of the library, that alliance of vision and mission will allow the college library to accomplish the target to be achieved in an education field.
- **Knowledge about the re-engineering and its consequences:** The librarian have proper depth knowledge about what re-engineering is and what changes re-engineering can bring to library's structure, staff, library products and services and its impact on user satisfaction. The librarian also needs be aware of complexities of re-engineering and his role is crucial and important in successful re-engineering.

- **Process-oriented and holistic cognitive style:** The librarian have to see the big picture and distinguish promising service and staff from the entire library. He needs to understand the individual task and integrate it to the final result and how the process design fit together to achieve the objective of re-engineering.
- **Design skills:** The librarian have design skills like creativity, trade-off evaluation, performance analysis and troubleshooting to predict a new way of accomplishing a task and to innovate new process that can actually be implemented for re-engineering the process.

For effective designing of a process, the librarian must have:

- **Creativity:** creating some entirely new process
- **Trade-off evaluation**: shaping designs that may satisfy challenging criteria and satisfy the user
- **Performance analysis**: verifying whether redesigned process actually delivers the performance required.
- **Troubleshooting:** finding and managing with anticipated design flaws.

- **Knowledge and use of Information infrastructure:** The librarian able to manage information and technology infrastructure required for re-engineering process, must be competent enough to :
  - recognize the importance of information technology to govern the gathering, organization, and dissemination of information
  - analyze the needs of the user to develop systems and interfaces that adhere to recognized usability and accessibility guidelines
  - work in coherence with information technology service providers

LIS professionals need to seriously think about improving their competencies in the area of ICT trends; metadata standards; web technology; search techniques; digital resources; subject gateways; information portals; e-learning; digital services; digital rights; Wi-Fi and RFID Technology for their effective utilization to deliver need-based high quality services to the users.

- **Enthusiasm and Optimism:** The librarian have to develop enthusiasm and passion for the organization. It reflects his commitment to and for library progress. The librarian use their knowledge, be dedicated and come out with their innovative ideas and exclusive ideas for re-engineering the library

process. The librarian convince his re-engineering team and staff for re-engineering the process and where it heads, which is most important for the success of change.

- **Time-management:** Time management is one of the important skill, the librarian have to accomplish the re-engineering project in time. It helps to achieve the objective of re-engineering in college libraries by effective planning and management of the workload and process based on priority is highly valuable
- **Team management:** The librarian has the ability to work as a part of a team. As a leader, the librarian encourage all the members to come out with new innovative ideas and at the same time consider their needs fot re-engineering.
- **Adaptability:** Swift revolution in the Library and information world, particularly in relation to technology and information seeking behavior behaviors, necessitated the often changes in curent work procedures in re-engineering library activities. Librarian has to be open and accept the change and flexible enough to unlearn the old process and adopt new process and techniques for better efficiency and productivity.
- **Integrity:**Integrity is an excellence that articulates honesty, respect, humility, fairness, and the ability to understand. It also comprises the capacity to resolve internal conflicts by being fair, respectful, transparency, open and free communication, and being trustworthy in dealing with issues. Library leaders with integrity represent personal integrity, forthrightness, politeness, honesty, caring, and humaneness.

Other skills and attributes : apart from the above technical, technological skills librarians need to develop another skill sets for effective working in managing change and re-engineering process like:

- self-discipline
- communication skills
- professional ethical standards and social responsibility
- project management skills
- problem-solving skills
- marketing skills
- human resource skills

- ability to build partnerships and alliances
- effective team relationship skills
- a commitment to lifelong learning
- relevant information and communications technology and technology application skills
- information literacy skills
- general knowledge

From the study of the different aspects of re-engineering process it is very clear that librarian and library staff is the main manpower involved in managing re-engineering of libraries process. For re-engineering purpose librarian as a in charge has to look for proper planning process with advanced skills. Re-engineering process is necessary even in college libraries to support education system.

3.10 Summary

To survive in competitive information age, ICT age, and changing user needs, college libraries are subject to change their library processes. For this, Re-engineering is an important management approach to reshape the college libraries for achieving breakthrough performance. The library has to adopt various strategies like re-engineering, which enable the libraries to redefine, refine and continuously improve effectiveness in library services. This chapter made emphasis to analyze in brief the re-engineering process and its components.

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CHAPTER 4

Profile of Colleges in Mumbai Region

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CHAPTER 4

Profile of Colleges in Mumbai Region

"Every art should become science, and every science should become art"
- Heinrich Von Schlegel
"Commerce changes the fate and genius of nations"
- Thomas Gray

4.1 Introduction

There are total 107 Government and Government fully and partially aided Arts, Science, Commerce, B.ED, Law and other non-AICTE colleges in Mumbai Region. Out of which, 84 are of Arts, Science and Commerce colleges.

The study is based on Government and Government fully and partially aided Arts, Science and Commerce colleges only. The researcher got the responses from 79 colleges out of total 84 colleges located in Mumbai Region. In this chapter, the brief review is presented for 79 colleges and their libraries under study, which gives an idea of their status. The information collected and presented in this chapter is retrieved from the responses received through questionnaire and the web pages of the colleges and links are also appended in the text.

4.2. Profile of Colleges in Mumbai Region

Following are the profile of colleges under survey.

1. H.R. College of Commerce and Economics(College Code MC 1)

(www.hrcollege.edu)

The college is situated in Churchgate Mumbai and was established in 1960. The college has got the academic autonomous status in 2007. H.R. College is the first college in Mumbai, which received autonomous status. H.R. College was awarded the **'Best College'** by the University of Mumbai for 2010-2011.

- **Accreditation Status:** The college got "A" grade (87.95%) in the year 2002. In 2008, in the second round, it got "A" grade with CGPA 3.46. In 2013 in the third accreditation process the college was awarded "A" Grade with 3.72 CGPA.

The library has a collection of more than 54000 books. Library subscribes to 17 multilingual newspapers and 70 periodicals. It also has a collection of Audio-Visual materials, CD Roms, Floppies, maps etc. It has more than 6000 students. The library works for 10 hours to serve the students. The library subscribes to UGC-INFONET N-LIST resources.

2. Krishandchand Chelaram College of Arts, Science, and Commerce (Code: MC2) http://www.kccollege.org.in

The college is situated at Churchgate, Mumbai and was established in 1954. The college is Sindhi Minority College. The college is awarded 'STAR College Status' by DBT, Govt. of India, and "Best College" award by the University of Mumbai.

- **Accreditation Status:** The College has completed 3 cycles of accreditation with "A" grade consecutively.

The library has a rich collection of more than 75,419 documents, 30 current journals, and around 60 periodical. The library is a member of NLIST. It has a collection of more than 1214 Audio-Visual materials, CD ROMs, floppies, maps etc. A total number of students in the college is 3500. The working hours of the library are 8 a.m. to 7 p.m. throughout the year except on Sundays and Public Holidays.

3. Siddharth College of Commerce and Economics (College Code: MC 3) http://www.siddharthcollegeofasc.com

The College was founded on 19th June 1946.

- **Accreditation Status:** The College is accredited with A Grade in 2004.

The library has a rich collection of more than the collection of more than 79,000 documents, 24 current journals, and 8 newspapers. The library has subscribed the UGC INFONET NLIST resources. It has a collection of 823 CD ROMs, Floppies and 43 maps. The library has more than 3000 students. The Library is kept open from 8 a.m. to 5.30 p.m. throughout the year except on Sundays and Public Holidays.

4. Jai Hind College (College Code: MC5) http://www.jaihindcollege.com

Jai Hind College was established in 1948.

- **Accreditation Status:** The college is accredited A Grade in 2003, "A" grade (CGPA 3.26) in 2010, and "A" grade (CGPA 3.52) in 2016.

The library has a rich collection of more than 52,000 documents, 68 periodicals, 21 magazines, 20 current journals and 18 newspapers. It has a collection of 847 CD Rom. And the number of users in the library is more than 3000. The library is a member of N-LIST.

5. St. Xavier's College – Autonomous (College Code: MC7)

http://xaviers.edu

The Xavier College was established in 1869. For the last many years in a row, the national magazine INDIA TODAY has rated it high among the first 10 colleges in India. The college is receiving grants from UGC, DST, and DBT for the development of the college.

- **Accreditation Status:** The college is accredited with A Grade with 5 Star in 1999 and A+ Grade in 2007. In the third cycle, the college is accredited with an A grade and a 3.63 grade-point average on a 4-point scale in 2013.

The library has a rich collection of more than a collection of 1,20,000 Books, 102 current periodicals & journals, and 22 newspapers. The library is a member of N-LIST. It has a collection of 410 CD Rom. The library has more than 3200 members. The Library also provides services to users on holidays from 9 a.m. to p.m

6. K. P. B. Hinduja College of Commerce (College Code: MC8)

http://www.hindujacollege.com

K. P. B. Hinduja College was founded in 1974. In June 2010, India Today issue college was ranked 1st among commerce colleges in Mumbai and ranked 8th in all over India.

- **Accreditation Status:** The college is accredited with B++ Grade Score of 83.5% in 2005 and A Grade with CGPA 3.13 in 2011.

The library has a rich collection of more than 39,600 Books, 71 current periodicals & journals, 23 news papers, 3 maps, 40 thesis, 12 e-journals and 832 CD-ROMs. The library is a member of N-LIST. The library has more than 7000 members. The Library works for 12 hours during working days and for 8 hours on holidays.

7. Sant Gadge Maharaj College (College Code: MC9)

http://www.sgmcollege.in

The Sant Gadge Maharaj College was established in the year 1972.

- **Accreditation Status:** The college is accredited with C++ Grade in 2004 and B Grade in 2014.

The total collection in the library includes 22,000 Books, 21 periodicals & journals, 9 newspapers, 3 maps, 240 projects, 8 thesis, and 759 CD-ROMs. The library is a member of N-LIST. The college has 955 members.

8. Bharatiya VidyaBhavan's Hazarimal Somani College of Arts and Science (College Code MC10) http://www.chowpattybhavans.com/

Bharatiya VidyaBhavan's Hazarimal Somani was established in June 1965.

- **Accreditation Status:** The college is accredited with B Grade in 2004 and B Grade in 2014.

The library has a rich collection of more than a collection of 72777 Books, 34 current periodicals & journals, 15 newspapers, 17 maps, 54 CD-ROMs. The library is a member of N-LIST. The library has total 584 members The Library is kept open from 9 a.m. to 5 p.m. during working days, and from 9 a.m. to 4.35 p.m. on Sundays and holidays during the examination period.

9. Wilson College (College Code MC11) http://www.wilsoncollege.edu/

Wilson College was founded in 1832. It is one of the oldest colleges in Mumbai region, which is affiliated to University of Mumbai. In 2007 on completion of 175 years postal department, Government of India honored the founder and the institution by issuing stamp and first day cover of Wilson College.

- **Accreditation Status:** The college is accredited with A Grade in 2004 and 2011.

The library has a rich collection of 80254 Books, 56 current periodicals & journals, 11 newspapers, 42 maps, 36 Thesis, 648 CD-ROMs. It collection also includes Abu Faizal'sAkbarnama. The library is a member of N-LIST. The library has a total 6995 students. The Library timings are from 7.30 a.m. to 6. p.m. on weekdays.

10. Smt. B. M. Ruia'a Girl's College (College Code MC12)

http://www.bmrgirlscollege.com/

The College is recognized by SNDT Women's University from 1958.

- **Accreditation Status:** The college is accredited with B Grade in 2004, and B Grade with CGPA 2.78 in 2011

The library has a rich collection of 22000 Books, 41 current periodicals & journals, 12 newspapers, 58 Thesis, 200 CD-ROMs. The library is a member of N-LIST. The college has a total enrolment of 1500 students The Library is kept open from 7.30 a.m. to 6 p.m. during working days.

11. Anjuman-i-Islam's Akbar Peerbhoy College of Commerce & Economics (College Code MC13)

http://www.apcollege.in/

The College was established on 19th June 1969. First, it was known as Anjuman College of Commerce and Economics, in 1975 it was dedicated to the memory of late Mr. Akbar Peebhoy, a great philanthropist, educationist, and founder of the college. It is now known as Anjuman-i-Islam's Akbar Peerbhoy College of Commerce & Economics.

- **Accreditation Status:** The college is accredited with B Grade in 2004.

The college library is well equipped with 30810 books, renowned 63 Indian and foreign Professional Journals and 10 newspapers. The library is a member of N-LIST. A total number of members is 2142. The library has OPAC system.

11. N.S.S. College Commerce and Economics (College Code: MC14)

http://nsseducation.org

N.S.S College of Commerce and Economics was founded in 1988.

- **Accreditation Status:** The college is accredited with B Grade in 2009.

The library has a rich collection of more than more than 13,000 documents, 46 current periodicals & journals, 931 thesis, 1 map and 6 newspapers. The library is a member of N-LIST. It has a collection of 333 CD Rom. It has an enrolment of more than 550 students. The Library is kept open from 8.30 a.m. to 6.30 p.m. throughout the year.

12. Maharashtra College of Arts & Commerce (College Code: MC15)

http://www.maharashtracollege.org

The College is a well-known Muslim Minority Institution established in June 1968. This Society was founded under the able president-ship of Dr.RafiqZakaria, a Veteran Parliamentarian, Writer, Educationist and Islamic Scholar.

- **Accreditation Status:** The college is accredited with B+ Grade with 81.30% in 2004

The library has a rich collection of 75000 Books, 20 current periodicals & journals, and 15 newspapers. The library is a member of N-LIST Total number of members in the library are 1386. The Library is kept open from 7 a.m. to 6 p.m. during working days. And 10 a.m. to 4 p.m. during vacation and holidays.

13. Burhani College of Commerce and Arts (College Code: MC16)

http://www.maharashtracollege.org

The College was established in 1969 under the auspices of His Holiness Dr. Syedna Mohammed Burhanuddin Saheb (TUS). The college also has a certification from the **ISO 9001-2000**. The college is in process of reaccreditation.

- **Accreditation Status:** The college is accredited with B++ Grade in 2004

The library has a rich collection of 48902 Books, 39 current periodicals & journals, and 19 newspapers. The library is a member of N-LIST. The total number of members is 3000. Library is kept open from 7 a.m. to 5 p.m. during working days.

14. Sophia College for Women (College Code: MC17)

http://sophiacollegemumbai.com/

The College was founded in 1940, it is affiliated to University of Mumbai. The Governing Body of the Society for the Higher Education of Women in India runs the College.

- **Accreditation Status**: The college is accredited with A Grade in 2003, A Grade with 3.61 CGPA in 2009, and A Grade with 3.70 CGPA in 2015.

The library has a rich collection of 61261 Books, 80 current periodicals & journals, 8 newspapers, 251 maps, 95 films, 241 thesis and 841 CD-ROMS. The library is a member of N-LIST. The library has total 1670 members. The library also provides a reading facility from 8.30 a.m. to 2.30 p.m. before an examination on holidays.

15. Lala Lajpatrai College of Commerce and Economics (College Code: MC18)

http://www.lalacollege.edu.in

The College was established in 1972.

- **Accreditation Status:** The college is accredited with C Grade in 2000 and B++ Grade in 2007.

The college library is one of the oldest libraries among the commerce colleges in Mumbai.The library has a rich collection of 40000 Books, 66 current periodicals & journals, and 20 newspapers. The carpet area of the library is 241.11. sq, mt.

The library is a member of N-LIST. A total number of students enrolled is 2655. Reading service is also given on bank holidays and Sundays, before examinations 10 a.m. to 5 p.m.

16. Maharshi Dayanand College of Arts, Science, and Commerce (College Code: MC19) http://www.mdcollege.in/

The College was established in 1962. The college received "Best College" award for the year 2014-15 from University of Mumbai.

- **Accreditation Status:** The college is accredited with B Grade in 2004 and B Grade with 2.84 CGPA in 2012.

The library has a rich collection of 36837 Books, 75 current periodicals & journals, 22 newspapers, 12 maps, 8 thesis, 24 e-books, 5 e-journals, 2 database, 600 CD-ROMs and 1600 bound volumes. The carpet area of the Library is 1700 sq. ft. The library is a member of N-LIST. A total number of members is 4000.

17. Dr. T. K. Tope Arts and Commerce Night Senior College (College Code: MC20) http://tktopenightcollege.in/

The College was established in June 1984. It is the college of the first of its kind set up in the city of Mumbai to provide an opportunity to students who earn by the day and wish to learn by the night.

- **Accreditation Status:** The college is accredited with B+ Grade in 2004 and B Grade with 2.19 CGPA in 2010.

The library has a rich collection of 21988 Books, 9 current periodicals & journals, 12 newspapers, and 32 CD-ROMs. The library is a member of N-LIST. The total number of library members is 1102.

18. S.I.W.S's N.R.Swami College of Commerce and Economics (College Code: MC21) http://siwscollege.edu.in/

The South Indians' Welfare Society's N.R. Swami College was established in 1980 with an objective to provide educational facilities to the local population.

- **Accreditation Status:** The college is accredited with B+ Grade in 2004, and B Grade with 2.86 CGPA in 2012

The college has a well-established library which caters to the needs of the students, research scholars and the faculty. The library has a rich collection of 35000 Books, 89 current periodicals & journals, and 56 CD-ROMs newspapers. The library is a member of N-LIST. A total number of library members is 2682.

19. Dr.Ambedkar College of Commerce and Economics (College Code: MC22) http://ambedkarcollege.net

Dr. Ambedkar College of Commerce and Economics was established in June 1972 under the umbrella of the People's Education Society founded by Bharat-Ratna. B.R. Ambedkar.

- **Accreditation Status:** The college is accredited with C++ Grade in 2004, and B Grade with 2.38 CGPA in 2013.

The college has a library with a collection of over 60,000 thousand Classical and modern books. It also subscribes to 40 national and international journals and periodicals and 20 newspapers. The library is a member of N-LIST. The Carpet area of the library is 2500 sq.fts. A total library members are 5731. The Library is kept open from 8 a.m. to 5.30 p.m., and during examination, from 8 a.m. to 8 p.m.

20. Kirti M. Doongursee College of Arts, Commerce, and Science (College Code: MC23) http://www.kirticollege.org/

Kirti College was established in 1954.

- **Accreditation Status:** The college is accredited with A Grade with 3.32 CGPA in 2013.

The college library has a rich collection of Sanskrit books and Marathi drama, its total collection of books is 35000 Classical and modern books. It also subscribes to 40 national and international journals and periodicals of Commerce and Economics and 12 newspapers. The library is a member of N-LIST. The Carpet area of the library is 2500 sq.fts. A total number of library members is 5731.

22. Smt. Maniben M P Shah Women's College of Arts & Commerce (College Code: MC25) http://mmpshahcollege.com

The college came into existence from 1957 under the roof of S.N.D.T. Women's University. Shri Gambhirchand Oomedchand Shah Library with its excellent collection of books, periodicals, e-resources and variety of services plays a central role in the teaching-learning process at Smt. Maniben M.P. Shah Women's College of Arts and Commerce.

- **Accreditation Status:** The college is accredited with B+ Grade in 2004, and A Grade with 3.61 CGPA in 2013.

The college has a library with a collection of over 25822 books. It also subscribes to 78 journals and periodicals and 12 newspapers, 109 maps and 27 theses. The library is a member of N-LIST. The Carpet area of the library is 2500 sq.fts. A total number of library members is 3700. During an examination, library facilities are also provided on holidays from 10 a.m. to 4 p.m.

23. Guru Nanak Khalsa College of Arts, Commerce, and Science (College Code: MC26)

http://www.gnkhalsa.edu.in/

Shiromani Gurudwara Prabandhak Committee's Guru Nanak Khalsa College of Arts, Science, and Commerce was established in June 1957.

- **Accreditation Status:** The college is accredited with B++Grade in 2004, and A Grade with 3.22 CGPA in 2010.

In its library collection, there are 78000 books. It also subscribes to 62 journals and periodicals and 13 newspapers, 19 maps and 956 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 9436 sq.ft. A total number of library members is 5500. In the period of examination, the library works from 8.30 a.m. to 7 p.m. on holidays also.

24. S. P. Mandali'sRamnarian'sRuia College (College Code: MC27)

http://www.ruiacollege.edu

S. P. Mandali's Ramnarian's Ruia College was instituted in 1937, by the Shikshana Prasaraka Mandali, Pune.

- **Accreditation Status:** The college is accredited with A Grade in 1999, A Grade in 2007 and A Grade with 3.65 CGPA in 2012.

The college library has nearly 131000 books. It subscribes to 116 journals and periodicals and 12 newspapers, 25 maps and 217 CD-ROMs. The library is a member of N-LIST. The Carpet ares is 8400 sq.fts. A total library members are 3396.

25. D. G. Ruparael College of Art, Science, and Commerce

(College Code: MC 28) http://www.ruparel.edu/

The Modern Education Society started Doongarsee Gangjee Ruparel College in 1952. The college received "Best College" award for 2007-08 from the University of Mumbai.

- **Accreditation Status:** The college is accredited with A Grade in 2003, and A Grade with 3.07 CGPA in 2010.

The library has nearly 104180 books. It subscribes to 129 journals and periodicals, 1 e-journal, 25 newspapers and 111 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 10000 sq.ft. A total number of members is 3460.

25. R. A. Podar College of Commerce and Economics

(College Code: MC29) http://www.rapodar.ac.in/

S. P. Mandli's R.A. Podar College began in the year 1941. The college has been ranked among the first ten Commerce Colleges in the country, by the National Magazine, 'INDIA TODAY' for 3 consecutive years.

- **Accreditation Status:** The College is accredited with A+ Grade in 2004, and A Grade with 3.63 CGPA in 2011.

The college library has nearly 73000 Books. It subscribes to 75 journals and periodicals, 9 e-journal, 3 e-database, 2432 bounded volumes, 25 newspapers, 210 maps, 10 thesis, 106 audio video cassettes and 1354 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 10000 sq.ft. A total number of library members is 4500. Library timings are 8 a.m. to 8 p.m.

26. Guru Nanak College of Arts, Science &Commerce

(College Code: MC 30) http://www.gurunanakcollegeasc.in/

Guru Nanak Vidyak Society instituted the college in 1989.

- **Accreditation Status:** The college is accredited with B++ Grade in 2004, and B Grade in 2015.

The library has 19567 books in its print collection. It subscribes to 88 journals and periodicals, 13 newspapers, 22 maps, 2 thesis, and 188 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 750 sq.ft. A total number of library members is 2500. The Library offers reading facility on Sundays for examinations from 8 a.m. to 6 p.m.

27. SIES College of Arts, Science, and Commerce (College Code: MC31) http://www.siesascs.edu.in

The college began in the year 1960. The college has received "Best College" honor from the University of Mumbai.

- **Accreditation Status:** The college is accredited with B++ Grade in 2004, in the second cycle with "A" Grade in 2010 and in the third cycle of accreditation with "A" Grade in 2015.

It has 65267 books in a library collection. It subscribes to 187 journals and periodicals, 13 newspapers, 4063 bound volumes, 301 maps and charts, 10 thesis, and 2249 e-books, 10 e-journals, 2096 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 355 sq.mt. A total number of library members is 6000. The Library works for 12 hours.

28. SIES College of Commerce & Economics (College Code: MC32) http://www.siesce.edu.in/

SIES College of Commerce and Economics was established in 1989 by South Indian Education Society. The college is ISO 9001-2008 certified.

- **Accreditation Status:** The college is accredited with B+ Grade in 2004, A Grade in 2009, and A Grade 3.01 CGPA in 2015.

The library has nearly 19120 books. It subscribes to 68 journals and periodicals, 13 newspapers, and 529 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 154 .78 sq.mt. A total number of library members is 2690.

29. Vivekanand Education Society's College of Arts, Science, and Commerce (College Code: MS1) http://www.vesasc.org/

The college came into existence in June 1979.

- **Accreditation Status:** The College is accredited with B++ Grade in 2003 and A Grade 3.12 CGPA in 2012.

The library has nearly 48667 books. It subscribes to 90 journals and periodicals, 17 e-journals, 16 newspapers, 5 maps, 10 thesis and 1955 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 6400 sq.ft. A total number of library members is 3500. The Library works for 10.30 hours daily.

30. Sree Narayana Guru College of Commerce

(College Code: MS2) http://www.sngcollege.org

Sree Narayana Mandira Samiti situated at P.L. Lokhande Marg, Chembur (west) formed the college in July 1986. The college is a Malayalam Linguistic Minority Institution.

- **Accreditation Status:** The College is accredited with B Grade in 2004 and B Grade 2.73 CGPA in 2012.

The library has nearly 15796 books. It subscribes to 11 journals and periodicals, 7 newspapers and 117 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 2440 sq.fts. A total number of library members is 1526.

31. Mahatma Night Degree College of Commerce

(College Code: MS3) http://www.mes.ac.in/colleges/mndc.asp

Mahatma Night Degree College was established in July 1986. Mahatma Night Degree College of Commerce (MNDC) caters the need of the economically underprivileged students of the local area, who are part-time learners, employed during the day.

- **Accreditation Status:** The college is reaccredited with B Grade in 2011.

The college library is having 8817 total number of books, 35 magazines and journals, 15 newspapers, 74 maps and 19 CD-ROMs in its treasure. The college library has total 572 members.

32. N. G. Acharya & D. K. Marathe College of Arts, Science, and Commerce (College Code: MS4)

http://acharyamarathecollege.in

The institution was started in 1978.

- **Accreditation Status:** The College is accredited with B+ Grade in 2003 and B Grade 2.99 CGPA in 2010.

The library has nearly 63358 books. It subscribes to 58 journals and periodicals, 27 newspapers 18 maps, 2 globs and 2 thesis, 27 audio cassettes and 529 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 9400 sq.ft. A total number of library members is 3673.

33. K. J. Somaiya College of Science and Commerce

(College Code: MS5) https://www.somaiya.edu/kjssc

It came into existence in the year 1972. It is amongst the institutions formed under the arms of Somaiya Vidyavihar. The College has many feathers in its cap, the most

valued was "Best College Award" by University of Mumbai in the academic year 2008-2009. Many times it has been graded in top most colleges in Mumbai by reputed national publication.

- **Accreditation Status:** The college is accredited with A Grade in 2004 and A Grade 3.21 CGPA in 2010

The total number of the book collection in the library is almost 68500 books and 168 e-books. It subscribes to 45 journals and periodicals, 22 newspapers and 1000 CD-ROMs. The library is a member of N-LIST. The carpet area of the library is 3500 sq.fts. A total number of library members is 3728. The Library is open for 11 hours.

34. K. J. Somaiya College of Arts and Commerce (College Code: MS6) https://www.somaiya.edu/kjsac

K. J. Somaiya College of Arts and Commerce was established in 1962. The college has been conferred with an 'Autonomy status' from June 2013.

- **Accreditation Status:** The college is accredited with B Grade in 2004 and A Grade 3.27 CGPA in 2010

The library has nearly 71058 books. It subscribes to 117 journals and periodicals, 19 e-journals, 14 newspapers, 136 maps, 20 thesis, and 1121 CD-ROMs. The library is a member of N-LIST and also subscribed to EBSCO database. The Carpet area of the library is 10732 sq.fts. A total number of library members is 5103. The Library is kept open from 7 a.m. to 6 p.m.

35. RamniranjanJhunjhunwala College of Arts, Science & Commerce (College Code: MS7) http://www.rjcollege.edu.in

It was set up 1963. The college was honored with "Best College" award in 2009 and 2010 by University of Mumbai. The college received the grant from DBT Star College Scheme and DST FIST for the development of Botany, Zoology, Chemistry, and Physics.

- **Accreditation Status:** It has been accredited with A Grade, 3.33 CGPA in 2008, and A Grade with 3.50 CGPA in 2014.

The library has nearly 83000 books and 249 e-books. It subscribes to 131 journals and periodicals, 12 e-journals, 2 e-databases, 10 newspapers, 25 maps, and 10 theses. The library is a member of N-LIST. The Carpet area of the library is 3000 sq.fts. A total

number of library members is 5232. The Library is working for 10 hours during weekdays and during the examination, the time is 6.30 a.m. to 11 p.m.

36. Smt. P.N. Doshi Women's College (College Code: MS8)

http://www.spndoshicollege.com

Smt. P.N. Doshi Women's College was established by the trust in 1960.

Accreditation Status: It has been accredited with A Grade in 2003 and A Grade with 3.02 CGPA in 2010.

The library has nearly 64823 books. It subscribes to 58 journals and periodicals, 20 newspapers and 87 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 298.4 sq.mt. Total library members are 5232. The Library timings for users are from 7.30 a.m. to 6.30 p.m.

37. Vikas College of Arts, Science, and Commerce (College Code: MS9)

http://www.vikascollege.org

The foundation of the college was laid down in 1986.

- **Accreditation Status:** It has been accredited with B+ Grade in 2005 and A Grade with 3.15 CGPA in 2013

The library has nearly 34975 books. It subscribes to 58 journals and periodicals, 20 newspapers and 185 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 1600 sq. ft. A total number of library users is 2626. Timings of the library are from 8 a.m. to 10 p.m.

38. College of Arts and Commerce (College Code: MS10)

http://www.asmitacollege.org/

Om Vidyalankar Shikshan Sanstha started college for women in 1991.

- **Accreditation Status:** It has been accredited with B Grade in 2004.

In-library there are 23000 books 16 newspapers and 124 CD-ROMs. It subscribes to 39 journals and periodicals. The library is a member of N-LIST program of UGC. The Carpet area of the library is 1600 sq.ft. A total number of library members is 2000. During vacation, timings of the Library is 9 a.m. to 4 p.m.

39. Ratnam College of Arts and Commerce (College Code: MS11)

www.ratnamcollege.org

National Education Society's Ratnam College of Arts, Science, and Commerce was established in 1983. The College has been the proud recipient of ISO 9001: 2000 certificate on April 14, 2002- first of its kind in Maharashtra for any educational institution for conforming to world standards in education. Best College Award from the University of Mumbai was honored to the college for 2013-14 in Urban Area.

- **Accreditation Status:** It has been accredited with A Grade in 2004 and A Grade in 2011.

The college library has in its collection, the total 24000 books, 90 journals and periodicals, 20 maps and 250 CD-ROMS. The library remains open for 12 hours.

40. V. K. Krishna Menon College of Commerce and Science (College Code: MS12)

http://www.vkkrishnamenoncollege.org/

Bhandup Educational Society, which is a minority institution, established the college in June 1982, and in June 1992 Science stream was added to it.

- **Accreditation Status:** The College has been accredited with B Grade in 2003 and with B grade in 2015.

The library has nearly 33199 books. It subscribes to 51 journals and periodicals, 1 e-journals, 17 newspapers, 2 maps, 3 thesis and 500 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 3500 sq. ft. A total number of library members is 3000. The Library serves its users for 12 hours.

41. Ramanand Arya DAV College (College Code: MS13)

http://www.radav.org

College was established in 1981.

- **Accreditation Status:** The College has been accredited with B Grade in 2004 and with "A" grade in 2015.

Total 20133 books are there in the library collection. It subscribes to 61 journals and periodicals, 17 newspapers, 8 maps and 850 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 3896 sq. ft. A total number of library members is 2684. The timing of the Library are from 7 a.m. to 6 p.m.

42. KET'S V.G. Vaze College of Arts, Science, and Commerce (College Code: MS14)

http://www.vazecollege.net

The organization was set up in 1984. In Urban Area, it is the first college to receive Best College Award by the University of Mumbai. It is also ranked 5th in India by Biospectrum. The college has been granted under STAR SCHEME of DBT, DST-FIST and CPE scheme of UGC.

- **Accreditation Status:** It was accredited with Five stars in 1999 in First Cycle and was the first college in Maharashtra with five stars. Reaccredited with 'A' Grade in Second and Third Cycles in 2005 and 2012 respectively.

The college has a well-stocked, automated library with multiple reading rooms, internet facility, INFLIBNET and a separate website. The library has nearly 63000 books. It subscribes to 125 journals and periodicals, 19 newspapers, 21 maps, 1 globe and 1266 CD-ROMs. The Carpet area of the library is 4000 sq. ft. A total number of users is 3473.

43. Mulund College of Commerce (College Code: MS15)

http://mccmulund.ac.in

Parle Tilak Vidyalaya Association's Mulund College of Commerce, was founded in 1970 by such visionaries as the Late Shri Babasaheb Pethe, the Late Shri Baburao Paranjape, and others. The college was adjudged as the Best College by the University of Mumbai in 2012-13.

- **Accreditation Status:** Accredited in 2004 by NAAC (A Grade with 86%) reaccredited in 2011 (A– Grade with CGPA 3.2).

Mulund College of Commerce Library is a vibrant information Centre. It is a treasure trove of knowledge having a rich and diverse collection of 55258 books and 17 e-books. It subscribes to 49 journals and periodicals, 12 e-journals, 1 e-database, 10 newspapers, 7 maps, 1 globe and 451 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 6976 sq.ft. A total number of library members is 3921. The Library is working for more than 12 hours daily.

44. Chetna's HazarimalSomani College Of Commerce and Economics (College Code: MS16)

http://chetanadegreecollege.com/

Chetana College was founded in 1969 and managed under Chetana Education Trust.

- **Accreditation Status:** The College is accredited with B Grade.

The college has a well-equipped, automated library with a collection of over 91339 books. It also subscribes to 79 journals and periodicals, 346 bounded volumes and 16 newspapers, 14 maps and 514 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 9436 sq.ft. 3500 users are served by the college library. During an examination, on holidays, it is open from 7 a.m. to 7 p.m.

45. St. Andrew's College of Arts, Science, and Commerce (College Code: MS17)

http://standrewscollege.ac.in/

The college was founded on 9th July 1983 by the Catholic Archdiocese of Bombay (Mumbai), primarily.

- **Accreditation Status:** The College got B Grade in 2004 and reaccredited by NAAC in 2009 with 'A' Grade.

The college has a library with a collection of over 39000 books and 7 e-books. It also subscribes to 90 journals, 6 e-journals, and 20 newspapers. The library is a member of N-LIST. The Carpet area of the library is 2210 sq. ft. Total library users are 2718.

46. Rizvi College of Arts, Science, and Commerce (College Code: MS18)

http://www.rizvicollege.edu.in

The college was established in the year 1985 with the Vision of "the upliftment of Muslim minority students through quality education". To achieve excellence and for quality checks, various audits like academic audit, green audit, gender audit and ISO certification 9001:2008 certification audit have been successfully conducted by the institution.

- **Accreditation Status:** The College is accredited with B Grade in 2004 and B Grade in 2011.

The library has a rich and diverse collection of 42809books, reference books, 76journals, 25 newsweeklies, and 103 CDs. The library is a member of N-LIST. The Carpet area of the library is 1880 sq.ft. A total number of library members is 3208.

47. R. D. & S. H. National College (College Code: MS19)

http://www.rdnational.ac.in

The college was first established in Hyderabad (Sind), now in Pakistan, in the year 1921. After partition, it is the first college to be established in suburbs of Mumbai, in the year 1949. R. D. National College was established in 1949.

- **Accreditation Status:** The College is accredited with B++ Grade in 2004.

The college has a spacious library with 50842 volumes of books, 30 journals, and periodicals, 16 newspapers, 146 CDs. And internet facility providing excellent opportunities for academic exploration and research to the staff and students. The Carpet area of the library is 5000 sq.ft. A total number of library members is 4000. The college library remains open from 6.30 a.m. to 6.30 p.m.

48. M. M. K. College of Commerce and Economics

(College Code: MS20) http://www.mmk.edu.in

The college is a Sindhi linguistic minority institution established in 1961 by the National Collegiate Board, Hyderabad (Sind) to cater to the educational needs of students.

- **Accreditation Status:** The College is accredited with B++ Grade in 2004 and A Grade with 3.29 CGPA in 2011.

The college library is the well-furnished library with an updated collection of 48164 books, 90 journals and magazines and 10 e-journals and 17 newspapers and 1017 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 2500 sq. ft. A total number of users is 4000.

49. L. S. Raheja College of Arts & Commerce

(College Code MS21) http://www.lsraheja.org

L. S. Raheja College of Arts & Commerce was established in 1982. The college is Gujarati Linguistic Minority College.

- **Accreditation Status:** The College is accredited with A Grade in 2004 and A Grade with 3.12 CGPA in 2011.

The college library has almost 50000 books in its collection. It also subscribes to 53 journals and magazines, 20 newspapers, 5 maps, 20 thesis and 1285 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 3000 sq.ft. A total number of library members is 3100. The Library is open for 12 hours to serve the users.

50. Parle Tilak Vidhayalaya Association's Sathaye College

(College Code: MS24) http://sathayecollege.com/

Parle Tilak Vidyalaya Association established Parle College in 1959. In 1963 Parle College was renamed as Sathay College. For the year 2013-14 the college received "Best College" award from the University of Mumbai.

- **Accreditation Status:** The College is twice accredited by NAAC with "A" grade in 2004 and 2011.

There are rich collections of over 76000 books in the college library. It also subscribes to 87 journals and magazines, 5 e-journals, 10 newspapers, 4 maps, 1 thesis and 100 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 1949 sq. ft. A total number of library members is 3655. The Library provides the services for more than 10 hours on weekdays.

51. M. L. Dahanukar College of Commerce (College Code: MS25)

https://www.mldcc.com/

It was established in 1960.

- **Accreditation Status:** The College is accredited with B+ Grade in 2004 and A Grade in 2014.

The college has a library with a collection of over 105489 books. It also subscribes to 55 journals and magazines, 16 newspapers, and 18 theses. The library is a member of N-LIST. The Carpet area of the library is 517.89 sq. ft. A total number of library members is 3525. The Library is working for 12 hours.

52. V.P.M.S – L.J.N.J. Mahila Mahavidyalaya (College Code: MS26)

http://www.vpms.in

L.J.N.J. Mahaila Mahavidyalaya was established in 1952. It is affiliated to S.N.D.T. Women's University.

- **Accreditation Status:** The College is accredited with A grade in 2009.

The college library has 43000 books, 30 journals and magazines, 10 newspapers, 4 maps, 1 thesis and 100 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 1500 sq. ft. A total number of library members is 2000. The Library is kept open from 9 a.m. to 7 p.m.

53. Mithibai College of Arts, Chawhan Institute of Science and Amrutben Jivanlal College of Commerce and Economics (College Code: MS27)

http://mithibai.ac.in

The institution is visualized as a destination for the most talented and promising students, since its inception in 1961. The college is granted under Star College scheme under DBT and FST-DST, Government of India.

- **Accreditation Status:** The Institution is accredited with B+ Grade in 2003 and A Grade in 2015

The college library is entirely air-conditioned supported with modern technologies like WiFi and digital video recording cameras and having a rich collection of over 55917 books. It also subscribes to 171 journals and magazines, 22 newspapers, and 364 CD-ROMs. The library is a member of N-LIST. Library also has access to SVKM Consortia databases. The Carpet area of the library is 6900 sq. ft. A total number of library members is 6085. The Library works for 10 hours.

54. Narsee Monjee College of Commerce & Economics (College Code: MS28)

http://www.nmcollege.in/

The college was started in 1964 by Shri Vile ParleKelavani Mandal (SVKM). The college is rated amongst the top ten colleges in the country in the Commerce stream as per India Today rankings. It is Gujarati Minority Institution.

- **Accreditation Status:** The College is accredited with B++ Grade in 2004

The college has a library with a collection of over 66900 books and 82 e-books. It also subscribes to 95 journals and magazines 28 e-journals, 4 maps, 19 newspapers, and 311 CD-ROMs. The library is a member of N-LIST. Library also has access to SVKM Consortia databases. The Carpet area of the library is 7400 sq. ft. A total number of library members is 2300. The Library timings are from 7 a.m. to 7 p.m.

55. ManibenNanavati Women's College (College Code: MS29)

http://www.mnwc-sndt.org/

The institution is affiliated to SNDT University and was established in 1972. It is.

- **Accreditation Status:** The institution is accredited with B+ Grade in 2004 and B Grade with 2.89 CGPA in 2010.

The college library has 37894 books, 8 e-books, 89 journals and magazines, 11 newspapers, and 784 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 4368.18 sq. ft. A total number of library members is 1026. During vacation, the library remains open from 7.30 a.m. to 5.30 p.m. and 9 a.m. to 5 p.m.

56. Shri Chinai College of Commerce and Economics (College Code: MS31)

http://www.chinaicollege.com

China College was established in 1963.

- **Accreditation Status:** It is accredited with B++ Grade in 2004.

The college has a library with a collection of over 60000 books. It also subscribes to 59 journals and magazines, and 10 newspapers. The library is a member of N-LIST. The Carpet area of the library is 3590 sq.ft. A total number of library members is 1192.

57. Sheth L.U. and S.M.V. Arts, Science and Commerce College. (College Code: MS32)

http://www.chinaicollege.com

The college came into existence from 1963.

- **Accreditation Status:** The College is accredited with A Grade in 2004.

Its library has a huge collection of more than 60000 books. It also subscribes to 12 journals and magazines, and 6 newspapers. The library is a member of N-LIST. The Carpet area of the library is 3000 sq. ft. A total number of library members is 1000.

58. Tolani College of Commerce (College Code: MS33)

http://www.tolani.edu

Tolani College was started in 1989.

- **Accreditation Status:** The College is accredited with B++ Grade in 2004 and A Grade with 3.02 CGPA in 2011

The college has a library with a collection of over 28698 books. It also subscribes to 75 journals and magazines, 116 bounded volumes, 13 newspapers and 1412 CD-ROMs. It has also subscribed to ProQuest database. The library is the member of N-LIST. The Carpet area of the library is 389.84 sq.mt. A total number of library members is 4000. The Library timings are from 7 a.m. to 5 p.m.

59. Valia College of Commerce and Arts (College Code: MS34)

http://valiacollege.in/

The establishment year of the college is 1986.

- **Accreditation Status:** The Institution is accredited with B+ Grade in 2004 and B grade in 2016.

The college library has more than 11300 books in its collection. It also subscribes to 14 journals and magazines, 14 newspapers, 5 maps, 5 thesis and 200 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 5000 sq .ft. A total number of library members is 1802. The library timing are from 7 a.m. to 5 p.m.

60. BhartiyaVidyaBhavan's M.M. College of Arts, N.M. Institute of Science, and H.R.J. College of Commerce (College Code: MS35)

http://bhavans.ac.in

It was formed in 1946.

- **Accreditation Status:** The College is accredited with B++ Grade in 2004 and A Grade in 2015.

The college library has a total number of 75290 books, 62 journals, 12 newspapers, 42 maps, 1 globe, 1647 bounded volumes, and 381 CD-ROMs. The library is the member of N-LIST. The Carpet area of the library is 5635 sq. ft. A total number of library members is 4000.

61. J. M. Patel College of Commerce (College Code: MS36)

http://www.jmpcollege.org

Sanskardham Kelvni Mandal's J. M. Patel College of Commerce was commenced from 1988.

- **Accreditation Status:** It is accredited with C Grade in 2004 and B Grade with 2.79 in 2010.

There are 13200 books 43 journals and magazines, 15 newspapers, 16 maps, 1 globe, and 19 CD-ROMs in its college library. The library is a member of N-LIST. The Carpet area of the library is 1000 sq. ft. A total number of library members is 1205.

62. Vivek College of Commerce &Economics

(College Code: MS37) http://www.vivek-college.org

Vivek Education Society's - Vivek College was opened in 1985. The institution belongs to linguistic minority institution with Tamil and Malayalam as the regional languages.

- **Accreditation Status:** The College is accredited with C Grade in 2004 and B Grade with 2.79 in 2011.

The college has a library with a collection of over 28307 books. It also subscribes to 104 journals and magazines, 18 newspapers, and 30 maps. The library is a member of N-LIST. The Carpet area of the library is 2500 sq. ft. A total number of library members is 2200.

63. S. S. & L. S. Patkar College of Arts & Science & V. P. Varde College of Commerce & Economics (College Code: MS38)

http://www.patkarvardecollege.edu.in

The organization was established 1964.

- **Accreditation Status:** The College is accredited with B++ Grade in 2004 and A Grade with 3.17 in 2010.

The college library collection includes more than 68000 books, 133 e-books, 15 newspapers, 5 maps and 436 CD-ROMs. It also subscribes to 84 journals and magazines and 1 e-journal and is also a member of N-LIST. The Carpet area of the library is 508 sq.mt. A total number of library members are 6000.

64. D. T. S. S. College of Commerce (College Code: MS39)

http://www.sanskarsarjan.org/

The college was formed in the year 1984.

- **Accreditation Status:** The College is accredited with B++ Grade in 2004 and B Grade in 2011.

The college library has a collection of over 36827 books. It also subscribes to 54 journals and magazines, 10 e-journals, 16 newspapers and 416 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 1000 sq.ft. A total number of library members are 1984.

65. Ghanshyamdas Saraf Girls College of Arts & Commerce (College Code: MS40)

http://sarafcollege.org

RajasthaniSammelan Education Trust established the college in 1984. It is an ISO certified college.

- **Accreditation Status:** The College is accredited with A Grade with 3.23 CGPA in 2012.

The college library is known as Sir Valla Saraf Library has a collection of over 44105 books. It also subscribes to 60 journals and magazines, 15 newspapers, 3 maps, 2

thesis and 184 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 1500 sq. ft. The library has more than 4000 users. The library provides the reading facility for more than 12 hours.

66. P.D. Lion's College of Commerce and Economics

(College Code: MS41) http://www.dalmialionscollege.ac.in

It was established in 1984.

- **Accreditation Status:** The College is accredited with B Grade in 2004 and B Grade with 2.80 CGPA in 2012.

The college has a library with 33846 books and 41 e-books. It also subscribes to 46 journals and magazines, 13 newspapers and 801 CD-ROMs. The library is a member of UGC N-LIST. The Carpet area of the library is 3200 sq.ft. A total number of users in the college library are nearly7000.

67. M.D. Shah Mahila College of Arts & Commerce

(College Code: MS42) http://www.mdshahmahilacollege.ac.in

The institution was established in 1968 to enlighten and empower women to become instrumental in enhancing the quality of society. The institution is a premier institute for women affiliated to the S.N.D.T Women's University.

- **Accreditation Status:** The College is accredited with A Grade in 2008 and A Grade with 3.97 CGPA in 2012.

It has 56000 books and 28 e-books its library collection. It also subscribes to 56 journals and magazines, 22 newspapers, 228 maps, 3 thesis, and 378 CD-ROMs. The library has taken membership of N-LIST. The Carpet area of the library is 4135.5 sq. ft. Total 3000 members are there in the college library. The Library is operational from 7 a.m. to 5.30 p.m.

68. Smt. Kmladevi Gauridatt Mittal College of Arts & Commerce

(College Code: MS43) http://kgmittalcollege.com/

Mittal College was commenced in 1992. The college is ISO 9001-2008 Certified. It linguistic minority institute.

- **Accreditation Status:** The College is accredited with B+ Grade in 2004.

The college has a library with a collection of over 11470 books. It also subscribes to 41 journals & magazines and 5 newspapers. The library is a member of N-LIST. The Carpet area of the library is 278 sq.mt. A total number of members is 2280 in its library. The library is functioning from 9 a.m. to 5.45 p.m.

69. NagindasKhandwala College of Commerce and Arts (College Code: MS44)

http://kgmittalcollege.com/

The institution was established in July 1983.

- **Accreditation Status:** The College is accredited with Five stars in 2003, A Grade with CGPA 3.1 in 2008 and A Grade with 3.31 CGPA IN 2013.

The library has a rich collection of over 56000 books. It also subscribes to 81 journals and magazines, 15 newspapers and 3557 CD-ROMs. The library is a member of N-LIST. The Carpet area of the library is 5000 sq.mt. Total library members are 4500. The Library is functioning from 7 a.m. to 7 p.m.

70. Balbharti's M. J. Pancholia College of Commerce (College Code: MS45)

http://www.balbharati.edu.in/

The establishment year of Balbharti's M. J. Pancholia College of Commerce is 1988. The library has a collection of 9800 books, 55 maps, and 60 CD-ROMs. The library subscribes to 30 journals and magazines, 14 newspapers. The Carpet area of the library is 1000 sq. ft. There are 1600 library users in the college library.

71. Kandivali Education Society's College of Arts & Commerce (College Code: MS46)

http://www.kes.ac.in

The college was founded in July 1989.

- **Accreditation Status:** The College was accredited with A Grade with 3.16 CGPA in 2012.

The library has a collection of over 36418 books, 66 journals and magazines, and 16 newspapers. The Carpet area of the library is 3500 sq. ft. Overall 3000 library members are there in the library.

72. Gokhale Education Society's Shri BhausahebVartak Arts, Commerce and Science College (College Code: MS47

http://sbvartakcollege.in/

G.E.S. established Shri BhausahebVartak Arts, Commerce and Science College at Borivali (West), Mumbai in June 1979. It is the first Senior College set up in the suburb of Borivali and Dahisar area.

- **Accreditation Status:** The College was accredited with B+ Grade in 2004 and B Grade in 2011.

The college has a library with a collection of over 58535 and 270 e-books. It also subscribes to 65 journals and magazines and 5 e-journals, 15 newspapers, 30 thesis, 1050 CD-ROMs and 15 V.C.Ds. The Carpet area of the library is 3300 sq.mt. 4500 library members are enrolled. The Library remains open from 7.30 a.m. to 5.30 p.m.

73. Shailendra Education Society's Arts, Science and Commerce College (College Code: MS48) http://shailendradegreecollege.in/

Shailendra College was established in 1994.

- **Accreditation Status:** The institution was accredited with B+ Grade in 2004 and B Grade with 2.92 CGPA in 2012.

Library collection comprises of 31157 books 55 journals and magazines, 566 bounded journals, 10 newspapers, 1 thesis, 774 CD-ROMs and 15 V.C.Ds, The space allotted to the library is 1934 sq. ft. in the library total 3000 library members are there. The Library working for 10 hours.

74. S. K. Somaiya Degree College of Arts, Science and Commerce (College Code: MS49) https://www.somaiya.edu/sksasc

S.K. Somaiya College of Arts and Commerce was established in 1995.

- **Accreditation Status:** The college is accredited with B++ Grade in 2004 and A Grade 3.215 CGPA in 2012

The library has nearly 48476 books. It subscribes to 80 journals and periodicals, 14 newspapers, 36 maps, 2 thesis, and 1121 CD-ROMs. The library is a member of N-LIST and also subscribed to Indiastat database. The Carpet area of the library is 5122 sq.ft. A total number of library members is 5427. The Library is kept open from 8 a.m. to 7 p.m.

75. Public Night Degree College (College Code: MS 51)

College was recognized in 1998.

- **Accreditation Status:** The College was accredited with B Grade in 1st cycle of Accreditation.

The library has a collection of 7332 books, 2 maps, 1 thesis, and 195 CD-ROMs. It also subscribes to 15 journals and magazines, 10 newspapers. The Carpet area of the library is 1776 sq. ft. A total number of library members are 1200. The Library is kept open from 4 p. m, to 9 p.m.

76. Sydeham College of Commerce & Economics http://sydenham.ac.in/

Sydeham College of Commerce & Economics College was established in 1913. Miss Yasmin Surveyor, the first woman commerce graduate in Asia is from Sydenham College.

- **Accreditation Status:** The College was accredited with A Grade in 2004

The college has a library with a collection of over 60715. It also subscribes to 44 journals and magazines, 2 Braille Magazine, and 12 newspapers. The Carpet area of the library is 5496 sq. ft. Library serves to more than 3800 users. The Library is operational from 8 a.m. to 8 p.m.

77. Elphinston College http://www.elphinstone.ac.in/

It was established in 1856.

- **Accreditation Status:** In 2004, the College was accredited with A Grade.

Its library has a huge collection of 120000 books in its treasure. It also has 10 journals and magazines, and 6 newspapers. The area allotted for the library is 7000 sq. ft. and has 3165 users Timings of the library are from 7 a.m. to 4.45 p.m.

78. Ismail Yusuf College of Arts, Science and Commerce

http://www.ismailyusufcollege.com/

Ismail Yusuf College of Arts, Science and Commerce College was established in 1930.

- **Accreditation Status:** The College was accredited with B+ Grade in 2003

The college has a library with a collection of over 72000. It also subscribes to 75 journals and magazines, 16 newspapers, and 302 CD-ROMs. The Carpet area of the library is 4000 sq. ft. A total number of library members are 4500.

4.3 Summary

With respect to Government and Government fully and partially aided Arts, Science & Commerce colleges in Mumbai Region, it is seen that majority of the college have completed their 1st and 2nd circle of accreditation. Space allotted to college libraries are not satisfactory. Non-print collection of college libraries are very poor. And at the same time, very few college libraries remain open for more than 12 hours. College libraries need to focus on non-print collection and must extend their opening hours.

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CHAPTER 5

Data Analysis: Presentations and Interpretations

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CHAPTER 5

Data Analysis: Presentations and Interpretations

" What gets measured, gets managed"

- Peter Drucker

5.1 Introduction

Analysis and interpretation of the data presented in this chapter is based on the examining and analyzing collected data from the survey of college libraries of Government and Govt. fully and partially aided Arts, Science and Commerce Colleges in Mumbai region. This analysis revealed the status, relationships, patterns, and trends, of college libraries in Mumbai. The questionnaire was circulated among college librarians and library users. The purpose of survey of College Librarians is to identify the status of for re-engineering college libraries and finally assess the status of re-engineering the college libraries with respect to library collection, library services, library staff, automation, use of ICT in libraries, efforts towards digital library and digitization. In addition to these identify the problems faced by college librarians in satisfying user needs, and efforts to be taken for success of re-engineering in college libraries. The purpose of circulating questionnaires among the library users is to assess the frequency and purpose of library visits, their preferences, and opinion about the library collections and services, ICT infrastructure and facilities and library staff and to understand the need of re-engineering process in the college library. Collected data are analyzed with the help of MS Office Application, the MS Excel Spreadsheets and statistical tools and the analyzed data is presented in the tables, graphs, charts etc.

Both the surveys are analyzed separately.

5.2 Analysis of Data Collected from College Librarians

1. Population and Sampling

There are total 107 Government and Government fully and partially aided Arts, Science, Commerce, B.ED, Law and other non-AICTE colleges in Mumbai Region (Appendix III). Out of which, 84 are of Arts, Science and Commerce colleges, 11 B.Ed. Colleges, 7 Law Colleges, 1 Nritya Kala Mahavidyalaya, 1 Management Institute and 3 Home Science colleges.

84 colleges pertaining to Arts, Science, and Commerce are selected for the survey. The questionnaire was distributed to College Libraries of all 84 colleges. The responses were received from 79 college libraries/librarians. The researcher has tried to collect the data from remaining 5 college libraries, but due to some problems, the researcher could not manage to get the data from them. The response to survey is 94.05%. The librarians' questionnaire covers 54 questions and its analysis are presented below.

2. Responses Obtained

The questionnaire was distributed among 84 College librarians and the Table 5.1 indicate the details of responses received by the researcher.

Table 5.1: Responses to Survey

Sr. No.	Particulars	No. of Respondents	Percentage
1	Responses Received	79	94.05%
2	Responses not Received	5	5.95%
	Total Questionnaires Distributed	84	100%

Observation:

Responses to survey is 94.05% (79 responded out of 84).

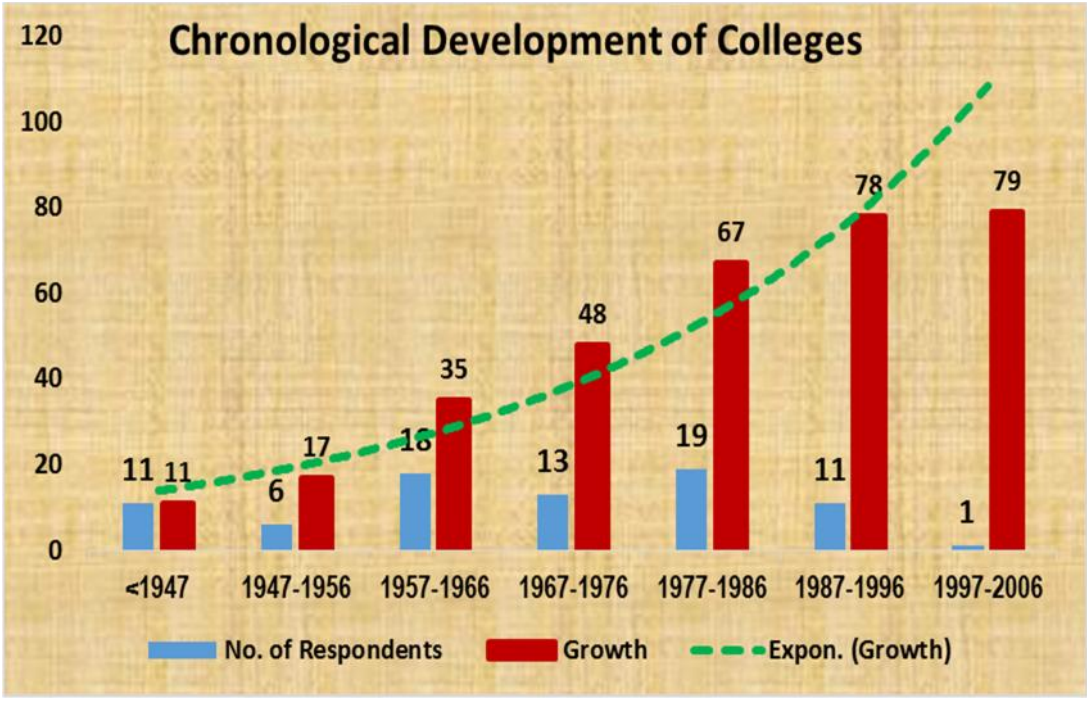
3. Growth of the Arts, Science and Commerce Colleges

The growth of Government and Government fully and partially aided Arts, Science and Commerce Colleges in, Mumbai region is shown in Table 5.2.

Table 5.2: Chronological Development of Colleges.

Sr. No.	Year of Establishment	Total No. of Respondents	Percentage	Growth
1	Prior to 1947	11	14%	11
2	Between 1947-1956	6	8%	17
3	Between 1957-1966	18	23%	35
4	Between 1967-1976	13	16%	48
5	Between 1977-1986	19	24%	67
6	Between 1987-1996	11	14%	78
7	Between 1997-2006	1	1%	79
	Total	**79**	**100%**	

Figure 5.1: Chronological Development of Colleges.



Observation:

From the above data, prior to independence only 11(14%) colleges were established under Government and Government fully and partially aided Arts, Science and Commerce colleges in Mumbai region. The real growth in colleges took place during the period 1957-1966 , 18(23%) and during 1977-1986, 19(24%). 1998 onwards growth is almost stopped.

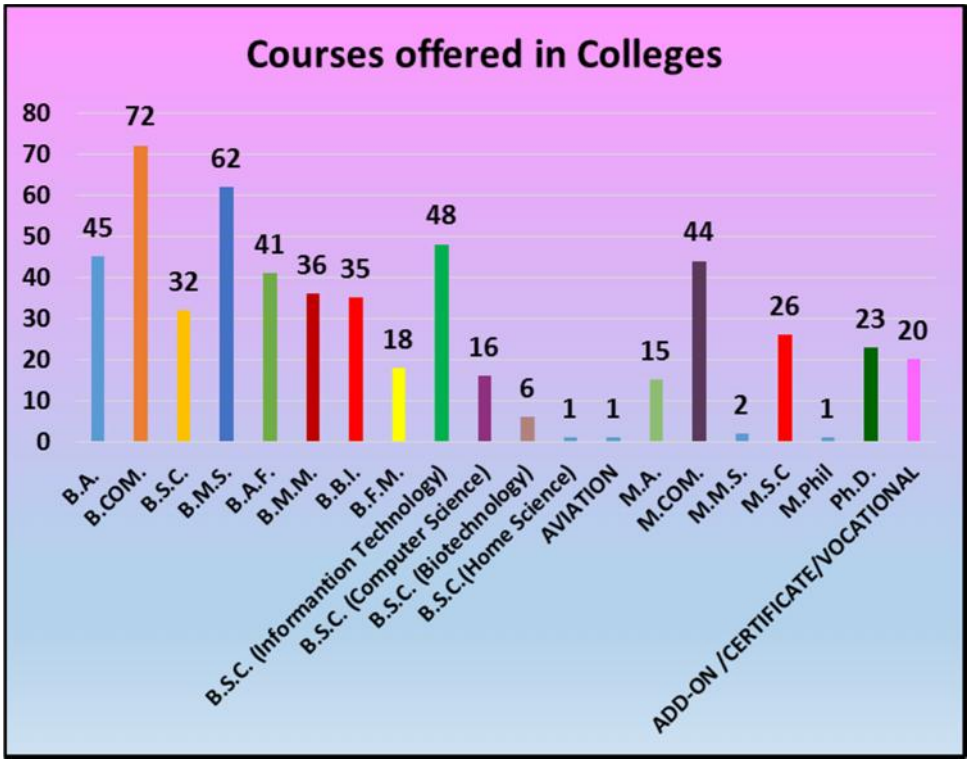
4. Courses Offered in Colleges

The researcher attempted to find out the courses offered by the colleges under study. The courses offered in colleges are shown in Table 5.3.

Table 5.3: Courses offered in Colleges

Sr. No.	Courses	No. of Respondents	Percentage
1	B.A.	45	57%
2	B.COM.	72	91%
3	B.S.C.	32	41%
4	B.M.S.	62	78%
5	B.A.F.	41	52%
6	B.M.M.	36	46%
7	B.B.I.	35	44%
8	B.F.M.	18	23%
9	B.S.C. (Information Technology)	48	61%
10	B.S.C. (Computer Science)	16	20%
11	B.S.C. (Biotechnology)	6	8%
12	B.S.C.(Home Science)	1	1%
13	AVIATION	1	1%
14	M.A.	15	19%
15	M.COM.	44	56%
16	M.M.S.	2	3%
17	M.S.C	26	33%
18	M.Phil	1	1%
19	Ph.D.	23	29%
20	ADD-ON/CERTIFICATE/VOCATIONAL	20	25%

Figure 5.2: Courses offered in colleges



The data shows that:

- A total number of courses offered by Arts, Science and Commerce colleges are 20.
- Among aided courses maximum number of colleges 72(91%) offer B.Com
- In case of un-aided courses, maximum number of college 62(78%) offer B.M.S.
- Postgraduate courses offered by colleges are: 44(56%) colleges offer M.COM., 15(19%) colleges offer M.A., 26(33%) colleges offer M.S.C. 2(3%) colleges offer M.M.S. Only 1% colleges offer M.Phil.
- 23(29%) colleges have Ph.D. i.e. research centers
- 20(25%) colleges offer ADD-ON/Certificate/Vocational courses in different branches.

In general it is observed that arts, science and commerce courses in colleges are more in number, but among these commerce courses are on higher side.

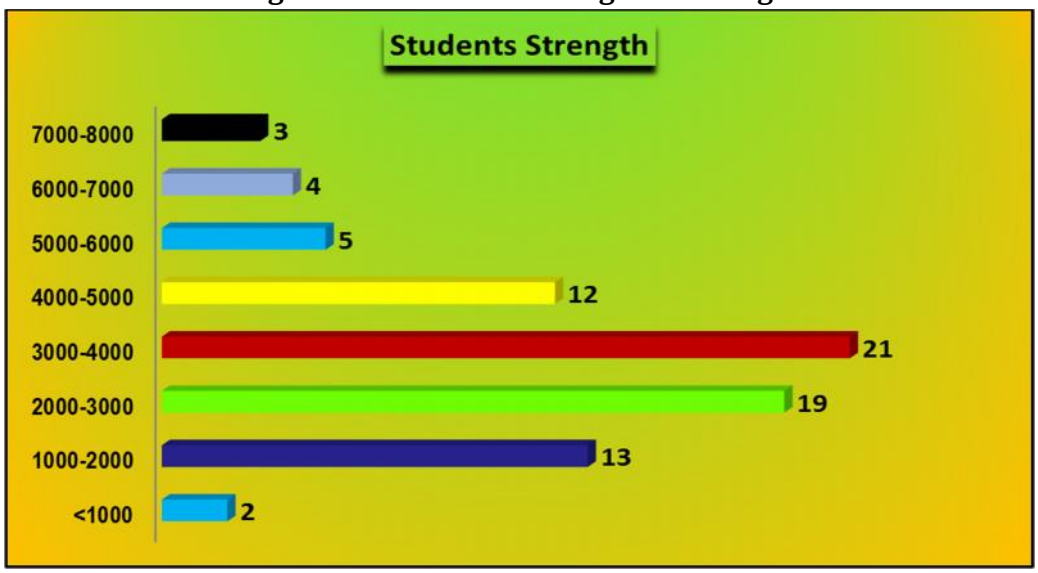
5. Students Strength in Colleges

The main objective of the library is to satisfy the needs of the user. It is the crucial focal point of the college library. The strength of the users gives the librarian an understanding of the products and services it must provide to satisfy user needs. The details of strength of students in colleges are shown in Table 5.4.

Table 5.4: Students Strength in Colleges

Sr. No.	No. of Students	No. of Respondents	Percentage
1	<1000	2	3%
2	1000-2000	13	16%
3	2000-3000	19	24%
4	3000-4000	21	27%
5	4000-5000	12	15%
6	5000-6000	5	6%
7	6000-7000	4	5%
8	7000-8000	3	4%
	Total	**79**	**100%**

Figure 5.3: Students Strength in Colleges



Observation:

Nearly 40(50%) colleges have student's strength in between 2000-4000, and 24(30%) colleges have strength more than 4000 but less than 8000.

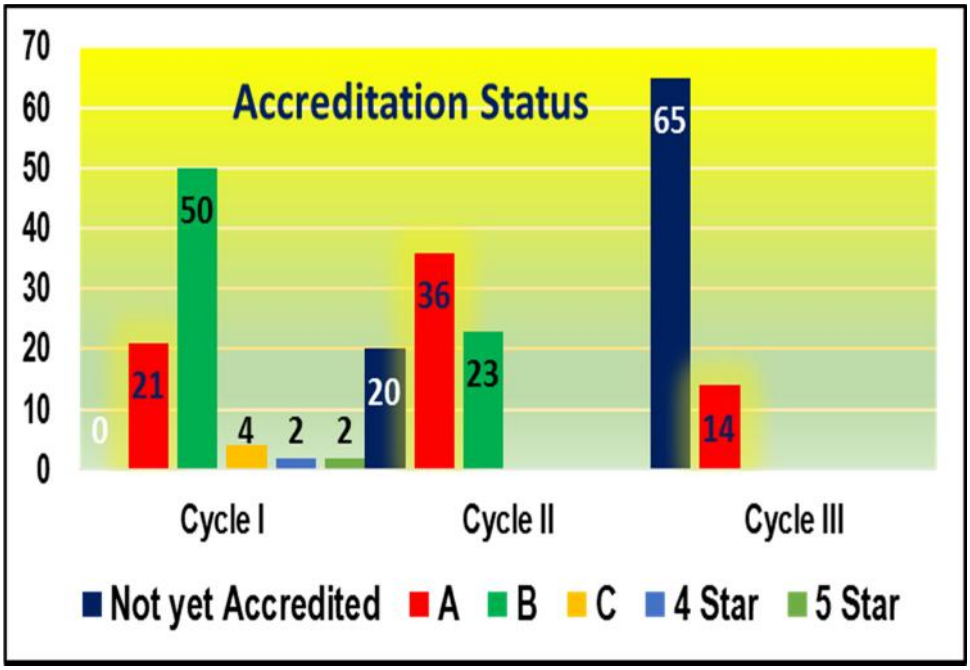
6. Accreditation status of Colleges

Accreditation help to know the growth and quality of education in the colleges. The researcher had asked respondents to provide the details about the accreditation status of their colleges and the same is presented in the Table 5.5.

Table 5.5: Accreditation Status of Colleges

Sr. No.	GRADE	CYCLE I	Percentage	CYCLE II	Percentage	CYCLE III	Percentage
1	A	21	26%	36	46%	14	18%
2	B	50	63%	23	29%	0	0%
3	C	4	5%	0	0%	0	0%
4	4 Star	2	3%	0	0%	0	0%
5	5 Star	2	3%	0	0%	0	0%
6	Not yet Accredited	0	0%	20	25%	65	82%
	Total	**79**	**100%**	**79**	**100%**	**79**	**100%**

Figure 5.4: Accreditation Status of Colleges



Observation:

It is observed from the data that all the Government and Govt. fully and partially aided Arts, Science and Commerce colleges in Mumbai region have been accredited in Cycle I. 59(75%) Colleges have been reaccredited in Cycle II and Only 14(18%) colleges have been reaccredited in Cycle III.

In Cycle I, 6% colleges were graded with five and four stars, and 21(26%) colleges were graded with "A" grade. 50(63%) colleges were graded with "B" grade, 4(5%) colleges were graded with "C" grade.

In Cycle II, 36(46%) colleges have been reaccredited with grade”A". 23(29%) colleges have been reaccredited with "B" grade. 20(25%) colleges have not been accredited as yet.

For Cycle III only 14(18%) colleges have gone through the process of accreditation and were awarded "A" grade.

7. Status of College Libraries

i). Opening Hours

The researcher has asked respondents to give the details of the opening hours, and the data collected is tabulated in table 5.6 and 5.7. This is asked to understand the facilities provided to users to access the libraries by users.

Table 5.6: Opening hours of the College Libraries

Sr. No.	Opening Hours	Total	Percentage
1	<7	1	1%
2	7-8	5	6%
3	8-9	15	19%
4	9-10	19	24%
5	10-11	16	20%
6	11-12	10	13%
7	12-13	11	14%
8	13-14	2	3%
	Total	**79**	**100%**

Figure 5.5: Opening hours of the College Libraries

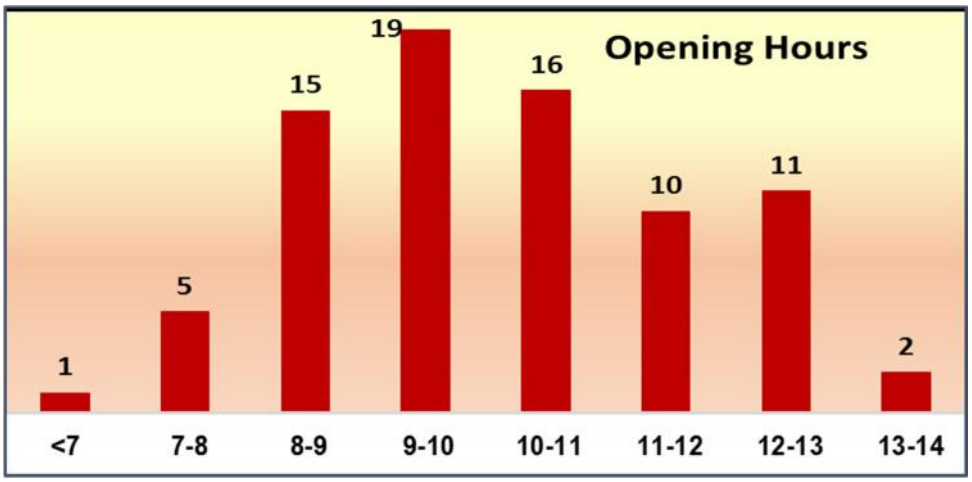


Table 5.7: Library facilities on Holidays

Sr. No.	Library facilities on Holidays	No. of Respondents	Percentage
1	Throughout the year	0	0%
2	During Examination Period	59	75%

Observation:

The data reveals that 45(57%) libraries are kept open during working days around 9-12 hours per day. 20(25%) libraries kept open about 7-9 hours a day during working days. It is noticed that after office hours library reading room are kept open for students. 13(17%) libraries are kept open more than 12 hours and they follow the recommendations of Dr. P N Kaula (1983). 59(75%) libraries during examination time kept open during the examination period as per the demands of users.

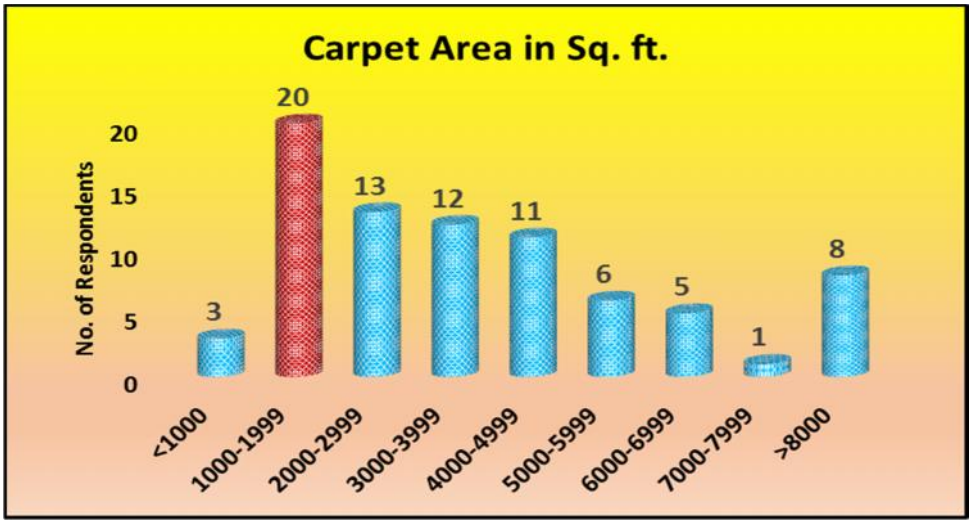
ii). Library Area and Reading Room Facility

City like Mumbai, is facing space problems. Space is the main crunch that all libraries are facing in colleges. Table 5.8, 5.9 and 5.10 gives status of area allotted to college libraries in Mumbai Region,

Table 5.8: Carpet Area of College Libraries

Sr. No.	Carpet Area in Sq. ft.	Total	Percentage
1	<1000	3	4%
2	1000-1999	20	25%
3	2000-2999	13	16%
4	3000-3999	12	15%
5	4000-4999	11	14%
6	5000-5999	6	8%
7	6000-6999	5	6%
8	7000-8000	1	1%
9	>8000	8	10%
	Total	**79**	**100%**

Figure 5.6: Carpet Area of College Libraries



Observation:

Majority of college libraries that is 20(25%) have a library space within the range of 1000-2000 sq. ft. 48 (61%) college library occupies library space in the range of 2000-7999 Sq. ft, 3(4%) college libraries have carpet area up to 1000 sq. ft. Whereas 8(10%) college libraries occupy library space more than 8000 sq. ft.

Table 5.9: Carpet Area of College Libraries and Student Strength

Sr. No.	Year of Establishment	Average Number of Student	Average Library Area	Average Space per student in sq. ft.
1	<1947	3624	6007	1.66
2	1947-1956	3371	3518	1.04
3	1957-1966	3874	4824	1.25
4	1967-1976	3231	3744	1.16
5	1977-1986	3094	3467	1.12
6	1987-1996	2608	2188	0.84
7	1997-2006	1200	1776	1.48
	Total	**3294**	**3949**	**1.20**

Observation:

The data shows that the colleges established in 1987-96 have allotted the lowest carpet area for the college library i.e. average 1776 sq. ft.

Space required for the library depends on the strength of the students. The above analysis shows that the average carpet area of the college library per student ranges from 0.84 sq. ft. to1.66 sq. ft., which is very low.

Table 5.10: Reading Room Facility in College Libraries

Sr. No.	No. of Respondents	Percentage
Yes	79	100%
No	0	0%
Total	79	100%

Observation:

It depicted from the data that all the college libraries have reading room facility

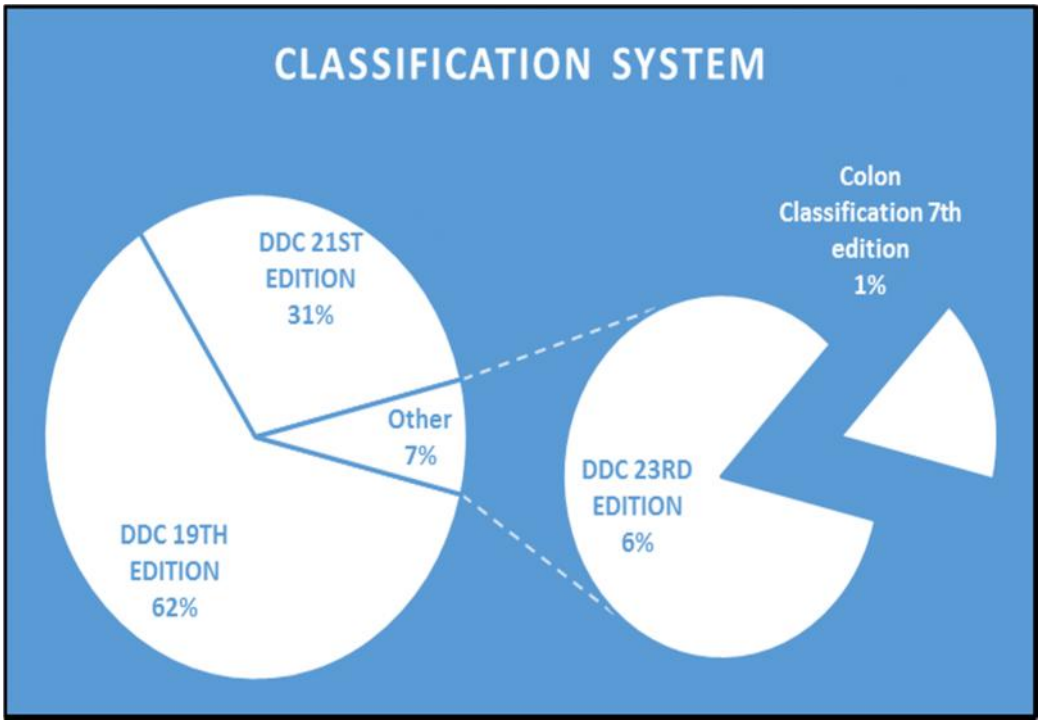
iii). Classification System

The researcher asked respondents to give details of the classification system used in their college library. The details of which are shown in Table 5.11.

Table 5.11: Classification system used by the College Libraries

Sr. No.	Classification system	No. of Respondents	Percentage
1	D.D.C. 19TH Edition	49	62%
2	D.D.C. 21ST Edition	24	30%
3	D.D.C. 23RD Edition	5	6%
4	Colon Classification 7th edition	1	1%
5	U.D.C.	0	0%
6	Library of Congress	0	0%

Figure 5.7: Classification system used by the College Libraries



Observation:

It is found that 62% of the respondents use DDC 19th edition. 30% use DDC 21st edition, 6% use latest DDC 23rd edition, which is the latest edition. Only 1 college library uses Colon Classification system.

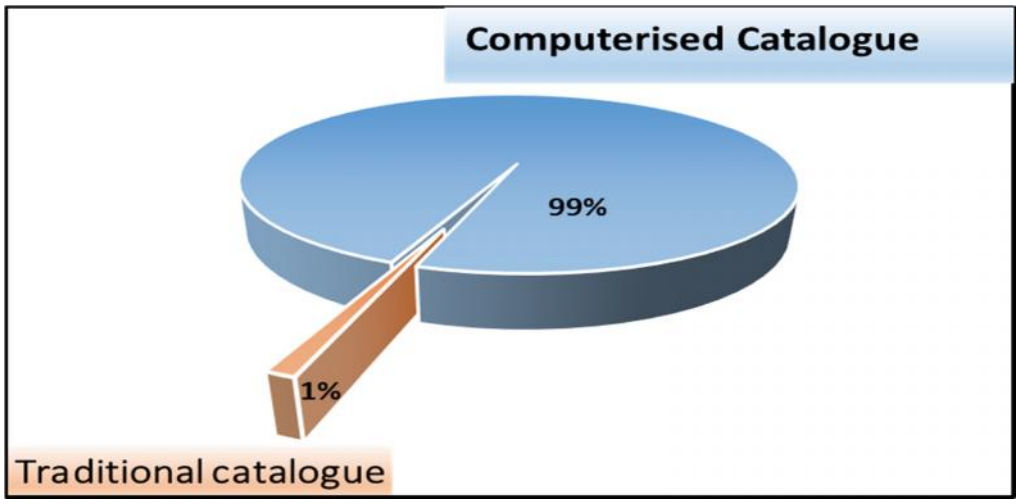
iv) Cataloguing System Used by College Libraries

Respondents were asked to give the details of cataloguing system used by their college libraries. The details of which are shown in Table 5.12.

Table 5.12: Cataloguing System Used by College Libraries

Sr. No.	Cataloguing Method	No. of Respondents	Percentage
1	Traditional catalogue	1	1%
2	Computerized catalogue (OPAC/WEB OPAC)	78	99%
	Total	**79**	**100%**

Figure 5.8: Cataloguing System Used by College Libraries



Observation:

It is revealed from the data that 99% of the college libraries use computerized catalogue (OPAC/WEB OPAC) and only 1% still uses the traditional catalogue in card form.

v). Library Collection

The library exists for the sole reason of creating library collection and services to fulfill user needs. It should be continuously reinforced by adding quality and need-based information resources. In today's digital environment, the college library must have a balanced growth of both print and non-print resources.

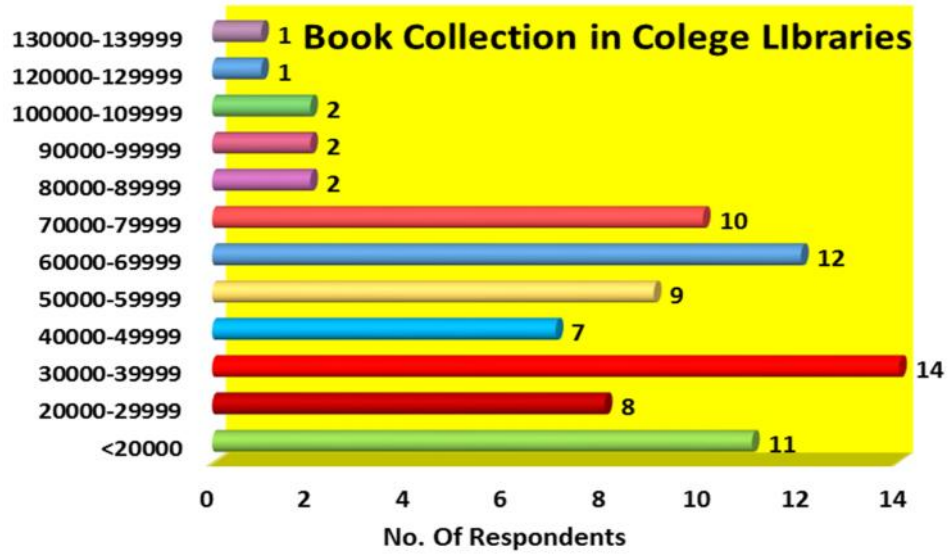
(a) Print Collection

Books: The researcher has asked the respondents to give the details of the collection of books in their college library. The details of which are given in Table 5.13.

Table 5.13: Book Collection in College Libraries

Sr. No.	Books	No. of Respondents	Percentage
1	<20000	11	14%
2	20000-29999	8	10%
3	30000-39999	14	18%
4	40000-49999	7	9%
5	50000-59999	9	11%
6	60000-69999	12	15%
7	70000-79999	10	13%
8	80000-89999	2	3%
9	90000-99999	2	3%
10	100000-109999	2	3%
11	120000-129999	1	1%
12	130000-139999	1	1%
	Total	79	100%

Figure 5.9: Book Collection in College Libraries



Observation:

The data collected from the survey shows that:

- 14(18%) college libraries have book collection in the range of 30000 to 39999
- 11(14%) college libraries have book collection less than 20000
- 8(10%) college libraries have book collection in the range of 20000 to 29999
- 42(54%) college libraries have books in the range of 40000 to 99999
- 4(5%) college libraries have book collection more than 100000
- Ramnarayan Ruia College of Arts & Science, Matunga has the highest number of books i.e.1,31,000.

Ratio of Books per Student:

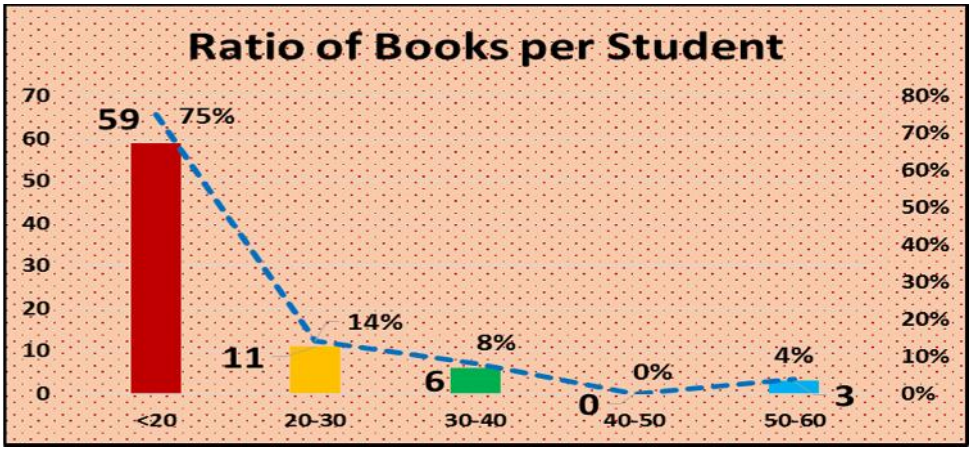
UGC Advisory committee meeting held in 1965, under the chairmanship of Dr. Ranganathan, on University and college libraries, recommended that affiliated colleges should have 30000 volumes for 1000 undergraduate student. This implies that the ratio of books to students should be 1:30 for undergraduate students. Later, in the second meeting on 30th August 1979, by UGC Advisory committee on University and college libraries, recommended a ratio of 1:20 (Nath 2001 and Sharma, 1986).

The researcher has attempted to find out the ratio of books per student, and the ratio between the mean of students enrolled in the colleges and the mean of the book collection in the college libraries. The details of which is shown in Table 5.14 and 5.15.

Table 5.14: Ratio of Books per Student

Sr. No.	Ratio of Books per Student	No. of Respondents	Percentage
1	<20	59	75%
2	20-30	11	14%
3	30-40	6	8%
4	40-50	0	0%
5	50-60	3	4%
	Total	**79**	**100%**

Figure 5.10: Ratio of Books per Student



Observation:

It is observed that in 59 (75%) college libraries, a ratio of books per student is below 20. In 70(89%) college libraries ratio of books per student is below 30. 6 (8%) college libraries have a ratio in the range of 30 to 40. In 3 (4%) college libraries, the book ratio per student is 50 to 60, which is moderate.

Table 5.15: Ratio between Mean of total student enrolled and Mean of book collection in College Libraries

Mean of Book collection in college libraries	50140
Mean of Students enrolled	3294
Ratio of Books to Students	15

Observation:

Data shows that this ratio is 1:15, which is very low compared to the ratio recommended by the UGC advisory committee.

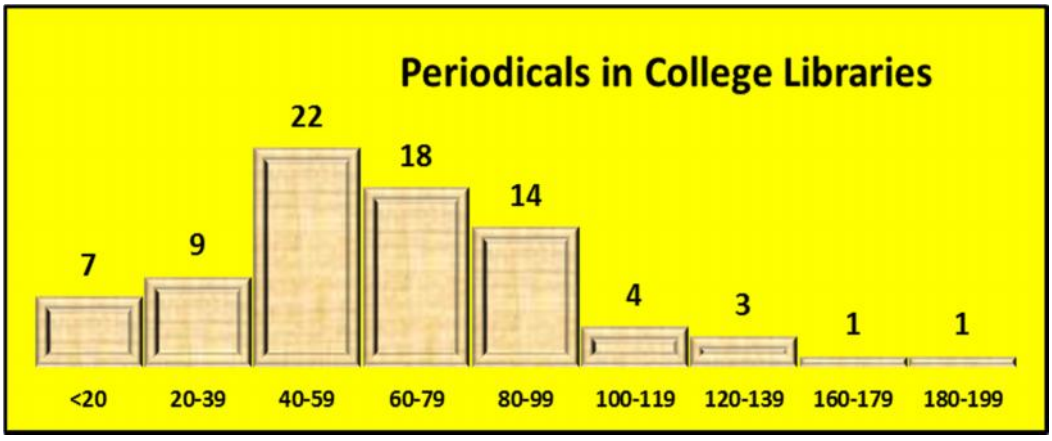
Periodicals

Periodicals are one of the primary sources for information on current developments in various fields. UGC advisory committee has recommended 20 to 100 periodicals for the college library (Nath 2001 and Sharma, 1986). In order to ascertain the availability of the periodicals in the college library, the researcher asked respondents to give the details of the periodicals subscribed by them. The details of which are given in Table 5.16.

Table 5.16: Availability of Periodicals in the College Libraries

Sr. No.	Periodicals	Total No. of Respondents	Percentage
1	<20	7	9%
2	20-39	9	11%
3	40-59	22	28%
4	60-79	18	23%
5	80-99	14	18%
6	100-119	4	5%
7	120-139	3	4%
8	160-179	1	1%
9	180-199	1	1%
	Total	**79**	**100%**
	Maximum		192
	Minimum		9

Figure 5.11: Availability of Periodicals in the College Libraries



Observation:

It is seen that 7(9%) college libraries have less than 20 periodicals, which low as compared to UGC recommendations. 63(80%) college libraries subscribe to periodicals within the range of 20 to 100, which is satisfactory as per the guidelines of the UGC. 9 (11%) college libraries subscribe to more than 100 periodicals.

South Education Society's Arts, Science and Commerce college subscribe to a highest number of periodicals i.e. 192.

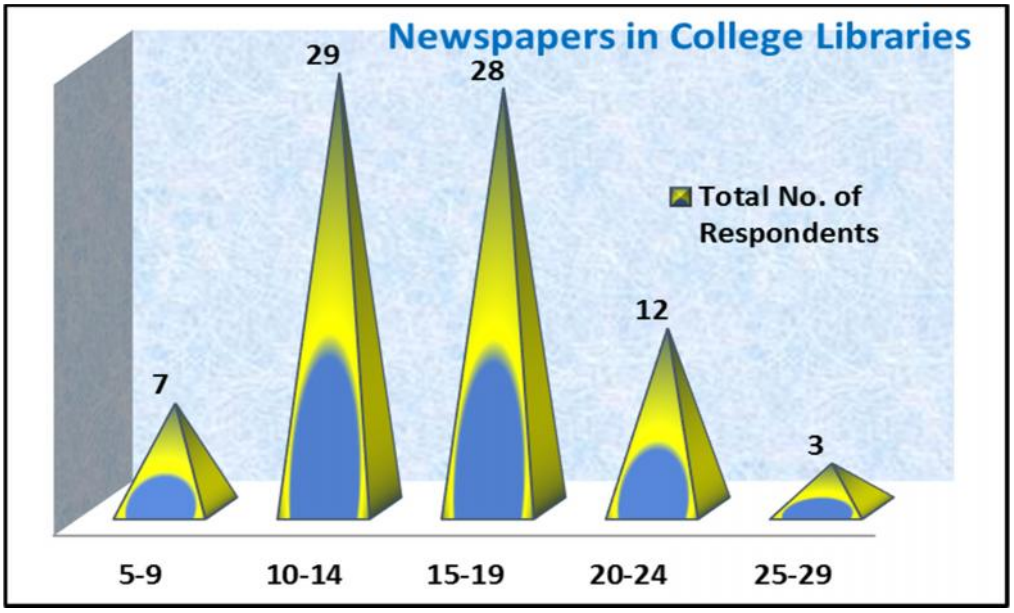
Newspapers

The newspaper is the most low-priced print resource, providing details of current affairs in various fields like economics, finance, social science, technology, business, entertainment etc. The researcher has asked the respondents to give details of the subscription of newspapers, details of which are given in Table 5.17.

Table 5.17: Availability of Newspapers in the College Libraries

Sr. No.	Newspaper	Total No. of Respondents	Percentage
1	5-9	7	9%
2	10-14	29	37%
3	15-19	28	35%
4	20-24	12	15%
5	25-29	3	4%
	Total	**79**	**100%**
	Minimum		6
	Maximum		27

Figure 5.12: Availability of Newspapers in the College Libraries



Observation:

Data shows that 7 (9%) college libraries have 5-9 newspapers. 29 (37%) college libraries subscribe 10 to 14 newspapers. 28(35%) college libraries subscribe 15 to 19 newspapers. 12 (15%) college library subscribes newspaper in the range of 20 to 24. And 3 (4%) of college libraries have more than 25 newspapers.

On an average, the number of newspapers subscribed by the college libraries is 15.

Amongst all the college libraries, A. G. Acharya and D. K. Marathe College of Arts, Commerce, and Science have maximum newspapers i.e. 27.

Availability of Other Print Resources in the College Libraries

The researcher has tried to find out the other print resources available in college libraries the details of which is given in Table 5.18.

Table 5.18: Availability of Other Print Resources in the College Libraries

Sr. No.	Other Print Resources	Yes	No	Total
1	Maps	37 (47%)	42 (53%)	79 (100%)
2	Thesis	32 (41%)	47 (59%)	79 (100%)
3	Braille Books	2 (3%)	77 (97%)	79 (100%)
4	Bound Volumes	10 (13%)	69 (87%)	79 (100%)
5	Globe	4 (5%)	75 (95%)	79 (100%)

Observation:

It is observed from the data that 37(47%) College libraries have Maps; 32(41%) College Libraries have Thesis; only 2(3%) college libraries have Braille Books; 10(13%) college libraries have Bound Volumes and only 4 college libraries (5%) have Globe in their print collection.

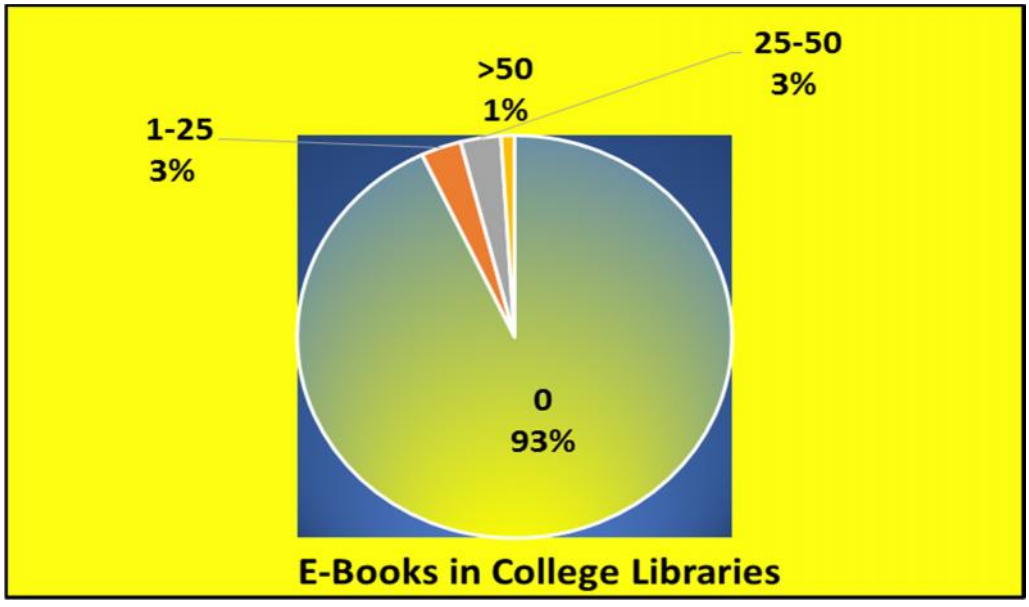
(b) Non-Print Collection

Today's techno-savvy users expect their college library to have a sufficient number of a non-print collection to satisfy their information needs. The researcher has considered the following non-print collection as a vital part of the college library collection- e-books, e-journals, e-databases and CD/DVDs. The respondents were queried about the number and type of non-print collection, which formed a part of their library collection. The details of which are given in Table 5.19 to 5.23.

Table 5.19: Availability of E-Books in the College Libraries

Sr. No.	E-Books	No. of Respondents	Percentage
1	0	74	93%
2	1-25	2	3%
3	25-50	2	3%
4	>50	1	1%
	Total	**79**	**100%**
	Minimum Number of E-books		7
	Maximum Number of E-Books		82

Figure 5.13: Availability of E-Books in the College Libraries



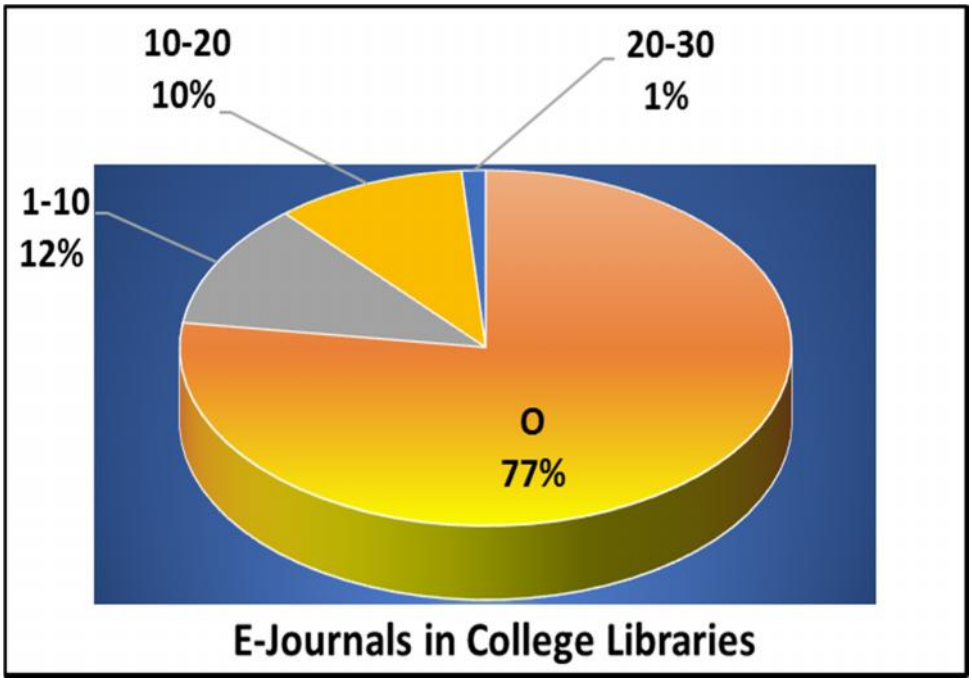
Observation:

Data shows that 74(93%) college libraries do not have an e-book. 2(3%) of the college libraries have an e-book in the range of 1-25. 2(3%) of the college libraries have e-books within the range of 25-50. 1(1%) of the college library have more than 50 e-books. N.M. College of Commerce has the highest number of e-books i.e. 82.

Table 5.20: Availability of E-Journals in the College Libraries

Sr. No.	E-Journals	Total No. of Respondents	Percentage
1	0	61	77%
2	1-10	9	12%
3	10-20	8	10%
4	20-30	1	1%
	Total	**79**	**100%**
	Minimum		1
	Maximum		28

Figure 5.14: Availability of E-Journals in the College Libraries



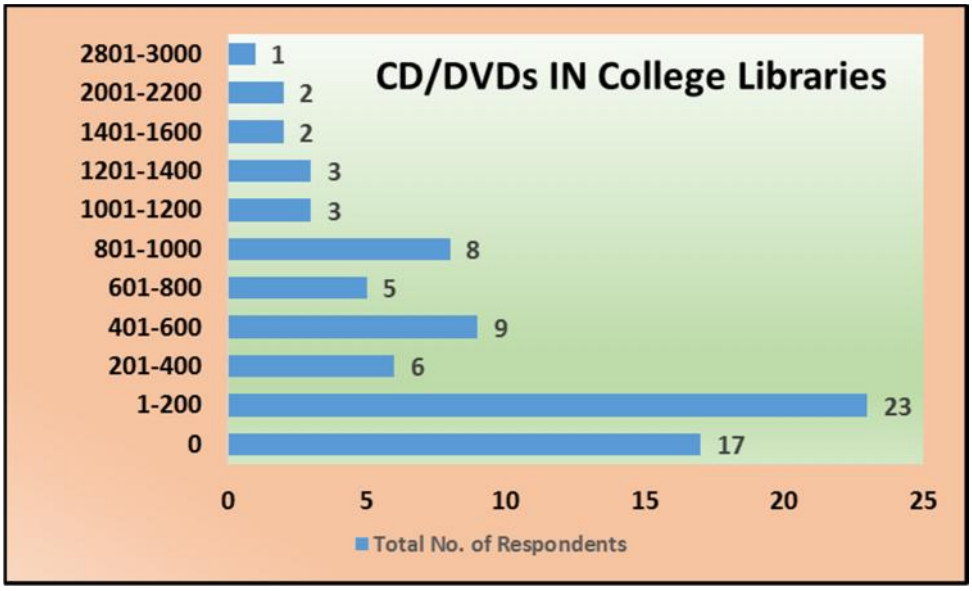
Observation:

The data indicates that 61 (77%) of the college libraries do not subscribe to any e-journals. 9(12%) of the college libraries have less than 10 e-journals. 8(10%) of the college libraries have e-journals in the range of 10 to 20. Only 1(1%) college library has more than 20 e-journals. N. M. College of Commerce subscribes to maximum 28 e-journals.

Table 5.21: Availability of CD/DVDs in the College Libraries

Sr. No.	CD/DVDs	Total No. of Respondents	Percentage
1	<1	17	22%
2	1-200	23	29%
3	201-400	6	8%
4	401-600	9	11%
5	601-800	5	6%
6	801-1000	8	10%
7	1001-1200	3	4%
8	1201-1400	3	4%
9	1401-1600	2	3%
10	2001-2200	2	3%
11	2801-3000	1	1%
	Total	**79**	**100%**
	Minimum		19
	Maximum		2873

Figure 5.15: Availability of CD/DVDs in the College Libraries



Observation:

It is found that 17(22%) of the libraries still do not possess CD/DVD in their library collection. 51(64%) college libraries have less than 1000 CD/DVD. 8 (11%) college libraries have CD/DVD in the range of 1000 to 2000. 3(4%) of college libraries have more than 2000 CD/DVD. Nagindas Khandwala College of Arts, Science & Commerce College have maximum, 2873 CD/DVD in their college library.

Table 5.22: Availability of E-Thesis in the College Libraries

Sr. No.	E- Thesis	Total No. of Respondents	Percentage
1	0	79	100%
	Total	**79**	**100%**

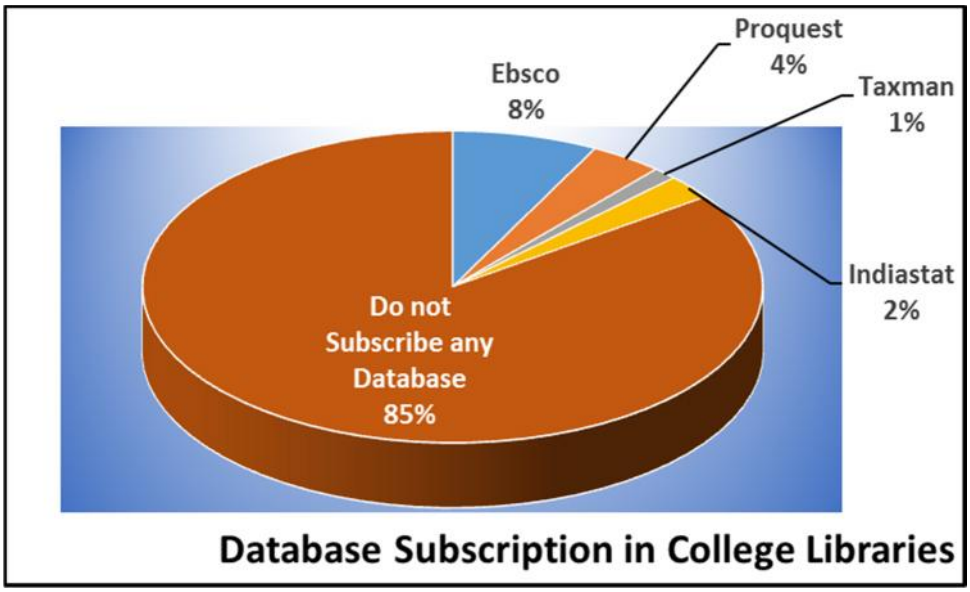
Observation:

It is seen from the data that no college library has E-Thesis in its Collection

Table 5.23: -Database Subscription in the College Libraries

SR. No.	E-Database	No. of Respondents	Percentage
1	Ebsco	6	8%
2	Proquest	3	4%
3	Taxman	1	1%
4	Indiastat	2	2%
5	Do not Subscribe to any Database	67	85%
	Total	**79**	**100%**

Figure 5.16: Database Subscription in the College Libraries



Observation:

It is observed that 67(85%) college libraries do not subscribe to any e-database. 6(8%) college libraries subscribe to EBSCO, 3(4%) of college libraries subscribe to ProQuest, 2(2%) college libraries subscribe to Indiastat and 1(1%) of college library subscribe to Taxman.

vi). Membership with Library Network

Library networks link universities, colleges, research institutions and national information institutes, facilitate resource sharing at nominal prices. The researcher has attempted to

study the details of the college libraries, who are members of the library networks. The details of which are shown in Table 5.24.

Table 5.24: Membership with Library Network

Sr. No.	Library Network	Yes	No	Total
1	INFLIBNET N-LIST	77 (97%)	2 (3%)	**79 (100%)**
2	DELNET	16 (20%)	63 (80%)	**79 (100%)**

Figure 5.17: Membership with Library Network



Observation:

It is observed that 77(97%) of the college libraries are the members of the INFLIBNET N-LIST program and 16(20%) of college libraries are members of DELNET.

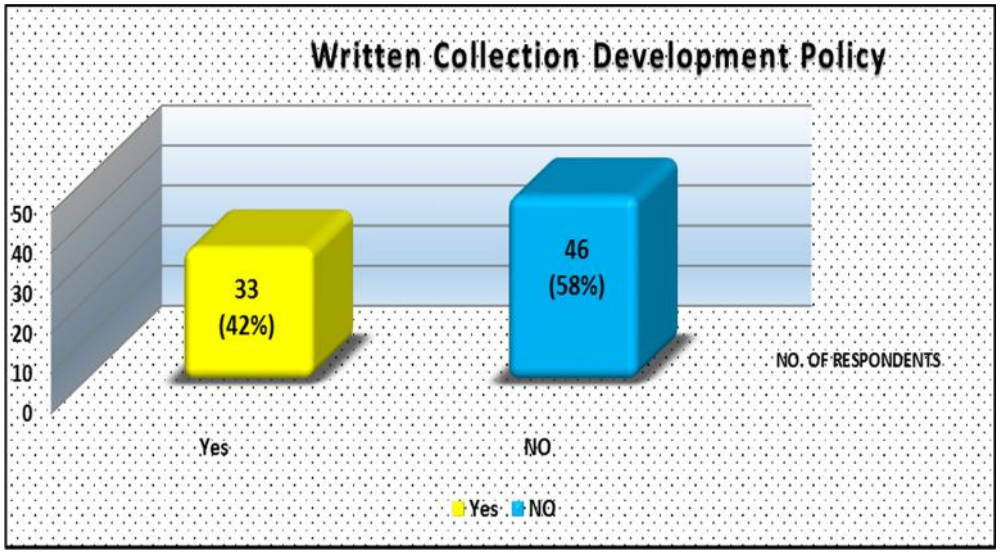
vii). Collection Development Policy in College Libraries

A proper written collection development policy aids in the careful planning and procurement of print and non-print collection. The researcher has queried the respondents about the availability of a written collection development policy and details of which is shown in Table 5.25. .

Table 5.25: Written Collection Development in College Libraries

Sr. No.	Written Collection Development Policy	No. Of Respondents	Percentage
1	Yes	33	42%
2	No	46	58%
	TOTAL	**79**	**100%**

Figure 5.18: Written Collection Development in College Libraries



Observation:

It is observed that only 33 the college libraries (42%) have a written collection development policy for developing the balanced growth of print and non-print resources to satisfy the needs of the user.

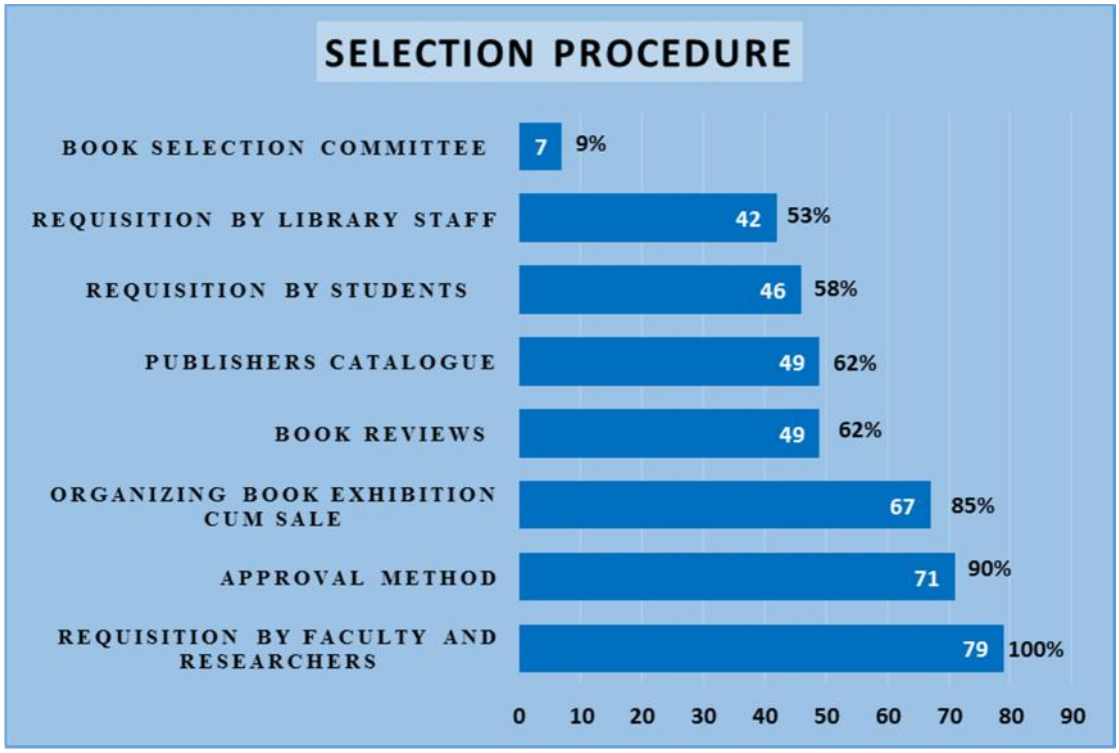
viii). Selection procedure adopted by the College Libraries

According Druvy (2009), the founding principle for selection of book is that library should select the right book to the right user at the right time and in the right form. The details of selection procedure adopted by college libraries are given in Table 5.26.

Table 5.26 Selection Procedure adopted by the College Libraries

Sr. No	Selection Procedure	No. of Respondents	Percentage
1	Requisition by faculty and Researchers	79	100%
2	Approval method	71	90%
3	Organizing Book Exhibition cum sale	67	85%
4	Book Reviews	49	62%
5	Publishers catalogue/ Trade Bibliography	49	62%
6	Requisition by student	46	58%
7	Requisition by Library Staff	42	53%
8	Book Selection Committee	7	9%

Figure 5.19: Selection Procedure adopted by the College Libraries



Observation:

It is observed that in all the college libraries, faculty members and researchers play an active role in the selection process. 71(90%) college libraries select documents based on approval method. 67(85%) college libraries select print and non-print resources through organizing Book exhibition cum sale. 49(62%) college libraries rely on book reviews and publishers catalogue. 46(58%) consider students request, 42(53%) depend on library staff while, only 7(9%) have a separate Book Selection Committee.

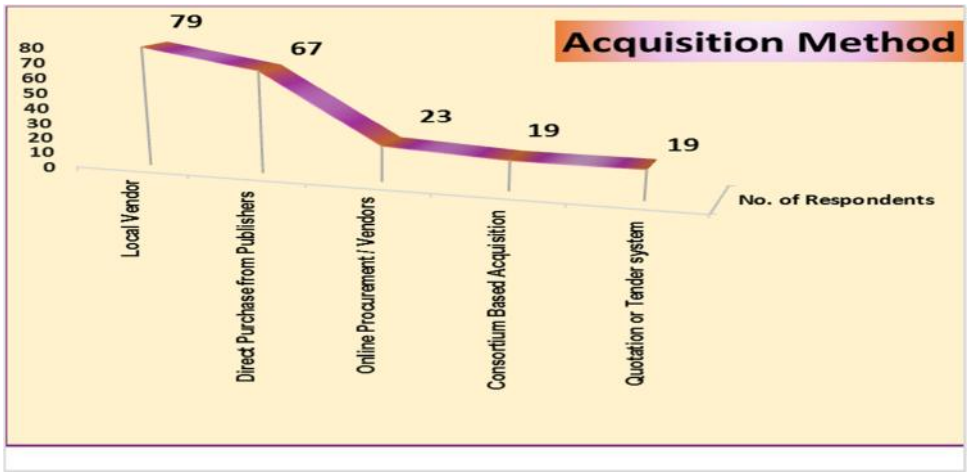
ix). Methods of Acquisition adopted by the College Libraries

The mark of a good library is the methods it uses to acquire and make available information to the user when he/she needs it the most. With regard to the acquisition methods adopted by the college library the details are given in Table 5.27.

Table 5.27: Methods of Acquisition adopted by the College Libraries

Sr. No.	Acquisition Method	No. of Respondents	Percentage
1	Local Vendor	79	100%
2	Direct Purchase from Publishers	67	85%
3	Online Procurement / Vendors	23	29%
4	Consortium Based Acquisition	19	24%
5	Quotation or Tender system	19	24%

Figure 5.20: Methods of Acquisition adopted by the College Libraries



Observation:

It is found that all the college libraries 79 (100%), purchase resources through local vendors. Besides that 67(85%) college libraries purchase directly from publishers. 23(29%) college libraries adopt online procurement method. 19(24%) college libraries prefer consortium based acquisition, and adopt quotation system or tender system.

x). Physical Verification and Weeding Process Adopted in the College Libraries

For the effective use of library space and for management of library collection, college libraries need to adopt weeding process. The details of the weeding process adopted by the college libraries are given in Table 5.28.

Table 5.28 Physical Verification and Weeding Process in the College Libraries

Sr. No.	Frequency of Physical Verification	No. of Respondents	Weeding Action Taken	No. of Respondents
1	Yearly	15 19%	Yearly	5 6%
2	As and When Required	64 81%	As and When Required	74 94%
	Total	**79 100%**	**Total**	**79 100%**

Observation:

It is observed from the table that 15(19%) libraries does physical verification of library collection on yearly basis, whereas 64(81%) does it as and when required. Majority of the college libraries weed out the collection as and when required and only 5(6%) weed out the non-required collection on yearly basis.

xi). Library & Information Services in College Libraries

The college library needs to provide effective services as per the convenience and need of the user, for maximum use of the library. The researcher asked respondents to provide the information about library and information services offered by them. The details of which are given in Table 5.29 and 5.30.

Table 5.29: Library & Information Services in College Libraries

Sr. No.	Library & Information Services	Responses	Percentage
1	Lending / Circulation Services	79	100%
2	Reference Services	79	100%
3	User Education/Orientation	76	96%
4	Bibliographic Services	65	82%
5	CAS	55	70%
6	News Paper Clipping	48	61%
7	SDI	32	41%
8	Book Bank Service	25	32%
9	Reprography Services	21	27%
10	Indexing / Abstracting Services	16	20%
11	Inter Library Loan	13	16%
12	Referral Services	10	13%
13	Printing Services	6	8%
14	Book Club	4	5%
15	External Membership	2	3%
16	Senior Citizen Book Club	2	3%

Figure 5.21: Library & Information Services

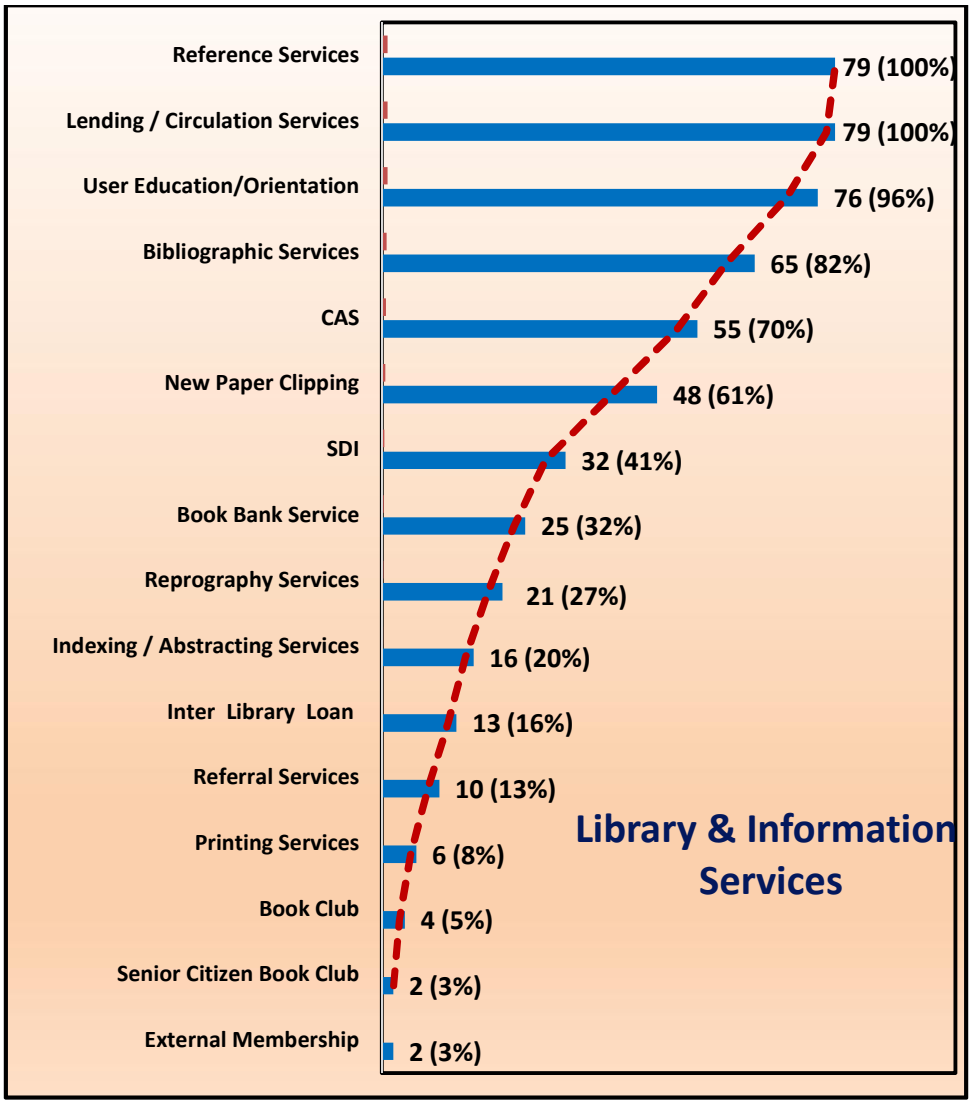
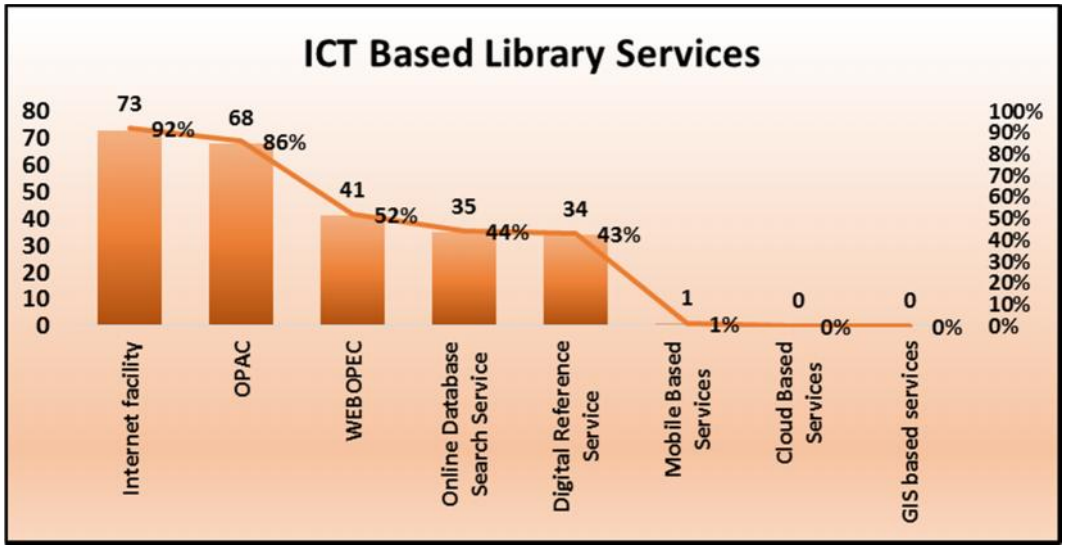


Table 5.30: Library Services based on ICT

Sr. No.	Library Services based on ICT	Responses	Percentage
1	Internet facility	73	92%
2	OPAC	68	86%
3	WEB OPAC	41	52%
4	Online Database Search Service	35	44%
5	Digital Reference Service	34	43%
6	Mobile Based Services	1	1%
7	Cloud-Based Services	0	0%
8	GIS-based services	0	0%

Figure 5.22: Library Services based on ICT



Observation:

The data shows that:

- All the college libraries (100%) provide the lending services and reference services to their users.
- 76 (96%) college libraries conduct User Education, User Orientation, and User Awareness program.
- 65 (85%) college libraries provide bibliographic services.
- 55 (70%) college libraries provide Current Awareness Services.
- 48(61%) college libraries provide newspaper clipping services and have Institutional Membership.
- 32 (41%) college libraries provide SDI services.
- 25 (32%) college libraries provide book bank services.
- 21 (27%) college libraries provide reprography services
- Only 16 (20%) college libraries provide Indexing and Abstracting services.
- Also, 13 (16%) college libraries provide interlibrary loan service.
- 10 (13%) college libraries provide library manual.
- 6 (8%) college libraries provide printing services,
- 4 (5%) college libraries indicated the presence of a Book Club.
- 2 (3%) college libraries have External Membership services and Senior Citizen Book Club.

Application of ICT to the services is the need of the modern digital era. The data shows the application of ICT in the college libraries.

- 73 (92%) college libraries provide internet facility to the users in the library to access the e-resources.
- 68 (86%) college libraries have OPAC facility.
- 41 (52%) college libraries provide WEB OPAC facility.
- 35 (44%) college libraries allow users to access the online database through network facilities.
- 34 (43%) college libraries provide digital reference service via email, website, blogs, Facebook etc.
- Only one college library provides Mobile-based services through SMS to its users. Even in this digital age, no college library has Cloud-based and GIS-based services.

xii). Other Practices Managed by College Libraries

College library needs to manage other practices like Open Access, Institutional Repository Development and Wi-Fi facility to attract the more users to the library and for optimum utilization of available resources, the details of which are shown in Table5.31.

Table 5.31: Other Practices Managed by College Libraries

Sr. No.	Library Practices	Yes	NO
1	Open Access	20 (25%)	59 (75%)
2	Institutional Repository Development	20 (25%)	59 (75%)
3	Wi-Fi Facility	32 (41%)	47 (59%)

Observation:

Data depicts that only 20(25%) of college libraries are managing the practices like Open Access and Institutional Repository Development. However, 32(41%) college libraries provide Wi-Fi facility to their users.

xiii). Library Staff

College libraries being service-oriented institution, the success of the college library is based on the quality of services. Human resources play a major role in the success of the library and enable the library to grab the good opportunities to reap in today's' cut-throat competition (Ranganathan, 2011). Quality library services are based on the adequacy and

competency of the library staff. The college library staff includes librarian, assistant librarian, library clerks and library attendants. The success of College Library depends on the management of human resources in the library.

It has become imperative for college libraries to make their library staff competitive enough to keep themselves updated with latest trends in information world by various activities and functions like proper staffing, selection methods, performance appraisals, motivations, compensation and benefits, training and development programs. It is important to recruit the adequate and qualified library staff.

Recruitment of Library Staff in the College Libraries

As per the Maharashtra Government Circular NGC/2299/(4795)/VC4 DATED 26TH August 1999, the staffing pattern for the college libraries is as follows.

1. Librarian: One Librarian for the beginning of the College
2. Assistant Librarian: One Assistant Librarian for 2000 student
3. Library Attendant: one Library Attendant for every 250 student
4. Library Clerk: For every plus 1000 student, 1 Library clerk position can be exchanged with 1 Library Attendant. Provided there are four positions available for library attendants.

The researcher has tried to compare the actually recruited library staff as per the circular of Maharashtra Government mentioned above. The respondents are asked to provide the information about a number of staff in the library and details of which are shown in Table 5.32, 5.33 and 5.34.

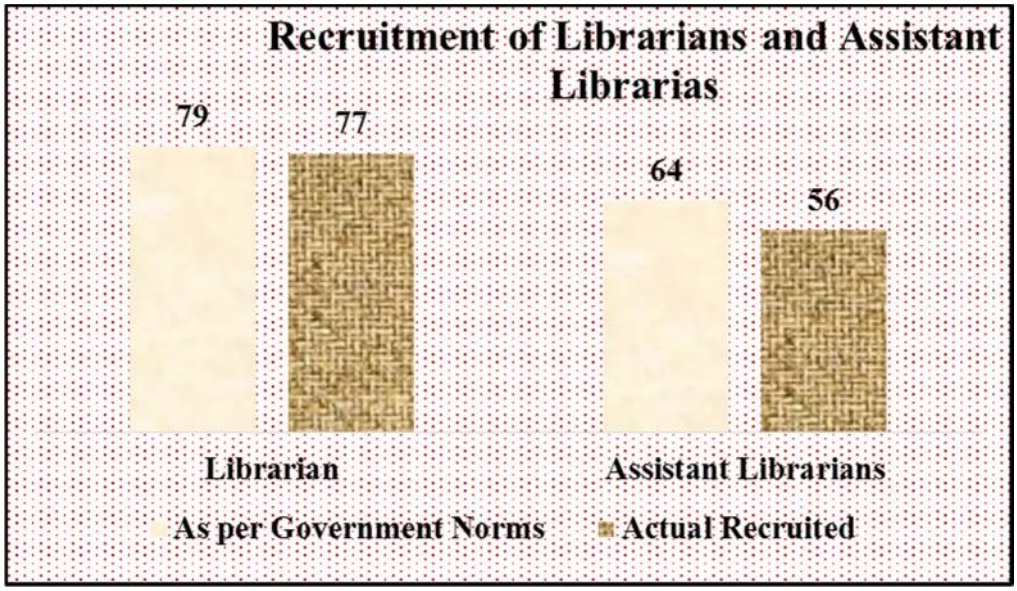
Table 5.32: Librarians recruited by Colleges

Sr. No.	Student Strength	No. of Respondents	As Per Govt. Norm	Actual No. of recruited Librarian	Vacant Posts
1	0-1999	15	15	14 (93%)	-1
2	2000-3999	40	40	39 (98%)	-1
3	4000-5999	17	17	17 (100%)	0
4	6000-8000	7	7	7 (100%)	0
	Total	**79**	**79**	**77 (97%)**	**-2 (3%)**

Table 5.33: Assistant Librarians recruited by the Colleges

Sr. No.	Student Strength	No. of Respondents	As Per Govt. Norm	Actual No. of recruited Assistant Librarian	Vacant Posts
1	0-1999	15	0	0 (0%)	0
2	2000-3999	40	40	35 (88%)	-5
3	4000-5999	17	17	15 (88%)	-2
4	6000-8000	7	7	6 (86%)	-1
	Total	**79**	**64**	**56 (88%)**	**-8 (12%)**

Figure 5.23: Recruitment of Librarians and Assistant Librarians



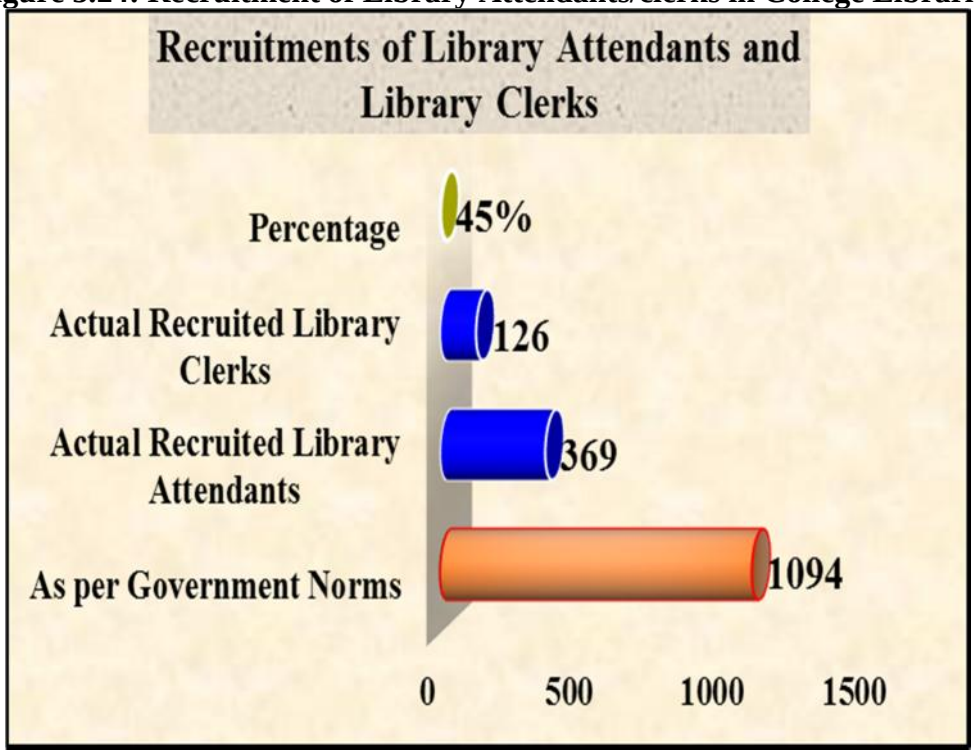
Observation:

It is found that 77(97%) college libraries have librarians as per the Maharashtra Government norm, "1 librarian for the beginning of the college", whereas in 2(3%) college libraries post of the librarian is vacant. It is also observed that 56(88%) of college libraries have recruited Assistant Librarian as per the norms of Maharashtra Government. In 8(12%) college libraries the post of Assistant Librarians are vacant.

Table 5.34: Recruitment of Library Attendants/clerks in the College Libraries

Strength of Student	as per norm	No. of Respondents	Total Library Clerk & Attendant as per Govt. Norm	Actual Library Attendant	Actual Library Clerk	Actual Total Library Attendant and Clerk	Vacant Posts
0-250	1	0	0	0	0	0	0
250-500	2	0	0	0	0	0	0
500-750	3	0	0	0	0	0	0
750-999	4	2	8	5	1	6 (75%)	-2
1000-1249	5	8	40	21	5	26(65%)	-14
1250-1500	6	0	0	0	0	0(0%)	0
1500-1749	7	4	28	3	2	5(18%)	-23
1750-1999	8	1	8	1	0	1(13%)	-7
2000-2249	9	6	54	26	6	32(59%)	-22
2250-2499	10	2	20	10	4	14(70%)	-6
2500-2749	11	10	110	44	12	56(51%)	-54
2750-2999	12	1	12	5	1	6(50%)	-6
3000-3249	13	6	78	26	10	36(46%)	-42
3250-3499	14	6	84	44	16	60(71%)	-24
3500-3749	15	7	105	34	13	47(45%)	-58
3750-3999	16	2	32	11	2	13(41%)	-19
4000-4249	17	7	119	31	17	48(40%)	-71
4250-4500	18	0	0	0	0	0(0%)	0
4500-4749	19	5	95	25	4	29(31%)	-66
4750-5000	20		0	0	0	0(0%)	0
5000-5249	21	2	42	25	6	31(74%)	-11
5250-5500	22	0	0	0	0	0(0%)	0
5500-5749	23	3	69	18	6	24(35%)	-45
5750-6000	24	0	0	0	0	0(0%)	0
6000-6249	25	4	100	25	12	37(37%)	-63
6250-6500	26	0	0	0	0	0	0
6500-6750	27	0	0	0	0	0	0
6750-7000	28	0	0	0	0	0	0
7000-7249	29	2	58	7	6	13(22%)	-45
7250-7500	30	0	0	0	0	0	0
7500-7750	31	0	0	0	0	0	0
7750-8000	32	1	32	8	3	11(34%)	-21
Total		**79**	**1094**	**369**	**126**	**495 (45%)**	**-599 (55%)**

Figure 5.24: Recruitment of Library Attendants/clerks in College Libraries



Observation:

It is observed that the college libraries are lacking in the sufficient number of library attendants/clerks. Only 495(45%) of a total post of Library Attendants/Library clerks are filled, however, 599(55%) posts are vacant in the college libraries in the Mumbai Region.

xiv). Qualification of Library Staff

Sharma (1986), UGC Library Advisory Committee was of opinion that without skilled and qualified library professionals, the library may be a mere storehouse of books instead of intellectual workshop and heart of the academic institution.

Librarian: The post of the college librarian is recognized as teaching post by UGC. Minimum qualification prescribed by UGC Regulation (2010) for the post of College Librarian is:

- Master's Degree in Library Science/Information Science/Documentation Science or an equivalent of professional Degree with at least 55% of marks, and consistently good academic record with knowledge of computerization of Library.
- Qualifying National Eligible Test conducted by UGC or any other agency approved by UGC

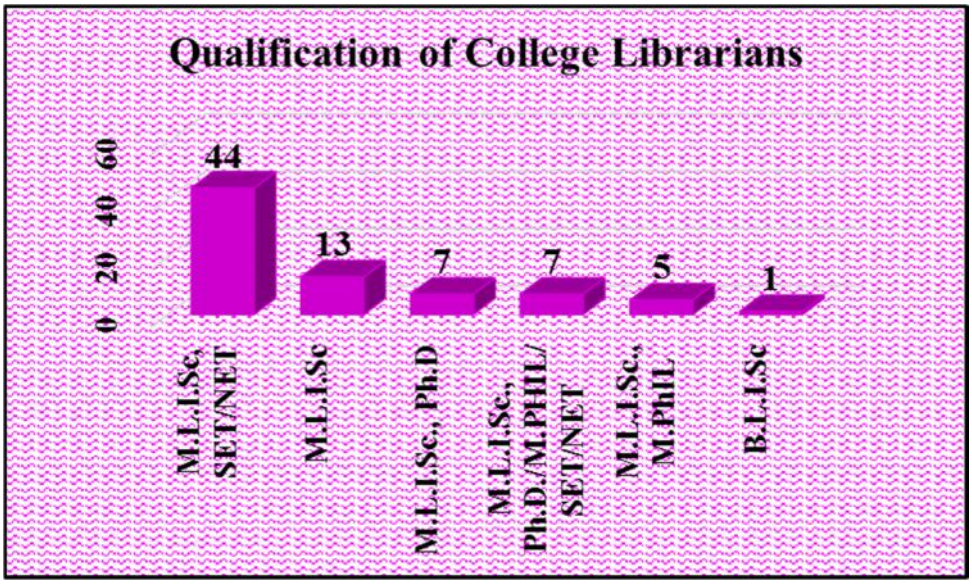
- Candidate with a Ph.D. degree in accordance with UGC Regulations 2009 will be exempted from NET/SET/SLET.

The researcher has asked the respondents to provide the information about qualification of librarians and details of which are given in Table 5.35.

Table 5.35: Qualification of Librarians in the College Libraries

Sr. No.	Qualification of Librarian	No. of Respondents	Percentage
1	M.L.I.Sc, SET/NET	44	57%
2	M.L.I.Sc (Appointed before 1996)	13	17%
3	M.L.I.Sc., Ph.D	7	9%
4	M.L.I.Sc., Ph.D./M.PHIL/SET/NET	7	9%
5	M.L.I.Sc., M.Phil.	5	7%
6	B.L.I.Sc (Appointed before 1986)	1	1%
	Total	77	100%

Figure 5.25: Qualification of Librarians in the College Libraries



Observation:

It is observed from the data that 44(57%) of the college librarians have cleared SET/NET examination; whereas 7(9%) of the college libraries have cleared SET examination and also have M.Phil. & Ph.D. 7(9%) of the college librarians are Ph.D. holders, 5(7%) college librarians have completed their M.Phil. Degree; degrees. Whereas 13(17%) of college librarians before appointed 1996 are M.L.I.Sc. And 1(1%) college librarian appointed before 1986 is B.L.I.Sc. All the college librarians are fully qualified as per the Government Norms.

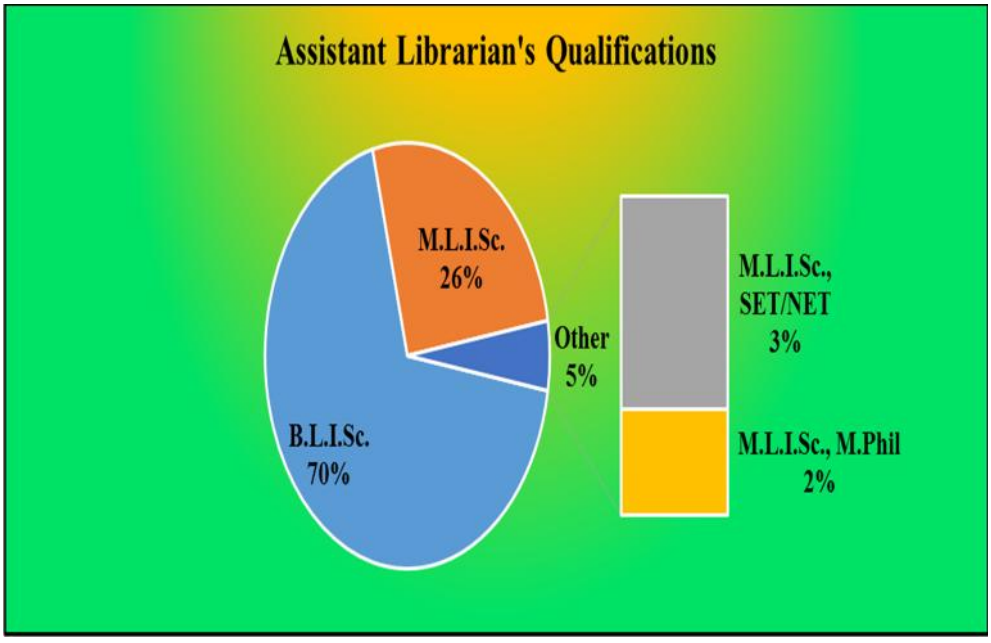
Qualification of Assistant Librarian

As per the Maharashtra Government Resolution (1995), the minimum qualification for the post of Assistant Librarian is Graduation in any discipline and Bachelor in Library Science. The researcher asked respondents to provide the information about the qualification of their Assistant Librarian. The details of which are given in Table 5.36.

Table 5.36: Qualification of Assistant Librarian in the College Libraries

Sr. No	Qualification of Assistant Librarian	No. of Respondents	Percentage
1	B.L.I.Sc.	39	70%
2	M.L.I.Sc.	15	26%
3	M.L.I.Sc., SET/NET	2	3%
4	M.L.I.Sc., M.Phil.	1	2%
	Total	**56**	**100%**

Figure 5.26: Qualification of Assistant Librarian in the College Libraries



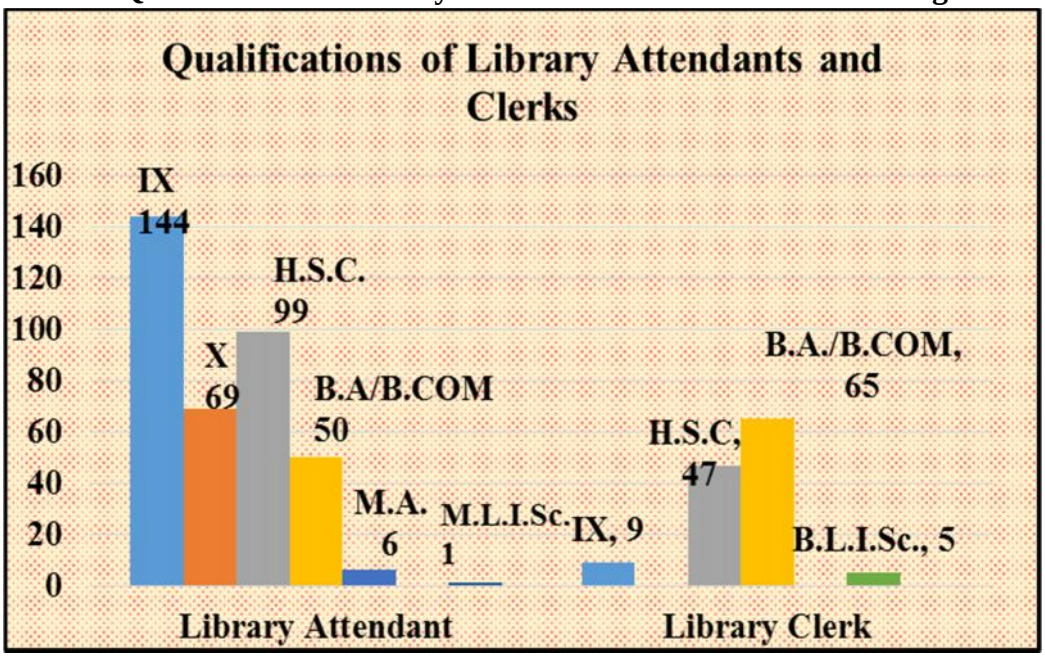
Observation:

39(70%) Assistant Librarians are B.I.S.C.; 15(26%) Assistant Librarians have completed their master's degree in Library Science. 2(3%) Assistant Librarians have cleared SET/NET. And 1(2%) Assistant librarian is Master's of Philosophy in Library Science. In conclusion Assistant Librarians in college libraries are fully qualified.

Table 5.37: Qualification of Library Clerks and Attendants in the College Libraries

Sr. No	Qualification	Library Attendant	Percentage	Library Clerk	Percentage
1	IX	144	39.0%	9	7.14%
2	S.S.C.	69	18.7%	0	0.00%
3	H.S.C	99	26.8%	47	37.30%
4	B.A./B.COM	50	13.6%	65	51.59%
5	M.A.	6	1.6%	0	0.00%
6	B.L.I.Sc.	0	0.0%	5	3.97%
7	M.L.I.Sc	1	0.3%	0	0.00%
	Total	**369**	**100%**	**126**	**100.00%**

Figure 5.27: Qualification of Library Attendants and Clerks in the College Libraries



Observation:

It is seen that 144(39%) library attendants' qualification is IXth standard. 69(18.7%) library attendants' qualification is Xth. 99 (26.8%) library attendants' qualification is XIIth standard. 50(13.6%) Library Attendants are a graduate, 6(1.6%) Library Attendants are postgraduate and only 1 Library Attendant (0.30%) have Master's degree in Library Science. 9(7.14%) library clerks are IXth passed, 47(37.30%) library clerks are XIIth passed, 65(51.59%) library clerks are graduate and only 5(3.97%) library clerks have B.L.I.Sc. Degree.

xv). ICT Skills of Library Staff

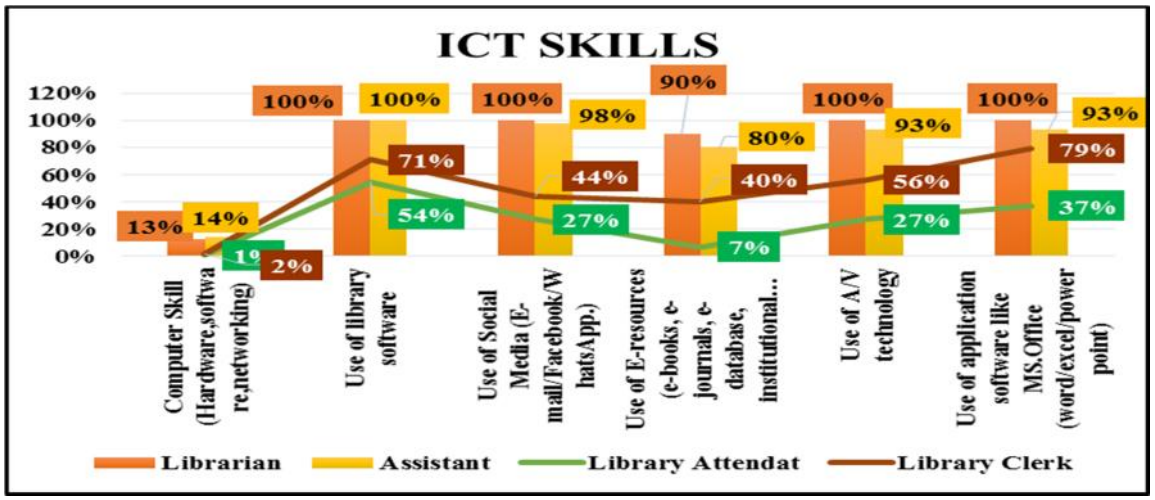
According to Gaur (2003), the three important elements of the re-engineering process are technology, process, and people, and they are intertwined with each other. In the college

libraries, where the library resources are available in print as well as in non-print form, library staff needs to have ICT skill. The researcher asked the respondents to provide the information about the ICT skills of library staff, the details are shown in Table 5.38.

Table 5.38: ICT skills of Library Staff

Sr .No.	ICT skills	Librarian	Assistant	Library Attendant	Library Clerk
1	Computer Skill (Hardware, software, networking)	10 (13%)	8 (14%)	5 (1%)	3 (2%)
2	Use of library software	77 (100%)	56 (100%)	199 (54%)	89 (71%)
3	Use of Social Media (E-mail/Facebook/Whats App.)	77 (100%)	55 (98%)	100 (27%)	55 (44%)
4	Use of E-resources (e-books, e-journals, e-database, institutional repository, open source etc.)	69 (90%)	45 (80%)	25 (7%)	50 (40%)
5	Use of A/V technology	77 (100%)	52 (93%)	100 (27%)	70 (56%)
6	Use of application software like MS. Office (word/excel/PowerPoint)	77 (100%)	52 (93%)	135 (37%)	100 (79%)
	Total	**77**	**56**	**369**	**126**

Figure 5.28: ICT skills of Library Staff



Observation:

It is observed that 77 (100%) college librarians know the use of library software, use of social media like e-mail/fax/Teletext etc., use of audio and video technology and use of

application software like MS. Office (Word/Excel/PowerPoint presentation etc.). 69 (90%) college librarians know the use of e-resources like e-books, e-journals, e-database, institutional repository, open source etc. only 10(13%) college librarians have computer hardware, software, and networking knowledge.

All Assistant Librarians, 56(100%) know the use of library software. 55(98%) Assistant Librarians know the use of digital communication media. 52(93%) Assistant Librarians know the use of audio-video technology and MS. Office applications. 45(80%) Assistant Librarians have the ICT skill of using e-resources. Only 8(14%) Assistant Librarians have the knowledge of computer hardware, software, and networking.

In case of library clerks, 100(79%) can use the MS Office applications. 89(71%) library clerks can use the library software. 70(56%) library clerks use audio video facilities 55(44%) library clerks use social media (e-mails/fax/Teletext etc.) to communicate with their patrons. 50(40%) library clerks have the knowledge of the use of e-resources. Only 3(2%) library clerks have the knowledge of computer hardware, software, and networking.

199(54%) library attendants use the library software. 135(37%) of library attendants have the knowledge of MS Office applications. 100(27%) library attendants use audio-video facilities and know the use of social media (e-mail/fax/Teletext etc.). 25(7%) library attendants know the use of e-resources and 5(1%) have computer hardware, software, and networking knowledge.

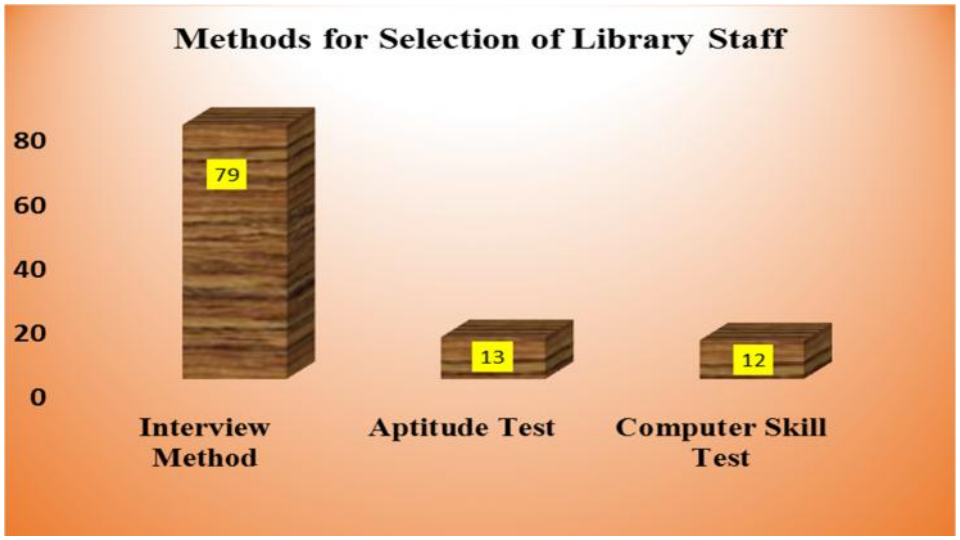
xvi). Methods Followed for Selection of Library Staff in College Libraries

Selection of library staff has a direct impact on the quality of services provided by the college library. To recruit the right candidate in the college library, it is necessary to adopt appropriate selection method. The researcher asked the respondents to provide the information about the selection method adopted by their college library. The details of which are given in Table 5.39.

Table 5.39: Methods Followed for Selection of Library Staff in College Libraries

Sr. No.	Selection Method	No. of Respondents	Percentage
1	Interview Method	79	100%
2	Aptitude Test	13	16%
3	Computer Skill Test	12	15%

Figure 5.29: Methods Followed for Selection of Library Staff in College Libraries



Observation:

It is revealed from the data that all 79(100%) college libraries under study adopt interview method, 13(16%) college libraries conduct Aptitude Test and 12(15%) college libraries conduct Computer skill test for the selection of a right candidate.

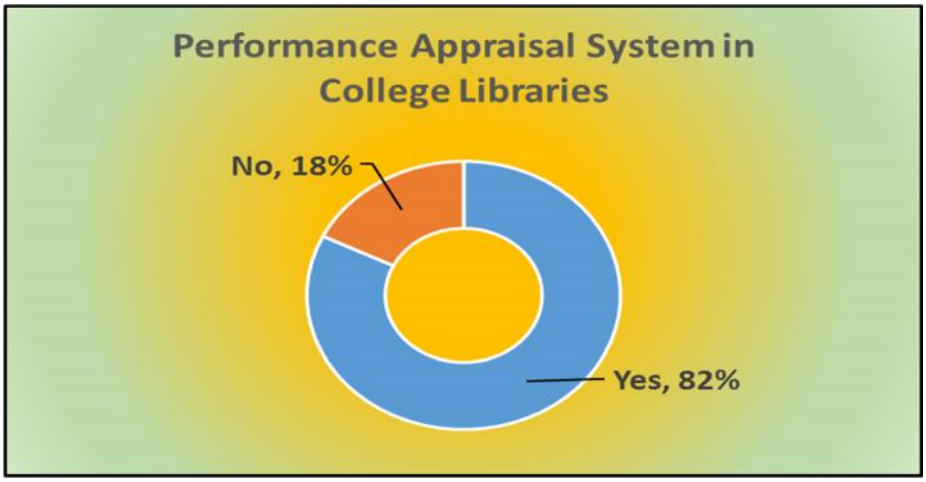
xvii). Performance Appraisal System in the College Libraries

Performance Appraisal system enables the library authority to identify the job related competencies, value-based attitudes required for the job, performance effectiveness and need for training and development programs. The researcher asked the respondents about the availability of performance appraisal system and the methods used for it. The details of which are shown in Table 5.40 and 5.41.

Table 5.40: Performance Appraisal System in the College Libraries

Sr. No.	Performance Appraisal System	No. of Respondents	Percentage
1	Yes	65	82%
2	No	14	18%
	Total	**79**	**100%**

Figure 5.30: Performance Appraisal System in the College Libraries



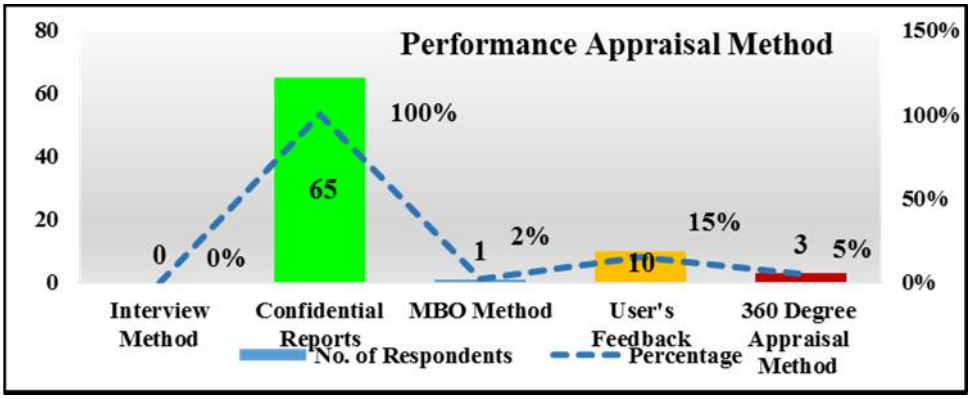
Observation:

It is observed that 65 out of 79 i.e. (82%) college libraries have performance appraisal system in their college libraries, whereas 14(18%) college libraries still do not have performance appraisal system.

Table 5.41: Performance Appraisal methods followed by the College Libraries

Sr. No.	Performance Appraisal Method	No. of Respondents	Percentage
1	Interview Method	0	0%
2	Confidential Reports	65	100%
3	MBO Method	1	2%
4	User's Feedback	10	15%
5	360 Degree Appraisal Method	3	5%

Figure 5.31: Performance Appraisal methods followed by the College Libraries



Observation:

It is observed that out of 65college libraries, who have adopted performance appraisal system, all of them, 65(100%) use confidential reports for evaluation of the performance of library staff. Only 1(2%) college library use MBO method coined by Peter Drucker, in which goals are set by the librarian and performance of each employee is measured according to his output. 10(15%) college libraries evaluate the performance of staff based on the user's feedback for the staff. 3(5%) college libraries use 360-degree appraisal method, developed and first used by General Electric Company of USA in 1992. In this method skill, ability, and behavior are measured on the basis of feedback from users, juniors, colleagues, seniors and other higher authorities. It is to be noted that no college library use interview method for performance appraisal of library staff.

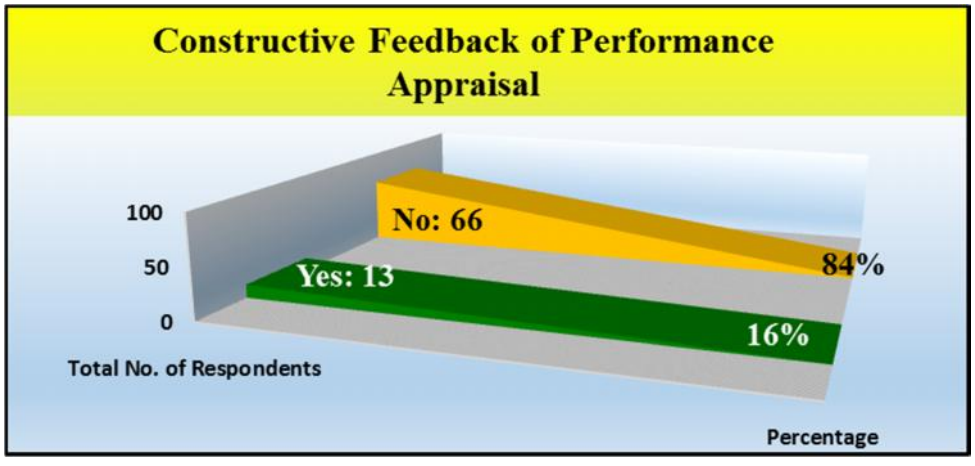
xviii). Constructive feedback method adopted in College Libraries

For the effective implementation of performance appraisal system, it is necessary to give constructive feedback to the library staff, to motivate them for better performance and for library authorities to organize training program to improve the necessary skills required from time to time. The researcher asked respondents to provide the information about the feedback system in their college library. The data is given in Table 5.42.

Table 5.42: Constructive feedback method adopted in College Libraries

Sr. No.	Constructive Feedback	Total No. of Respondents	Percentage
1	Yes	13	16%
2	No	66	84%
	Total	**79**	**100%**

Figure 5.32: Constructive feedback method adopted in College Libraries



Observation:

It is observed that only 13(16%) college librarians give constructive feedback to their employees about their performance. 66(84%) college libraries do not give feedback to their employees.

xix). Staff Motivation Techniques in College Libraries

Library staff needs to be motivated to perform better and develop healthy competitive environment among the library staff. The details of motivation techniques followed by the college library are given in Table 5.43 and 5.44.

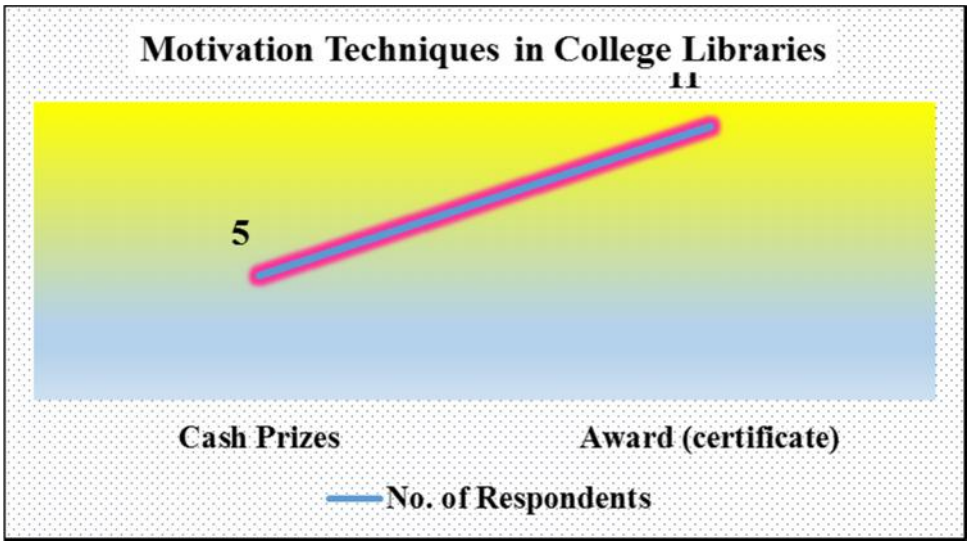
Table 5.43: Staff Motivation (Compensation / Reward System) adopted in College Libraries

Sr. No.	Motivation Techniques	No. of Respondents	Percentage
1	Yes	16	20%
2	No	63	80%
	Total	**79**	**100%**

Table 5.44: Motivation Techniques followed by College Libraries to Motivate Staff

Sr. No.	Motivation Techniques	No. of Respondents	Percentage
1	Cash Prizes	5	31%
2	Award (certificate)	11	69%
	Total	**16**	**100%**

Figure 5.33: Motivation Techniques followed by College Libraries to Motivate Staff



Observation:

It is observed that only 16(20%) college libraries have motivational systems in their college libraries and out of which, 5 college libraries give cash prizes to the best performers. 11

college libraries give awards (certificates) to library staff for their best performances. Whereas, 63(80%) college libraries do not have any reward system.

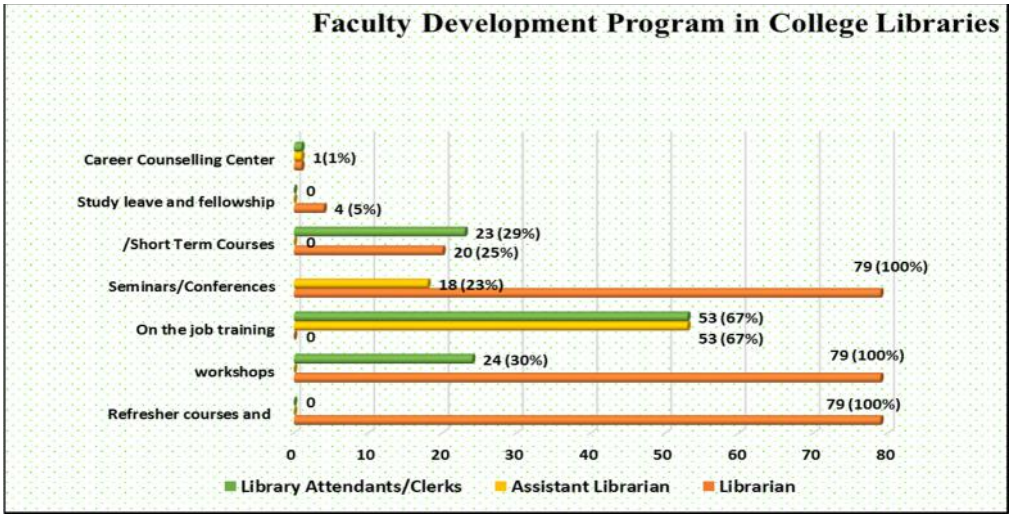
xx). Faculty Development Programs for Library Staff in College Libraries

Library staff needs to be equipped with some variety of a faculty development program (FDP) in order to deal with the rapid changes and shifting paradigms in technology, publishing methods, users' behavior and attitude. Without such training, it will be difficult to cope with the latest trends in the global information market. The details of FDP in the college libraries are given in Table 5.45.

Table 5.45: Faculty Development Program in College Libraries

Sr. No.	Faculty Development Program	Librarian	Assistant Librarian	Library Attendants/Clerks
1	Refresher courses and Orientations	79 (100%)	0 (0%)	0 (0%)
2	Workshops	79 (100%)	0 (0%)	24 (30%)
3	On the job training	0 (0%)	53 (67%)	53 (67%)
4	Seminars/Conferences	79 (100%)	18 (23%)	0 (0%)
5	Short Term Courses	20 (25%)	0 (0%)	23 (29%)
6	Study leave and fellowship	4 (5%)	0 (0%)	0 (0%)
7	Career Counseling Center	1 (1%)	1 (1%)	1 (1%)

Figure 5.34: Faculty Development Program in College Libraries



Observation:

The data shows that 79(100%) college libraries allow librarians to participate in refresher and orientation program, seminar/conferences and workshops. In 20(25%) college libraries, librarians have organized or participated in short-term courses, 4(5%) college libraries provide study leave and fellowship facilities to librarians for further study.

For assistant librarians, all the college libraries allow them to attend workshops. 53(67%) provide on the job training, 18(23%) motivates and allow assistant librarians to participate in Seminars and Conferences.

24(30%) college libraries organize or motivate library attendants and clerks for workshops, in 53(67%) provides on the job training, 23(29%) have sent library attendants and clerks for short-term library science course. Only one college library have provision of career counseling center for library staff to guide their career development.

8. Automation Status of College Libraries

Impact of technology is seen in every sphere of the library activity. Automation of the library housekeeping activities enables library staff to perform the activities speedily and effectively. The researcher asked the respondents to provide the information on automation of housekeeping activities, a status of automation, software used by them, satisfaction about software and any database developed by their college libraries. Details are as given in Table 5.46, 5.47, 5.48 5.49 and 5.50.

Table 5.46: Automation of House Keeping Activities in College Libraries

Sr. no.	Automation	Total No. of Respondents	Percentage
1	Yes	78	99%
2	No	1	1%
	Total	**79**	**100%**

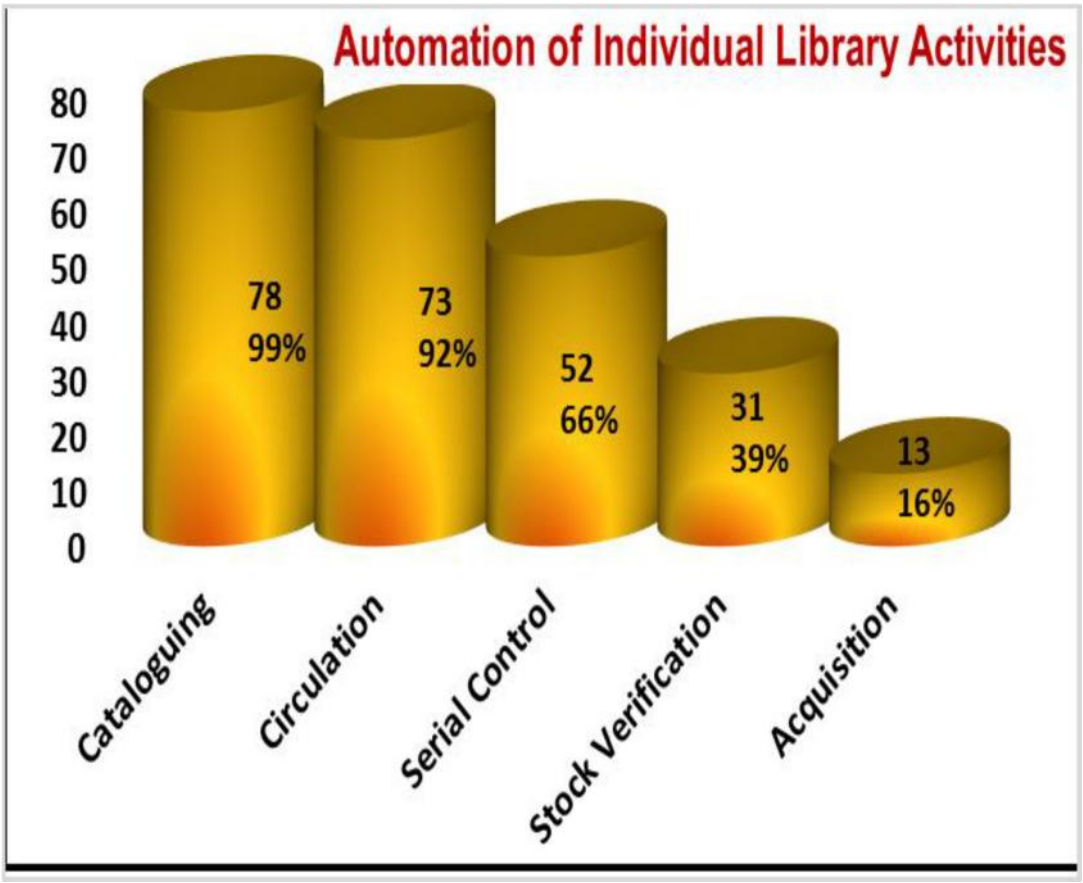
Observation:

Data represents that 78(99%) college libraries have automated their housekeeping activities. Only one college, Bal Bharti's Maghanmal J. Pancholia College of commerce has still not automated its housekeeping activities

Table 5.47: Status of Automation of individual activities in College Libraries

Sr. No.	Library Activities	No. of Responses	Percentage
1	Cataloguing	78	99%
2	Circulation	73	92%
3	Serial Control	52	66%
4	Stock Verification	31	39%
5	Acquisition	13	16%

Figure 5.35: Status of Automation of individual activities in College Libraries



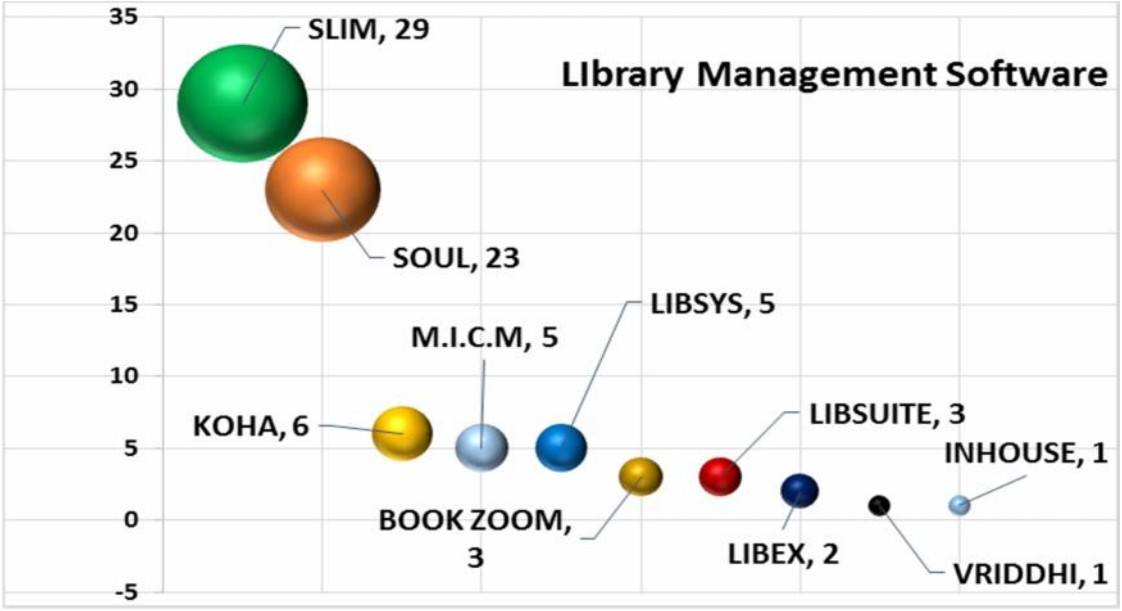
Observation:

It is observed that 78(99%) college libraries have computerized cataloging, 73 (92%) college libraries have automated circulation system, and 52(66%) of the college libraries have automated serial control system. 31(39%) college libraries have automated stock verification system and only 13(16%) college libraries have automated their acquisition system

Table 5.48: Software for Automation of Housekeeping Activities in College Libraries

Sr. No	Software	Responses	Percentage
1	SLIM	29	37%
2	SOUL	23	29%
3	KOHA	6	8%
4	M.I.C.M	5	6%
5	LIBSYS	5	6%
6	BOOK ZOOM	3	4%
7	LIBSUITE	3	4%
8	LIBEX	2	3%
9	VRIDDHI	1	1%
10	IN-HOUSE	1	1%
	Total	78	99%
11	Manual	1	1%
	Grand Total	79	100%

Figure 5.36: Software for Automation of Housekeeping Activities in College Libraries



Observation:

It is seen from the data that the college libraries have used different software packages for automation. Majority of college libraries 23(37%) use SLIM software, 23(29%) use SOUL,6(8%) use KO HA, 5(6%) use M.I.C.M, 5(6%) use LIBSYS, 3(4%) use Book Zoom, 3(4%) use LIBSUITE, 2(3%) use LIBEX, 1(1%) use Vriddhi software. 1(1%) college has developed in-house software for automation of its housekeeping activities.

Table 5.49: Satisfaction about Library Management Software in College Libraries

Satisfaction about Software	No. of Respondents	Percentage
Satisfied	65	82%
Not Satisfied	14	18%
Total	**79**	**100%**

Table 5.50: Plans to shift to New Software in College Libraries

Plans to shift to New Software	No. of Respondents	Percentage
Yes	9	11%
No	70	89%
Total	**79**	**100%**

Observation:

From data it is revealed that 65(82%) of respondents are satisfied with the existing library management software. Whereas, 14(18%) are unsatisfied with software. And 9(11%) college libraries are planning to shift to new software

Table 5.51: Database Developed by the College Libraries

Development of Database	No. of Respondents	Percentage
Yes	1	1%
No	78	99%
Total	**79**	**100%**

Observation:

It is observed from the data that only one college library of Nagindas Khandwala College of Arts, Science & Commerce College have developed database, namely Icon-AD Database.

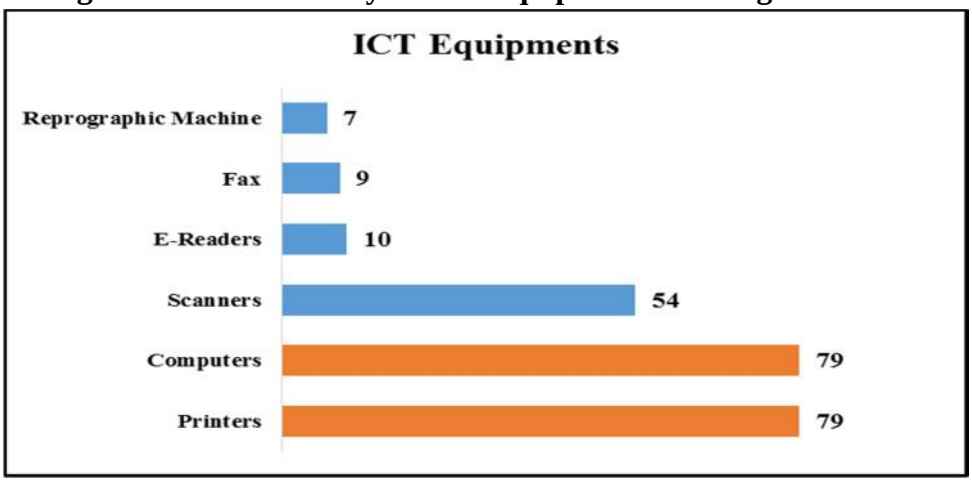
9. Use of ICT in College Libraries

ICT helps the college library in performing all its day to day activity, smoothly and efficiently like development and management of library collection and services, management of library staff, and satisfying user needs in most effective manner. The researcher has asked respondents to give the details about availability of ICT infrastructure and adequacy of infrastructure for the same, the details of which are shown in Table 5.5 to 5.57..

Table 5.52: Availability of ICT Equipment in College Libraries

Sr. No.	ICT Equipment	No. of Respondents	Percentage
1	Printers	79	100%
2	Computers	79	100%
3	Scanners	54	68%
4	E-Readers	10	13%
5	Fax	9	11%
6	Photocopier Machine	7	9%
7	Any Others	0	0%

Figure 5.37: Availability of ICT Equipment in College Libraries



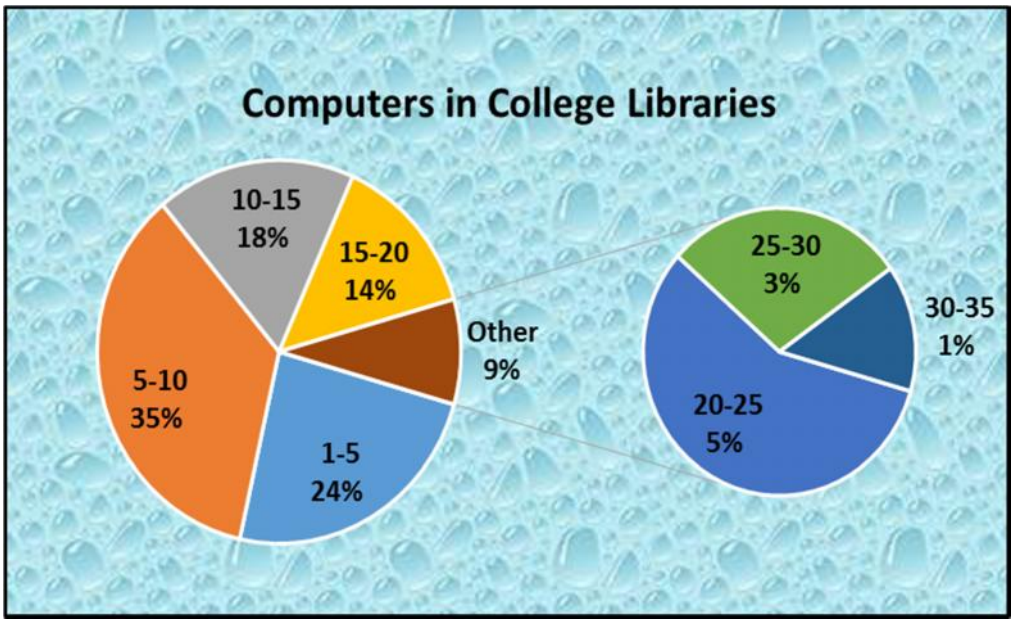
Observation:

It is observed that all the 79 (100%) college libraries have computers and printers to organize, process, store and to provide easy access to the available resources. 54(68%) college libraries have scanners to scan the documents, preserve and deliver the information in digital form. 10(13%) college libraries have e-readers to access e-books, 9(11%) college libraries have the fax machine for delivering the information to the users, and 7(9%) college libraries have the reprographic machine.

Table 5.53: Availability of Computers in the College Libraries

Sr. No.	Computers	No. of Respondents	Percentage
1	1-5	19	24%
2	5-10	28	35%
3	10-15	14	18%
4	15-20	11	14%
5	20-25	4	5%
6	25-30	2	3%
7	30-35	1	1%
	Total	**79**	**100%**

Figure 5.38: Availability of Computer in College Libraries



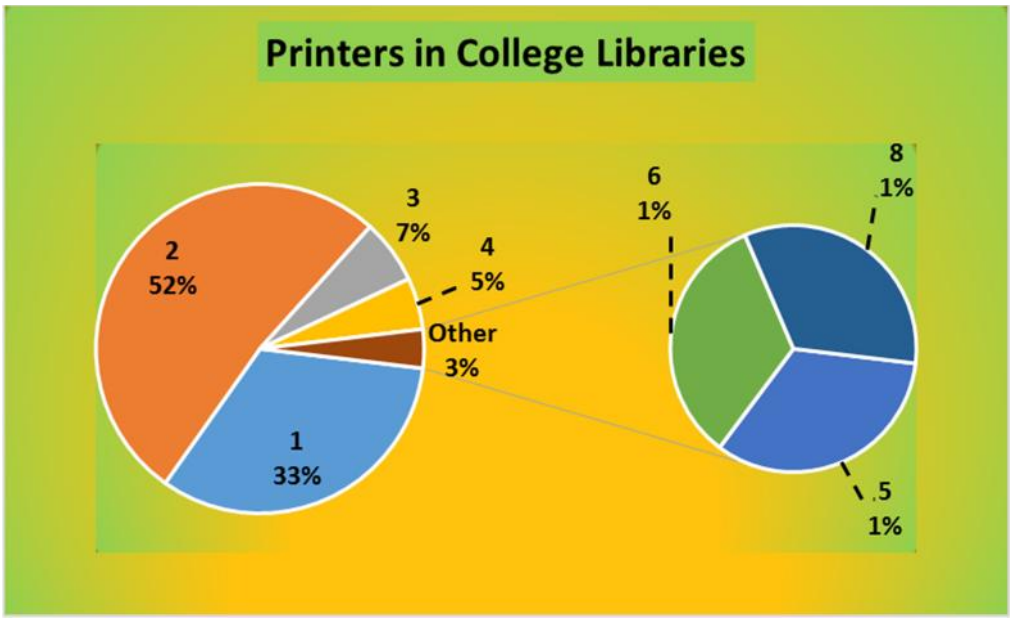
Observation:

It shows that 19(24%) of libraries have computers in the range of 1-5. 28(35%) college libraries have 5-10 computers, 14(18%) college libraries have 10-15 computers, 11(14%) college libraries have 15-20 computers, 4(5%) college libraries have 20-25 computers, 2(3%) college libraries have 25-30 computers and only (1%) college library have 30-35 computers. A maximum number of colleges 28(35%) have computers in the range of 5-10 computers.

Table 5.54: Availability of Printers in College Libraries

Printer	No. of Respondents	Percentage
1	26	33%
2	41	52%
3	5	7%
4	4	5%
5	1	1%
6	1	1%
8	1	1%
Total	**79**	**100%**

Figure 5.39: Availability of Printers in College Libraries



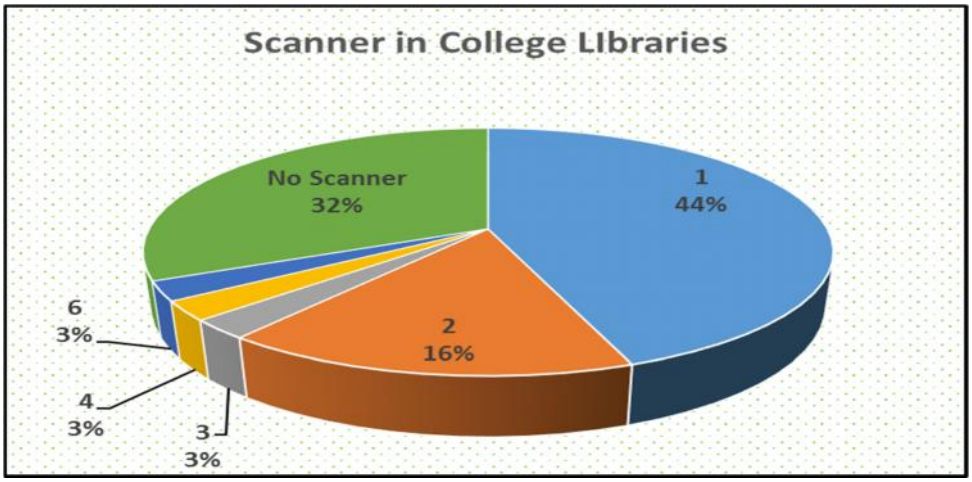
Observation:

Data reveals that 26(33%) college libraries have only one printer, 41(52%) college libraries have 2 printers, 5(7%) college libraries have 3 printers, 4(5%) college libraries have 4 printers, 1% college libraries have 5, 6, and 8 printers each.

Table 5.55: Availability of Scanner in College Libraries

Scanners	No. of Respondents	Percentage
1	35	44%
2	13	16%
3	2	3%
4	2	3%
5	2	3%
No Scanner	25	32%
Total	79	100%

Figure 5.40: Availability of Scanners in College Libraries



Observation:

It is observed that 32% of college libraries do not have a scanner. Whereas 44% college libraries have only one scanner, 16% college libraries have 2 scanners, 3% college libraries have 3, 4 and 6 scanners each.

Table 5.56: Availability of E-Readers in College Libraries

E-Readers	No. of Respondents	Percentage
1	2	3%
2	4	5%
3	1	1%
5	1	1%
6	2	3%
No E-Reader	69	87%
Total	**79**	**100%**

Observation:

It is observed that 87% of college libraries do not have E-Reader. Whereas, 3% have only one e-reader, 5% have 2 e-readers, 1% have 3 readers and 5 readers each and 3% have 6 e-readers.

Table 5.57: Adequacy of Infrastructure in the College Libraries

Availability of Infrastructure	No. of Respondents	Percentage
Yes	13	17%
No	66	83%
Total	**79**	**100%**

Observation:

Data revealed that only 13(17%) respondents are of opinion that yes, the infrastructure in the college libraries are sufficient, whereas, 66(83%) respondents feel that it is insufficient for smooth functioning of library functions and provision of services to the users.

10. Efforts towards Digital Library and Digitization

The researcher asked the respondents to give the details about digital library, initiative taken for digitization, documents digitized and methods used for digitization.

i). Digital Library

Digital library is a collection of digital resources organized, managed and disseminated digitally. In a digital library, users are not required to visit the library personally; services are provided to them digitally at their desktop. Digital resources may be born-digital or digitized from available physical documents. The researched asked respondents to provide information about availability of digital library in their libraries, the details of which are shown in Table 5.58.

Table 5.58: Digital Library in College Libraries

Sr. No.	Digital Library	No. of Respondents	Percentage
1	Yes	0	0%
2	No	79	100%
	Total	**79**	**100%**

Observation:

It is observed that none of the college libraries have initiated for separate digital library in their college library

ii). Initiative taken by college library for digitization

In the college libraries, for convenient storage and retrieval of documents and also there are resources, which are rare, and limited in numbers and multiple access of these resources are limited. To make effective use of resources, college libraries need to digitize the rare documents, manuscripts, syllabus, research articles of faculty members, old question papers

etc. Respondents are queried whether they have moved toward digitization, documents digitized and digitization method adopted in College Libraries. The details are given in Table 5.59, 5.60 and 5.61.

Table 5.59: Initiative taken for Digitization in College Libraries

Sr. No.	Digital Initiative	Total No. of Respondents	Percentage
1	Initiated	12	15%
2	Planning for Digitization	15	19%
3	Not Initiated and Planned	52	66%
	Total	**79**	**100%**

Figure 5.41: Initiative taken for Digitization in College Libraries



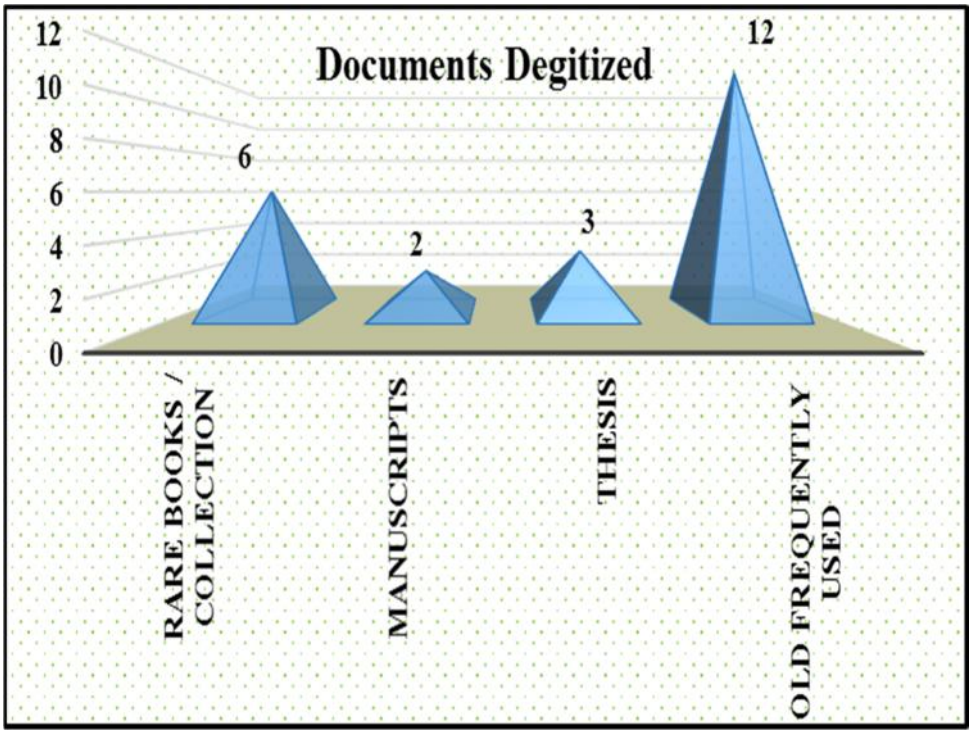
Observation:

Digitization makes information available digitally and preserves information for easy and convenient access. However, it is seen that only 12(15%) college libraries have initiated the digitization of documents; 15(19%) are planning for digitization and yet 52(66%) college libraries have not initiated and planned digitization process in libraries.

Table 5.60: Documents Digitized in the College Libraries

Sr. No.	Documents Digitized	No. of Respondents	Percentage
1	Rare Books	6	50%
2	Manuscripts	2	17%
3	Thesis	3	25%
4	Old frequently used	12	100%
	Total	**12**	**100%**

Figure 5.42: Documents Digitized in the College Libraries



Observation:

It is observed that out of 12(15%) college libraries who have initiated the digitization of documents, 6 (50%) college libraries have digitized Rare Books, 2(17%) have digitized manuscripts, 3(25%) have a digitized thesis, 12(100%) college libraries have digitized old frequently used documents like, syllabus, annual reports, faculty publications and question papers.

Table 5.61: Digitization Method adopted by the College Libraries

Sr. No	Digitization Method	No. of Respondents	Percentage
1	In-house digitization with scanner/digital camera etc.	12	100%
2	Outsourcing	0	0%
	Total	**12**	**100%**

Observation:

It is witnessed that 12 (100%) libraries, who initiated digitization of documents, have adopted in-house digitization with scanner/digital camera etc.

11. Problems faced by College Libraries in satisfying users need

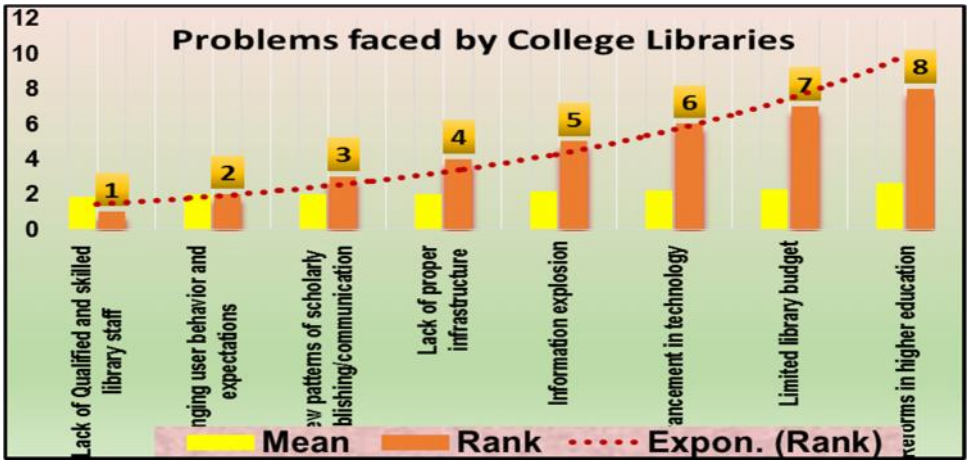
The researcher has asked the respondents to give the information about problems faced by them in satisfying user' needs. The details of which are given in Table 5.62.

Table 5.62: Problems faced by College Libraries in Satisfying User Need.

Sr. No	Problems	S. A.	A	S.D	D	U	Mean	Rank
1	Lack of Qualified and skilled library staff	34 (43%)	35 (44%)	2 (3%)	4 (5%)	4 (5%)	1.848101	1
2	Changing user behavior and expectations	23 (29%)	46 (58%)	2 (3%)	1 (1%)	7 (9%)	2.025316	2
3	New patterns of scholarly publishing/communication	32 (41%)	30 (38%)	4 (5%)	8 (10%)	5 (6%)	2.037975	3
4	Lack of proper infrastructure	21 (27%)	42 (53%)	1 (1%)	11 (14%)	4 (5%)	2.025316	4
5	Information explosion	24 (30%)	39 (49%)	1 (1%)	4 (5%)	11 (14%)	2.177215	5
6	Advancement in technology	23 (29%)	36 (46%)	3 (4%)	12 (15%)	5 (6%)	2.240506	6
7	Limited library budget	21 (27%)	36 (46%)	4 (5%)	14 (18%)	4 (5%)	2.291139	7
8	Reforms in higher education	13 (16%)	35 (44%)	5 (6%)	18 (23%)	8 (10%)	2.65228	8

SA = Strongly Agree; A = Agree; SD = Strongly Disagree; D = Disagree; U = Undecided

Figure 5.43: Problems faced by the College Libraries in Satisfying User Need



Observation:

It is inferred from the given data that based on the mean, respondent's opinion about problems faced by the college library in satisfying the needs of the user is ranked.

- Lack of qualified and skilled library staff (M= 1.848101) is ranked first.
- Changing user behavior and expectations (M=2.025316) is ranked second.
- New patterns of scholarly publishing/communication (M=2.037975) is ranked third.
- Lack of proper infrastructure (M=2.025316) is ranked fourth.
- Information explosion (M=2.177215) is ranked fifth.
- Advancement in technology (M=2.240506) is ranked sixth.
- Limited library budget (M=2.291139) is ranked seventh, and
- Reforms in higher education (M=2.65228) is ranked eighth

12. Initiation towards Re-engineering

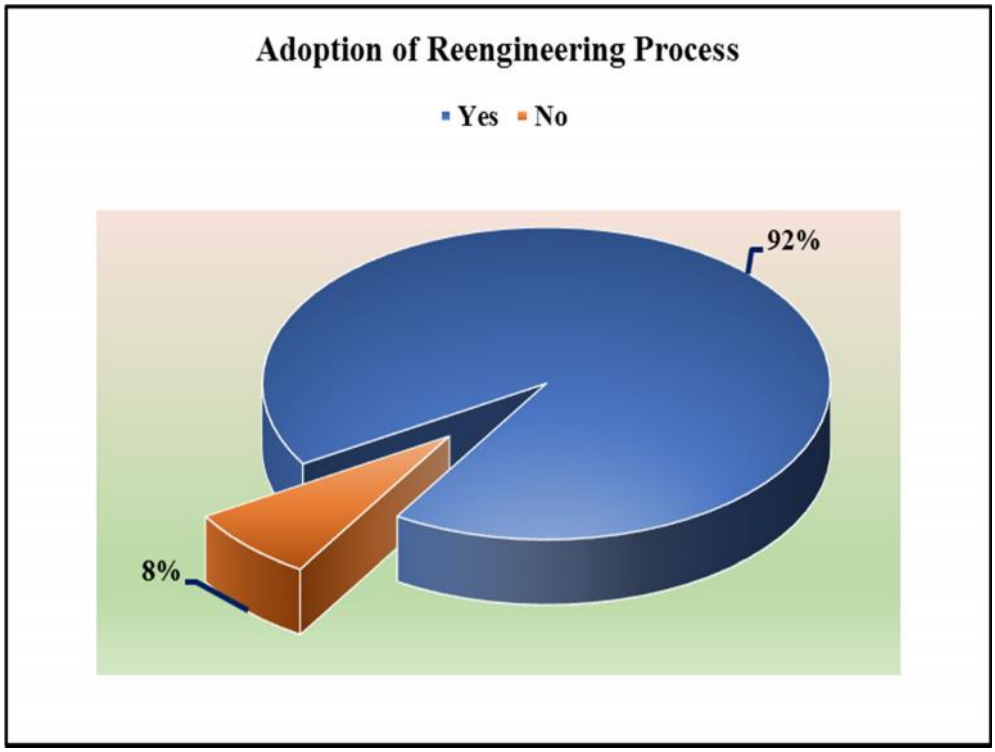
i). Adoption of Re-engineering Process in the College Libraries.

To assess the re-engineering strategies adopted by the college libraries and to find out the relation between accreditation status of the college and the adoption of re-engineering process in the college library, the researcher has asked the respondents to give the details about the adoption of re-engineering process in their college library. The responses are shown in Table 5.63 and 5.64.

Table 5.63: Re-engineering Process adopted by the College Libraries

Sr. No	Adoption of re-engineering process in the college library	No. of Respondents	Percentage
1	Yes	73	92%
2	No	6	8%
	Total	**79**	**100%**

Figure 5.44: Re-engineering process adopted by the College Libraries



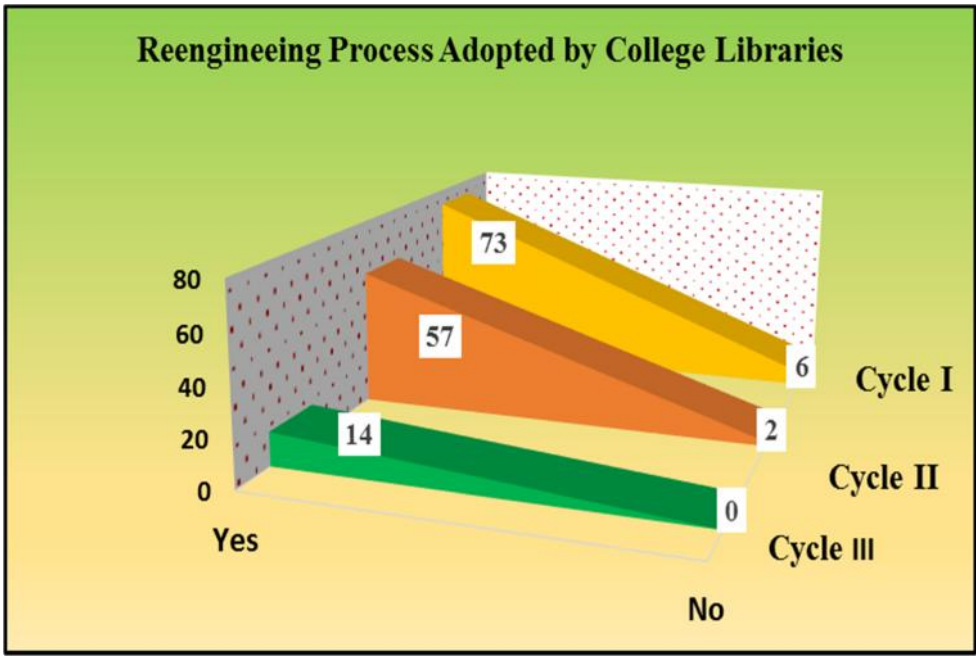
Observation:

The data shows that, Out of the total 79 colleges, which have been accredited in cycle I, a large majority that is 73 (92%) of the college libraries have adopted re-engineering process in their college library, however 6(8%) of the college libraries have not yet adopted the re-engineering process.

Table 5.64: Relation between accreditation status of the college and re-engineering process adopted by library

Colleges accredited by the NAAC	No. of Colleges Accredited	Re-engineering process adopted by the college library	
		Yes	No
Cycle 3	14	14	0
Cycle 2	59	57	2
Cycle 1	79	73	6

Figure 5.45: Relation between accreditation status of the college and re-engineering process adopted by library



Observation:

The data indicates that out of the total 79 colleges, which have been accredited in cycle I, 73(92%) colleges have adopted the re-engineering process in the college library.

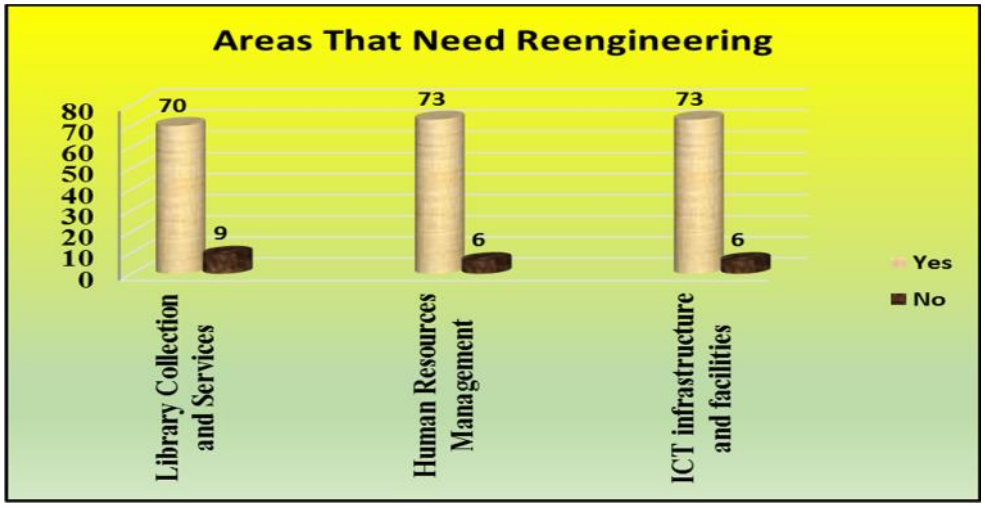
ii). Areas, in which Re-engineering is needed in the College Libraries

The researcher asked the respondents about the area in their college library, which needs re-engineering. The details of their responses are given in Table 5.65.

Table 5.65: Need of Re-engineering in College Libraries

Sr. No	Need of Re-engineering	Yes	No	Total
1	Library Collection and Services	70 (89%)	9 (11%)	79 (100%)
2	Human Resources Management	73 (92%)	6 (8%)	79 (100%)
3	ICT Infrastructure and facilities	73 (92%)	6 (8%)	79 (100%)

Figure 5.46: Need of Re-engineering in College Libraries



Observation:

Data indicates that 73(92%) college libraries need to re-engineer the human resource management system and ICT infrastructure and facilities. 70(89%) college libraries need re-engineering in the area of Library collection and services.

iii). Objectives for Re-engineering the College Libraries

The researcher asked respondents about the objectives for re-engineering in the college libraries. The details of which are given in Table below:

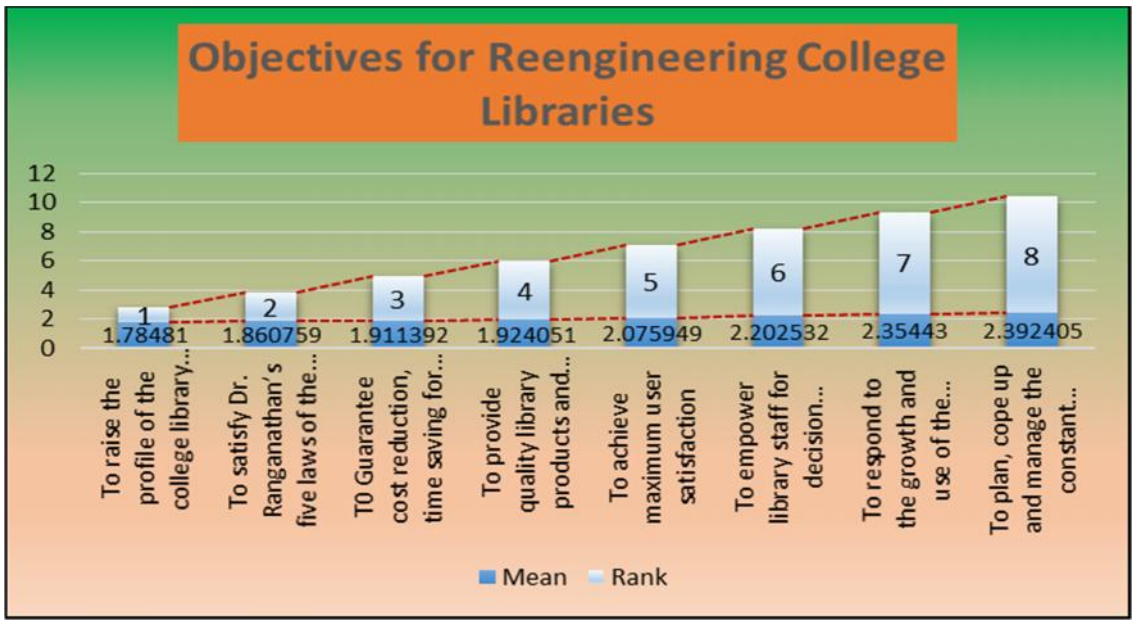
Table 5.66: Objectives for re-engineering in College Libraries

Sr. No.	Objectives for re-engineering the College Libraries	S.A.	A	S.D.	D	U	Total	Mean	Rank
1	To raise the profile of the college library as an important component of higher education system.	32 (41%)	41 (52%)	0 (0%)	3 (4%)	3 (4%)	79 (100%)	1.7848	1
2	To satisfy Dr. Ranganathan's five laws of the library science.	30 (38%)	41 (52%)	1 (1%)	3 (4%)	4 (5%)	79 (100%)	1.8607	2
3	T0 Guarantee cost reduction, time-saving for efficient and effective management of	25 (32%)	46 (58%)	2 (3%)	2 (3%)	4 (5%)	79 (100%)	1.9113	3

	the college library								
4	To provide quality library products and services to its users	31 (39%)	39 (49%)	0 (0%)	2 (3%)	7 (9%)	79 (100%)	1.9240	4
5	To achieve maximum user satisfaction	16 (20%)	54 (68%)	1 (1%)	3 (4%)	5 (6%)	79 (100%)	2.0759	5
6	To empower library staff for decision-making and to provide maximum job satisfaction.	22 (28%)	42 (53%)	2 (3%)	3 (4%)	10 (13%)	79 (100%)	2.2025	6
7	To respond to the growth and use of the networks for academic purpose.	25 (32%)	34 (43%)	1 (1%)	5 (6%)	14 (18%)	79 (100%)	2.3544	7
8	To plan, cope up and manage the constant change in technology	22 (28%)	37 (47%)	1 (1%)	5 (6%)	14 (18%)	79 (100%)	2.3924	8

SA = Strongly Agree; A = Agree; SD = Strongly Disagree; D = Disagree; U = Undecided

Figure 5.47: Objectives for Re-engineering in College Libraries



Observation:

Based on the mean, the respondents' opinion about the objectives for the need for re-engineering is ranked.

- To raise the profile of the college library as an important component of the higher education (M=1.78481) is ranked first.
- To satisfy Ranganathan's laws of the library science (M=1.860759) is ranked second.
- To reduce cost and save time for effective management (M=1.911392) is ranked third.
- To provide quality library products and services to users (M=1.924051) is ranked fourth.
- To achieve maximum user satisfaction (M=2.075949) is ranked fifth.
- To empower the library staff for decision-making and provide maximum job satisfaction (M=2.202532) is ranked sixth.
- To respond to the growth and use of networks for academic purposes (M=2.35443) is ranked seventh.
- To plan, cope up and manage the constant change in technology (M=2.392405) is ranked eighth.

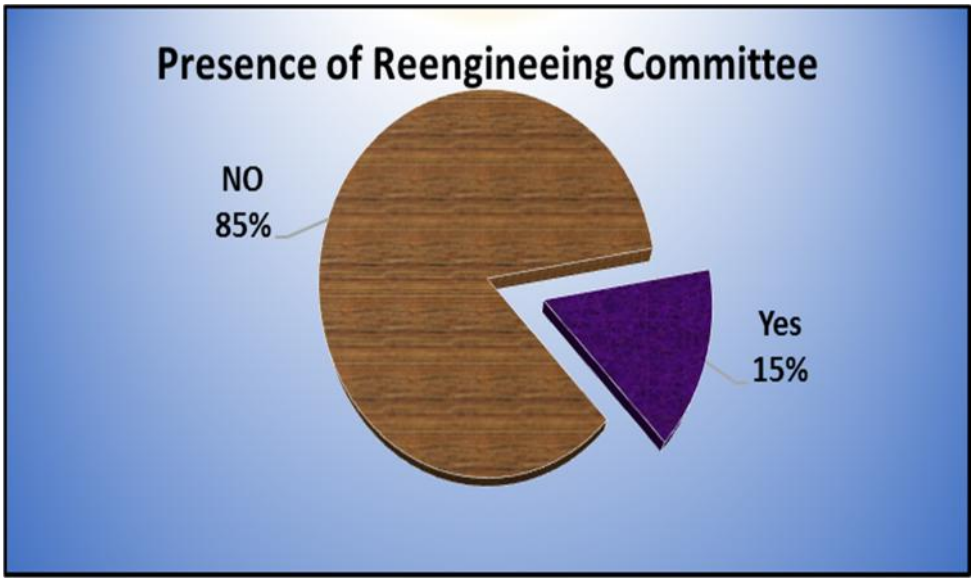
iv). Presence and composition of Re-engineering committee in College Libraries

There is need of a properly commissioned re-engineering committee, which takes care of the process on day to day basis. The researcher has asked respondents about the presence and composition of the re-engineering committee in their college libraries. The details of which are given in Table 5.67.

Table 5.67: Presence of Re-engineering Committee in College Libraries

Sr. No.	Re-engineering Committee	No. of Respondents	Percentage
1	Yes	12	15%
2	No	67	85%
	Total	**79**	**100%**

Figure 5.48: Presence of Re-engineering Committee in College Libraries



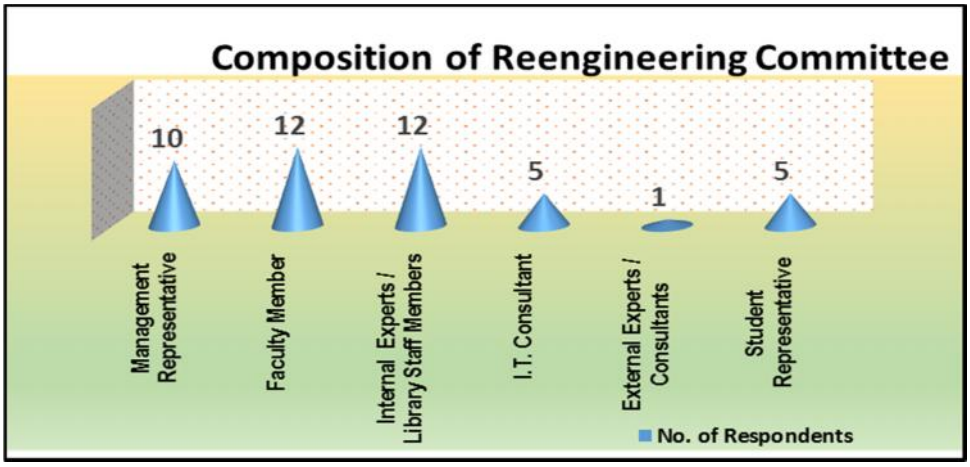
Observation:

The data shows that only 12 college libraries (15%) have a separate re-engineering committee in order to plan, implement and follow up the re-engineering process. On the other hand, 67 college libraries (85%) do not have a separate re-engineering committee.

Table 5.68: Composition of Re-engineering Committee

Sr. No.	Re-engineering Committee Members	No. of Respondents	Percentage
1	Management Representative	10	83%
2	Faculty Member	12	100%
3	Internal Experts / Library Staff Members	12	100%
4	I.T. Consultant	5	42%
5	External Experts / Consultants	1	8%
6	Student Representative	5	42%
	Total	12	

Figure 5.49: Composition of Re-engineering Committee



Observation:

Out of the 12 college libraries who have re-engineering committee, 12 college libraries have a faculty member and library staff member. 10 college libraries have a management representative in their re-engineering committee; 5 college libraries have an I.T. Consultants and student representative in re-engineering committee. And only 1 college library has an external expert/consultant.

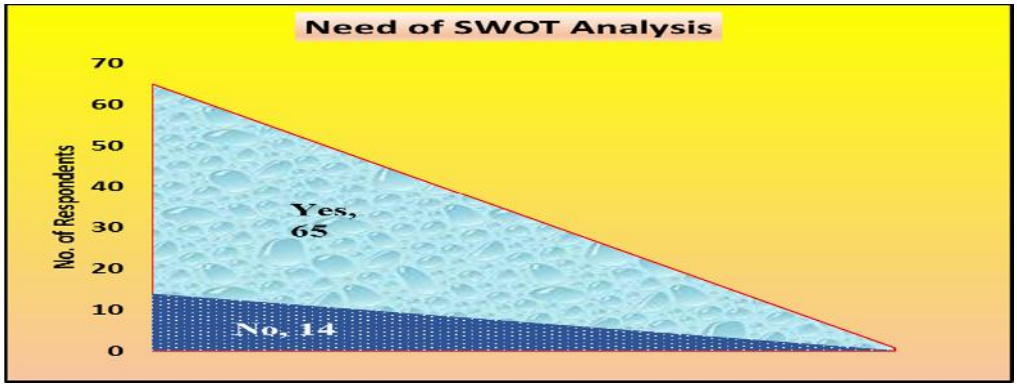
v). SWOT Analysis: need, frequency, and tools used in College Libraries

SWOT analysis helps to comprehend the strength, weakness, opportunities, and threats tangled in the re-engineering process. It helps the college library to map the strong capabilities or area in which it has competitive advantage, areas where library is lacking in achieving its objectives, opportunities which the college library can capitalize to achieve its mission and vision, and finally the external factors, which obstructs the execution of strategic development of the college library through the re-engineering plan and which should be controlled, avoided or minimized. The researcher asked the respondents about the need for SWOT analysis for re-engineering process, its frequency and tools used for SWOT analysis in their college libraries. The details of which are given in Table 5.69, 5.70 and 5.71.

Table 5.69: Need for SWOT analysis in the College Libraries

Sr. No.	Need for SWOT analysis	No. of Respondents	Percentage
1	Yes	65	82%
2	No	14	18%
	Total	**79**	**100%**

Figure 5.50: Need for SWOT analysis in the College Libraries



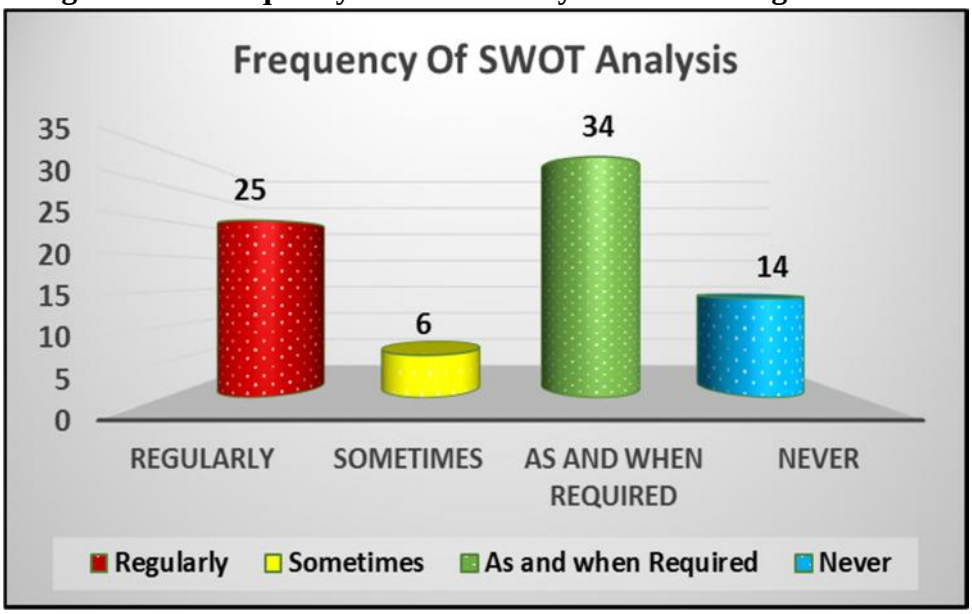
Observation:

It is revealed from the data that 65 (82%) college libraries believe that there is a need for conducting SWOT analysis for re-engineering of the college library. Whereas, 14(18%) college libraries feel that there is no need.

Table 5.70: Frequency of SWOT analysis in the College Libraries

Sr. No.	Frequency	No. of Respondents	Percentage
1	Regularly	25	32%
2	Sometimes	6	8%
3	As and when Required	34	43%
4	Never	14	18%
	Total	**79**	**100%**

Figure 5.51: Frequency of SWOT analysis in the College Libraries



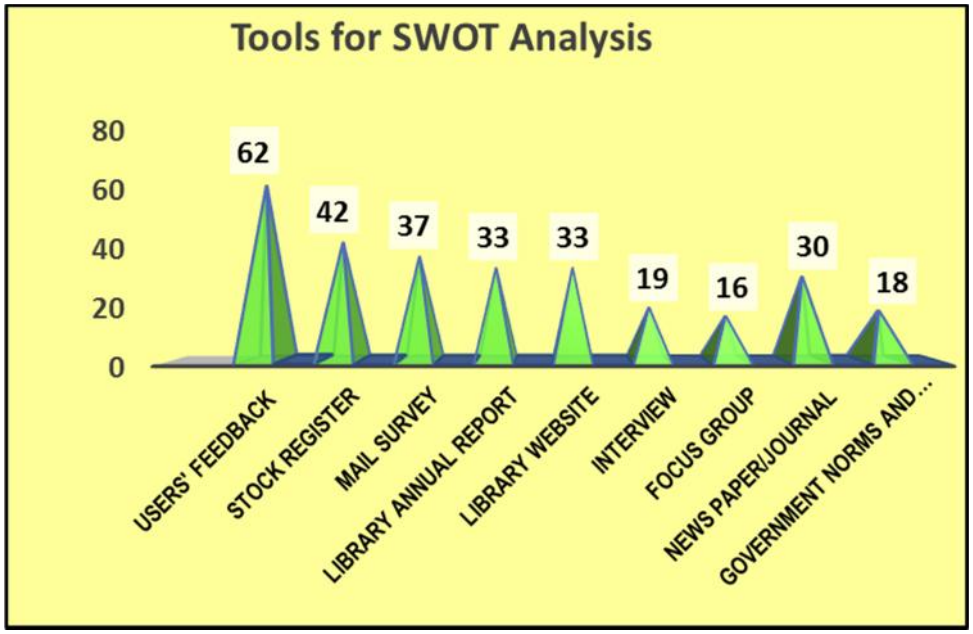
Observation:

Only 25 (32%) college libraries conduct SWOT analysis regularly; 6 (8%) college libraries conduct it sometimes; 34 (43%) college libraries conduct it as and when required, while 14 (18%) college libraries never conducted any such SWOT analysis.

Table 5.71: Tools Used for SWOT analysis in the College Libraries

Sr. No.	Tools for SWOT analysis	No. of Respondents	Percentage
1	User feedback	62	78%
2	Stock Register	42	53%
3	Mail Survey	37	47%
4	Library Annual Report	33	42%
5	Library Website	33	42%
6	Interview	19	24%
7	Focus Group	16	20%
8	News Paper/Journal	30	38%
9	Government Norms and Policies	18	23%

Figure 5.52: Tools Used for SWOT analysis in the College Libraries



Observation:

A majority of the college libraries, i.e. 62 (78%) make use of User statistics, 42 (53%) college libraries use Stock Register; 37 (47%) college libraries use Mail Survey; 33(42%) college libraries use Library Annual Reports and Library Website; 19 (19%) college libraries use Interview method and 16 (20%) college libraries use Focus Group. Also,

30(38%) college libraries use News Paper/Journals and 18 (23%) college libraries use Government Norms and Policies for the same.

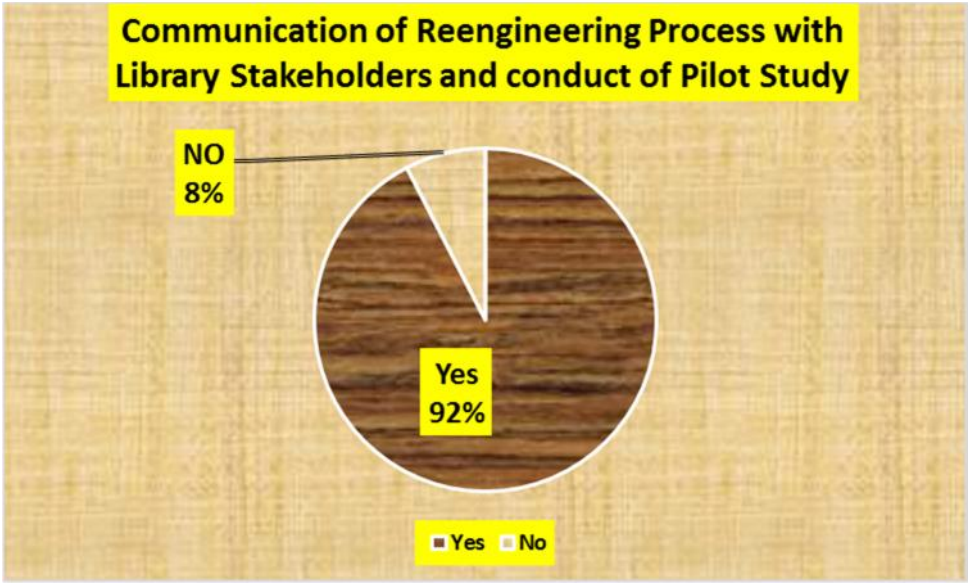
vi). Communication of re-engineering process (Plan) with Library Stakeholders and Pilot study of re-engineering process

Communication of re-engineering process with library stakeholders is necessary for transparency and support of all stakeholders for its effective implementation. Pilot study helps in building the enthusiasm for successful implementation of redesigned process. The researcher has asked the respondents to give the details of the same, and are shown in Table 5.72.

Table 5.72: Communication of re-engineering process with Library Stakeholders and conduct of Pilot Study

Sr. No.	Communication of Re-engineering process with library stakeholders and conduct of Pilot study	No. of Respondents	Percentage
1	Yes	73	92%
2	No	6	8%
	Total	**79**	**100%**

Figure 5.53: Communication of re-engineering process with library stakeholders and conduct of Pilot Study



Observation:

The data shows that 73 college libraries (92%) communicate the re-engineering process with their stakeholders, while 6 libraries (8%) do not communicate

13. Need o ICT in re-engineering College Libraries

ICT is one of the potential enabler of the re-engineering process, the respondents were asked to give their opinion on need of ICT in re-engineering process of college libraries. The details are shown in Table 5.73.

Table 5.73: Need of ICT in re-engineering College Libraries

Sr. No	Need of ICT in Re-engineering	No. of Respondents	Percentage
1	Yes	79	100%
2	No	0	0%
	Total	**79**	**100%**

Observation:

Data reveals that all the college libraries (100%) are of opinion that there is need of ICT in re-engineering

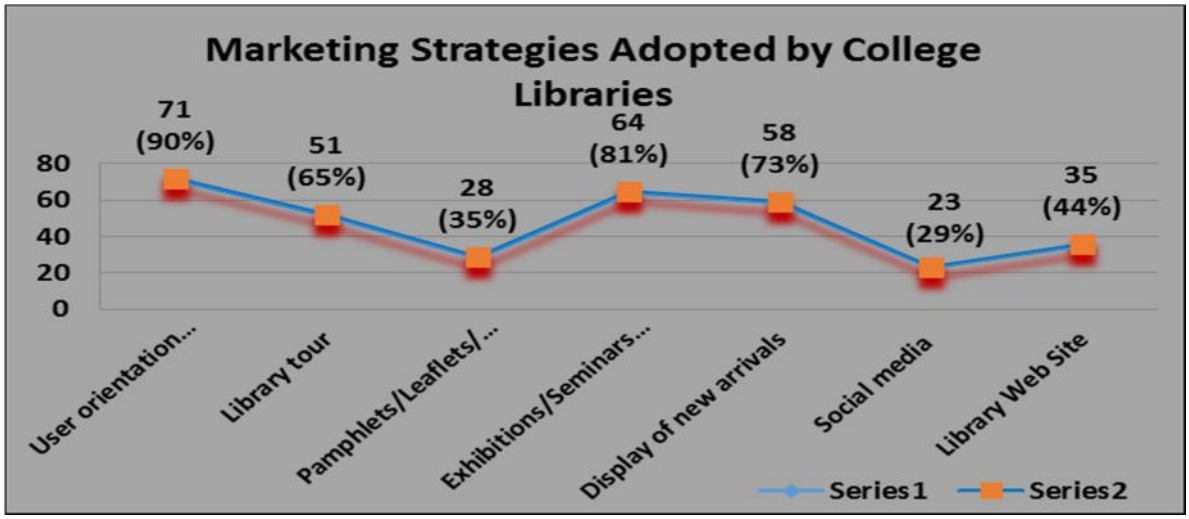
14. Marketing Strategies Adopted by College Libraries

It is imperative to inform all the stakeholders about a library process, collection and services for its effective use. Marketing strategies adopted by the college libraries creates awareness and encourage users to use the library for their academic excellence, the details of which are given in Table 5.74.

Table 5.74: Marketing Strategies Adopted by College Libraries

Sr. No.	Marketing strategies	No. of Respondents	Percentage
1	User orientation program /Information literacy program	71	90%
2	Library tour	51	65%
3	Pamphlets/Leaflets/Brochures etc.	28	35%
4	Exhibitions/Seminars/Workshops etc.	64	81%
5	Display of new arrivals	58	73%
6	Social media	23	29%
7	Library Web Site	35	44%

Figure 5.54: Marketing Strategies Adopted by College Libraries



Observation:

It is observed that 71(90%) college libraries make their users aware about library activities through User orientation program, 51(65%) college libraries organize library tour, 28(35%) college libraries use pamphlets/leaflets/brochures etc. for user awareness, 64(81%) college libraries conducts exhibitions/seminars/workshops etc., 58(73%) display new arrivals, 23(29%) use social media whereas 35(44%) college libraries use their library websites for marketing their library activities for its effective use by all its stakeholders.

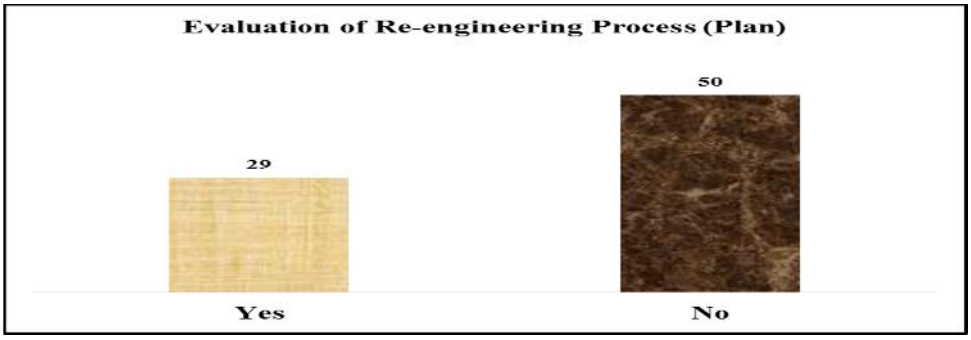
15. Evaluation of Re-engineering Process

Evaluation of re-engineering process helps college library to evaluate the performance of the newly re-engineered process and do the modifications if required for its successful implementation. The researcher asked details of evaluation adopted by college libraries are given in Table 5.75.

Table 5.75: Evaluation of Re-engineering Process

Sr. No.	Evaluation of Re-engineering Process	No. of Respondents	Percentage
1	Yes	29	37%
2	No	50	63%
	Total	**79**	**100%**

Figure 5.55: Evaluation of Re-engineering Process



Observation:

It is revealed that 29(37%) of the college libraries evaluate their re-engineering process, whereas 50 (63%) don't evaluate the re-engineering process.

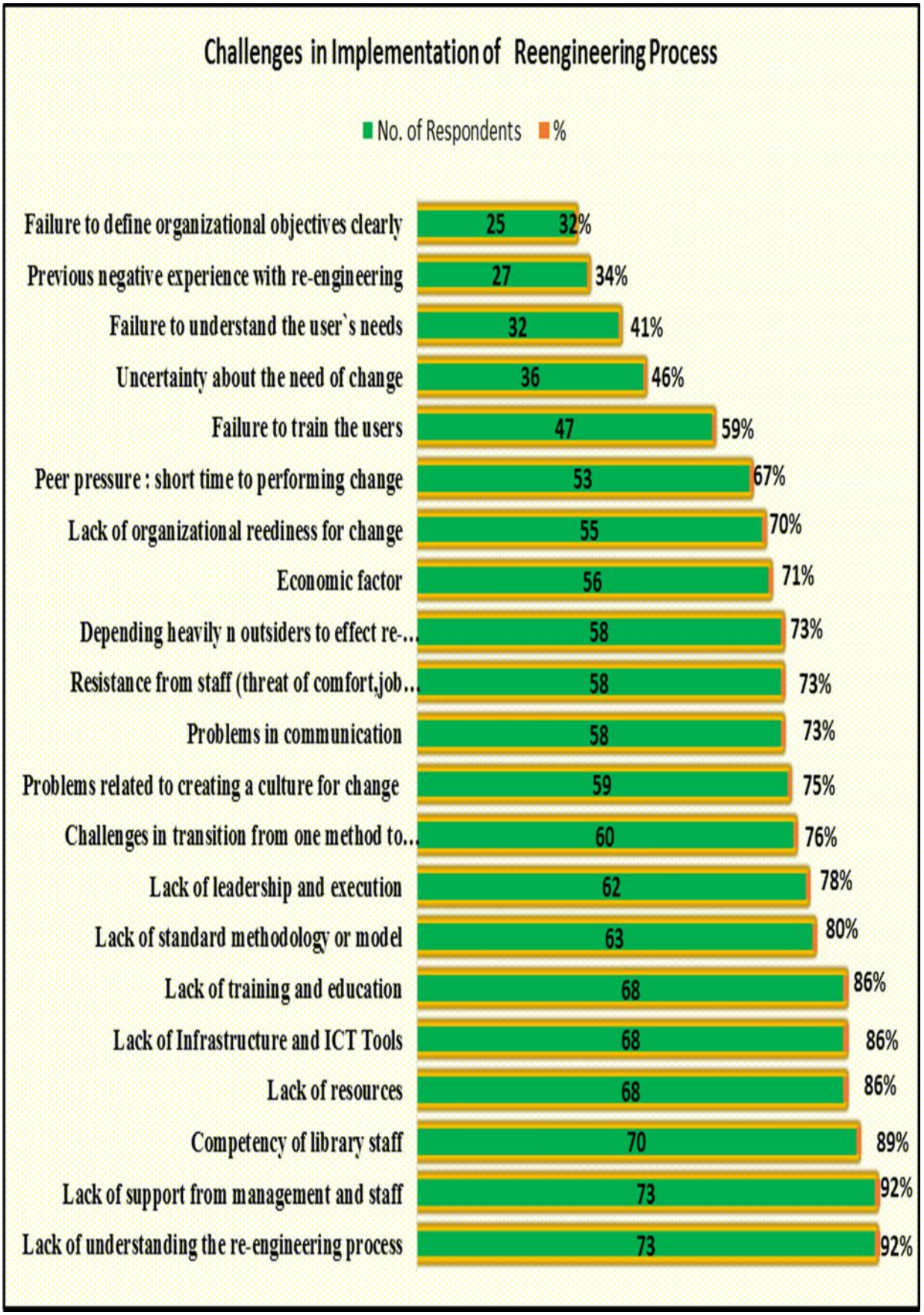
16. Challenges faced while Re-engineering the College Libraries

The researcher tried to find out the challenges faced by the college libraries for the success of re-engineering process and details of which are given in Table 5.76.

Table 5.76: Challenges faced while Re-engineering the College Libraries

Sr. No.	Challenges faced in re-engineering process	No. of Respondents	%
1	Lack of understanding the re-engineering process	73	92%
2	Lack of support from management and staff	73	92%
3	Competency of library staff	70	89%
4	Lack of resources	68	86%
5	Lack of training and education	68	86%
6	Lack of Infrastructure and ICT tools		
7	Lack of standard methodology or model	63	80%
8	Lack of leadership and execution	62	78%
9	Challenges in transition from one method to another	60	76%
10	Problems related to creating a culture for change	59	75%
11	Problems in communication	58	73%
12	Resistance from staff (threat of comfort, job security or interpersonal relation)	58	73%
13	Depending heavily n outsiders to effect re-engineering and neglecting the employees	58	73%
14	Economic factor	56	71%
15	Lack of organizational readiness for change	55	70%
16	Peer pressure: short time to performing change	53	67%
17	Failure to train the users	47	59%
18	Uncertainty about the need of change	36	46%
19	Failure to understand the user`s needs	32	41%
20	Previous negative experience with re-engineering	27	34%
21	Failure to define organizational objectives clearly	25	32%

Figure 5.56: Challenges faced while Re-engineering the College Libraries



Observation:

- It is seen that 73(92%) college libraries say that lack of understanding of re-engineering process and lack of management support are the main challenges for re-engineering process.
- For 70(89%) college libraries Competency of library staff is the challenge.
- Lack of resources, lack of training, and education of staff and lack of infrastructure and ICT tools are the challenges for 68(86%) college libraries.
- Lack of standard methodology or model is one of the challenge faced by the 63(80%) college libraries
- 62(78%) college libraries say lack of leadership and execution is the challenge for effective re-engineering process
- 60(76%) college libraries are facing challenges in transition from one method to another
- 59(75%) college libraries have problems related to creating a culture for change for re-engineering process implementation
- 58(73%) college libraries are facing challenges from problems in communication, resistance from staff, and over dependency on outsiders and neglecting library staff.
- 56(71%) college libraries have an economic problem, in 55(70%) college libraries there is lack of organizational readiness for change.
- 53(67%) college libraries have peer pressure for completion of re-engineering process.
- Failure to train the user is also one of the challenges for the success of re-engineering process in 47(59%) college libraries.
- 36(46%) college libraries have the challenges from uncertainty about a need of change and 32(41%) are facing challenges due to failure to understand the users need for the success of re-engineering process.
- Previous negative experience with re-engineering are the challenges for 27(34%) college libraries and for 25(32%) failure to define organizational objectives are the challenges in success in re-engineering process

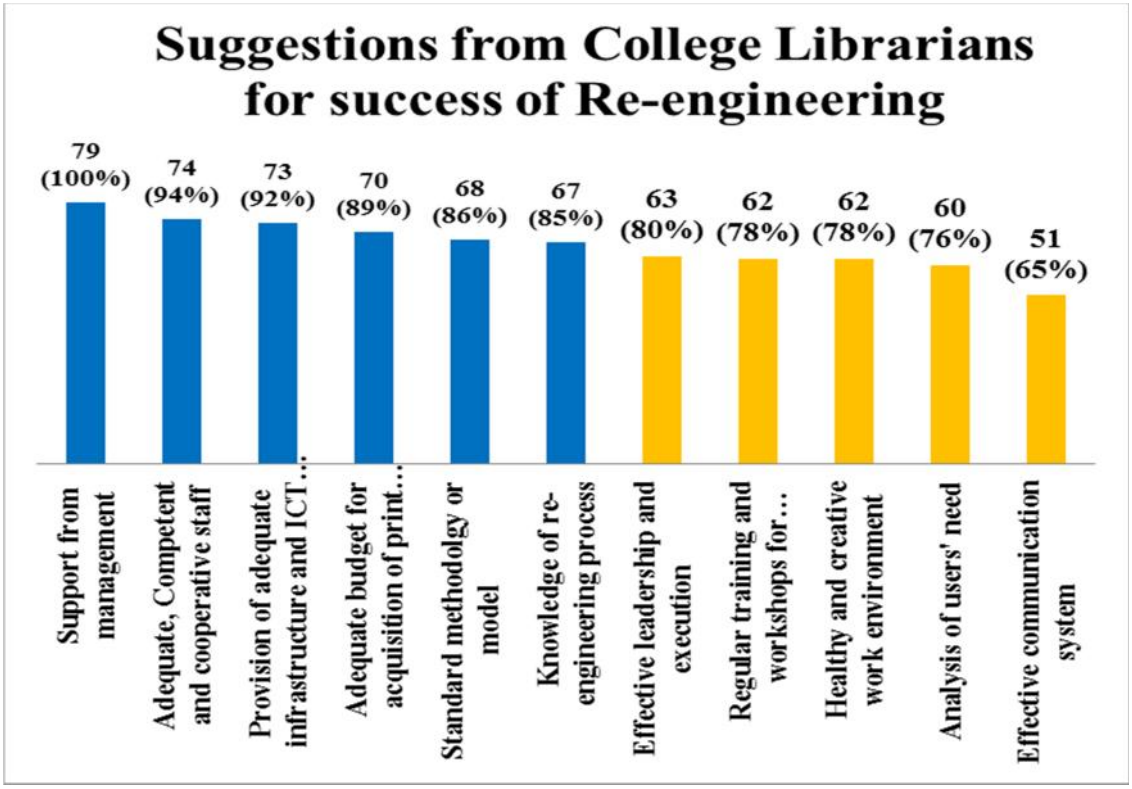
17. Suggestions from College Librarians for Successful Re-engineering of College Libraries

The researcher asked the respondents to give some suggestions for the success of re-engineering process. The details of which are given in Table 5.77.

Table 5.77: Suggestions from College Librarians for Successful Re-engineering of College Libraries

Sr. No.	Suggestions from College Librarians	No. of Respondents	Percentage
1	Support from management	79	100%
2	Adequate, Competent and cooperative staff	74	94%
3	Provision of adequate infrastructure and ICT tools	73	92%
4	Provision of adequate budget for acquisition of print and non-print resources	70	89%
5	Standard methodology or model	68	86%
6	Knowledge of re-engineering process	67	85%
7	Effective leadership and execution	63	80%
8	Regular training and workshops for improvement of skills	62	78%
9	Healthy and creative work environment	62	78%
10	Analysis of users' need	60	76%
11	Effective communication system	51	65%

Figure 5.57: Suggestions from College Librarians for Successful Re-engineering of College Libraries



Observation:

Data shows that 79(100%) respondents suggested that support from management is the important factor for success of re-engineering. 74 (94%) suggested the need for adequate, competent and cooperative staff. 73 (92%) suggested the provision of adequate infrastructure and ICT tools for successful re-engineering. 70(89%) respondents are of opinion that for success of re-engineering, adequate budget for acquisition of print and non-print resources is necessary. 68 (86%) respondents felt the need of standard mythology or model for effective implementation of re-engineering process. According to 67(85%) Knowledge of re-engineering process is required for success of re-engineering. 63(80%) advocated that Effective leadership and execution is obligatory for re-engineering. 62 (78%) are of opinion that regular training and workshops for improvement of skills and Healthy and creative work environment are essential for success of re-engineering. 60 (76%) said success of re-engineering is based on analysis of users' need. 51(65%) felt the need of Effective communication system for re-engineering.

5.3. Analysis of Data Collected from College Library Users.

1. Population and Sampling

There are total 265801 library users in Arts, Science Commerce College in Mumbai Region. The sample size for library users is calculated as 1528 keeping confidence level at 95% and confidence interval at 2.50. Total 1800 questionnaire were distributed @ 21 questionnaires per college. The researcher received the responses from 1531(85.05%) respondents. The Library users questionnaire covers 9 questions and its analysis is presented below.

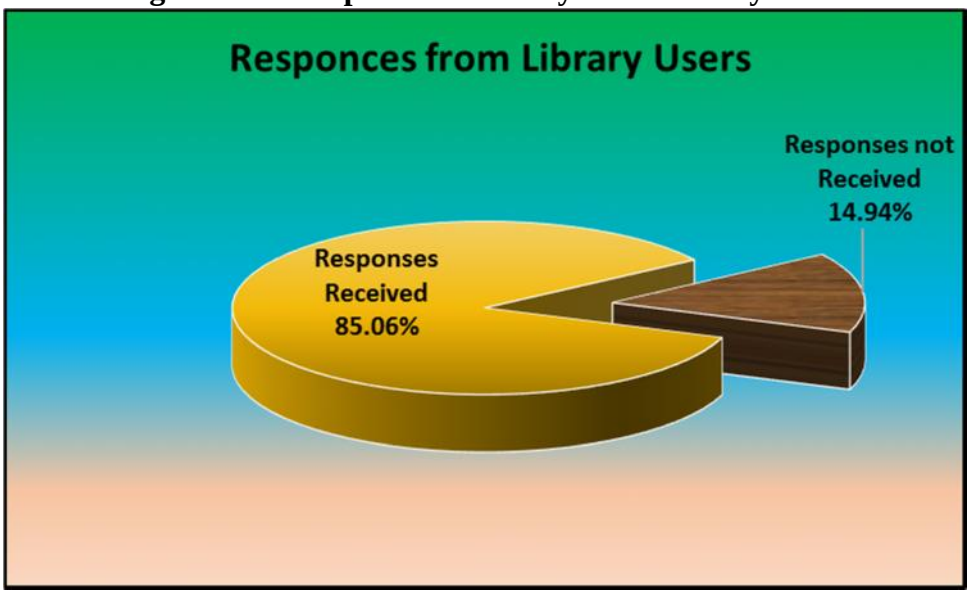
2. Responses Obtained

The questionnaire was distributed to 1800 library users and the Table shown below gives the details of responses received by the researcher.

Table1 5.78: Responses to Survey from Library Users

Sr. No.	Particulars	No. of Respondents	Percentage
1	Responses Received	1531	85.06%
2	Responses not Received	269	14.94%
	Total Questionnaires Distributed	**1800**	**100%**

Figure 5.58: Responses to Survey from Library Users



Observation:

Data shows that the researcher has distributed the questionnaire to a total of 1800 library users and have received back the responses from 1531 library users. The total response received is 85.06%.

3. Category of Library Users in the College Libraries

To understand the needs of the users, the respondents were asked to provide their category as a user.

Table 5.79: Category of Users in the College Libraries

Sr. No.	User's Category	No. of Respondents	Percentage
1	Student	1102	72%
2	Faculty (Teaching/Non-Teaching)	429	28%
	Total	**1531**	**100%**

Observation:

It is observed that 1102(72%) of the respondents are the students of the college and 429(30%) of the respondents are the faculty (Teaching/Non-Teaching) of the college.

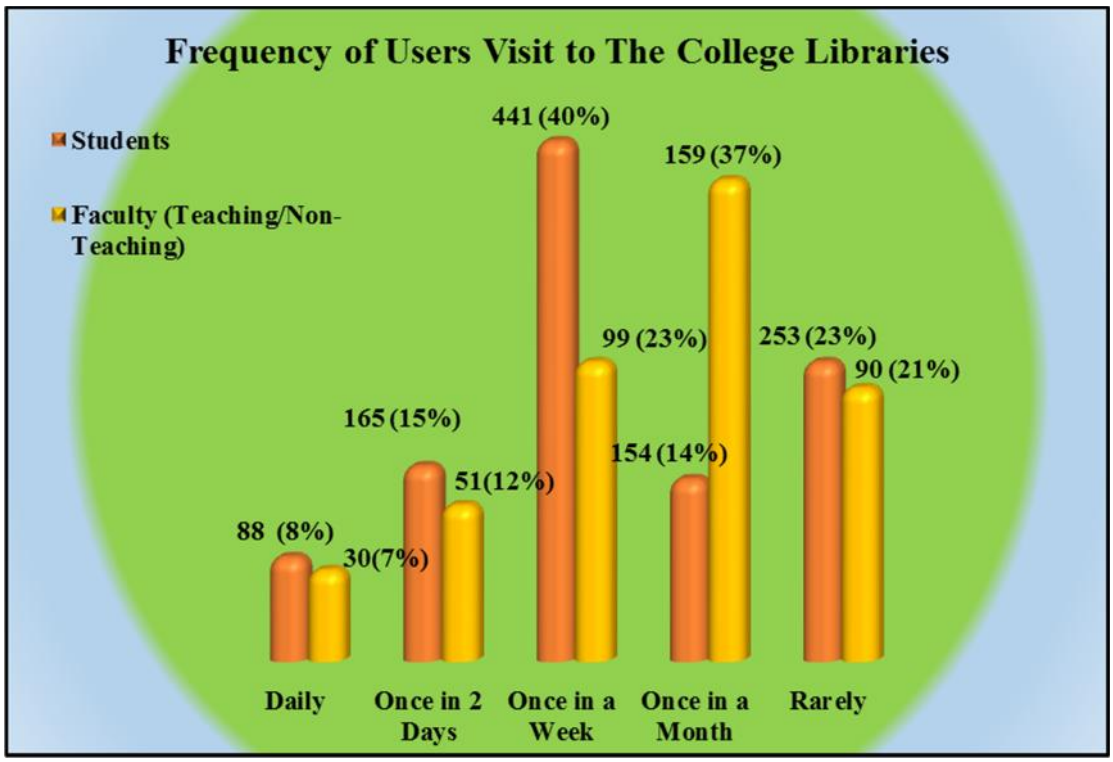
4. Frequency of Users' Visit to the College Libraries

The quality of library collections and services can also be measured by frequency of users visit. The data of frequency of user's visit to the library are given in Table 5.80.

Table 5.80: Frequency of Users' Visit to College Libraries

Sr. No.	Frequency of User's Visit	No. of Student	Percentage	No. of Faculty (Teaching/ Non-Teaching)	Percentage
1	Daily	88	8%	30	7%
2	Once in 2 Days	165	15%	51	12%
3	Once in a Week	441	40%	99	23%
4	Once in a Month	154	14%	159	37%
5	Rarely	253	23%	90	21%
	Total	**1102**	**100%**	**429**	**100%**

Figure 5.59: Frequency of Users' Visit to College Libraries



Observation:

The figure represents that 88(8%) of the student visit the college library on daily basis. 165(15%) of users visit the library once in two days; 441(40%) visit the library once in a week; 154(14%) visits once in a month. And 253(23%) users visit the library rarely.

In case of staff 30(7%) visits daily, 51(12%) visits once in 2 Days, 99(23%) visits once in a week, 159(37%) visits once in a month and 90(21%) staff visits library rarely.

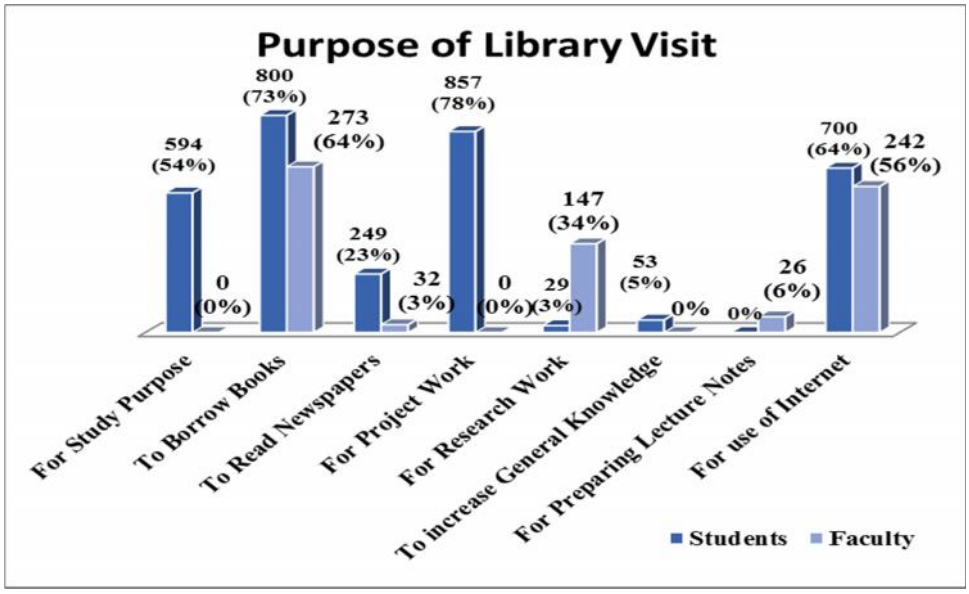
5. Purpose of Library Visit

Researcher asked respondents to provide the information about their purpose to visit the library, as purpose of library visit by library users enables library authorities to develop and extend their library collection and services. The details of which are given in Table 5.81.

Table 5.81: Purpose of Library Visit

Sr. No.	Purpose of Library Visit	No. of Students	Percentage	No. of Faculty (Teaching/Non-Teaching)	Percentage
1	For Study Purpose	594	54%	0	0%
2	To Borrow Books	924	84%	273	64%
3	To Read Newspapers	249	23%	14	3%
4	For Project Work	857	78%	0	0%
5	For Research Work	29	3%	147	34%
6	To increase General Knowledge	53	5%	0	0%
7	For Preparing Lecture Notes	0	0%	26	6%
8	For use of Internet	700	64%	242	56%

Figure 5.60: Purpose of Library Visit



Observation:

Data shows that majority of students, 857(78%) visits the library for preparation of project work. 800(73%) students visits library to borrow the books. 700(64%) students visits for the use of internet. For study purpose 594(54%) students visit the library. 249(23%) students

visits library for reading newspapers. 53(5%) students visits the library to increase their general knowledge. 29(3%) students visits library for their research work.

273(64%) faculty visit the library to borrow books. 242(56%) faculty visits for the use of internet. 147(34%) faculty for research work visits the library. To prepare lecture notes. 26(6%) faculty visits library 14(3%) faculty visits for reading news paper.

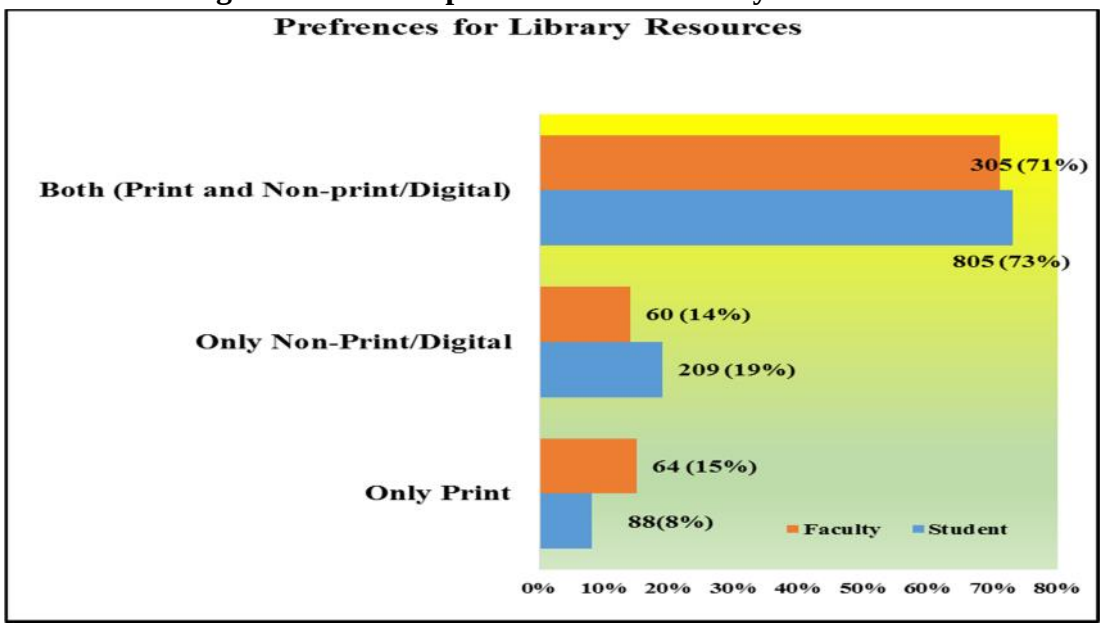
6. Users' Preferences for Library Resources

Advancement in technology and publishing have greatly affected the users' preferences for use of library resources. The researcher asked the users to give the details of their preferences, which are shown in Table 5.82.

Table 5.82: Users preferences for Library Resources

Sr. No.	Users	Only Print	Only Non-Print/Digital	Both (print and non-print/Digital)	Total
1	Student	88 (8%)	209 (19%)	805 (73%)	**1102 (100%)**
2	Faculty	64 (15%)	60 (14%)	305 (71%)	**429 (100%)**

Figure 5.61: Users preferences for Library Resources



Observation:

It is observed from data that 88(8%) students prefer the only print form of library collection and services followed by 209(19%) students prefer to have library collection and services in non-print/digital form only. 805(73%) students prefer to print and non-print/digital form

64(15%) faculty (Teaching/Non-teaching) wants to use library collections and services in print form only. 60(14%) prefers only non-print/digital. 305(71%) prefers both print and non-print/digital library collection and services.

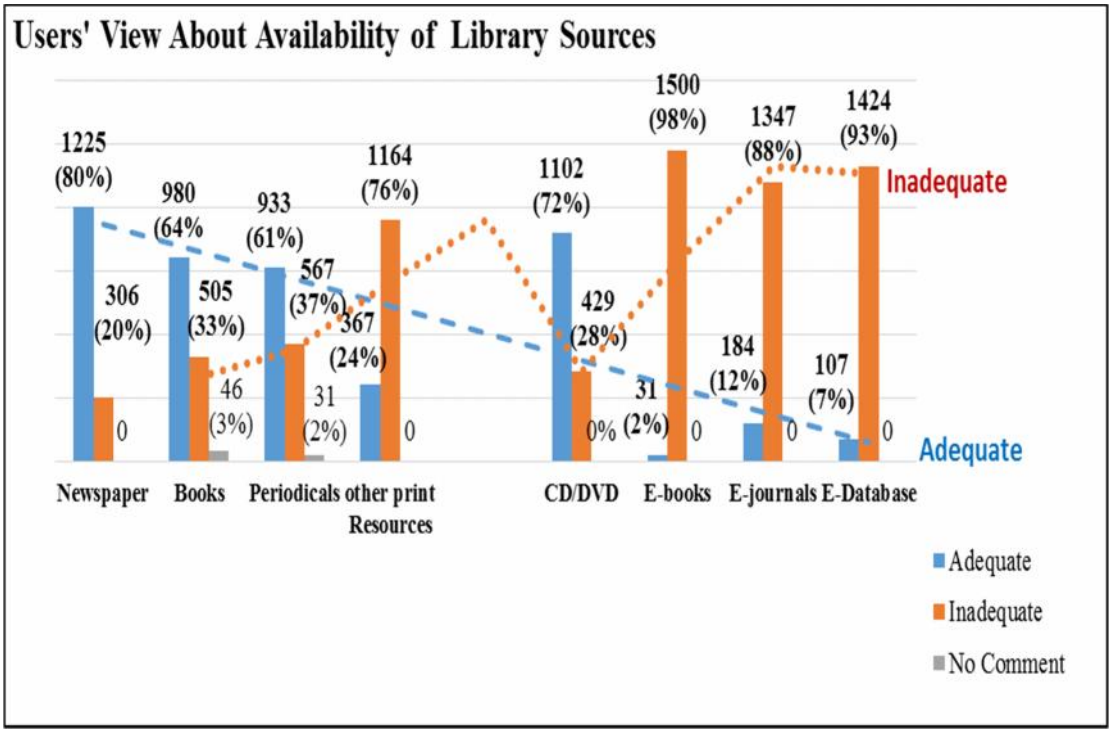
7. Users' View about Availability of Library Collection

The researcher asked the respondents to provide their views about the adequacy of the library collection. Users' view about the adequacy of the library collection is shown in Table 5.83.

Table 5.83: Users' View about Availability of Library sources

Sr. No.	Library Collection	Adequate	Inadequate	No Comment	Total Percentage
	Print Sources				
1	Newspaper	1225 (80%)	306 (20%)	0 0%	1531 (100%)
2	Books	980 (64%)	505 (33%)	46 (3%)	1531\(100%)
3	Periodicals	933 (61%)	567 (37%)	31 (2%)	1531 (100%)
4	other print Resources	367 (24%)	1164 (76%)	0 0%	1531 (100%)
	Average (%)	**876 (57%)**	**636 (42%)**	**19(1%)**	**1531(100%)**
	Non-print/ Sources				
5	CD/DVD	1102 (72%)	429 (28%)	0 0%	1531 (100%)
6	E-books	31 (2%)	1500 (98%)	0 0%	1531 (100%)
7	E-journals	184 (12%)	1347 (88%)	0 0%	1531 (100%)
8	E-Database	107 (7%)	1424 (93%)	0 0%	1531 (100%)
	Average (%)	**356 (23%)**	**1175 (77%)**	**0 0%**	**1531 (100%)**

Figure 5.62: Users' View about Availability of Library sources



Observation:

It is observed from the data that

- 1225(80%) users are of opinion that availability of newspapers in the library is adequate in numbers. 306(20%) user says that newspapers are inadequate.
- 980(64%) users are of opinion that collection of books is adequate and 505(33%) feel it is inadequate whereas 46(3%) users didn't comment on the availability of books in the library.
- 933(61%) users are of opinion that availability of periodicals are adequate whereas 567(37%) are of opinion that a number of periodicals are inadequate. 31(2%) have no opinion about the availability of periodicals.
- In case of other resources like a thesis. Glob, atlas, bound volumes etc. 367(24%) users say that they are adequate and 1164(76%) are of opinion that they are inadequate in numbers.

On an average 876(57%) users are of opinion that print resources in the college library are adequate 636(42%) users feel print resources are inadequate and 19(1%) users have no opinion about availability of print resources

- 1102(72%) users are of opinion that collection of CD/DVDs are adequate and 429(28%) users feel it is inadequate.
- 31(2%) users are of opinion that collection of e-books are adequate and according to 1500(98%) users say they are inadequate.
- For e-journals, only 184(12%) user is of opinion that e-journals are adequate in number, 1347(88%) users say it is inadequate.
- In case of e-databases, 107(7%) users are of opinion that available e-databases are adequate and 1424(93%) of users feel e-databases are inadequate.

In case of non-print resources, on an average 356(23%) of users are of opinion that non-print collection in the college library is adequate and 1175(77%) users say that non-print collection is inadequate.

8. Users' view about Library services

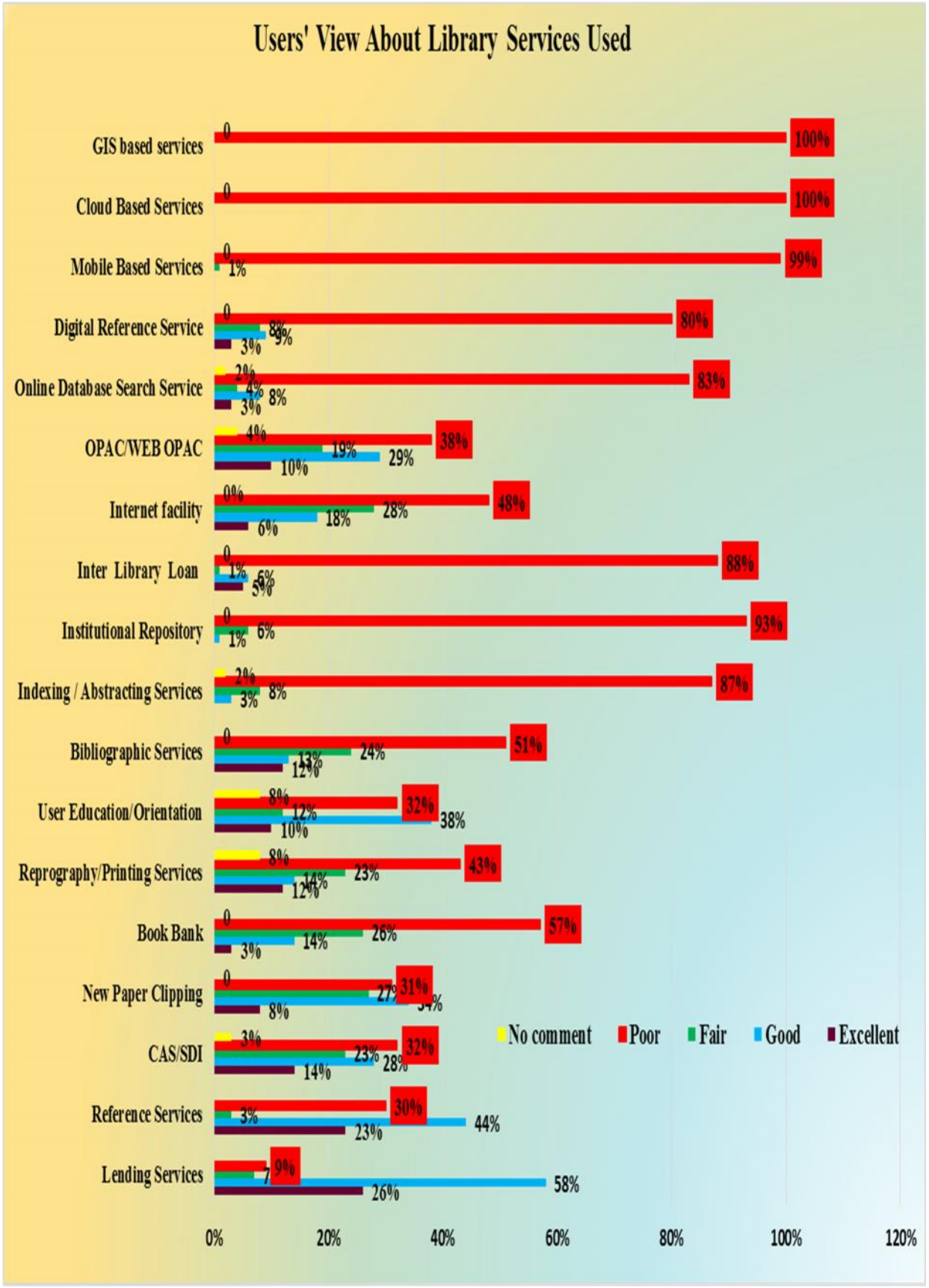
Effective library services help the users in enhancement of teaching, learning, and research program. To make the decision about re-engineering of library services it is most important to know the users' view about the library services used by them. The details of which are given in Table 5.84.

Table 5.84: Users' view on about Library services

Sr. No.	Library & Information Services	Excellent	Good	Fair	Poor	No comment	Total
1	Lending Services	398 26%	888 58%	107 7%	138 9%	0 0%	1531 100%
2	Reference Services	352 23%	674 44%	46 3%	459 30%	0 0%	1531 100%
3	CAS/SDI	214 14%	429 28%	352 23%	490 32%	46 3%	1531 100%
4	New Paper Clipping	122 8%	521 34%	413 27%	475 31%	0 0%	1531 100%
5	Book Bank	46 3%	214 14%	398 26%	873 57%	0 0%	1531 100%
6	Reprography/Printing Services	184 12%	214 14%	352 23%	658 43%	122 8%	1531 100%
7	User Education/Orientation	153 10%	582 38%	184 12%	490 32%	122 8%	1531 100%
8	Bibliographic	184	199	367	781	0	1531

	Services	12%	13%	24%	51%	0%	100%
9	Indexing / Abstracting Services	0 0%	46 3%	122 8%	1332 87%	31 2%	1531 100%
10	Institutional Repository	0 0%	15 1%	92 6%	1424 93%	0 0%	1531 100%
11	Inter Library Loan	77 5%	92 6%	15 1%	1347 88%	0 0%	1531 100%
12	Internet facility	92 6%	276 18%	429 28%	735 48%	0 0%	1531 100%
13	OPAC/WEB OPAC	153 10%	444 29%	291 19%	582 38%	61 4%	1531 100%
14	Online Database Search Service	46 3%	122 8%	61 4%	1271 83%	31 2%	1531 100%
15	Digital Reference Service	46 3%	138 9%	122 8%	1225 80%	0 0%	1531 100%
16	Mobile Based Services	0 0%	0 0%	15 1%	1516 99%	0 0%	1531 100%
17	Cloud Based Services	0 0%	0 0%	0 0%	1531 100%	0 0%	1531 100%
18	GIS based services	0 0%	0 0%	0 0%	1531 100%	0 0%	1531 100%

Figure 5.63: Users' View About Library Services Used



Observation:

- More than 80% of users are of opinion that lending services provided by college libraries are either excellent or good.
- 60-80% of users feel that reference services, CAS/SDI, New Paper Clipping, User Education/Orientation service and of the college libraries are either excellent, good or fair.
- 50%-60% of users say OPAC/WEB OPAC and Internet facilities are either excellent, good or fair.
- 40-50% of users say Book Bank and Bibliographic services, are either excellent excellent, good or fair .
- Only 20% of users say Digital Reference Service is either excellent excellent, good or fair .
- 10-20% of users say Indexing/Abstracting Service, Inter Library Loan service and Online Database Search service are are either excellent excellent, good or fair .
- Only 7% of users say Institutional Repository of their college library is either god or fair.
- 99% of users are of opinion that Mobile Based Services are poor in their college libraries. Also, 100% of users are of opinion that Cloud-Based Services and GIS-based services are poor.

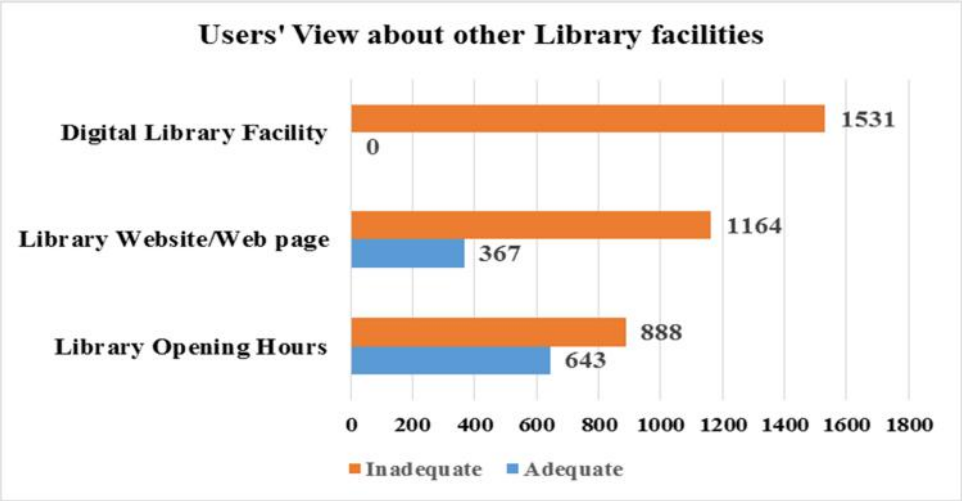
9. Users' View about other Library Facilities

The researcher asked respondents to give their view about other library facilities. The details of which are shown in Table 5.85.

Table 5.85: Users' Opinion about other Library Facilities

Sr. NO.	Library Facilities	Adequate		Inadequate		Total	
1	Library Opening Hours	643	42%	888	58%	**1531**	**100%**
2	Library Website/Web page	367	24%	1164	76%	**1531**	**100%**
3	Digital Library Facility	0	0%	1531	100%	**1531**	**100%**

Figure 5.64: Users' Opinion about other Library Facilities



Observation:

It is observed from the data that 643(42%) users feel that library opening hours are adequate and 888(56%) say, it is inadequate.

According to 367(24%) users services provided through library website/webpage are adequate whereas 1164(76%) users find it inadequate.

Whereas, 1531(100%) users says that digital library facilities are inadequate in their college libraries

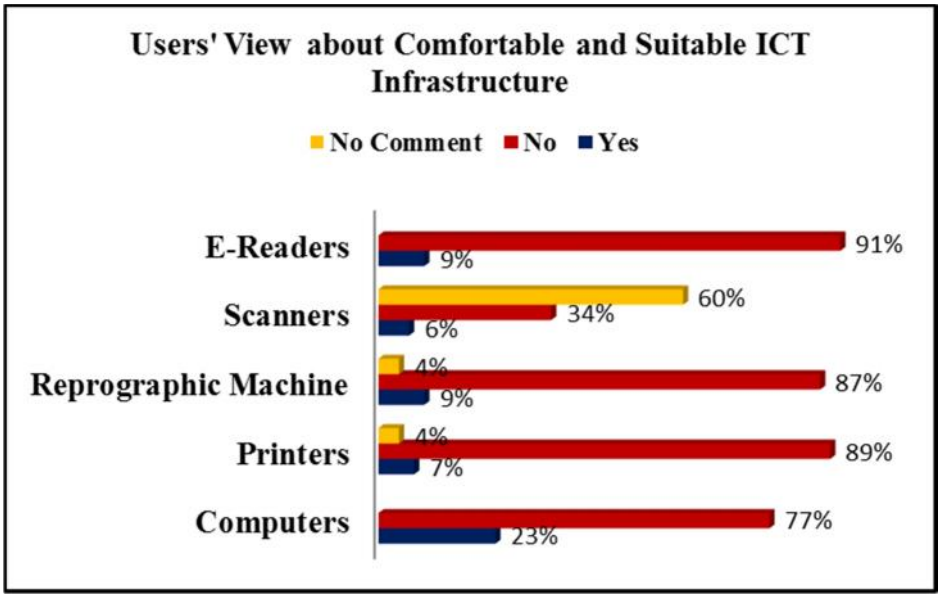
10. Users' view about Comfortable and Suitable ICT Infrastructure

Availability of comfortable and suitable ICT Infrastructure permits the usage of library collection and services, quick and convenient. The details Users' view about ICT Infrastructure is given in Table 5.86.

Table 5.86: Users' view about Comfortable and Suitable ICT Infrastructure

Sr. No.	ICT Infrastructure	Yes	No	No Comment	Total Percentage
1	Computers	352(23%)	1179(77%)	0(0%)	1531(100%)
2	Printers	107(7%)	1363(89%)	61(4%)	1531(100%)
3	Reprographic Machine	138(9%)	1332(87%)	61(4%)	1531(100%)
4	Scanners	92(6%)	520(34%)	919(60)	1531(100%)
5	E-Readers	138(9%)	1393(91%)	0(0%)	1531(100%)
	Average No. of Respondents	**165**	**1157**	**209**	**1531**
	Average Percentage	**11%**	**76%**	**14%**	**100%**

Figure 5.65: Users' view about Comfortable and Suitable ICT Infrastructure



Observation:

It is observed from the data that

- 352 (23%) library users feel that computers are comfortable and suitable. Whereas, 1179(77%) user says computers are not comfortable and suitable.
- In case of printers, only 107 (7%) user says that printers are comfortable and suitable for use. 1363 (89%) users feel they are not comfortable and suitable and 61 (4%) users didn't comment.
- For about reprographic machines, 138 (9%) users feel that they are comfortable and suitable, whereas 1332 (87%) users opined that reprographic machine is not comfortable and suitable in the college library whereas 61 (4%) user has no say about the reprographic machine.
- 92 (6%) users are of view that scanners are comfortable and suitable in use, 520 (34%) says that scanners are not comfortable and suitable and 919 (60%) didn't give any opinion about the availability of scanner.
- 138 (9%) users are of opinion that e-readers are comfortable and suitable and 1393 (91%) user says that it is not comfortable and suitable for use.

On an average only 165 (11%) users feel that ICT infrastructure is comfortable and suitable for use, 1157 (76%) users feel that it is not comfortable and suitable for use and 209 (14%) users didn't give any comment about comfortable and suitable ICT infrastructure.

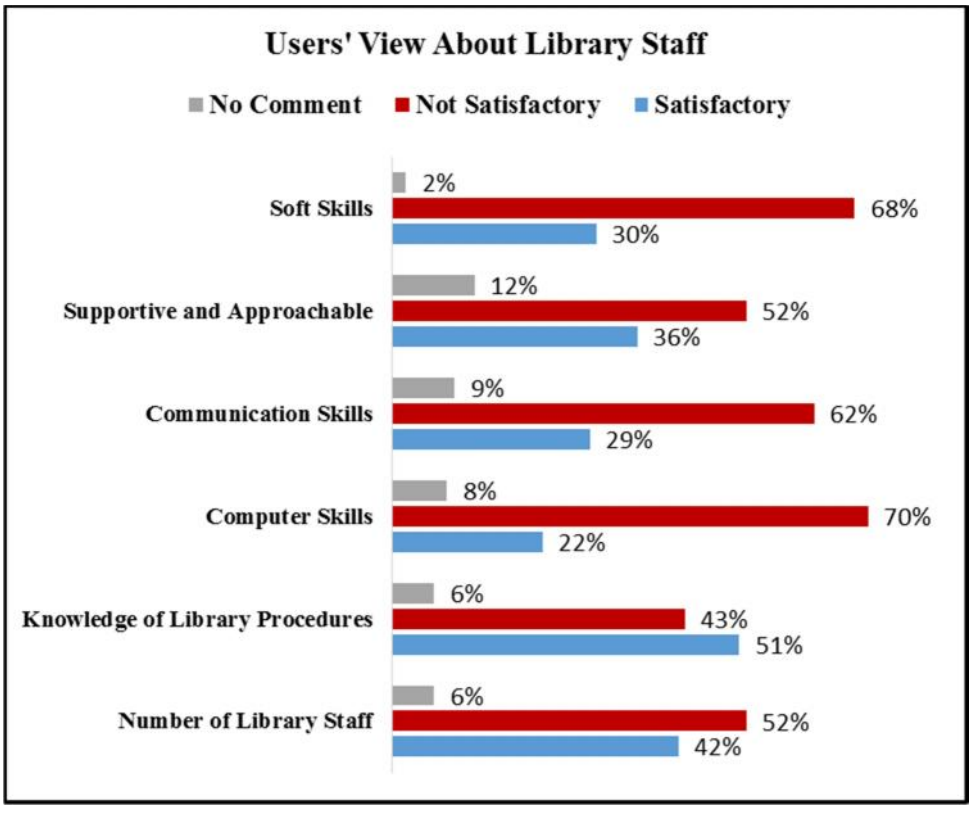
11. Users' View about Library Staff

Effective performance of the library mainly depends on the quality of library staff. The users' view about library staff are shown in Table 5.87.

Table 5.87: Users' View about Library Staff

Sr. No.	Library Staff	Satisfactory	Not Satisfactory	No Comments	Total
		No. of Respondents	No. of Respondents	No. of Respondents	No. of Respondents
1	Number of Library Staff	643 (42%)	796 (52%)	92 (6%)	1531 (100%)
2	Knowledge of Library Procedures	781 (51%)	658 (43%)	92 (6%)	1531 (100%)
3	Computer Skills	337 (22%)	1072 (70%)	122 (8%)	1531 (100%)
4	Communication Skills	444 (29%)	949 (62%)	138 (9%)	1531 (100%)
5	Supportive and Approachable	551 (36%)	796 (52%)	184 (12%)	1531 (100%)
6	Soft Skills	459 (30%)	1041 (68%)	31 (2%)	1531 (100%)

Figure 5.66 Users' View about Library Staff



Observation:

- It is observed from the data that only 643(42%) users are satisfied with the number of library staff available in the library. Whereas, 796 (52%) users are not satisfied. 92 (6%) users did not give any comment
- About knowledge of library procedures, 781 (51%) of the users are satisfied with their knowledge, 658 (43%) users are not satisfied and 92 (6%) did not comment.
- Only 337(22%) users are of opinion that computer skills of library staff are satisfactory, whereas, according to 1072 (70%) it is not satisfactory and again 122 (8%) did not give any comment
- According to 444 (29%) users, communication skills of library staff are satisfactory. Whereas 949 (62%) users say, it is unsatisfactory and 138 (9%) did not give any comment
- 551 (36%) users feel that library staff are supportive and approachable. 796 (52%) are of opinion that library staff are not supportive and approachable, and 184 (12%) do not have any say on this.
- For soft skills of library staff, only 459 (30%) users feel that it is satisfactory. Whereas, 1041(68%) users are of opinion that it is not satisfactory and 31(2%) did not comment on this.

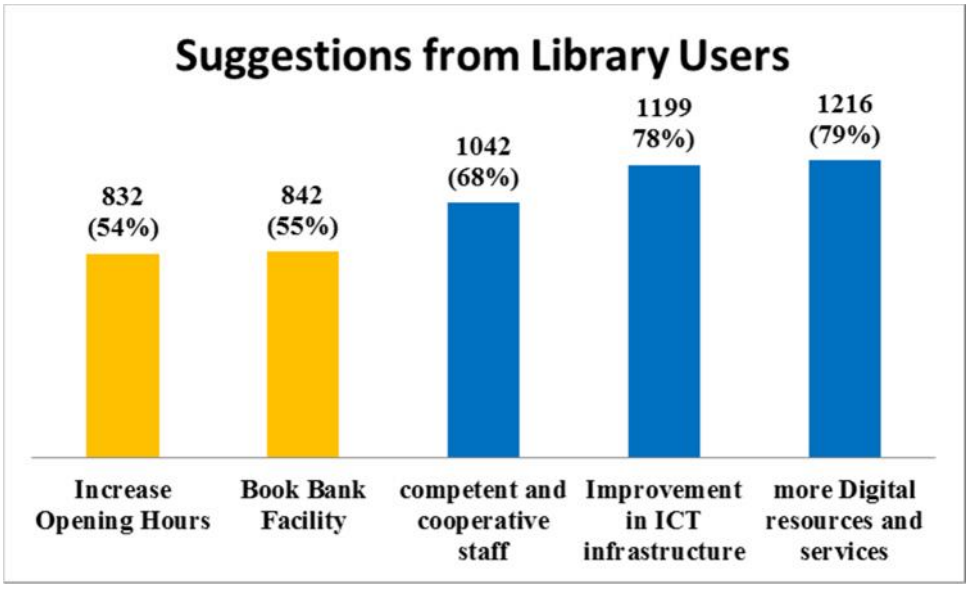
12. Suggestions From Library Users for Improvement in Library Usage

Library users are the king of the library, and the main objective of the college library is to satisfy the needs of the user. To improve the library usage, the researcher has asked users to give their suggestion for improvement of library usage. The details of which are given in Table 5.88.

Table 5.88: Suggestions From Library Users for Improvement in Library Usage

Sr. No.	Suggestions from Library Users	No. of Respondents	Percentage
1	Book Bank Facility	842	55%
2	Increased Opening Hours	832	54%
3	Improvement in ICT infrastructure	1199	78%
4	Competent and cooperative staff	1042	68%
5	More Digital resources and services	1216	79%

Figure 5.67: Suggestions From Library Users for Improvement in Library Usage



Observation:

Data shows that 832(54%) users wants increased opening hours, 842(55%) wants libraries to improve Book Bank facility, 1042(68%) feel that college libraries should have competent and cooperative staff so that users can take their help and like to visit library more. 1199(78%) users are of opinion that college libraries should improve ICT infrastructure, In digital age students are more comfortable with digital resources and applications so 1216(79%) users suggested college libraries to add more digital resources and services to increase the library usage.

5.4 References

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CHAPTER 6

Findings, Suggestions and Conclusion

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CHAPTER 6

Findings, Suggestions and Conclusion

"Knowing comes from learning, finding from seeking."

— Vaddey Ratner

6.1 Introduction

Findings of the status of re-engineering of college libraries, their collection, services, ICT infrastructure, and facilities and library staff based on views of college librarians and library users are given in this chapter.

6.2 Findings based on analysis of views of College Librarians

The researcher has distributed questionnaire to 84 college librarians and received responses from a total of 79 college librarians that is 94.05%.

6.2.1 Organization Information

There are 84 Government and Government fully or partially aided colleges in faculty of Arts, Science and Commerce in Mumbai Region.

Chronological Development of Colleges

1. Prior to independence only 11(14%) colleges were established under Government and Government fully and partially aided Arts, Science and Commerce colleges in Mumbai region. The real growth in colleges took place during the period 1957-1966, 18(23%) and during 1977-1986, 19(24%).
2. Wilson College was the oldest college established in the year 1832. And Public Night Degree College of Commerce is the last college, which got the permission to start college on a permanent grant basis in the year 1998.
3. After 1998 not a single Government and grant-aided college was established in Mumbai Region for Arts, Science, and Commerce education.

Courses offered and Student Strength in Colleges

1. The data shows that a total number of courses offered by Arts, Science and Commerce colleges are 20.
2. Among aided courses maximum number of colleges 72(91%) offer B.Com
3. In case of un-aided courses, maximum number of college 62(78%) offer B.M.S. course.
4. Majority of the colleges are offering commerce courses.
5. Nearly 40(50%) colleges have students' strength in range of 2000-4000, and 24(30%) colleges have strength more than 4000 but less than 8000.

Accreditation Status

1. All the Government and Govt. fully and partially aided Arts, Science and Commerce colleges in Mumbai region have been accredited in Cycle I by NAAC. 26% colleges have been accredited with "A" grade and majority of the colleges, that is 63% of the colleges have been accredited with "B" grade.
2. In the 2nd cycle of accreditation by NAAC, 59(75%) of colleges have been reaccredited and a majority of the colleges that is 36(46%) of the colleges have been reaccredited with "A" grade.
3. Only 14(18%) colleges have completed the 3rd Cycle of reaccreditation and all colleges have been awarded "A" Grade.
4. The result shows the incremental increase in the number of colleges with "A" grade in Mumbai Region, which have helped college libraries to improve their services.

6.2.2 Status of College Libraries

i). Opening Hours

1. It is observed that majority of the college libraries that is 66(83%) are kept open for less than 12 hours, which is less than opening hours prescribed by Kaula P. N (1983).
2. Only 13(17%) college libraries remain open for more than 12 hours.
3. No college library remains open on Sundays and Bank Holidays throughout the year. During examination period 59(75%) college libraries remain open on Holidays.

ii). Library Area

1. The highest number of college libraries that is 20(25%) has library carpet area ranging from 1000-1999 sq. ft.
2. 8(10%) college libraries have more than 8000 sq. ft. carpet area.
3. No. library has a separate building; all the libraries have space adjusted among college building itself and all the college libraries have reading room facility.
4. Average carpet area per student ranges from 0.84 to 1.66 sq. ft., which is very low.

iii). Classification, and Cataloguing Method,

78(99%) college libraries use Dewey Decimal Classification system. Even though there is enormous growth in various subject areas and multidisciplinary subjects, yet 49(62%) college libraries use DDC 19th edition. Only 5(6%) college library uses latest DDC 23rd edition. Only 1 college library uses Colon Classification 7th edition. And 78(99%) college libraries use the computerized catalog.

iv). Library Collection

a) Print Collection

1. 11(14%) college libraries have book collection less than 20000; 14(18%) college libraries have book collection in the range of 30000 to 39999; 8(10%) college libraries have book collection in the range of 20000 to 29999; 42(54%) college libraries have books in the range of 40000 to 99999; and 4(5%) college libraries have book collection more than 100000.
2. An average number of books per student enrolled in the Arts, Science and Commerce Colleges are only 1:15, which is low as compared to ratio 1:30 and 1:20, recommended by the UGC advisory committee meetings headed by Dr. S. R. Ranganathan in the year 1965 and 1979 respectively. It is observed that in 59 (75%) college libraries, a ratio of books per student is below 20. In 70(89%) college libraries ratio of books per student is below 30. Ram Narayan Ruia College of Arts & Science, Matunga has the highest number of books i.e.131000.
3. 63(80%) college libraries subscribe to periodicals within the range of 20 to 100. 9(11%) of college libraries subscribe to more than 100 periodicals. South

Education Society's Arts, Science and Commerce college subscribe to highest number of periodicals i.e. 192

4. Majority of the college libraries 72 (91%) subscribe more than 10 newspapers. Amongst all the college libraries, A. G. Acharya and D. K. Marathe college of Arts, Commerce, and Science have maximum newspapers i.e. 27.
5. Very few college libraries in Mumbai region have other print resources like globe, thesis, map, Braille Books, bound volumes. Only 2(3%) college libraries have Braille Books, 4(5%) have a globe, 32(41%) have a thesis, 37(47%) have maps and only 10(13%) college libraries have bound volumes. The college libraries in Mumbai region lack other print resources.

b). Non-Print Collection

6. It is observed that very few college libraries have non-print resources. Only 5(7%) college libraries have e-books in their library collection which is a very low figure. N.M. College of Commerce has the highest number of e-books i.e. 82.
7. Only 18(23%) college libraries have e-journals, out of them the majority of them have less than 20 e-journals. Only 1 college library, N. M. College of Commerce subscribes to maximum 28 e-journals.
8. 17(22%) college libraries still do not possess CD/DVD in their library collection. Nagindas Khandwala College of Arts, Science & Commerce College have maximum, 2873 CD/DVD in their college library and no college library has E-Thesis in its collection.
9. 67(85%) of the college libraries do not subscribe any database.
10. Majority of the college libraries,77(97%) have the membership of library network, INFLIBNET N-LIST.
11. In short print collection of college libraries are less than recommended by the UGC committees. Non-print collection is very poor and majority college libraries depend on e-resources of INFLIBNET N-LIST.

v). Collection development policy

To procure quality and balanced library collection (print and non-print), it is imperative that the college library has a systematic written collection development

policy in place, but in the survey, it is found that only 33(42%) college libraries have a written collection development policy.

vi). Document Selection Procedure

1. 79(100%) college libraries accept suggestions from faculty and researchers, 71(90%) college libraries adopted approval method for selection of documents. 67(85%) college libraries select through Organizing Book exhibition cum sale, 49(62%) college libraries use book reviews and publishers catalog, which are main source for a selection of quality print and non-print collection.
2. Ranganathan's Third Law of Library Science lays emphasis on the choice and requirement of the user for the book selection procedure, still, only 46(58%) of college libraries, give preferences to requisition of the students.
3. Library staff, are the best reviewer of the needs of user, yet 42(53%) college libraries accept the suggestions from library staff for selection of documents
4. Selection committee plays an important role in the selection of quality documents but unfortunately, only 7(9%) colleges have selection committee for selection of library collection (print and non-print).

vii). Method of Acquisition

It is found that all the college libraries in Mumbai region prefer purchases through local vendors for print and non-print resources, which is very convenient. Besides 67(85%) college libraries purchase directly from publishers so that they can take the advantage of maximum discounts and thus reduce the cost of purchase. Incidentally, in today's digital world, where everything is available online and a wide variety of documents is available with large discounts, college libraries are still hesitant to do online purchases; only 23(29%) college libraries adopt online procurement. 19(24%) of college libraries adopt quotation or tender method for the purchase of print and non-print materials.

viii). Physical Verification and Weeding out Process

It is found from the analysis that the space allotted to college libraries are less still 15(19%) college libraries do physical verification on yearly basis and only 5(6%) college libraries weed out the not required collection on yearly basis.

ix). Library Services

1. 79(100%) of the college libraries provide the lending services and reference services. 76(96%) conducts User Education/Orientation; and 65(82%) provides Bibliographic Services. The rest of the services viz. CAS, SDI, Newspaper Clippings, Book Bank, Reprography Services, Printing Services, Indexing / Abstracting Services, Inter-Library Loan, External Membership, Book Club, and Senior Citizen Book Club are still not integral part of the services provided by the college libraries in Mumbai Region. Very few college libraries are providing all the library services defined above.
2. The prerequisites of ICT based services are the computerization of library management system. Data revealed that 78 (99%) libraries have computerized two major in-house activities that are cataloguing and circulation. 68(86%) have OPAC facility, but, only 41(52%) college libraries provide WEB OPAC facility.
3. Internet facility enables the user to access the wide spectrum of non-print resources freely available in the knowledge world and resources subscribed by the college libraries. 73 (92%) colleges provide internet facility to the users in the library to access the e-resources, out of which only 35 (44%) college libraries allow the user to access an online database through network facilities. This shows that majority of college libraries are underutilizing e-resources and e-database (especially N-list) by the college libraries, though the subscription has been paid for the same. And only 34 (43%) college libraries provides digital reference service via email, website, blogs, Facebook etc. this shows that more than 50% of the college libraries are still not providing this service.
4. Only one college library provides Mobile-based services through SMS. In this digital age, yet no college library has Cloud-based and GIS-based services.

x). Management of Other Library Practices

1. Practices like Open Access, Institutional Repository Development and Wi-Fi facility helps the library to increase readership and research activities, but the data shows that only 20(25%) of college libraries are managing the practices like Open Access and Institutional Repository Development. Whereas 32(41%) college libraries provide Wi-Fi facility to their users

xi). Library staff

1. One of the reasons of underutilized library resources and services is lack of an adequate and qualified library staff. In 77(97%) college libraries, the post of librarians and in 56 (88%) college libraries, the post of assistant librarians are recruited as per the Maharashtra Government norm.
2. Whereas only 45% of the post of Library Attendants/Library Clerks are filled by in the college libraries in the Mumbai Region. This reveals that in the college libraries of Mumbai region, there is lack of adequate supporting staff.
3. All the college librarians and assistant librarians recruited are qualified as per the Government norms. 7(9%) of the college librarians are Ph.D. holders. 15(26%) Assistant Librarians have completed their master's degree in Library Science. 2(3%) have cleared SET/NET. And 1(2%) is Masters of Philosophy in Library Science.
4. Whereas 312(84.5%) library attendant's qualification is up to XIIth standard only and qualification of 56(44.44%) library clerks is up to XIIth standard only. This reveals that college libraries in Mumbai region are having less number of qualified supporting staff i.e. library clerks and attendants.
5. It this digital era it is imperative that the library staff, irrespective of the positions held should have required ICT skills to provide adequate and efficient library services for the success of the college. Majority of librarians and assistant librarians have ICT skills other than knowledge of computer hardware and software. Only 10(13%) college librarians and 8(14%) assistant librarians have knowledge about hardware and software, whereas library clerks and attendants do not have the knowledge about it. 89(71%) library clerks and only 199(54%) library attendants know the use of library software. 100(27%) of library attendants and 55(44%) library clerks can use social media for provision of library services, 25(7%) of library attendants and 50(40%) of library clerks have the knowledge of use of e-resource, like e-books, e-journals, e-database, institutional repository, open source etc., whereas in case of Use of A/V technology (OHP/LCD) only 100(27%) library attendants and 70(56%) library clerks know the use of it. And also, only 135(37%) library attendants can use the Window's application like

Word/Excel/Power Point presentation etc. this reveals that ICT skills of the supporting staff i.e. library clerks and attendants are very poor.

xii). Selection Method Followed for Recruitment of Library Staff

1. Adoption of proper selection method enables the college libraries to recruit the competent staff to provide efficient and effective library services to the users. It is observed that all the college libraries 79(100%) have adopted interview method for selection of staff.
2. Aptitude test enables library to test abilities and expertise to deal with the library-related activities. It is observed that only 13(16%) college libraries have adopted aptitude test for the selection of library staff
3. Information Communication Technology is inseparable from any of library activities; still, only 12(15%) college libraries have adopted the computer skill test for the selection of the library staff.

xiii). Performance Appraisal System

1. Performance appraisal system enables the college library to evaluate the performance and growth of the library staff and also helps to decide about the training programs for them. 65(82%) college libraries adopted performance appraisal system in their college libraries. And all of them use the confidential report as a tool for performance appraisal. 15% uses users' feedback, 5% uses 360-degree appraisal system, 2% uses MBO method and no college library use interview method for performance appraisal of library staff.
2. Constructive feedback of the performance appraisal to the library staff imparts self-awareness and directs them to update with the required skills. It is observed that only 13(16%) college librarians give constructive feedback to their employees about their performance.

xiv). Motivation Techniques followed by College Libraries

only 16(20%) college libraries have motivational systems in their college libraries and out of which, 5 college libraries give cash prizes to the best performers. 11 college libraries give awards (certificates) to library staff for their best performances. .

xv). Faculty Development Program for Library Staff

1. It is observed from the data that all the college libraries 79(100%) allows librarians to participate in refresher, orientation programs, workshops,

seminars and conferences. Only 18(23%) college libraries allow assistant librarians to participate in seminars and conferences, also only 24(30%) college libraries organize workshops or motivates library attendants and clerks to participate in workshops. thus they are deprived of the opportunity to improve their professional standards.

2. In case of short-term course, 20(25%) college libraries either organize or allow librarians to participate, whereas only 23(29%) college libraries have sent library attendants and clerks for short-term library science course
3. Only 4(5%) college libraries provide study leave and fellowship facilities and that also only to librarians for further study.
4. 53(67%) college libraries provide on the job training to assistant librarians and library attendants/clerks.
5. Only one college library has a provision of career counseling center for library staff to guide their career development.

Thus it is revealed from the analysis that majority of faculty developments programs are for librarians. College libraries do not take much initiative for faculty development programs for assistant librarian, clerks, and attendants.

6.2.3 Automation Status

1. Automation helps the college library to effectively manage the library collection and provide easy and convenient access to the library materials, save the time of the staff, which can be used for other innovative services to users. 78(99%) college libraries have automated their housekeeping activities. With regard to the automation of individual library activities, a majority of the college libraries 78(99%) have automated their cataloguing and 73(92%) automated circulation system. Whereas only 52(66%) have automated their Serial Control system, 31(39%) have automated stock verification and only 13(16%) have automated their acquisition process. Thus, it reveals that majority of college libraries have automated cataloguing and circulation system only. No college library has fully automated its housekeeping activities.

2. Out of the 79 college libraries 78 libraries have automated their library management system using following 10 different software: 29(37%) SLIM; 23(29%) SOUL; 6(8%) KOHA; 5(6%) M.I.C.M; 5(6%) LIBSYS; 3(4%) BOOK ZOOM; 3(4%) LIBSUITE; 2(3%) LIBEX; 1(1%) VRIDDHI; and 1(1%) INHOUSE customized
3. However, 14(18%) college libraries are unsatisfied with software. And 9(11%) college libraries are planning to shift to new software
4. Only one college library of Nagindas Khandwala College of Arts, Science & Commerce College have developed database, namely Icon-AD Database.

6.2.4 Use of ICT

1. A maximum number of colleges 28(35%) have computers in the range of 5-10 computers only. And a maximum number of college libraries 41(52%) have 2 printers only, which is less in numbers to serve the users in this digital world. ICT equipment like a scanner and photocopier helps to scan, preserve, and deliver the information. It also saves the time of the user and provides instant access to information, however, the analysis of data shows that Only 54 (68%) college libraries have scanners, 10(13%) college libraries have e-readers. 9(11%) college libraries have a fax, 7(9%) college libraries have photocopier machine.
2. Majority of the respondents that is 66(83%) are of opinion that the infrastructure in the college libraries are insufficient for smooth functioning of library functions and provision of services to the users.

6.2.5 Efforts towards Digital Library and Digitization

None of the libraries, so far have a digital library. Only 12(15%) college libraries have initiated the digitization of documents. Out of which, 6 (50%) college libraries have digitized Rare Books, 2(17%) digitized manuscripts, 3(25%) digitized thesis, 12(100%) college libraries have digitized old frequently used documents like syllabus, annual reports, faculty publications and question papers. All 12 college libraries use scanners/web cameras for digitization of documents.

6.2.6 Problems faced by the College Libraries in satisfying user needs

The three major problems faced by the college libraries in satisfying user needs are: Lack of qualified and skilled library staff, changing user behavior & expectations and new patterns of scholarly publishing/communication.

6.2.7 Initiation towards Re-engineering

i). Adoption of re-engineering process in the college libraries.

Out of the total 79 colleges, which have been accredited in cycle I, 73(92%) colleges have adopted the re-engineering process in the college library. This indicates that accreditation has a positive impact on the adoption of re-engineering process in the college library.

ii). Area of re-engineering in college libraries

1. Library collection and services is the core evaluator to measure the satisfaction level of the users. 70(89%) of the college libraries are of the opinion that there is need to reengineer the library collection and services.
2. Library staff is responsible for the development of library collection and provision of services to the users. It is therefore very important that human resources of any college library are competent enough and managed properly. It is seen that 73(92%) college library requires re-engineering with respect to human resource management.
3. In the modern era ICT infrastructure and facilities forms the backbone of the college library. The analysis indicates that 73(92%) of college libraries need to strengthen their ICT infrastructure and facilities.

iii). Objectives for re-engineering in college libraries

Rank wise data for the objectives of re-engineering shows that the main reason for re-engineering is to raise the profile of the college library as an important component of higher education system

iv). Presence and composition of Re-engineering Committee

Only 12(15%) of the college libraries have a separate re-engineering committee for effective planning and implementation of re-engineering process. All the college libraries have representative from management, faculty and library staff. Whereas, 5 college libraries have an I.T. Consultant and student representative on their re-

engineering committee. And only one college library has an external expert/consultant. This shows that the importance of the I.T. consultant, external expert/consultant and student representative who plays a major role in the success of re-engineering process have been undermined in most re-engineering committees.

v). SWOT Analysis: need, frequency, and tools used.

SWOT analysis helps the college library to understand the existing process, helps to identify the need for re-engineering in specific area. 65(82%) college libraries agree that there is a need to conduct SWOT analysis but only 25(32%) college libraries conduct it on regular basis. And with regard to the type of tools used for conducting SWOT analysis, it is seen that a majority of the college libraries, i.e. 62 (78%) take the aid of User feedback.

vi). Communication regarding re-engineering process (plan) to library stakeholders and conduct of Pilot Study of re-engineering process

The process of re-engineering will have a major influence on its stakeholders; hence they need to be informed about any decisions regarding the same. It is seen that 73 (92%) college libraries communicate with their stakeholders regarding the re-engineering process and conduct Pilot Study of re-engineering process.

vii). Need of ICT infrastructure

79(100%) college libraries are of opinion that there is need of ICT in re-engineering.

viii). Marketing of Newly Reengineered Process

1. More than 50% of college libraries adopt various marketing strategies like user orientation programs, library tour, pamphlets/leaflets/brochures, conducts exhibitions/seminars/workshops etc. and display of new arrivals.
2. Only 29% of the college libraries use digital media like social media and 445 use library websites for making their stakeholders aware about the library activities for optimum use of library, infact, majority of stakeholders are comfortable with digital media.

ix). Evaluation of Re-engineering Process

Evaluation of re-engineering process helps college library to identify the effectiveness of the new process and do the modifications if required, achievement of its objectives. Still, 50(63%) college libraries do not evaluate the re-engineering process.

x). Challenges for effective implementation of re-engineering process

1. More than 90% say that lack of understanding of re-engineering process and lack of management support are the main challenges for re-engineering process.
2. 70-90% college libraries are of opinion that competency of library staff, Lack of: resources, training and education of staff, infrastructure, ICT tools, standard methodology, leadership and execution, over dependency on outsiders and neglecting library staff, resistance from staff, challenges in transition from one method to another, problems related to creating a culture, problems in communication, and. lack of organizational readiness for change for change are the challenges for the success of re-engineering.
3. 60-70% college libraries are facing pressure for completion of re-engineering process.
4. 50-60% college libraries are of opinion that lack of users' training and economic problems are the challenges for the success of re-engineering process.
5. 40-50% college libraries are facing challenges due to ever-changing users' need and their failure to understand their need.
6. 30-40% are facing challenges due to previous negative experience with re-engineering and failure to define organizational objectives.

xi) Suggestions from respondents for success of re-engineering

More than 90% of respondents suggested that, management support, adequate, competent and cooperative staff and adequate infrastructure and ICT tools are the important factor for success of re-engineering. 85% to 90% respondents are of opinion that there is need of adequate budget for acquisition of print and non-print resources, standard methodology or model and knowledge of re-engineering process for success of re-engineering. 75% to 80% respondents suggested effective leadership and execution, regular training and workshops and healthy, creative work environment and effective analysis of users' need are essential for success of re-engineering. Whereas, only 65% respondents are of opinion that there is need for effective communication system for re-engineering

6.3 Findings Based on Analysis of Users' View

The researcher has distributed a questionnaire to 1800 library users of Arts, Science and Commerce colleges of Mumbai Region. The responses were received from 1531 respondents out of 1800 i.e. 85.05%

1. It is observed that only 88(8%) student and 30(7%) staff visit the college libraries on daily basis.
2. More than 70% of students visits library for preparation of project work and to borrow books. 700(64%) students visit for the use of internet. For study purpose 594(54%) students visit the library. Very few students visits library for reading newspapers, to increase their general knowledge and for their research work.
3. Whereas, 273(64%) faculty (Teaching/Non-Teaching) visits library to borrow books, and 242(56%) faculty visits for the use of internet. Only 147(34%) faculty for research work visits the library. And Very few faculty visit library to prepare lecture notes and for reading news paper
4. 805(73%) students and 305(71%) faculty (Teaching/Non-teaching) prefer to use library resources in both print and non-print/digital form.
5. On an average 876(57%) of users say that print resources in the college library are adequate and resources, and in case of non-print resources, on an average 356(23%) users say that non-print collection in the college library is adequate. In short, according to the majority of users non-print collection is inadequate in their libraries.
6. More than 80% of users are of opinion that lending services provided by college libraries are either excellent or good. 60-80% of users feel that reference services, CAS/SDI, New Paper Clipping, User Education/Orientation service and of the college libraries are either excellent, good or fair. 50%-60% of users say OPAC/WEB OPAC and Internet facilities are either excellent, good or fair.
7. Whereas, more than 50% of users say Book Bank and Bibliographic services, Digital Reference Service, Indexing/Abstracting Service, Inter Library Loan service and Online Database Search service, and Institutional Repository of

their college library are poor. 99% of users say that Mobile Based Services provided by college libraries are poor. 100% of users are of opinion that Cloud-Based Services and GIS-based services are poor in their college libraries. Thus, it is observed that the library services – traditional and ICT based - are not fully satisfactory

8. For other library facilities like opening hours, library website/web pages and digital library facilities, it is observed from the data that for 653(42%) users the library opening hours are adequate, for 367(24%) users, services provided through library website/web page are adequate. Whereas, no user feel that, digital library facilities are adequate in their college libraries.
9. On an average only 165 (11%) users feel that ICT infrastructure is comfortable and suitable for use.
10. It is observed from the data that 643(42%) users are satisfied with the number of library staff available in the library. 781(51%) users are satisfied with their knowledge of library procedures. Only 337(22%) users are of opinion that computer skills of library staff are satisfactory. 444(29%) says communication skill of library staff are satisfactory. 551(36%) users feel they are supportive and approachable. For soft skills of library staff, only 459 (30%) users feel that it is satisfactory.

Suggestions from Library Users for Improvement in Library Usage

In digital age students are more comfortable with digital resources and applications and many times they are engaged in many other activities so they may not have enough time to visit the library, so 1216(79%) users suggested college libraries to add more digital resources and services to increase the library usage. 1199(78%) users are of opinion that college libraries should improve ICT infrastructure, 1042(68%) feel that college libraries should have competent and cooperative staff so that users can take their help and like to visit library more. 842(55%) users wants libraries to improve Book Bank facility, 832(54%) wants increased opening hours.

6.4 Suggestions

On the basis of the findings, the researcher has made suggestions to college libraries, college authorities and Government Authorities, which are as follows:

6.4.1. Suggestions to College Libraries:

A. For Re-engineering Strategies

1. **Re-engineering Committee for proper planning and implementation of re-engineering process:**

It is found from the analysis of college librarian's and users' view that it is highly needed for the college libraries to raise the profile of the college library as an important component of the higher education system. It is suggested that the college libraries need to focus on planning and implementation of re-engineering process in order to meet the objective of the college libraries. Re-engineering committee helps in proper planning and implantation of re-engineering process. It is suggested that all the college libraries should have re-engineering committee comprising members viz. I.T. Consultant; External Experts / Consultants; Student Representative over and above the Management Representative and Faculty Member. Representative from different disciplines and section think about the situation differently and accelerates the innovations in library activities

2. **Regular SWOT Analysis**

SWOT Analysis enables the library to identify of actual need for re-engineering process. The library needs to conduct SWOT Analysis on continuous basis should make use of tools like : User feedback; Stock Register; Mail Survey; Library Annual Report; Library Website; Interview; Focus Group; News Paper/Journal; Government Norms and Polices for effective analysis

3. **Prioritise the re-engineering of weaker area**

All the factors contributing to the re-engineering of college libraries viz. library collection, services, ICT infrastructure and library staff are to be handled simultaneously in such a way that the weaker area is given priority to reengineer the college libraries. All the sections of library can not be re-engineered at the same time.

4. **ICT enabled Re-engineering Plan**

Planning is important for the success of re-engineering process. It is suggested that all college library should have re-engineering plan pivoted around ICT based infrastructure and facilities. Information Communication Technology is a critical and usual companion of re-engineering in this digital era.

5. **Time frame:**

Re-engineering plan should define a specific time frame for its implementation. In absence of specific time frame there is possibility that staff may lose the support from higher authorities and thrust essential to achieve objective of the re-engineering process successfully.

6. **Pilot Study**

Pilot study helps in building the enthusiasm for successful implementation of redesigned process. All the college libraries should conduct the pilot study of re-engineering plan before going for its implementation

7. **Communication of Re-engineering plan to Stakeholders and staff empowerment for effective implementation of process**

It is strongly recommended that the re-engineering plan is communicated to all the stakeholders to maintain the transparency in re-engineering process and to avoid the resistance from its stakeholders. In a way, communication will help in gaining early support from stakeholders for new process. And for its effective implementation, library staff should be empowered enough to take the decisions in their working area with permission of higher authorities

8. **Marketing of Re-engineered Process**

College libraries should adopt various marketing strategies like help desk, face-to-face user group meetings, newsletters the library's own website, exhibitions and should also make use of social media because today's user are more comfortable with digital media and it is easy to reach out to users through social media. Effective marketing make users aware of the newly reengineered process so users can take the maximum benefit of a new process in their teaching learning and research activities.

9. **Evaluation**

Evaluation is needed to measure the extent to which the pre-defined goals of the re-engineering process have met and helps to modify the changes if required. Evaluation is a must for the success of any re-engineering process, it is suggested that college libraries should evaluate their re-engineering process regularly and take the necessary actions wherever and whenever it is required.

B. For Collection Development

1. **ICT enabled Collection Development Policy and suggestions from all stakeholders**:

It is suggested that re-engineering committees encourage college libraries to adhere to the written collection development policy. The library may use ICT for a suggestion from all the stakeholder viz. teaching and non-teaching faculty, researchers, students, management representatives and subject experts, for selection and purchase of the quality and balanced library collection (print and non-print).

2. **Cost effective and efficient Acquisition Method:**

For cost-effective and qualitative library collection, all the college libraries should acquire the library collection through local vendors, publishers, consortia, on approval or quotation method. The library may also go for online purchases via Flipkart, Amazon etc, where, the library can get all the latest publications of various disciples published by various publishers on the same platform. At the same time through online purchase, the library may get more discounts also. The college library should select the acquisition method depending upon the need, urgency, and budget.

3. **Library Network:**

The college libraries may form library networks for bulk purchase of library documents and also to subscribe DDC online, which will be cost-effective and all the college libraries can use the latest edition of DDC at a reasonable cost.

4. **Timely regular up gradation of Library Management Software and automation of all housekeeping activities:**

There is need to update the library management software from time to time to comply with the development taking place in international standards for bibliographic descriptions and its exchange. It is also suggested that the college libraries automate all other library activities on an above cataloguing and circulation that is an acquisition, serial control, and stock taking. It will save the time of the library staff and will reduce the duplication of work.

5. **Balanced, adequate and rich Library Collection:**

It is suggested that the colleges falling below the standard recommended by UGC for the book collection, should raise their collection at least to match the

recommended level as early as possible. It is suggested that college libraries subscribe to adequate periodicals depending upon the need and strength of the users.

In this digital world, there is a profound transformation in user's choice and options for information resources, which is confirmed by users' survey 72.5% users prefer both print and non-print collection. Day by day demand and use of non-print collection are increasing. It is also observed from data analysis that majority of the college libraries still depend on print collection rather than a non-print collection. There is need to provide a non-print collection to library users to bridge the knowledge and digital divide between developed and developing countries.

6. Stock Verification and Weeding out process

For effective management of resources, and to solve the problem space crunch, libraries need to adopt stock verification and weeding out process on regular basis.

C. For Library Services

1. All the college libraries (100%) provides the lending services and reference services. Lending services: the college libraries may increase the number of books and days for lending documents, it may also make the changes in lending time, provide online renew and reservation facilities. If budget permits, the college library may also go for self-check system which also enables libraries to provide the services also during extended hours without additional or no library staff. Such systems include security measures too. The college libraries should take initiative to extend their reference services digitally through e-mail, blogs etc.
2. Also, 99% of the college libraries have automated their library activities, especially cataloguing which enables them to provide CAS, SDI and Bibliographic Services. the college libraries should promote CAS, services and SDI and Bibliographic services and college libraries may also scan and digitize the documents and start electronic document delivery services through e-mail, blogs, library websites and other social media in the form of pdf files or HTML files along with reprography and printing services.

3. With the rising cost of publications (print and non-print) in addition to reformation in the educational system like to semester and choice based, the college libraries required to provide book bank services.
4. It is suggested that all the college libraries should organize orientation and information literacy programs to ensure that all the stakeholders are aware of the library collection and services and also about its usage.
5. Irrespective of the type and size of the library as a prerequisite of re-engineering, every college library should provide open access services based on library collection.
6. As mentioned above with the rising cost of publication and information explosion the college libraries can not afford to have all the documents needed by its users, in such situation the college library need to have inter library loan services using digitized document delivery services which is cost effective and time-saving.
7. One of the objective of the college library is inculcate reading habits among students and to satisfy this objective the college library may go for book cub facility.
8. As a community service, the college library may extend its services in form of External Membership, Book Club, and Senior Citizen Book Club, which helps in lifelong learning and be a member of an information society.
9. Majority of the college libraries under study has subscribed to e-resources of INFLIBNET N-LIST, there is need to take initiative by the college libraries to orient the library users about its usage for maximum utilization of e-resources. 92% of the college libraries have internet facility, to make the maximum use of e-resources the college libraries are suggested to guide and provide the internet services for accessing e-resources to all the stake holders
10. With computerized cataloguing the bibliographic search is not limited only to either an author or title or subject, rather it enables precise and exhaustive information search (using Boolean operators). It is therefore necessary to provide OPAC and WEB OPAC services.
11. The college libraries may also develop information literacy model using GIS services.

12. Nowadays all the library users have smart phones with internet connectivity, the college libraries may reach out to users using Mobile-based services.
13. The college library may explore cloud computing technology for storage of large database, which also enables resource sharing like sharing software and large databases.
14. College libraries should remain open on all Sundays and Bank Holidays for users, as these are days when users get time to visit the library. And during weekdays also, the college libraries should extend their opening hours minimum up to 12 hours.

D. For ICT Infrastructure and facilities

1. The college libraries should make available enough number of computers, printers and internet connectivity with a separate section to enable students to access online sources, prepare project reports and their presentations with adequate administrative control.
2. For faster and easy communication there is a need to develop digitized institutional repositories like annul reports, various committee reports and minutes, circulars, faculty research publications, institutional publications and other important documents through proper administrative controls.
3. The digitization technology has to be further extended for rare books, manuscripts, and thesis. The college libraries also need to take initiative to share these digitized thesis and manuscripts with respective universities for their participation in ETDS program initiated by INFLIBNET CENTRE controlling plagiarism.
4. The college libraries should explore the use of scanners for preservation and to provide multiple copies of the reference documents recommended by the teachers in the classroom, it helps to avoid damages to the documents due to multiple duplications.
5. There is strong need to provide training in open source digital library software to digitize institutional repositories and other resources.
6. The college library should have a separate website or web page linked to the parent institution. Library catalogue (WEB OPAC), important website links for free resources and other institutions, e-resources subscribed by the college

libraries, institutional repositories viz. syllabus, question papers, research publications of faculty, rare books, annual reports, college magazines etc. should be linked with library website/web page with proper administrative control. And also it should be updated on regular basis.

E. For Human Resource Management

1. **Recruitment of Adequate Library Staff:** Effective implementation of re-engineering process and success of it largely depend on the availability of competent library staff. It is suggested that all the college libraries should recruit library staff as per the staffing pattern provided by the UGC and Maharashtra Government and under no circumstances any of the library post should remain vacant.
2. **Selection of Competent Staff:** Role of college libraries have changed dramatically, it is vital that over and above the basic qualifications, library staff must have ICT skill, communication skill and management skill for the provision of effective library services to the users. It is suggested that for the selection of the library staff combination of multiple selection methods like an interview, aptitude test, and computer skill test should be employed by the higher authorities.
3. **Performance Appraisal System with constructive feedback system:** For qualitative improvements in the library staff, higher authorities of the college must adopt performance appraisal system on a continuous basis. Performance appraisal activity need to be followed by constructive feedback to library staff showing them their strength and weakness to motivate them for further improvements. It is also suggested that college libraries should adopt user's feedback, MBO method and 360-degree appraisal system in combination with the confidential report method for appraisal system. Users' feedback system enables college libraries to identify the strength and weakness of the library staff. MBO method enables college libraries to motivate the library staff to accomplish the task/job in most effective manner and in the stipulated period of time. It also creates healthy competition among the library staff. And 360-degree appraisal system enables the college library to assess the all rounded and balanced view of skill and behavior of the library staff.

4. **Use of Motivational Techniques:** To encourage the library staff for better performance, it is suggested that all college libraries should adopt reward system either in form of cash prizes or best user award etc. It also creates healthy competition amongst the library staff which ultimately boosts them to provide effective and efficient library service.
5. **Organization of Faculty Development Program for all stakeholders**: It is suggested that all the college libraries need to organize workshops, short-term courses, and training programs for library staff. They should also allow and motivate the library staff specifically the supporting staff and assistant librarians to participate in such faculty development programs for updating their knowledge in a field of technology and library science and to learn and improve their communication and soft skills to be competent, friendly and supportive to the library users for providing better services.

6.4.2. Suggestions to College Authorities

1. **Timely reaccreditation of colleges and constant support for re-engineering college libraries:** It is observed form the analysis that yet 25% college have not been reaccredited in the IInd cycle of NAAC accreditation. And very few colleges have been reaccredited in an IIIrd cycle. It is suggested that colleges should go for reaccreditation from time to time as it will help the college libraries to improve its collection, services, ICT infrastructure and efficiency of library staff. College authorities should encourage the college libraries to adopt re-engineering process with constant monetary and moral support.
2. **Regular qualitative audit of College Libraries.** College authorities need to regularly conduct an audit of a library collection, services, staff, infrastructure and functioning of the college library.
3. **Treat College library as an academic unit not as an administrative unit:** College authorities should not ignore the role of college libraries, on the contrary, should acknowledge and appreciate the efforts of the college libraries in a success of academic excellence of the institution. And should

treat college libraries as an academic unit and not as an administrative unit, and should not transfer library staff in any other administrative unit.

4. **Provision of ICT and other infrastructure:** Colleges should provide adequate library space for providing various library services. And, should also provide an adequate number of ICT infrastructure like, computers, printers, scanners, reprographic machine, fax, internet and Wi-Fi which are an integral part of the re-engineering of college libraries and other infrastructure for comfort of users.

6.4.3. Suggestions to Government Authorities

1. **Provision of separate fund for College Libraries:** UGC should sanction separate fund to the college libraries for procurement of print and non-print collection, ICT infrastructure, for seminars, workshops and training programs for library staff. As very often college libraries are getting very less share from the college development grant given by the UGC
2. **Revision of staffing pattern and Eligibility criteria staff for Library Supporting:** Government authorities should conduct a regular audit of the staff strength and the educational and ICT skills of the library staff so that they can revise and reconsider the staffing pattern and eligibility criteria for library staff as per the current trends.The government authorities should revise the basic qualification required for the post of library attendants. Standard of minimum qualification required to be raised to a minimum of XII pass and certificate course in library science and MSC-IT course. For Library clerks, standard of minimum qualification required to be raised to a minimum of graduation, certificate course in library science and MSC-IT course.
3. **Faculty Development Programs for Library Supporting staff and its linkage with their promotion and increment**: UGC should also take an initiative to arrange for short-term courses in the area of technology, communication, and management techniques and latest trends in library science for the professional development of assistant librarians, library clerks, and attendants. And also these courses should be linked with their promotion and increment. These faculty development programs will motivate library staff

to participate for their knowledge upgradation, career development and of course for monetary benefits, which ultimately improves the quality performance of the college libraries.

4. **Revision of API scheme for College Librarians**: UGC should also revise the promotional criteria for college librarians. There is need to revise API scheme, where more weightage is given to research papers and publications. There is need to give due weightage to refresher courses and short-term courses continuously throughout the service period of the college librarians. It will actually help the college librarians to update their knowledge and apply the same for better and innovative services of college libraries and meet the needs of the technosavy library users. And also due weightage should be given to innovative practices adopted by college librarians for the benefit of users and to achieve objective of parent organization. Ultimately quality and better services of college libraries will help the colleges to improve their academic standards.

6.5 Proposed Model for Re-Engineering in Arts, Science and Commerce College Libraries

Introduction

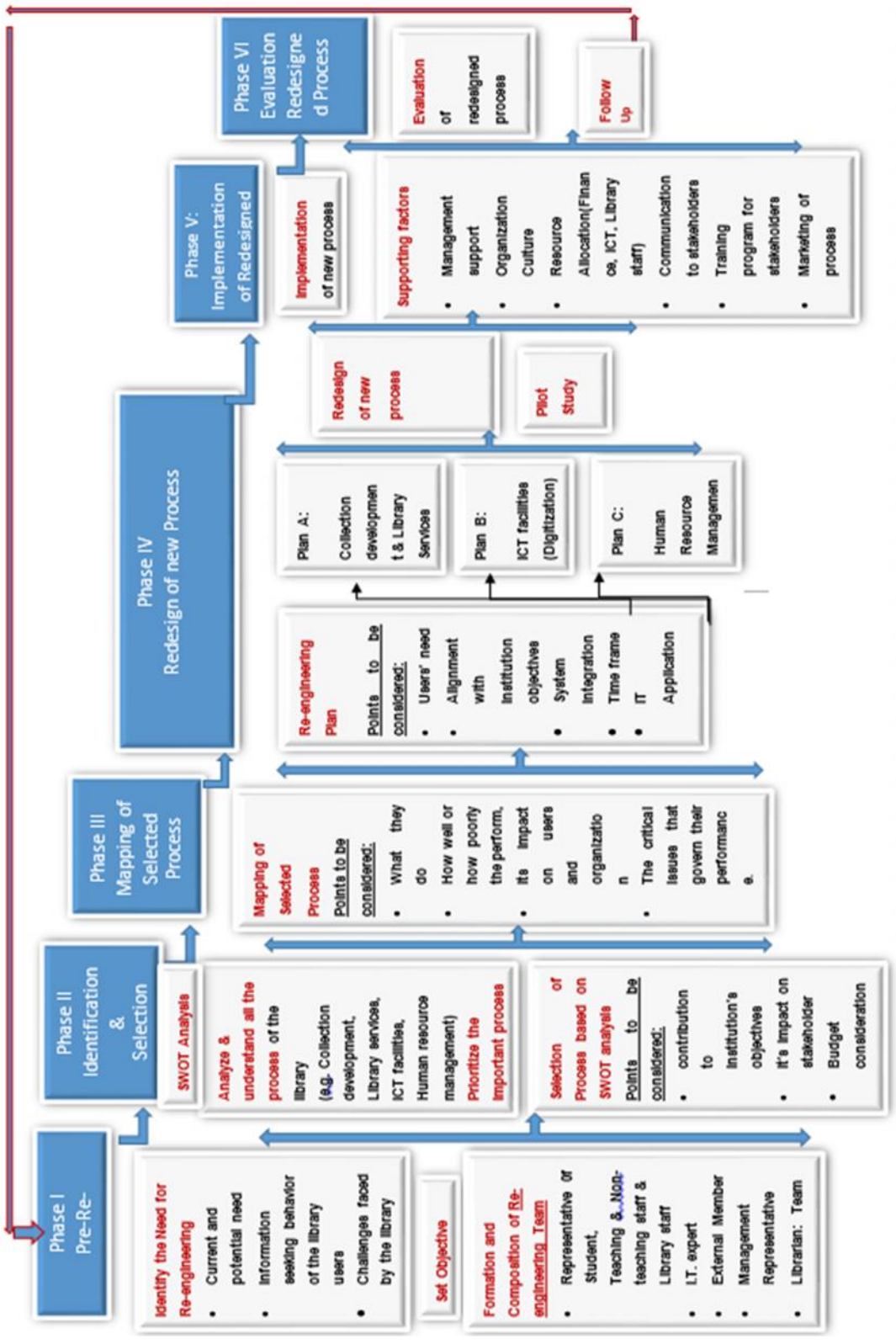
Today's college libraries are challenged with difficult operation conditions and with continuously increasing competition. Re-engineering the library processes seems to be unavoidable in order to survive in a competitive and continuously changing environment.

Many management experts have introduced several re-engineering models. The majority of Re-engineering models share common features and steps. The main challenge in Re-engineering project is to select the approach that is best suited to the situation in hand, taking into account the objectives of institution, capabilities and economic or competitive requirements. The main purpose is to integrate the wealth of information into a set of model, that can be easily applied by the college librarian

Figure 6.1: Conceptual Framework for Re-Engineering in Arts, Science and Commerce College Libraries



Figure 6.2: Proposed Model for Re-Engineering in Arts, Science and Commerce College Libraries



<table>
<tr><th colspan="4">Plan A (1): Collection Development in Arts, Science and Commerce College Libraries</th></tr>
<tr><td>1</td><td>Written Collection Development Committee:</td><td colspan="2">Proper formation of Collection Development Committee with competent representative from teaching faculty, administrative department, library users and library staff evaluation, storage and weeding</td></tr>
<tr><td>2</td><td>Written Collection Development Policy</td><td colspan="2">Collection development of policy should include objective of the library, target audience, budget, format of information sources, selection and acquisition process, collection</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Library Collection</td><td>Print Collection</td><td>Non-Print Collection</td></tr>
<tr><td>Books : Minimum 20 books per user

Journals: Minimum 20 per course

Newspapers: Minimum 10

Textbooks *

Thesis and dissertations, Government publications, Maps and atlases, reports, archival material including rare books, original manuscripts, interviews, grey literature etc. ***</td><td>E-Books : Minimum 30 e-books per course

E-Journals : Minimum 6 e-journals per course

E-database: Minimum 1

Audio/Video material and other digital information sources ***

Institutional Membership: Minimum 1 at least with (INFLLIBNET N-List)</td></tr>
<tr><td colspan="4">*** It depends on courses run by the colleges, users need and budget</td></tr>
<tr><td>4</td><td>Selection Process: tools and resources</td><td colspan="2">• Suggestions from Library users, Teaching faculty, Library staff, and Non-teaching staff
• Bibliographies and list by local vendors, commercial publishers, libraries and professional societies.
• Reviews from press, disciplined based journals, media
• Publishers’ brochures, catalogs, websites
• Books fairs: local, regional, national and international
• Online book stores’ catalogue</td></tr>
</table>

5	**Evaluation of Library Collection**	**Evaluation criteria for Print Collection**	**Evaluation criteria for Print Collection**
		• Content quality, • Level of library users, • Cost • Currency and accuracy • Critical reviews • Access points (indexes and level of details in table of content, • Long term significance • Physical Quality • Completeness, and comprehensiveness • Authoritativeness of author, publishers, editors • Frequency of revisions (editions)	• Availability of equipment for hearing or viewing audiovisual material • Licensing and Contractual terms, limitations and obligations • Cost, Discounts for individual purchase • Cost and discounts for consortia purchase, restrictions on cancellation • Currency and completeness • Vendor support and responsiveness • Ease of Use • Compatibility with link and management software • Quality of end user interface • Availability of back files in case of e-journals • Permission to access purchased content if subscription cancelled • Technical support and training • Physical and logistic requirements including space, furniture, hardware, wiring and telecommunications and data ports

			• Levels of Access (availability of multiple user, usually simultaneously)
6	**Acquisition Method**	Ownership and Access method through Direct Purchase , Standing order, Blanket Order, Approval method, Exchange, donations, gifts, depository plans , subscription, pay per view, Licensing agreements Big Deal etc.	
7	**Order Placing with**	**Print Collection**	**Non-Print Collection**
		Books : • Wholesale Vendor • Local Vendor • Publisher • Online stores amazon.com, Flipkart.com etc. **Journals:** • Through Consortia • Subscription Agent • Commercial Publishers • Scholarly Association	**E-Books :** • Book Vendors • Publishers • Through Consortia **E-Journals :** • Publishers • Aggregator for e.g Project MUSE, JSTORE, EBSCO • Through Consortia • Scholarly Association **E-Database :** • Vendors • Publishers • Through Consortia **Free E-Resources (Examples)** Social Science Research Network e-Library: SSRN e-Library Directory of Open Access Repositories (OpenDOAR) Google Scholar www.gutenberg.org www.doaj.com www.britannica.com www.abebooks.com www.doaj.com
8	**Processing**	Classification and Cataloguing: The college library should use standard and updated classification and cataloguing method which will help them in resource sharing and union catalogue	

9	**Automation**	**Points to be considered** • Availability of Collection, Budget and library users • Requirement of hardware, networking and other infrastructure • Standard software matching with latest international standards
		Commercial Library Management Software • SOUL, SLIM+, LIBSYS etc. **Open Source Software** • Koha : http://koha-commun ity.org/ • NewGenLib: http://www.verussolutions.biz/ • Evergreen: http://evergreen-ils.org/ • OPALS: http ://help.opalsinfo.net/ • Kuali OLE: http ://www.kuali.org/ole
10	**Weeding**	**Points to be considered** • Is it worn, soiled or damaged? • Is it out of syllabus? • Is content still pertinent? • Is it duplicated in collection? • Is it rare and valuable? • Is new edition of it available? • Is it listed in standard bibliography of important work? • Does it have local relevance? • Is it cited in standard indexing abstracting tools?

Plan A (2): Library Services in Arts, Science and Commerce College Libraries

<table>
<tr><th>Sr. No.</th><th>Type of Services</th><th colspan="2">Details</th></tr>
<tr><td rowspan="2">1

2</td><td>Basic Library and Value Added Services</td><td>• Lending services
• Reference Services
• New Paper Clipping
• Book Bank Services
• Reprography Services
• Printing Services
• CAS/ SDI/ Bibliographic Services
• Inter Library Loan
• User Education/Orientation
• Indexing / Abstracting Services, Open Access
• Institutional Repository</td><td><u>Best Practices</u>
• Best Library User Award
• Book Exhibitions
• Users Meet
• Senior Citizen Book Club
• External Membership facility
• Career/Employment Information Services
• Book Talk
• Book Review Competition</td></tr>
<tr><td>Internet Based Services</td><td colspan="2">• Library Management Software (Barcode enabled for issue, return and E-reservation service)
• Self-check (RFID)
• OPAC/WEB OPAC for catalogue search
• E-Reference Service:
• Internet and Wi Fi facility to access E-resources (e-books, e-journals, e-database, digitized question papers, syllabus, thesis, rare materials etc.)
• Web 2.0 services
• Instant Messaging, Blogs, RSS, Wikis, Mashups etc.
• Content Management Services using free software like:
➢ Drupal : http ://drupal.org
➢ Wordpress: http ://wordpress.org
➢ Joomla: http ://www.joo mla.org</td></tr>
<tr><td>3</td><td>Mobile Based Services through Wi Fi</td><td colspan="2"><u>Prerequisites for Mobile Based Services</u>
Smart phone with Wi Fi and Blue tooth facility
Standard Software of Electronic Access system compatible to all types of smart phone
Information in electronic form</td></tr>
</table>

		Mobile Based Services • Information and reference services via SMS and social networking • WEB OPAC
		• Issue, Return, Renewal and overdue notifications, Upcoming events notifications via SMS service • New arrivals, Circulars, Syllabus, Question papers through QR code services • Access of e-resources (e-books, e-journals, e-database) • Other ready reference services • Podcasts on iTunes U and You Tube • Lectures • Library virtual tour • Tutorials • Assignments
4	**GIS Based Services**	**Prerequisite for GIS based services** • Image processing program and GIS package • Compatible Hardware with GIS software • Training to Staff **GIS based services** • Location of Library Building , Floor plan • Location of books on shelves • Demographic details of library users, library suppliers and vendors
5	**Cloud Based Services**	**College library can adopt any type of computing from** • **Private Cloud Computing** : for individual library • **Public Cloud computing**: Commercial base cloud computing. • **Hybrid cloud computing:** Mixture of public and private cloud computing. • **Community Cloud computing : Number of College libraries can share t**he cloud computing services **Cloud Based Services** • Web OPAC facility • Real time service delivery through internet • Reliable data storage Backup and recovery • Access of data through any site and from anywhere • Virtual Library Tour • User Education/ Training Programs • Electronic documents service
		• Digitized Institutional Repository • Sharing of software and resources

Plan B: Human Resource Management in Arts, Science and Commerce College Libraries

Human Resource Management in the College Libraries				
		Staffing Pattern	**Qualification**	**Other Skills required**
1	**Recruitment Process**	**Librarian** 1 Librarian for all the colleges **Assistant Librarian** 1 Assistant Librarian per 2000 student **Library Attendant & Clerk** 1 Library Attendant per 250 student **Library Clerk** 1 Library Clerk can be recruited on the exchange of 4th Library Attendant	**Librarian** M.L.I.Sc. SET/NET Computer Skill **Assistant Librarian** Graduate in any discipline B.L.I.Sc Computer Skill **Library Attendant** XII standard pass in any discipline Library Science Certificate Course Plus computer certificate course **Library Clerk** Graduate in any discipline Library Science Certificate Course Plus	Leadership Managerial skill like Team Management Time Management Communication Skill Decision Making Computer Networking Information Security IT Governance Project Management
		Recruitment Process		
		• Determine the post to be recruited • Obtain the approval from college authorities and Government office • advertise the Post in newspapers sanctioned by Government office and in local newspapers, websites etc.		

		• Accepts the applications through mail, e-mail or hand delivery • Screen the applications • Invite the eligible candidates for selection process
2	**Selection Method**	• Interview Method • Aptitude Test • Computer Skill Teat • Reference checks • Medical Test
3	**Performance Appraisal**	**Methods for Performance Appraisal** • Interview Method • Confidential Reports • MBO Method • User's Feedback • 360 Degree Appraisal Method **Constructive Feedback to library staff should be followed by performance appraisal**
4	**Reward System**	• Cash Prizes • Best Employee Certificate • Appreciation Certificates
5	**Faculty Development Program**	• On job training • Job rotation • Career Counselling Centre • Workshops and short term courses • Training Programs for technical skill, communication skill and competencies needed to perform library tasks • conferences/ seminars • Orientation Programs • Refresher Courses • Study leave and fellowship

Plan C: ICT Infrastructure and Digital Initiative in Arts, Science and Commerce College Libraries

1	**ICT Infrastructure**	• Computer (Server, Desktop, Mobile Phone Laptop) • Printer • Scanner, Barcode Scanner • Barcode Reader • Fax • Photocopier Machine (al –in-one) • Internet facility with Wi Fi • Switches and Routers • Ant Virus Software • UPS • Networking (LAN/WAN/MAN) • Latest Operating System • CCTV Camera
2	**Digital libraries /Institutional Repositories**	**Software** · DSpace: http://dspace.org DSpace can be installed on Linux, UNIX and Windows platform. · E-Prints: http://www.eprints.org E-Prints requires Apache (with mod_perl), MySQL and can run on Windows Greenstone: http://www.greenstone.org Greenstone can be installed on all version of Windows, and Unix/Linux.
3	**Collection**	• Digitized text (printed Staff publications, Books, Reports, handwritten or typed manuscripts etc.) • E-Journals • E-Books • Audio/Video (Presentations, Course wears, Lectures etc.)
	Digitization Process	1. Material Preparation includes Binding, Debinding, Sorting, Classification of documents 2. Digitization of text, images (scanning), audio and video (In house/Outsource) 3. PDF conversion including OCR, indexing, table of contents and file compression 4. Meta data creation

5	**Copy Right Issues to be considered**	• Obtain permission form the author, publisher or copyright holder (for Books, Textbooks, Articles etc.) • Check License term for e-books, e-journals, cropping, adopting or modifying • For work in public domain (Government Publication) citation is required • For using information from Web citation is required.

***(As per the type of courses offered, needs of the user and available budget)**

Summary:

The Re-engineering model for College Library will serve as a medium for communication between the participants involved in the redesign process. It will also enable all participants to under- stand and discuss the process to be reengineered and gain a shared understanding of problems. To enable active participation, the model should be easily interpreted by participants.

6.6 Conclusion

The college library is the heart of the institution. It plays a major role in the growth of higher education and academic excellence of the institution. Advancement in technology has highly affected the forms and prices of publication, ways of storing, organizing and retrieving of information and most importantly information seeking behavior of users. To meet these challenges the college libraries needs adopt re-engineering process in their libraries to achieve the objectives of the institution and to achieve maximum users' satisfaction. The present study, focus on the status of the re-engineering in the college libraries of Government and Non-Government fully or partially aided colleges in faculty of Arts, Science and Commerce in Mumbai Region. The main objectives of the study are:

Objective 1: To identify the problems encountered by librarians in providing library services.is achieved by data presented and analysed in 5.2(11): Problems faced by the Library in satisfying users need (Table 5.62).

Objective 2: To identify the need for the re-engineering in college libraries is achieved through 5.2(12) Initiation towards Re-engineering Libraries (Table 5.65)

Objective 3: To find out the status of library collection, services, ICT infrastructure & facilities, and human resources of college libraries, is achieved through 5.2(7): Status of college libraries with respect to library collection, services and staff; 5.2(8) Automation Status of College Library; 5.2(9) Use of ICT in College Library; and 5.2(10) Efforts towards Digital Library and Digitization (Table 5.13 to 5.61)

Objective 4: To find out the strategies adopted by college libraries for re-engineering process. is achieved through data presented and analyzed in 5.2(12): Initiation towards Re-engineering (Table 5.63 to 5.76).

Objective 5: To propose a formal model for re-engineering College Libraries is achieved through 6.5: Proposed Model for Re-Engineering in Arts, Science and Commerce College Libraries given in of chapter 6.

Testing of Hypothesis

Hypothesis I: College libraries in Arts, science and commerce, are weak in their collection, services and staff

- **From Librarians' point of view**
  - Print collection of college libraries are reasonably less than required and non-print collection is very poor. (Table 5.15 to 5.23)
  - College libraries in Mumbai region are still not providing all the core and value added services and also ICT based services are poor. (Table 5.29 and 5.30)
  - There is lack of adequate supporting staff, and also, educational qualification and ICT skills of the supporting staff are very poor. (Table 5.34, 5.37 and 5.38)
- **From Library Users' Point of View**
  - According 43% Print collection is inadequate and majority, 77% say, Non-print collection is poor. (Table 5.83)
  - Majority of library services are not fully satisfactory. (Table 5.84)
  - More than 50% of users are not fully satisfied with availability of staff, their qualification, ICT & soft skills. (Table 5.87)

Hence <u>Hypothesis I is accepted.</u>

Hypothesis II: The application of Information Communication Technology in libraries is not so strong.

- **From Librarians' point of View**

- **ICT Equipment:** All the libraries have computers and printers, but number of computers and printers are less. 68% have scanners and very few libraries have e-readers, fax, and photocopier machine. (Table 5.52, 5.53 and 5.54)
- **Automation:** No library is fully automated. (Table 5.47)
- Initiative towards Digital Library and Digitization: No library has a digital library. Only 15% have initiated digitization of documents. (Table 5.58 and 5.59)

- **From Library Users' Point of View**

- On an average only 11% users feel that ICT infrastructure is comfortable and suitable for use. (Table 5.86)
- According to 76% the facility of library website/webpage is inadequate. And no user are of opinion that digital library facilities are adequate in their libraries (Table 5.85)

Hence <u>Hypothesis II is accepted</u>.

Hypothesis III: The college libraries inadvertently adopt a flawed or incomplete re-engineering strategy.

- **From Librarians' point of view**

- **Adoption of Re-engineering Process and Re-engineering Committee:** Majority of the libraries have adopted the re-engineering process, but 15% libraries have separate re-engineering committee with required members. (Table 5.63 to 5.67)
- **Composition of Re-engineering Committee:** Majority of college libraries have undermined the representation of I.T consultant, External Experts, and students in the formation of re-engineering committee (Table 5.68)
- **SWOT Analysis:** Majority of college libraries agree that there is a need to conduct SWOT analysis but only 32% conduct it on regular basis and tool used is use feedback (Table 5.69, 5.70 and 5.71)

- **Marketing Strategies:** Very few libraries make use of library website, pamphlets. Leaflets/brochures, and social media for marketing to make users aware about the new redesigned process. (Table 5.74)
- **Process of Management of collection, services, staff and in ICT facilities:** College libraries are weak in proper management of collection, services, staff and in ICT facilities (Table 5.25 to 5.29, Table 5.39 to 5.45, Table 5.58 to 5.61)
- **Evaluation:** Only 37% libraries evaluate the re-engineering process. (Table 5.75)
- **Challenges in Implementation of Re-engineering Process:** More than 80% are facing challenges like lack of understanding of re-engineering process; management support; Competency of library staff; ICT tools and infrastructure and lack of standard methodology or model in effective implementation of re-engineering process (plan). (Table 5.76)

Hence from college librarians' view, **Hypothesis III is accepted**

On the basis of the analysis the researcher has suggested the college libraries to adopt the systematic re-engineering process for collection development, ICT infrastructure, and management of human resources in the college libraries and use of ICT for library services, provision of value added services to the users for enhancing their teaching, learning and research activities. Library collection and services, Information Communication Technology and library staff are interlinked and most important factors in successful re-engineering of the college libraries. Researcher has proposed model for effective re-engineering of the college libraries for smooth and effective implementation of re-engineering process in the Arts, Science and Commerce college libraries. Researcher has also suggested the college authorities and government authorities to acknowledge the role of the college libraries and encourage them to play an important role in higher education by providing constant moral and financial support for providing efficient and effective services to its users.

Future Area of Research

The present study is based on re-engineering in Government and Govt. fully and partially aided Arts, Science and Commerce college libraries in Mumbai region, it can

be further extended to permanently un-aided Arts, Science and Commerce colleges with wider scope and also Comparative study of re-engineering process in Arts, Science and Commerce, Management and Technical colleges can be undertaken. Besides, study on Impact of NAAC accreditation on re-engineering of college libraries in Arts, Science and Commerce colleges and Role of UGC in development of college libraries specifically in Arts. Science and Commerce colleges in Urban and Rural areas can also be considered.

Appendix I

Re-Engineering of College Libraries: A Study of the Present Scenario in Mumbai Region

Questionnaire for College Librarians

(Note: Please Tick Mark to appropriate Answers, suits to you for questions)

Part – I Personal Information of Librarian

1. Name**:** Mr. /Mrs. /Ms. / Dr _____
2. Designation: _____
3. Gender: Male _____ Female _____
4. Contact Details**:**_____ Office Phone No: _____
   Email: _____ Mobile No: _____
5. Qualifications Acquired:

M.Lib.I. Sc.	M.Phil	Ph.D.	SET/NET	Any other

Part – II Details of Institute

1. Name of The College: _____
2. Communication Address : _____
3. Website Address :_____
4. Year of Establishment: _____
5. Courses Offered: _____
6. Strength: Faculty_____ Students: ____Non-teaching Staff
7. Accreditation Details

Name of the Accreditation Agency:

Cycle	Year of Accreditation	Grade and Points

Part III Details of Library

8. Name of the Library (If other than Institute Name): _____
9. Library Opening Hours : Hrs. Per Day_____

Sr. No	Working Days	Time
1	Monday to Saturday (normal working days)	
2	On Holidays	

10. Library Area (in sq. ft): Approx. _____
11. Reading room Facility : Yes ☐ No ☐

12. Classification System Used: _____

13. Cataloguing System Used: Traditional / OPAC /Web OPAC

14.. Library Collection:

A) Print Collection:

Sr. No.	Type of Material	Numbers
1	Books	
2	Periodicals	
3	Newspaper	
4	Maps	
5	Thesis	
6	Braille Books	
7	Bound volumes	
8	Globe	
	Any Other	

B) Non Print Collection

Sr. No	Type of Material	Numbers
1	E-Books	
2	E-Journals	
3	CD/DVD	
4	E-Thesis	
5	Any other (please specify)	

15. Does Library Subscribe to Databases?

Yes ☐ No ☐

If Yes, Please specify:

Sr. No.	Name of Database	Yes/No
1	INDIASTAT	
2	TAXMANN	
3	EBSCO	
4	PROQUEST	
5	Any Other	

16. Does Library Have Membership of Library Networks / Consortia?

Yes ☐ No ☐

If Yes, Please specify:

17. Does Library Have Written Collection Development Policy for Both Print and E-resources?

Yes ☐ No ☐

18. Book Selection Procedure Adapted:

Sr. No.	Book Selection Method Used	Yes / No
1	Approval Method	
2	Organizing Book Exhibition Cum Sale	
3	Requisition by Students	
4	Requisition by Faculty/Researchers	
5	Book Reviews	
6	Publishers' catalogue/ trade bibliographies	
7	Any Other	

19. Acquisition Method Used :

Sr. No.	Acquisition Method	Yes / No
1	Local Vendor	
2	Online Procurement / Vendors	
3	Quotation or Tender System	
4	Consortium Based Acquisition	
5	Direct Purchase from Publishers	
6	Any Other	

20. Physical Verification and Wedding Process Adopted:

Sr.No	Frequency	Yes / No	Weeding Action Taken	Yes / No
1	Yearly			
2	As and When Required			

21. Services Provided by Library

Sr. No.	Type of Services	Yes / No
1	Lending / Circulation Services	
2	Reference Services	
3	Referral Services	
4	CAS	
5	SDI	
6	New Paper Clipping	
7	Book Bank	
8	Reprography Services	
9	Printing Services	
10	User Education/Orientation	
11	Bibliographic Services	
12	Indexing/ Abstracting Services	
13	Inter Library Loan	
14	Internet facility	

15	OPAC	
16	WEBOPEC	
17	Online Database Search Service	
18	Digital Reference Service	
19	Mobile Based Services	
20	Cloud Based Services	
21	GIS based services	
22	Any Other	

22. Are you Managing Following Practices:

Open Access Yes/ No
Institutional Repository Development Yes / No
Wi-Fi Facility Yes / No

23. Library Staff:

Sr. No	Designation	Number of Staff in Category	Qualifications
1	Librarian		
2	Assistant Librarian/s		
3	Library Clerk/s		
4`	Library Attendant/s		
4	Support Staff		
5	Any other		

24. ICT Skill Of Library Staff :

S. N.	ICT Skills	Librarian	Assistant Librarian	Library Attendant	Library Clerk
1	Use of basic software packages				
2	Use of library software				
3	Use of Social Media				
4	Use of E-resources, open source software				
5	Use of A/V technology				
6	Computer Skill (Hardware, software, networking)				

25. Method of Selection and Recruitment of Staff Followed :

Sr. No.	Method	Yes / No
1	Aptitude Test	
2	Interview	
3	Computer Skill Test	
4	Any other, Please specify	

26. Does Library Follows Performance Appraisal System?

Yes ☐ No ☐

If Yes, specify the methods followed by your Library.

Sr. No.	Performance Appraisal Method	Yes / No
1	Confidential Reports (CR)	
2	Interview Method	
3	MBO Method	
4	360 Degree Appraisal Method	
5	User's Feedback	
6	Any Other	

27. Do You Get Constructive Feedback to Improve Employee Performance?

Yes ☐ No ☐

28. Does Library Motivates staff (Compensation/Reward System) ?

Yes ☐ No ☐

If yes, state ways:

Sr.No.	Motivation system	Yes / No
1	Cash prizes	
2	Awards	
3	Promotions	
4	Any Other	

29. Initiatives Undertaken for Faculty Development Programs (FDP) for Library Staff.

Sr. No.	Program	Librarians	Assistant Librarians	Library Attendants / Clerks
1	Refresher courses and Orientations			
2	Workshops			
3	On the job training			
4	Seminars/Conferences			
5	Short Term Courses			
6	Study leave and fellowship			
7	Any Other			

Part IV : Automation Status

30. Does Your Library Have Automated Library House Keeping Activities?

Yes ☐ No ☐

31. Status of Automation of House Keeping Activities in Library:

Sr. No.	Library Activity	Yes / No
1	Acquisition	
2	Cataloguing (OPAC)	
3	Circulation	
4	Serial Control	
5	Stock Verification	

Any Other Automated activity Initiated:_____

32. Software Used for Automation Purpose:_____
33. Are you Fully Satisfied About the software?: Yes / No
34. Have you any Plans to shift to New Software?: Yes / No
35. Has Library Developed any Database? Yes / No

Part V: Use of ICT

36. ICT Infrastructure Available in Library:

Sr. No.	ICT Infrastructure	Numbers
1	Computers	
2	Printers	
3	Scanners	
4	Digital camera	
5	E-reader/s	
6	Fax	
7	Any other (please specify)	

37. Do you Feel Infrastructure is Sufficient? Yes / No

Part VI: Efforts Towards Digital Library and Digitization

38. Do you have Digital Library?

Yes ☐ No ☐

If Yes: What is nature of Collection: (Please State)

_____

39. Initiatives Taken For Digitization:

Sr. No.	Digitization	Yes / No
1	Initiated	
2	Planning for Digitization	
3	Not Initiated and Planned	

40. Documents Digitized in Library:

Sr. No	Resources	Yes / No
1	Rare Books / Collection	
2	Manuscripts	
3	Thesis	
4	Old frequently used	
5	Any other (please specify)	

41. Digitization Method Adopted

Sr. No.	Digitization Method	Yes / No
1	In-house digitization with scanner/digital camera etc.	
2	Outsourcing	
3	Any other (please specify)	

Part VII : Problems Faced by Libraries in Satisfying User Needs

42. Problems Faced by Libraries in Satisfying User Needs

Sr. no.	Challenges	SA	A	SD	D	U
1	Advancement in technology					
2	Changing user behavior and expectations					
3	Information explosion					
4	Lack of proper infrastructure					
5	Lack of Qualified and skilled library staff					
6	Limited library budget					
7	New patterns of scholarly publishing/communication					
8	Reforms in higher education					

SA = Strongly Agree; A = Agree; SD = Strongly Disagree; D = Disagree; U = Undecided

Part VIII: Initiation Towards Re-Engineering

43. Has Your Library Adopted any Reengineering Process / Activity?

Yes ☐ No ☐

44. Areas in Which Re-engineering is Needed in Your Library?

Sr. No.	Areas	Yes/ No
1	Library Resources and Services	
2	Human Resource Management	
3	ICT Infrastructure and facilities	

45. In Your Opinion, Objectives For Re-engineering in College Libraries Are :

Sr. No	Need for Re-engineering	SA	A	SD	D	U
1	To provide quality library products and services to users					
2	To plan, cope up and manage the constant change in technology					
3	To respond to growth and use of networks for academic purposes					
4	To guarantee cost reduction, time saving, greater efficiency and effectiveness for managing the Library					
5	To empower library staff for decision making					
6	To maximize job satisfaction of library staff					
7	To facilitate interaction with library stakeholders					
8	To radically improve the overall efficiency, effectiveness and productivity of the library					
9	To satisfy Ranganathan's Laws of Library Science					
10	To raise the profile of the Library as a ser vice oriented organization					

SD = Strongly Agree; A =Agree; SD = Strongly Disagree; D = Disagree U = Undecided

Any other (please specify) :

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46. Does Your Library have Established Re-Engineering Committee?

Yes ☐ No ☐

If Yes, Who are Members?

Sr. No	Members of the Team	Yes/No
1	Management Representative	
2	Faculty Members	
3	Internal experts/ Library staff members	
4	I.T. Consultant	
5	External experts/Consultants	
6	Student Representative	
7	Any other	

47. Does Your Library Conduct a SWOT Analysis?

Yes ☐ No ☐

If Yes, state the frequency of conducting SWOT analysis.

Sr. No.	Frequency	Yes /No
1	Regularly	
2	Sometimes	
3	As and when Required	
4	Never	

48. Tools Used for Conducting SWOT Analysis

Sr. No.	Tools for SWOT Analysis	Yes / No
1	User feedback	
2	Focus group	
3	News papers/Journals	
4	Stock Register	
5	Website	
6	Annual reports	
7	Interview	
8	Mail survey	
9	Government Norms & Policies	

Any other (please specify) : _____

49. Communication of Re-engineering Process With Library Stakeholders and conduct of Pilot Study of re-engineering Process :

Sr. No.	Communication of Reengineering process to library stakeholders conduct of Pilot Study of re-engineering Process	Please tick (✓) that is applicable
1	Yes	
2	No	

50. Do You feel Need of Re-Engineering in ICT or Using ICT?

Yes ☐ NO ☐

51. Any Marketing Strategies Adopted by Library

Sr. No.	Marke Any Other Please Specify: ting strategies	Yes/ No
1	User orientation program/Information literacy program	
2	Library tour	
3	Pamphlets/Leaflets/Brochures etc.	
4	Exhibitions/Seminars/Workshops etc.	
5	Display of new arrivals	
6	Social media	
7	Library Web Site	

Any Other Please Specify: _____

52. Is there any provision for Evaluation of Re-Engineering process in Library?

Yes ☐ NO ☐

53. Challenges to be Faced while Re-engineering College Libraries:

Sr. No.	Challenges	Yes /No
1	Uncertainty about the need for change	
2	Previous negative experience with reengineering	
3	Lack of understanding about the reengineering process	
4	Failure to understand the users' needs	
5	Failure to define organizational objectives clearly	
6	Problems in communication to staff about the process	
7	Lack of support from management and staff	
8	Lack of resources	
9	Lack of leadership and execution	
10	Competency of library staff to handle the process	
11	Resistance from staff (Threat of comfort, job security, interpersonal relations, fear of staff layoffs or reduction)	
12	Lack of training and education	
13	Chaos in transition from one method to another	
14	Peer pressure; short time to performing change	
15	Problems related to creating a culture for change	
16	Lack of standard methodology or model	
17	Depending heavily on outsiders to effect re-engineering and neglecting the employees(Library staff sidelined in the reengineering process)	
18	Failure to train the users	

Any other (please specify) : _____

54. Librarians Overall Suggestions for Successful Re-Engineering of College Librarie

_____

_____

Appendix II

Re-Engineering Of College Libraries: A Study Of The Present Scenario In In Mumbai Region
Questionnaire For Library Users

(Note: Please Tick Mark to appropriate Answers, suits to you for questions)

Name:_____

Institution / College: _____

Faculty: Teaching /Non-Teaching / Student

1. Frequency of Library visit:

Daily	**Once in 2 days**	**Once in a week**	**Once in a month**	**Rarely**	**Not Using**

2 Purpose of Library Visit:

Sr No	**Purpose of Visit**	**Yes / No**
1	For Study Purpose	
2	To Borrow Books	
3	To Read Newspapers	
4	For Project Work	
5	For Research Work	
6	To incraese GK	
7	For preparing Lecture notes	
8	For use of Internet	
9	Any Other	

3. Which Form of Documents do you prefer to Consult Library Resources?

Only Print	**Only Non-Print / Digital**	**Both (print and non-print/ Digital)**

4. Rate the Library Resources Which, you Use from the Library:

Sr. No.	**Library Resources**	**Adequate**	**Inadequate**	**No Comment**
	Print Resources			
1	Newspaper			
2	Books			
3	Periodicals			
4	Other print Resources			

	Non-print Resources			
5	CD/DVD			
6	E-books			
7	E-journals			
8	E-Database			

Any Other (Pl Specify): _____

5. Rate the library services which, you use from library:

Sr. No.	**Library & Information Services**	**Excellent**	**Good**	**Fair**	**Poor**	**No comment**
1	Lending Services					
2	Reference Services					
3	CAS/SDI					
4	New Paper Clipping					
5	BookBank					
6	Reprography Services/Printing					
9	Bibliographic Services					
10	Indexing / Abstracting Services					
11	Institutional Repository					
12	Inter Library Loan					
13	Internet facility					
14	OPAC/WEB OPAC					
15	Online Database Search Service					
16	Digital Reference Service					
17	Mobile Based Services					
18	Cloud Based Services					
19	GIS based services					

Any Other (Pl specify):_____

6. Rate the Library Facilities which, you avail from Libraries:

Sr. No.	**Library Facilities**	**Adequate**	**Inadequate**	**No comment**
1	Library Opening Hours			
2	Library Website/Web page			
3	Digital Library Facility			

7. Do you feel Availability of ICT Infrastructureis Comfortable and Suitable?

Sr. No.	**ICT Infrastructure**	**Yes / No**
1	Computers	
2	Printers	
3	Photocopier	
4	Scanners	
5	E-Readers	

8. Are you Comfortable with Library Staff in getting Assistance?

Sr. No.	**Library Staff Qualities**	**Satisfactory**	**Not Satisfactory**
1	Number of Library Staff		
2	Knowledge of Library Procedures		
3	Computer Skills		
4	Communication Skills		
5	Supportive and Approachable		
6	Soft skills		

9 . Remarks: (Please write your suggestions about the library usage improvement):

_____

_____

APPENDIX- III: List of Colleges in Mumbai Region

Sr. No	College Code	College Name & Address	Contact Details	Website Address
1	MC 1	H.R.College Ofcomm. & Eco., Churchgate, Mumbai-400 020., Email:- Info@Hrcollege.Edu	22876115, Fax:- 22810758	www.hrcollege.edu
2	MC 2	K.C.College, Churchgate,Mumbai - 400 020 Email:- Kccollege@Rediffmail.Com	22855726, Fax:- 22029092	www.kccollege.org
3	MC 3	Siddharth College Of Comm. & Eco. , Fort, Mumbai - 400 023. Email:- Scce@Hathway.Com	22043868, Fax:- 22831188	www.siddharthcollege.ac.in
4	MC 4	Siddharth College Of Arts, Com., Science, Fort, Mumbai - 400 023	2204386, 22043868, Fax:- 22819049	www.siddharthcollegeasc.org
5	MC 5	Jai Hind College, Churchgate, Mumbai - 400 023. Email:- Info@Jaihindcollege.Com	22040256, Fax:- 22819504	http://www.jaihindcollege.com
6	MC 6	College Of Home Science, Nirmala Niketan, Churchgate, Mumbai - 400 020. Email:- Nnchsc@Mtnl.Net.In	2076503, Fax:- 22003217	http://nirmalaniketan.com
7	MC 7	St. Xavier's College, Mahapalika Marg, Mumbai - 400 001. Email:- Admin@Xaviers.Edu	22620662, Fax:- 22659484	www.xaviers.edu
8	MC 8	K.P.B. Hinduja College Of Comm., New Charni Road, Mumbai - 400 004 Email:- Hindujacollege@Gmail.Com	23889408, Fax:- 23859397	www.hinducollege.org
9	MC 9	Sant Gadge Maharaj College Of Comm. & Eco, Khetwadi, Mumbai - 400 004. Email:- Sgmcollege.Khetwadi@Yahoo.Com	23824204, Fax:- 23824204	http://www.sgmcollege.in
10	MC 10	Hazarimal Somani College Of Arts, Science & Comm., Chowpatty, Mumbai - 400 007. Email:- Hazarimalsomani@Rediffmail.Com	23691508, Fax:- 23675108	http://www.chowpattybhavans.com/

11	MC 11	Wilson College, Chowpatty, Mumbai - 400 007. Email:- Information@Wilsoncollege.Edu	23637663, Fax:- 23633088	www.wilsoncollege.edu
12	MC 12	Smt. B.M.R. Girls College, Gamdevi, Mumbai-400 007 Email:- Info@Bmrgirlscollege.Com	23808130, Fax:- 23804530	http://www.bmrgirlscollege.com/
13	MC 13	Akbar Peerbhoy College Of Comm. & Eco. Maulana Shukatali Road, Mumbai -400 008. Email:- Apcollege@Hathway.Com	23074122, Fax:- 23063587	www.apcollege.org
14	MC 14	Nagrik Shikshan Sanstha's College Of Comm Tardeo, Mumbai - 400 008.	23510203, 23510203, Fax:- 235110203	Email:- principalnss@yahoo.com
15	MC 15	Maharashtra College Of Arts, Comm. & Science Byculla, Mumbai - 400 008. Email:- Prin.Maharashtracasco8@Yahoo.Com	23081664, Fax:- 23092248	http://www.maharashtracollege.org
16	MC16	Burhani College Of Comm. & Arts, Mazgaon, Mumbai - 400 010. Email:- Burhanicollege@Yahoo.Co.In	23776560, Fax:- 23703690	www.burhanicollege.com
17	MC 17	Sophia College For Women Bhulabi Desai Road, Mumbai - 400 026. Email:- Sophiacollegemumbai@Gmail.Com	23512642, Fax:- 23513183	http://sophiacollegemumbai.com/
18	MC 18	Lala Lajpatrai College Of Comm. & Eco. Hajiali, Mumbai - 400 034. Email:- Llcolcom@Mtnl.Net.In	24928240, Fax:- 24925799	www.llim.edu
19	MC 19	Maharshi Dayanand College Of Arts, Comm. & Science, Parel, Mumbai - 400 012. Email:- Principal@Mdcollege.In	24130012, Fax:- 24106960	www.mdcollege.org
20	MC 20	G.E.S.'S Dr.T.K.Tope Arts & Comm. Night College Parel, Mumbai - 400 012. Email:- Gestktacnc@Hotmail.Com	24138617,	http://tktopenightcollege.in/

21	MC 21	S.I.W.S.'S N.R.Swami College Of Comm., & Eco. Wadala, Mumbai - 400 031. Email:- Siws1@Vsnl.Net	24180390, Fax:- 24118657	www.sis.ac.in
22	MC 22	Dr. Ambedkar College Of Comm. & Eco. WADALA, MUMBAI - 400 031. Drambedkarcollege@Yahoo.Com	24122396, Fax:- 24147798	http://ambedkarcollege.net
23	MC 23	D.E.S's Kirti M.Doongursee College Arts, Comm. & Sci., Dadar, Mumbai - 400 028. Email:- Kirti_College1@Rediffmail.Com	24302372, Fax:- 24308010	www.kirticollege.com
24	MC 24	Dr. Bhanuben Mahindra Nanavati College Of Home Science, Mantunga, Mumbai -019. Email:- Smesedu@Bom3.Vsnl.Net.In	24095792, Fax:- 24026511	www.smes.netfirms.com
25	MC 25	Smt. Maniben M.P.Shah Women's College Of Arts & Comm., Matunga, Mumbai - 019. Email:- Mmp_Shah@Rediffmail.Com	24095869	http://mmpshahcollege.com
26	MC 26	G.N.Khalsa College, Matunga, Mumbai - 400 019.	24096234, Fax:- 24016815	www.gnkhalsa.org
27	MC 27	Ramanarain Ruia College Of Arts & Science, Matunga, Mumbai - 19. Email:- Ruiaprincipal@Yahoo.Com	24143098, Fax:- 24141335	www.netcampusruia.org
28	MC 28	D.G.Ruparel College, Matunga, Mumbai – 016 Email:- Principal@Ruparel.Edu	24303733, Fax:- 24303042	www.ruparel.edu
29	MC 29	R.A.Podar College Of Comm., & Eco. Matunga, Mumbai - 400 019. Email:- Podcol@Vsnl.Net	24143178, Fax:- 24141964	www.rapodar.ac.in
30	MC 30	Guru Nanak College, Sion(East), Mumbai - 400 037. Email:- Gncol37@Vsnl.Net	24071098, Fax:- 24013273	http://www.gurunanakcollegeasc.in/
31	MC 31	South Indian Education Society's Arts, Sci, & Comm. College, Sion (West), Mumbai - 400 022. Email:- Sies@Siesascs.Net	24072729, Fax:- 24096633	http://www.siesascs.edu.in

32	MC 32	South Indian Education Society's College Of Comm. & Eco. Sion(East), Mumbai - 400 022. Email:- Siesce_Se@Yahoo.Co.In	24074944, Fax:- 24083944	www.siesce.com
33	MS 1	Vivekanand Education Soc's College Of Arts, Science & Comm., Chembur, Mumbai - 071. Email:- Vesasc@Rediffmail.Com	25227470, Fax:- 25227514	www.vesasc.com
34	MS 2	Shree Narayan Guru College Of Comm., & Eco. Chembur, Mumbai - 400 071. Email:- Sngcollege@Sify.Com	25280926,	http://www.sngcollege.org
35	MS 3	Mahatma Education Society's Night College Of Comm.,Chembur, Mumbai - 400 071. Email:- Mndc@Mes.Ac.In	25224826, Fax:- 25229587	www.mahatmandc.ac.in
36	MS 4	N.G.Acharya & D.K.Marathe College Of Arts, Comm. & Science, Chembur, Mumbai - 400 071.Email:- Acjarya_Marathecollege@Yahoo.Co.In	25224826, Fax:- 25214176	http://acharyamarathecollege.in
37	MS 5	K.J.Somaiya College Of Science & Comm. Vidyanagar Campus, Vidyavihar, Mumbai - 077. Email:- Principalkgssc@Somiya.Edu	25115919, Fax:- 25115918	www.somaiya.edu
38	MS 6	K.J.Somaiya College Of Arts & Comm. Vidyanagar Campus, Vidyavihar, Mumbai - 400 077. Email:- Kjssc@Hotmail.Com	25115915, Fax:- 25138367	www.somaiya.edu
39	MS 7	Ramniranjan Jhunjhunwala College Of Arts, Comm., & Science, Ghatkopar, Mumbai - 086. Email:- Rjcollege@Rjcollege.Edu.In	25152731, Fax:- 25150957	www.rjcollege.com
40	MS 8	Smt. P.N.Doshi Women's College, Ghatkopar, Mumbai - 400 086. Email:- Spndoshi@Vsnl.Net	5123484, Fax:- 25123484	www.spndoshiwomenscollege.org
41	MS 9	Vikas College Of Comm., (Night), Vikhroli (West), Mumbai - 400 083. Email:- Vikascollege1986@Yahoo.Co.In	25784267, Fax:- 25796196	http://www.vikascollege.org

42	MS 10	Asmita College Of Arts & Comm. Vikhroli (West), Mumbai - 400 083. Email:- Ashmithcollgevikroli@Yahoo.Co.In	25782466, Fax:- 25796196	http://www.asmitacollege.org/
43	MS 11	N.E.S.'S Ratnam College Of Arts Science & Comm. Bhandup (West), Mumbai - 400 078. Email:- ratnam_college@rediffmail.com	25951381, Fax:- 25954464	www.ratnamcollegeasc.org
44	MS 12	V.K.Krishna Menon College Of Comm. & Science, Bhandup (East), Mumbai - 400 078. Email:- Vkkmnoncollege@Yahoo.Com	25648541, Fax:- 25611898	www.vkkmenoncollege.org
45	MS 13	Ramanand Arya D.A.V.College Bhandup (East), Mumbai - 400 078. Email:- Ramanandarya88@Hotmail.Comm	25646691, Fax:- 259005138	http://www.radav.org
46	MS 14	V.G.Vaze College Of Arts, Science & Comm. Mulund(East), Mumbai - 400 081. Email:- Ketvaze@Bom3.Vsnl.Net.In	2567142223, Fax:- 25914262	www.vazecollege.net
47	MS 15	Mulund College Of Comm., Mulund (West), Mumbai - 400 080. Email:- Mulundcollege@Mtnl.Net.In	25600017, Fax:- 25640718	www.mccmulund.com
48	MS 16	Chetna's Hazarimal Somani College Of Comm., & Eco. Bandra (East), Mumbai - 400 050.	26422750, Fax:- 26425727	www.chetanadegreecollege.com
49	MS 17	St. Andrew's College Of Arts Science & Comm. Bandra (West), Mumbai - 400 050. Email:- Principal.Standews@Gmail.Com	26428684, Fax:- 26556006	www.standrewscollege.ac.in
50	MS 18	Rizvi College Of Arts, Science & Comm. Bandra (West), Mumbai - 400 050. Email:- Rizvilawcollege@Rediffmail.Com	26480348, Fax:- 26497448	www.rizvicollege.com
51	MS 19	R.D.National College, Bandra (West), Mumbai - 050.Email:- Rdnational@Vsnl.Com	26483544, Fax:- 26462620	www.rdnational.edu

52	MS 20	Smt. M.M.K. College Of Comm. & Eco. Bandra (West), Mumbai - 400 050. Email:- Ashok_Vanjani@Rediffmail.Com	26495230, Fax:- 26494510	www.mmkcollege.com
53	MS 21	L.S.Raheja College Of Arts & Comm. Juhu, Santacruz(West), Mumbai - 400 054. Email:- Contactus@Lsraheja.Org	26609320, Fax:- 26607391	www.lsraheja.org
54	MS 22	Sir Vithaldas Thackersey College Of Homesci.Juhu Road, Santacruz (West), Mumbai -49 Email:- Svtcollegehomescience@Yahoo.Com	26602504, Fax:- 26606427	www.svt.ac.in
55	MS 23	Nalanda Nritya Kala Mahavidyalaya, Vileparle(West), Mumbai - 400 049.	26206326, 26206326, Fax:- 26245008	Email:- ndrc@mtnl.net.in
56	MS 24	Sathaye College, Vileparle (East), Mumbai - 057. Email:- Sathayecollege@Gmail.Com	26130608, Fax:- 26130608	www.sathayecollege.com
57	MS 25	M.L.Dahanukar College Of Comm. Vileparle (East), Mumbai - 400 057. Email:- Mndc@Rediffmail.Com	26179580, Fax:- 26143955	www.mldcc.org
58	MS 26	V. P. M. S -- L.J.N.J.Mahila Mahavidyalaya Vile Parle (East), Mumbai - 400 057.	26169565, 26169565, Fax:- 26169565	ljnjmahilavidyalaya@yahoo.co.in
59	MS 27	Mithibai College Arts, & Chouhan Institute Of Science, ile Parle (West), Mumbai - 400 056. Email:- Svkmmithibhai@Vsnl.Net	261843545 5, Fax:- 26130441	www.mithibai.svkm.ac.in
60	MS 28	N.M.College Of Comm., Vile Parle (West), Mumbai - 400 056. Email:- Nmcce@Vsnl.Ne	26143157, Fax:- 26180555	www.nmcce.org
61	MS 29	Maniben Nanavati Women's College Vile Parle (West), Mumbai - 400 056. Email:- Mnwcollege@Hotmail.Com	26128840, Fax:- 26176196	www.mnwc.sndt.org
62	MS 30	Shri Rajasthani Seva Sangh College Of Arts & Comm. Andheri (East), Mumbai - 400 059.	28393002, 28393002, Fax:-	Email: srsscollegeartscom@yahoo.co.in

			28302822 Email:-	
63	MS 31	Shri Chinai College Of Comm. & Eco. Andheri (East), Mumbai - 400 069. Email:- Shrichinai_1963@Yahoo.Com	56992025, Fax:- 56992026	www.chinaicollege.com
64	MS 32	Sheth L.U. And S.M.V. College Of Arts,Sci., & Comm. Andheri (East), Mumbai -069. Email:- Shrimvlucollege@Yahoo.Com	56992022, Fax:- 56992023	http://www.chinaicollege.com
65	MS 33	Tolani College, Andheri (East), Mumbai - 400 069. Email:- Tcc@Tolani.Edu	28347070-74-75, Fax:- 28214824	www.tolani.edu
66	MS 34	C.E.S.'S Valia College Of Arts, & Comm., Andheri (West), Mumbai - 400 058.	26303125, Fax:- 26303583	http://valiacollege.in/
67	MS 35	Bhavan's College, Andheri (West), Mumbai - 400 058.	56970066, Fax:- 56964930	www.bhavans.ac.in
68	MS 36	J.M.Patel College, Goregaon(West),Mumbai - 062. Email:- Jmpcollege@Gmail.Com	28737858	http://www.jmpcollege.org
69	MS37	Vivek College Of Comm. & Eco. Goregaon(West), Mumbai - 400 062.Email:- Jmpcollege@Gmail.Com	28737858	http://www.vivek-college.org
70	MS 38	S.S. And L.S. Patkar College Of Arts, Comm. & Sci. Goregaon(West), Mumbai - 062. Email:- Info@Patkervardecollege.Edu.In	28744755	http://www.patkarvardecollege.edu.in
71	MS 39	D.T.S's College Of Comm., Malad (East), Mumbai - 400 097. Email:- Principal@Sanskarsarjn.Org	28400214, Fax:- 28406334	http://www.sanskarsarjan.org/
72	MS 40	Ghanshyamdas Saraf Girl's College Of Arts & Comm. Malad (West), Mumbai - 400 064. Email:- Gsgc1@Yahoo.Com	28725465, Fax:- 28783836	http://sarafcollege.org
73	MS 41	P.D.Lions College Of Comm., & Eco., Malad (West), Mumbai - 400 064. Email:- Dhalmiacollege@Gmail.Com	28725792, Fax:- 28725792	http://www.dalmialionscollege.ac.in

74	MS 42	Shri M.D.Shah Mahila College Of Arts & Comm. Malad (West), Mumbai - 400 064. Email:- Mdshahmahilacollege@Gmail.Com	28824860, Fax:- 28831622	http://www.mdshahmahilacollege.ac.in
75	MS 43	Smt. K.G.Mittal College Of Arts & Comm. Malad (West), Mumbai - 400 064. Email:- Kgmittalcollege@Vsnl.Net	28821673, Fax:- 28822452	http://kgmittalcollege.com/
76	MS 44	Nagindas Khandwala College Of Comm. & Arts. Malad (West), Mumbai - 400 064. Email:- Nagindaaskhandwala@Hotmail.Com	28072262, Fax:- 28650465	www.khandwalacollege.ac.in
77	MS 45	Bal Bharati's Maghanmal J. Pancholia College Of Comm. Kandivali (West), Mumbai - 400 067. Email:- College@Balbharthi.Edu.In	28628170, Fax:- 28650465	www.balbharati.edu
78	MS 46	Kandivali Education Society's College Kandivali (West), Mumbai - 400 067.Email:- Prinkesc@Vsnl.Net	28072477, Fax:- 28053107	www.mccmulund.com
79	MS 47	G.E.S's Shri Bhausasheb Vartak Art's, Sci.& Comm. College, Borivali (West), Mumbai - 400 091. Email:- Gssbvc1979@Yahoo.Co.In	28673498	http://sbvartakcollege.in/
80	MS 48	Shailendra Education Society's Arts, Sci., & Comm. College, Dahisar (E), Mumbai - 68. Email:- Sha_Deg_Col@Yahoo.Co.In	28949784, Fax:- 28902768	www.standrewscollege.ac.in
81	MS 49	S.K.Somaiya College, Vidya Vihar, Mumbai 400 077	25105113 25105113 Fax:- 25025313	Sksac@Vsnl.Net
82	MS 50	Borivali Edu. Soc's Commerce College Borivali (W), Mumbai - 400 092.		www.rdnational.edu
83	MS 51	Public Night Degree College Of Comm. Santacruz, Mumbai, Email:- Phsjc@Rediffmail.Com	26672360, 26672360 Fax:- 26673171	www.mmkcollege.com

84	Govt. College	Sydeham College of Commerce & EconomicsB Road, Churchgate, Mumbai : 400 020Email:- Sydprincipal@yahoo.com	22871452 / 22042897	http://www.sydenham.ac.in/
85	Govt. College	Elphinstone College, 156, Mahatma Gandhi Marg, Fort, Mumbai-400 032. Email:- elphinstone1856@gmail.com	22844060 / 22843797	http://www.elphinstone.ac.in/
86	Govt. College	Ismail Yusuf College of Arts, Science and Commerce, Jogeshwari (East), Mumbai – 400 060Email:- principaliyc@rediffmail.com	2820 2188	http://www.ismailyusufcollege.com/
87	Govt. College	Syednhem College Of Management Studies B Rd, Churchgate, Mumbai, Maharashtra 400020	022 6151 0701	http://simsree.org/
88	Govt. College	Government Law College A' Road, Opposite Churchgate Railway Station, Churchgate, Mumbai, Maharashtra 400020	022 2204 1707	www.glcmumbai.com
89	Govt. College	Institute Of Science , 15, madam cama Road,Mumbai 4000032 Maharashtra	022-22829293	http://iscmumbai.org.in/
90	Govt. College	Institute Of Forsenic Science 15, Madame Cama Rd, Fort, Mumbai, Maharashtra 400032	022 2281 6102	http://ifscmumbai.com/
91	Govt. College	Secondary Training College , Mahapalika Marg, Dhobi Talao, Chhatrapati Shivaji Terminus Area, Fort, Mumbai, Maharashtra 400001	022 2262 0050 Telefax : (022) 22612188	www.secondarytrainingcollege.org/

92	MCB1	Bombay Teachers Training College, Coloba, Mumbai - 400 039	22047160, 22845857, Fax:- 22845387	Email:- bttcollege@vsnl.net
93	MCB2	St. XAVIER'S INSTITUTE OF EDUCATION, CHURCH GATE MUMBAI - 20.	22014666, 22094178	Email:- principal@sxie-bed.org
94	MCB3	P.V.D.T. College Of Education For Women, Churchgate, Mumbai - 400 020.	22031879, 22031879	Email:- pvdt@vsnl.com
95	MCB4	G.E.S.'S College Of Education & Research, Parel, Mumbai - 12.	24136408, 24136408	
96	MSB1	Hansraj Jivandas College Of Education , Khar (West), Mumbai - 400 052	26044641, 26041192, Fax:- 24011760	Email:- hjcollege@rediffmail.com
97	MSB2	St. Teresa's Institute Of Education, Santacruz (West), Mumbai - 400 054.	32660252, 26490252, Fax:- 26490252	Email:- stie73@gmail.com
98	MSB3	Smt. Kapila Kahandwala College Of Education, Juhu Road, Santacruz (West), Mumbai - 400 054.	26608747, 26605695, Fax:- 26355831	Email:- kkbed54@gmail.com
99	MSB4	Smt. Surajba College Of Education, Juhu Road, Mumbai - 400 049.	26200589, 26702677, Fax:- 26366556	Email:- gandhishikshan@vsnl.net
100	MSB5	Chembur Sarvankash Shikshan Shastras, Mahavidyalaya, Chembur, Mumbai - 400 071	022 25221439, 25221439, Fax:- 25585191	Email:- cssmcollege@hotmail.com
101	MSB6	Hashu Advani College Of Special Education,	25531041, 25531041,	

		Chembur, Mumbai - 400 071.	Fax:- 25531041	
102	MCL1	K.C.Law College, Churchgate, Mumbai - 400 020	25212823, 22822376, Fax:- 22828374	Email:- kclawcollege@hotmail.com
103	MCL2	Siddharth College Of Law, Fort, Mumbai - 400 023.	22823935, 22823935	Email:- natraja001@yahoo.co.in
104	MCL3	New Law College, Mahim, Mumbai - 400 016.	24304417, 24304417	Email:- natraja001@yahoo.co.in
105	MCL4	Dr. Ambedkar College Of Law, Wadala, Mumbai - 400 031	24304417, 24304417	Email:- acl_2007@rediffmail.com
106	MSL1	G.J.Advani Law College, Bandra, Mumbai - 400050	26497484, 26488690, Fax:- 39509007	Email:- galc77@yahoo.co.in
107	MSL2	Jitendra Chauhan College Of Law, Vileparle, Mumbai -56.	26142346, 26133400	Email:- chandra_jccl@yahoo.com

APPENDIX – IV

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