

USE OF ELECTRONIC RESOURCES BY ARTS, COMMERCE, SCIENCE LIBRARIES: A STUDY

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September 2019

DECLARATION

I hereby declare that the thesis entitled “**Use of Electronic Resources by Arts, Commerce, Science Libraries: A Study**” 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 university or examining body.

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CERTIFICATE

This is to certify that the thesis entitled “**Use of Electronic Resources by Arts, Commerce, Science Libraries: A Study**” which is being submitted herewith for the award of Doctor of Philosophy (Ph.D.) Degree in Library and Information Science, Faculty of Moral and Social Sciences, Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by **Mr. Sahebrao Gangaram Annapure** 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 him.

Place : Pune
Date : 13th Sept, 2019

Dr. Pandit Ajay Manohar
Research Guide

DEDICATION

The present research thesis is dedicated to the Queen of Aundh Sansthan, a visionary and ideal educationist, social activist, First Female Former President of Zilla Parishad, Satara, the real caretaker of the people from Aundh region and my continuous source of inspiration Hon. Chairman of Aundh Shikshan Mandal Aundh Shrimant Gayatridevi Pantprathinidhi, Ranisaheb, Aundh who provided me an opportunity to undertake Ph.D research and paved a strong path in the pursuit of my research.

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USE OF ELECTRONIC RESOURCES BY ARTS, COMMERCE, SCIENCE LIBRARIES: A STUDY

Abstract

Education system runs on two wheels those are teaching and learning. Learning part of education system is embedded in both the components i.e. teacher and learner. For providing excellent and rational knowledge there have to be need based learning resources. An excellent learner has to study from various resources as per the needs and goals. The hunger of knowledge is fulfilled by proper utilization of learning resources which are preserved in systematic manner at the place of library and today, these libraries are known as knowledge resource centers. Library is nothing but disseminator place of information and knowledge as well as a supporting center to education system for excellent academic performance. Today, in this digital age, library possesses various types of resources including print and non-print. But their use is most important part for getting academic achievement of their academic institution as well as higher education systems. In this approach, researcher was eager to know the present situation about utilization of electronic resources by Arts, Commerce and Science Stream College Libraries in Satara district.

Present research study is carried out by the researcher in keeping view of objectives, hypotheses and the entire objectives have been successfully obtained through various chapters as well as made realized through findings of this study. The investigator has applied appropriate research methodology, tools and techniques of data collection and obtained primary data through two types of questionnaires those are librarian questionnaire and user questionnaire. The received data is analyzed and interpreted in appropriate manner and present research study briefly concluded that Majority respondents belong to fulltime faculties and Post graduate students who are familiar with e-resources with highest rate of 90.68% and 84.61% respectively. The present research study indentified that majority librarian posts have been fulfilled with fulltime based. It is good sign of these higher education institutions but there is still inadequate supportive staffs, particularly ICT oriented which is essential for providing better and effective services in this electronic resources era. Further, study also observed that faculties go to library for accessing, downloading and sharing electronic based resources but PG community prefer to their laptop and smart phones. Both communities opined in highest numbers that there is adequate availability of online and offline based resources in their academic libraries.

This study also observed that electronic resources based collection development policy is mostly dependent on UGC Info net consortium and N-List programme and maximum libraries have achieved membership for subscription of e-resources besides other platform. Present research study identified that good number of users from both categories still visit library and they are aware with library services which are provided by ACS College libraries. User community got information about library services through various ways like college magazine, e-mail, Whatsapp, websites and so on but yet traditional based college magazine is playing high role for dissemination of library information rather than ICT based platform as well as reference service is more popular among both community. In this way, there are many results are found including merit and demerit of use of electronic resources among Arts, Commerce and Science Stream libraries in Satara district.

As per the findings from both type of analysis of questionnaires, researcher has suggested and recommended some solution to overcome the problem which have identified through this study such as There is need to make awareness among unknown users of library services for attracting towards library and information centers for getting and knowing value added services which are provided by ACS College libraries. Academic libraries from Arts, Commerce and Science Colleges should plan for optimum utilization of electronic based resources and particularly organize special programmes for attracting towards valuable electronic resources platform. UGC Info net and N-List platform host lot of rich, scholarly content relevant to Arts, Commerce and Science disciplines as well as there are good number of platforms available with rich content. Therefore, there is urgent need to make positive environment and proper guidelines regularly by library professionals for optimum utilization of these gateways in this digital age. In such a way, Investigator has suggested many valuable suggestions which will beneficial for growth and development in higher education system.

The present study fulfilled objectives and hypotheses proved correct, In this way, present study will be beneficial to libraries, institutions, universities, higher education systems and academic community with various angels.

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviations	Full Title
ACS	American Chemical Society
CD-ROM	Compact Disk Read Only Memory
DBMS	Data Base Management System
DOAJ	Directory of Open Access Journals
DLF	Digital Library Federation
ERM	Electronic Resource Management
ETD	Electronic Thesis and Dissertation
ERIC	Educational Resource Information Center
ERNET	Education and Resource Network
FTP	File Transfer Protocol
INFLIBNET	Information & Library Network
IFLA	International Federation of Library Association and Institutions
IT	Information Technology
ILS	Information Library system
ICT	Information and Communication Technology
IR	Institutional Repository
IQAC	Internal Quality Assurance cell
JSTOR	Journals Storage
N-list	National Library of Information and Scholarly content Infrastructure
NAAC	National Accreditation and Assessment Council
NKC	National Knowledge Commission
NPTEL	National Programme on Technology Enhanced Learning
NDL	National Digital Library
NISO	National Information Standard Organization
NROER	National Repository of Open Educational Resources
MOOCs	Massive Open Online Courses
M- OPAC	Mobile based Online Public Access Catalogue
MHRD	Ministry of Human Resource Development
OCLC	Online Computer Library of Congress

OPAC	Online Public Access Catalogue
OERs	Open Educational Resources
UGC	University Grants Commission
UAP	Universal Availability of Publication
USA	United States of America
UBC	Universal Bibliographic Control
UTM	Unified Threat Management System
WAIS	World Area Information Server
WWW	World Wide Web

Chapter - 1**INTRODUCTION****1.1 Introduction**

The ancient religious scriptures have been playing significant role in human life. They have shaped and colored the cultural patterns and the civilization all over the world. These books known as ‘Grunthas’ in India have contributed a bulk of literature which established a system in social, cultural, intellectual, economical, political and educational spheres. It is well said in Marathi, "Granth Hech Guru" which means ‘only books are the teachers’. This reflects value and status of books in human life. In Sikhism the scripture entitled ‘*Guru Granth Sahib*’ is considered as a final Guru i.e. God of the Shikh community. Thus, books have got a tremendous importance shaping various aspects of human life since ancient times. Books are the backbone of any education system on earth. However, the ancient education system in the country like India was based on transmission of knowledge orally from one generation to the next. In the ancient period, *shisya* (students) used go to their guru's (teacher's) home to get education. Students used to study there for long period to acquire knowledge orally. At that time, there were no teaching and learning facilities and tools like classrooms, boards, learning aids and library as such. The words of the Guru were considered as the final source of knowledge. As in Sikhism, Gurubani is preferably the only way to learn philosophy of life, the Vedas as the final principles of life narrated by the religious persons in Hinduism.

The invention of the press resulted into the transformation of the oral literature into the written books and thus flourished the libraries. In Indian educational scenario, the places of Nalanda, Jetvana, Ujjain, Vikramshila, Kanchi etc. were famous for establishment of rich libraries. This flourished level of libraries has been decreased in medieval period of India due to the Mughal invasion and other political disturbance. Further, during the period of British region, it has got new approach towards the academic libraries and higher education with impact of British education system. Before Independence era in India, British rulers had taken many steps for establishment of higher education systems in terms of Universities and colleges in India. They constituted commissions for growth and development in education system. In 1904, Indian Universities Commission focused on the importance of

academic libraries in education system and stated as, "Good reference libraries should be provided in Universities and colleges in order that students may have an opportunity of forming the habit of independent and intelligent reading". These lines depict the modern approach in regards of academic library.

It is said that Library is a Soul and undivided part of education systems. The basic functions of library are the acquisition of reading materials, organization of knowledge resources, and dissemination to end users as per their expectation and demand. In Primitive era, reading materials were kept in the lockers. At that time, there was no freedom to users to get resources when they required. But now there is drastic change in this situation and the scenario has undergone a drastic change and as per the need of hour, knowledge became open treasure to all.

The role and significance of higher education commissions has rapidly increased after the post independence period in India. Growth and development of Indian academic libraries has enhanced the scope of education. The 1st President of India and eminent academician Dr. Sarvapalli Radhakrishnan in its commission report stated that "The library is heart of all the university work; directly so, as regards its research work, and indirectly as regards its educational work, which derives its life from research work". This statement is although in the context of University Library but indirectly indicates all higher education system and academic libraries of colleges also. Dr. Radhakrishnan commission has focused attention on enhancement of higher education system and made recommendation in various aspects about overall academic libraries. University Grants Commission is playing a vital role in enhancement of academic libraries of higher educational universities and colleges. In 1959, UGC constituted a committee under the chairmanship of Dr S. R. Ranganathan, the Father of Library Science, in India to improve the environment of academic libraries and systems of universities as well as colleges. In 1966, Dr. D. S. Kothari commission also contributed its suggestions for the overall growth and development of academic libraries. In this way, from pre - Independence era to the present period, the nature of academic libraries has undergone a sea change and at present libraries are becoming wall less for providing services to end user in the global corner. In the context of academic libraries, the famous poet Jorge Luis Borges has well-stated , "I have always imagined that paradise will be a kind of library".

Gradually, academic libraries were being established in keeping view of modern approach of Higher Education System. After the independence era, there were several committees and commissions established for the enhancement of higher education system and its library organizations such as Dr. Sarvapali Radhakrishanan Commission, Kothari Commission, Ranganathan Committee etc. have contributed their views and knowledge through recommendations for the growth and development of University Grants Commission, establishment of Universities and colleges as well as its academic libraries. The impact of these various committees and commissions has been realized and since then academic libraries are playing significant role as supporting learning system for higher education in India. (Patidar, 2018)

Library is a place which assists to society as well as nation for enrichment with various aspects. In abroad, on the other hand, particularly in United States of America during the period of 15th to 17th century, libraries were flourished with the help of stakeholders through their donations. In 1638, John Harward donated 400 volumes for establishment of first University library at Cambridge in the English Colonies. Thomas bray set up a series of Parish libraries, Honorable Pratt contributed five hundred thousand dollars to Enoch Pratt free library to erect building for fourteen branches, Andrew Carnegie's generosity is unimaginable with contribution of planting libraries in United States, Great Britain, and Canada had established 1681,660 & 125 branches of libraries respectively over the land like Jonny Appleseed planting apple tress. In Indian scenario too, many steps have been taken for growth and enhancement of academic libraries. In post independence era, S.R. Ranganathan had contributed with intellectual and financial support, Late Kumarswami Raja who was the former ministry in Karnataka, spent money in establishing libraries, Dr. S. Radhakrishanan donated his own house and many valuable books collected by him to start a public library in his place Tirupati. In such a way, whether it is public or academic, libraries were flourished gradually in Indian culture and today's new look of libraries appeared in front of us. (Thirumalaimuthuswamy, 1974).

All over the world, there is establishment of various types of libraries as per the need of their users and kind of users according to Goal and vision of library organization. At present, academic libraries look in various forms such as traditional based library, Electronic library, digital library, virtual library, hybrid library and so on. The nature of libraries has been changed due to many reasons like ICT generation,

changing needs and expectations of user community etc. in the information society era. According to many scholars, study has mentioned the various factors which been responsible for transforming the traditional look of academic libraries into modern libraries such as origin of computer technology, improvement in communication technology, arrival of printing technology, impact of electronic publication industries and so on. The research and development in technology area is continuously progressed and produced various type of literature in different forms and formats as well as communication or delivery of information resources channels have been developed like WWW and Internet, Electronic Mail, Telnet, Gopher, up to 4.0 industry or web technology (social medias like Whatsapp, Facebook, twitter, blog, Rss feed etc.), List serves, forums, teleconferencing, videoconferencing, online chatting and so on. The value and importance of these tools and techniques have been realized in each and every sector including education system and that's why academic libraries have adopted and implemented within traditional functionality to cope up and meet the qualitative information needs of their academic community for achieving goal and mission of parent institutes as well as higher education system in digital age. (Patidar, 2018; Muthumari, 2016; Jindal,& Khan, 2018)

Information Technology is a recent and comprehensive term which describes the whole range of process of generation, storage, transmission, retrieval and processing of information. The rapid developments in information technology brought revolutionary changes in information processing, storage, dissemination and became a key ingredient in bringing up sea changes in overall aspects of society. Computer technology, Communication technology, CD-ROM technology and Reprographic technology are the four components of Information technology. Computerization of library is done with the help of computers. Huge information is stored in a small disc and solved up the problems regarding libraries about space and preservation of library resources. Traditional card catalogues are replaced into online public access catalogue which is popularly known as OPAC or Web OPAC. Print form of library resources is replaced in digital form. Concept of Electronic Resources (e-resources) has come into existence. In this way entire nature of libraries is changed in advent of Information Technology. There are many advantages as well as disadvantages of information technology such as Quickness, Timeliness, Accuracy, Multifunction, Worldwide, etc. are some advantages of information and communication technology.

At present situation, we can't imagine libraries without possession of electronic resources whether it is in online network based resources or CD, DVDs based e-resources. Academic libraries have been re-designed with their collection development policy considering the expansion of academic information desire in ICT era. Today, a lot of electronic resources are made available via Internet through various platforms for searching, viewing, accessing, downloading and sharing to each other with free as well as paid basis. Nobody patron can say about unavailability of reading materials for their academic purpose. It means that now there are variety of resources available in different pattern such as Microfilm, Microfiche, Micro card, CD/DVD ROM, e-book, e-journal, e-databases, e-image, e-maps, e-thesis, e-newspaper, graphical presentation, e-learning audio-videos and so on. Academic libraries and information centers are acquiring, cataloguing, classifying and discriminating these valuable electronic based resources to their faculties, researchers and students for fulfillment of academic performance and assist in teaching-learning counterpart. In historical background of electronic resources era, the Gutenberg project named e-book was known as first electronic book (e-book) appeared in 1970 and around 1884, in journal counterpart, engineering journal from Elsevier scientific publication is produced as e-journal. In this way till today, many advancements occurred in electronic resources area and now we all are witnessed with realizing multimedia, multifaceted and multidimensional nature of electronic resources at desktop. (Gaur, 2012).

Libraries and information centers have built up their resources collection in both formats i.e. print and non-print resources. There are many merits and demerits of having electronic resources. Now due to more merits rather than demerits features these resources are popular than non print resources among the user community. In point of view of library organization, publication industry, education system and user community, electronic resources are playing significant role due its potential nature. Today, e-resources have become essential part in blending teaching and learning environment. Keeping view of library organization, e-resources assist to overcome the barriers within library like space, maximum resources availability in minimum cost, possibility of extending library services with 24*7 basis, easy and quick services rendering, minimization on traditional time consuming task and convert into smart work, removes traditional letter ordering of acquisition and subscription process and

so on. Besides it, these type of resources also are helpful for publication of industries, vendors or aggregators in terms of easy availability of e-resources via online or offline platform rather than physical delivery, easy to reproduce, forward or modification within content or e-resources and another part of purchase and subscription process can be decreased as compared to print media etc. Electronic resources are not only profitable to library and publication industry but also beneficial for user community in terms of easy accessibility across globe, entire text can be searched and download possibility, simultaneous use of same document, multimedia and graphic colorful presentation, interactive and hypermedia link facility, easily availability through various means and so on. In considering above beneficial characteristics of electronic resources now it has become important in this ICT era.

Every coin has two sides' likewise electronic resources give more beneficial facility as well as there are some demerits such as while continue reading eye strain problem, technological constraints, copy right issue, term and condition with negotiation of publishers, vendors, changing nature in subscription model, lack of expertise man power and so on. In this way, these electronic resources having complexity nature but in considering both side of advantages and dis-advantages of electronic resources are evaluated and it is concluded that its value added importance in this information society era. Lacunas which are contained within e-resources can be easily possible to eliminate. In this way, electronic resources are more beneficial to fulfill the academic needs, exceptions, desire of techno savvy community and to maintain the standard and academic performance of higher education in this electronic age. In this regard Lawrence opined that," without efficient and comprehensive search services the content may not improve access greatly. Manpower is the most essential component for the library system. Professional experience and expertise make efficient use of e-resources. Digitization project can make print materials more easily accessible to users, create surrogates that are less vulnerable to theft and wear and serve as a preservation medium". This statement highlighted the entire aspects regarding the merits and barriers within electronic resources and necessary requirement for successful fulfillment of resources needs with electronic medium to user community. In such a way, while providing electronic resource services to the user, there is need to consider whole aspect in context of digital resources counterpart. (Gaur, 2012; Singh, 2009; Olayinka & Folorunso, 2017)

In the information society era, information and knowledge has become easily available to the society at grass root level due to advent in ICT and Open Electronic Resources movement culture. In Indian scenario, National Knowledge Center (NKC), University Grants Commission and MHRD (Ministry of Human Resources and Development) have taken steps towards the availability of scholarly resources with affordable rate or free of cost to end users. INFLIBNET (Information and Library Network), CALIBNET, BONET, DELNET etc. have been established to sharing and dissemination of knowledge and information resources with affordable cost to academic institutions in India. Besides it, various initiatives have been taken by Government of India in context of knowledge and resources organization in electronic form through various platform and portals such as E-libraries, Digital Library of India, Achieves of Indian Labor, Down to memory Lane, Digital Library of Arts Masterpiece, Kalasampadha, KudhaBaksh Oriental Public Library, Dware Gyan Sampadha, Mobile Digital Library, Mukhabodha Archiving Project, National Institute of advance studies (NIAS- Bangalore), UGC-Info net, Vidhyanidhi, Krishi-Prabha, Swayam and so on. These programme and Projects are nothing but the treasure of electronic resources in regards various disciplines and stream which are made available to academic community for growth and development in academic performance.

Open electronic resources movement has been spread across the world with aim and objectives of availability of world knowledge and scholarly literature among end users with free of cost and free from copy right act for academic purpose. Keeping this view, since many years ago, forward steps have been taken by Universities, Academic Institutions and Research and development centers for conservation of valuable knowledge and disseminate through public domain platform across the world. In India, Indira Gandhi National University (IGNU), YCMOU Digital library etc. have created their scholarly information resources through Institutional Repository scheme and made available via website portal in public domain. Today, each and every academic institutions and research development centers are designing such portals for optimum utilization of their resources. In this regards, it is need of hour in this information society era to create awareness of these valuable resources among the academic community by library professional.

In digital environment, conventional library professionals role has been changed as library manager, library and information scientist, cybrarian and so on. Electronic resources are flourished in variety forms and format such as Text, multimedia, PDF, HTML and so on. There are also different type of searching and browsing methods and techniques have been emerged due to advent in information and communication technology like Google, Google Chrome, Yahoo!, MSN, advanced search and Boolean operator etc. To cope up and fulfill the exact and proper need of information to user community in this electronic resources environment, the traditional as custodian circle role of librarian should be changed in modern age. He or she posses ICT based skills, ability, attitudes and recent trends knowledge towards the electronic resources environment. In such a way, the role has been changed in modern age to overcome the challenges of competitive Globalization to our academic community to performing excellence teaching learning ways on the Global platform. And in this critical situation, electronic resources are playing significant role for academic achievement. (Sudarrajan, 2015; Bellary, 2017;A., V. 2010; Sambo et al.,2017)

Now, Internet has spread over the world corner at root level and world has became as a global village. Each and every sector of human beings is touched with Internet facility via various technological tools like mobile etc. for communication and sharing the knowledge and information as well as day to day's experiences to each others. The impact of Internet and Information technology on library and information center area has been reflected since long decades. Internet technology is more flourished and implemented in library and information area of abroad as compared to Indian situation. Since long ago, Online Computer Library of Congress (OCLC) is providing various information services and e-resources to their patrons with the help of Internet network technology. IFLA (International Federation of Library Association and Institutions) has been created and made available Universal Bibliographic Control (UBC) and Universal availability of Publication (UAP) in public domain with assistance of Internet Platform. Apart from it, there are lot of organizations, agencies and Institutions from Indian as well as foreign culture are playing important role in creation, preservation and dissemination of electronic information sources and resources.

Today's Library cannot fulfill the each and every academic needs of techno savvy community without Internet facility. Hence, Internet play dual role as source of information as well as communication or dissemination platform of information sources and services. To fulfill the electronic resources need of patrons, the Internet network facility is important component in this information era. Web technology support holds tremendous variety of resources regarding each and every discipline in the worlds. Due to this technology, it is easily possible to retrieve the treasures of sources and resources in a fraction of second and single click of mouse. It means that in point of view of library science, Internet is nothing but the mother of electronic resources in various forms and format. And now, most of academic libraries are being utilized as an electronic resources treasure among their academic community. (Singh, 2011; Kannan and Abilash, 2011)

Since long days, there is another platform playing significant role in providing scholarly literature in electronic form that is consortium. Consortium concept is generated and developed for subscription of electronic firstly e-journal pattern and next it has spreads towards the e-books, databases and many more resources with affordable cost to academic institutions. Consortia enable libraries to meet the needs of user from National, International publishers, authors literature with least subscription fees and free from personal subscription process, negotiation, terms and conditions deals with vendors or publishers. Consortia is nothing but more than two libraries come together to fulfill combined objectives that usefully requires co-operation and the sharing of knowledge or resources. The origin of consortia term has found in United States of America (USA) with name of online computerized Library of Congress (OCLC). The growth and development has spread all over the world rapidly like New Zealand's CONZUL, CAUL, North America's CRL, Virginia's VIVA, CIC in south Asia, Curl in UK and concord in Britain. These are the some examples of consortia at global level. J- GATE IITs - BARC - TIFR consortium SNDT consortia for LISA, STI Network, FORSA, INDEST and UGC - Info net consortium are the examples of various disciplines at national level in India . There are various models in consortia like open consortia model, National consortium, publishers Initiatives, etc. UGC Info net consortia is certainly Funded model in which the financial responsibility of running the

consortium is taken by the present body of UGC and working under the control of Information and library network (INFLIBNET). There are many advantages of consortia to library community. Library consortia enrich the educational and Informational expectations of patrons through the mode of consortia of the user community. The main purpose is to improve the ability of libraries to serve their users through co-operative approach. Now, when we look at the academic libraries in the present scenario, it is the need of hour to fulfill the needs of users community in minimum cost providing maximum resources to its users. And academic libraries could overcome the financial problems of acquisition of core journals, books and other databases, etc.

Consortia includes a lot of electronic resources which differ from disciplines to disciplines. UGC Info net consortia consists of various resources and databases regarding general science, pure science, and language and humanities subject literature from well known publishers like Springer, Taylor and Francis, Wiley and so on. As mentioned in many studies there are maximum academic libraries that have subscribed much number of e-resources under the consortium scheme. As compared to technical and management education institutions academic libraries from Arts, Commerce and Science stream are less utilized and now these libraries are moving towards the consortium pattern. (Johnson et al., 2012)

N-list (National Library of Information and Scholarly content Infrastructure) programme is initiated by UGC under INFLIBNET center since 2009 for specific higher education institutions which come under 2 (f) & 12 (b) as per UGC act of 1956. Under this platform, today more than 31 Lakhs electronic resources are made available with minimum least annual subscription rate of 5900/- for aided and 34500/- rupees for unaided colleges. Electronic resources which are contained within it are very valuable and potential to academic community of Arts, Commerce and Science Stream. Recently, by initiatives of UGC and MHRD has made available newly consortium platform as e-Shodhshindhu in merging literature from UGC info net , INDEST and N-LIST where purely reviewed, peer reviewed journals, scholarly e-books and valuable bibliographic as well as full text databases are made available. (www.nlistinflibnet.ac.in)

In this way, today consortium platform has become a boon to academic institutions and its user community in terms of free from budgetary constraints, easily availability of scholarly resources and so on. Now majority libraries are giving preference to electronic resources under consortium platform rather than directly subscribing from vendors or publishers due to many beneficial reason. There are several studies regarding the use and impact of consortium resources indicated that academic communities are moved towards electronic resources for achievement of their academic goal. (Sakhare, 2007).

Although electronic learning resources having many benefits in terms of easy access, anytime and anywhere availability, instant and updated information retrieval possibility and so on. There is need to consider its second side that is security and preservation issue of electronic resources in view of sustainable availability and accessibility. The nature of e-resources on the web platform works as fragile and changeable. There are many issues and challenges regarding sustainability of e-resources that have been displayed by several studies in library and information science area. In this regard Chaudhary opined that, "... the rapid development have negative impact; technology becomes outdated so fast... this will continue to happen in future. Therefore we have to be very careful in preserving digital information resources; and this look to be a continuous problem". These lines clearly indicate the changing nature of technology and its negative impact on electronic resources with various aspects and in future requirement of sustainable availability of electronic resources is mentioned clearly. And therefore academic libraries and library professionals should carefully be aware of acquisition and subscription process to its information dissemination and preservation as well as electronic security system level due to its constant up gradation of technology and other issue etc. Selection of content and development of metadata of electronic resources both are important factor in digital era. Continuous management and maintenance, financial constraints, collaborative effort, data migration etc. component should be handled carefully and develop strategies for preservation, storage and security of electronic resources. (Gaur, 2012; Shukla and Shukla2011; Dharmapurikar, 2012)

Many studies are carried out regarding the need of user orientation programme, use and impact of information literacy, information seeking behavior of library users in electronic resources scenario. Such type of study is correlated with usage of electronic resources. It will be useful to academic centers and its library organization for identifying usage status of e-resources as well as barriers while using electronic resources by user community. Today, there is change in the ways of learning in electronic age. Many studies observed that generally maximum academic community are looking and getting their academic needs through internet platform. Instead of pen and pad they are using mouse and screen pad for writing or studying for their academic purpose. Users are moved towards audio, videos, multimedia resources for getting knowledge and information. Identified information are spreading and sharing through web tools among each other. In this way, their information seeking behavior is being changed due to easily availability of tremendous e-resources and traditional based reading ways and habit has been transformed into electronic environment. Keeping view of present learning ways of techno savvy community, academic libraries and information centers are being re-designed their collection development policy in this electronic information age.

A few decade back, library and information scientist Lancaster opined in context of changing nature of society as 'Paperless Society', R.G. Paraswar also stated in his book, 'Paperless society is a distant dream'. These both opinions depict the changing realistic situation in present and future era. Now, we all are sensitized towards the virtual picture which is being reflected through each and every sector of higher education system. And that is why; utilization of electronic resources among the academic community has become an important part in this present age. Now, most of academic libraries have changed their traditional ways of collection development and give preference acquiring electronic based resources rather than print materials due to various influencing factors like expanding demand of user category, chiefly availability and so on. (Mujumdar, 2017; Neeraj and Sukula, 2011; Singh and Singh, 2016; Nazir, and Zahid, 2015; Kothari and Gaurav 2019)

Long ago, Melvin dwey has established valuable principal regarding proper meets and needs of information to users as," to meet or provide the right information to right users at right time". In 1931, Dr. S.R. Ranganathan who is known as father of

library science in India has formulated five fundamental principals in keeping view of user centric regarding proper utilization of library resources for user community in various aspects. Both views by above scientists are still realization value for providing electronic based services and sources to academic community in digital environment. In higher education system, library and information centers are considered as learning resource center. To achieve the goal and mission of education system or parent institute there is need of assessment and evaluation of learning ways of academic communities as well as resources and services which are provided by the libraries and information centers. And hence in this regard, since long decades several studies have been carried out with different method as use study, user study, impact of information literacy programme on user community, information seeking behavior, citation analysis, bibliographic study and so on.

At present, use and user study have been flourished in library and information science area. Use study concentrates on use of resources with various patterns. It means use study examines the feature and characteristics of library resources including all kinds and forms of print and non-print based resources. Findings of such type of study will be helpful in providing effective and efficient of library services to their academic community and it will impact on standardized and successful education. Another type of user study is also playing significant role in different aspect. User study is a complex process and it includes information needs, information seeking behavior of users, use of resources through different media etc. In this regards, several studies have been conducted in keeping valuable objectives in India as well as abroad.

Due to many reasons, traditional nature of libraries and its services as well as nature of resources is being replaced as Automated or Electronic library and information services and electronic based resources. The impact of virtual culture is sensitizing through all type of libraries including Arts, Commerce and Science stream libraries. ACS libraries(Arts, Commerce and Science) has been moved and is being moved towards collecting, providing and preserving electronic based resources in terms of offline or online e-resources for their fulfillment of academics in current scenario. Recently, NAAC assessment and evaluation criteria report has stressed and expected utilization of e-resources and databases among academic community and

academic libraries are making attempt to increase collection in digital form for getting needs of techno savvy academic community in present era. And therefore researcher has chosen research topic for study as," Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study".

1.2 Need and Significance of the Study

The study relates to understand the usage of electronic resources both online and offline by fulltime faculty and postgraduate students from Non-Professional colleges i.e. Arts, Commerce and Science College Libraries. Today's age is called as technological era and its impact has been found in the change of the entire traditional nature of academic libraries. The libraries are providing e-resources to its users. So in this electronic environment, researcher wishes to conduct the study to find out the present situation of use of electronic resources as well as consortia based resources among the fulltime faculty and PG students in various aspects as well as to understand the availability of electronic resources and various services which are provided by the libraries. Besides, it also wants to know infrastructural facilities in keeping view of electronic based resources and to assess the satisfaction level after using e-resources, problems in libraries from Arts, Commerce and Science streams in Satara District. The results and findings of the study will contribute to the body of knowledge on patron's use of electronic resources and will also be beneficial to academicians, researchers and professionals interested in this area of study. Recommendations and suggestions will be useful for enhancement of libraries to meet the goals and objectives of the parent institutions. It is also beneficial to University as well as Higher Education system to improve the education in digital environment.

Up gradation in Information and Communication Technology is continuously going on and its impact and effect is reflected on change and modification in the forms and format of variety electronic resources. ICT has influenced higher education system in terms of teaching and learning ways and medium is changed as blended teaching, virtual learning and so on. Academic community is moving towards digital environment. In this situation, there is need to assess and evaluate the present status of use of electronic resources by academic community of Arts, Commerce and Science stream in Satara district which is considered as draught prone and hilly area. To

achieve the goal and vision of parent institutions or higher education system such type of operational study is the need of time in changing virtual environment. In this way, present study will also be useful to library professionals for enhancement and up gradation in library sources and services as per the need of time.

1.3 Statement of the Research Problem

The present study is entitled as “Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study”. The scope of the present study is Arts, Commerce and Science Colleges in Satara district only. The present study tries to investigate that how many readers are using these resources and what are the ways of accessing the electronic resources, availability of resources and services, assess the level of satisfaction as well as infrastructure facilities from point of view of e-resources, problems faced while using them, etc. from this approach researcher wants to find out the results through this present study.

1.4 Aim of the study

The researcher intends to explore the use of electronic resources and their merits as well as demerits in the present day digitalized scenario of the education system.

1.5 Objectives of the present study

1. To study the availability of e-resources in Arts, Commerce and Science College libraries in Satara District.
2. To know the usage of e-resources in Arts, Commerce and Science College libraries in Satara District.
3. To analyze the information services provided by Arts, Commerce and Science College libraries using e-resources.
4. To study the availability of infrastructure facility in Arts, Commerce and Science College libraries for using e-resources.
5. To study usage of UGC Info net Consortia resources by library users.
6. To assess the level of satisfaction of users after using e-resources.
7. To evaluate the problems faced while using e-resources by patrons of Arts, Commerce and Science College libraries in Satara District.

1.6 Hypotheses

1. Library users of Arts, Commerce and Science College libraries in Satara district are using Internet resources for data collection.
2. Few libraries have started acquiring e-books, e-journals and using UGC Info net resources.

1.7 Scope and Limitation of the Study

The present study is entitled as “Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study”. The Scope of the study is mainly to focus and examine the use of electronic resources by fulltime faculty and PG students and identify the electronic resources and services which are provided by the Arts, Commerce & Science College libraries in Satara district affiliated to Shivaji University, Kolhapur. The Geographical area considered is Satara district, where total 42 colleges are located and only 35 colleges are chosen for the present study. Data from fulltime faculties, Post Graduate Students and librarians have been collected from 42 colleges but data of 7 colleges was incomplete and error therefore these 7 colleges are not included in the present study and only 35 colleges are selected for this study. Hence, study is limited to 35 colleges with Arts, Commerce and Science Streams in Satara district. As far as time limit is concerned, the data collected for analysis covers the academic year from June 2016 to January 2017.

1.8 Research Methodology

Research is a systematic process used for generalization and formulation of theory. It is a scientific and systematic process which includes the formulation of problem or query, detailed study of existing specific problem oriented literature, develop and design objectives and hypothesis, determination of research design plan, formulation of population and sample design, collection of primary data, pilot study, analysis and interpretation process, drawing conclusion and findings, hypothesis testing and so on. In this way, a researcher tries to find answer to the research question. For doing successful research work there is need of proper and accurate research methods, tools, techniques, sample design etc. There are many types of research such as Descriptive research, Analytical research, Applied, Fundamental, Qualitative and Quantitative research, etc. The present study has applied descriptive

research method and data has been collected for findings of the research problem using survey system. According to Burns, “Research is a systematic Investigation to find answer to a problem”. It means research is systematic and proper procedure which plays a significant role among entire process in successful fulfillment of research work. Nobody can move towards research solution without appropriate research methodology and its tools and that is why it will be useful for getting the answers of the research problems.

The present study focus on the use of electronic resources by Arts, Commerce and Science College Libraries in Satara district. The researcher has used survey methodology for this study. The study is concentrated in keeping view of objectives for getting answer of the research problem and researcher has included questions within questionnaire in regard of library resources, facilities, services etc. and their use among fulltime faculty and postgraduate students of the colleges. Researcher has collected data regarding library facilities and services formulating a separate questionnaire for librarian community. For this present study, appropriate research methodology and its relevant tools and techniques have been applied. (Kumar, 2011; Upagade and Shende, 2010; Kothari, 2019)

1.9 Chapter Scheme of Thesis

The present study includes five chapters which are presented in the order of first Introduction chapter to fifth chapter including findings, suggestion and conclusion. It has been presented briefly in the nature of thesis as introductory part of thesis.

1) Introduction

The first chapter entitled Introduction cover overall picture of research in brief. It includes growth and development of higher education system as well as its soul part as a library and information area from pre-independence era to post independence age. Besides, this chapter has covered transformation of generation from print resources counterpart to electronic resources, its feature and importance in this information society period, role and impact of information communication technology and valuable importance of various tools and techniques in providing library and information sources and resources, needful and supportive factors to e-resources like expertise man power, electronic management system and security, availability of open educational resources, consortia and N-list platform etc. has been

introduced briefly. Further, this also chapter includes need and significance of the study, objectives, hypotheses, scope and limitation of the study, research methodological tools and techniques as well as overall chapter scheme in brief.

2) Review of Literature

The second chapter consists of literature study which existed and done previously by researchers in various form such as research articles, research papers published in conference proceedings, rare books, reference books, print and not print material, databases from consortia platform, e-thesis and so on. This chapter includes studied literature by researcher classified and presented from 1995 to 2018 relevant to present research topic on, " Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study". Selected literature for present study consists of use of electronic resources among academic community with different stream of higher education system, impact and satisfaction level of patrons, study related to consortia based electronic resources and so on. In this way, researcher has studied up to 104 references.

3) E-resources: A Review

Third chapter of thesis consists of various terminologies which are relevant to electronic resources. There is detailed explanation of the concept of electronic resources, types of electronic resources, historical background of e-book, e-journals, e-databases and many more multimedia resources, features, merits and demerits of electronic resources. Apart from this, it includes the role and importance of consortia, Internet, N-list platform, different types and discipline wise open educational resources. Print resources versus non print resources, traditional resources over online resources, electronic database system and security part, changing role of library professional and significant role of e-resources in digital era etc. have also been included in this chapter.

This chapter also includes the valuable information of each and every institution in Satara district which are affiliated to Shivaji University Kolhapur having the streams of Arts, Commerce and Science only. This valuable information will be useful for researchers, students, parents, universities and higher education system for academic or other purpose. This valuable database is consisting of 35 colleges including only aided from Satara district.

4) Data Analysis and Interpretation

This part of thesis includes the research methodology, variable used for the study, operational definition of the study, selection of sample, pilot study, use of simple random sampling techniques, sample population, data collection tool, sources of data, statistical tools and techniques, style manual used etc,. Further, study includes the analysis and interpretation of questionnaire 'A' (librarian questionnaire) and questionnaire 'B' (user questionnaire) as per the primary data. Analysis of the data and presented in the form of tables, charts and graphs.

5) Findings, Suggestion and Conclusion

This chapter deals to findings of the present study and on the basis of findings has given some suggestions. Moreover, this chapter includes fulfillment of objectives as well as hypotheses testing. Investigator has described the further scope of study and lastly conclusion. Some sample results of study include electronic resources are most important aids in the information and communication era. Majority respondents belong to male category fulltime faculty and post graduate students who are familiar with e-resources and the number is 181 & 127 respectively whereas 72 & 170 female category respectively. From both respondent groups, the very less number access electronic resources in the library whereas PG students prefer individual Laptops and Smart Phones. About availability of Online and Offline resources in the libraries of Arts, Commerce and Science Colleges in the jurisdiction of Satara district, majority users opined that both types of resources are available in their libraries with the rate of 81.36% FF and 67.24% PG Students.

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Chapter - 2

REVIEW OF LITERATURE

2.1 Introduction

Review of literature has been undertaken keeping the research topic entitled, "Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study" at the Center. The review includes a comprehensive study of the topic explored by previous researchers and scholars from different perspectives. Literature available in the form of Books, Journals (print as well as e-resources), handbooks, reports, thesis and dissertation, etc. is analyzed in detail to understand to topic of research.

The micro level observation and detailed study of previous literature relevant to selected problems of research is a first and necessary step of any type of study. Lot of study has been carried out relevant to the subject of use of e-resources by academic libraries. While doing this work, researcher has observed that such type of literature is existed in Indian as well as abroad study counterpart and has studied both literature in this chapter. There are many purposes behind undertaking the review of literature such as to get the knowledge of research problem, to achieve an idea regarding the methodologies and techniques relevant to the selected study, sampling techniques and tools etc. The information and knowledge which is gained from review study will guide to researcher for doing and making successful research works. Without doing this activity researcher cannot move ahead even for framing the research problem. In this way, such type of study plays important role in successful research activity. In this view researcher has collected and studied the various type of secondary resources such as Books, Journals, Thesis and Dissertations, Reports, Newspapers, Important portal, websites and databases etc. In this chapter, researcher has chosen 104 articles and other type of resources which are regarding the research topic of "Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study". Researcher has applied APA (American Psychological Association) style manual in reference writing.

There are many views expressed by many authors about the purpose of review of literature. In this regard, Good, Barr and Scates have given some basic reasons behind the review of literature as per following.

1. To show whether the evidence already available solves the problem adequately without further investigation, and thus to avoid the risk of duplication.
2. To get the ideas, theories, explanations, or hypotheses or any valuable information regarding the research problem.
3. To indicate or suggest the proper methodology for doing the research.
4. To locate comparative data useful in the interpretation of results etc.
5. To contribute to the general scholarship of the investigator.

2.2 Classification of studied Literature

The researcher has selected and reviewed following literature which is related to present research topic.

1. Use of electronic resources by Arts, Commerce and Science College libraries.
2. Use of electronic resources by other type of libraries except above mentioned.
3. Study related to digital resources and academic libraries and universities.
4. Use of N-List based database by students and academician.
5. Study regarding the e-resources acquisition and preservation process.

The researcher has attempted study from research articles, conference papers and thesis-dissertation etc. as following.

2.3 Review of Literature from 1995 to 2005

Cartwright, G., and Diane, K. K. (1995).¹⁹ Authors have expressed their views on the topic, "Beyond E-mail: Electronic Journals". The present article has highlighted on the subject of early stage of e-mail system tool and its usage in various ways. The article also described generation of journals resources and its various kinds and process such as editor level assessment, co-editor, viewer and peer viewer etc. This process is applied in the print as well as e-resources journal counterpart. It has

thrown light on the issue of growth and development of e-journal resources from Argentina to Venezuela. Lastly, authors have focused light on the cost issues of electronic journals and majority organizations are spending and expanding their budget on digital counterpart resources rather than print counterpart.

Aluri, R. (1996).⁴ Author expressed that how e-publishing Industry is spreading in the print counterpart and their impact is positively found through academic libraries. In this article Lynch notes that, " Electronic publishing is leading to centralization and monopoly of information which will result in society". This message indicates that electronic based libraries are not remained at imaginary level. At present, publishers from digital counterpart are producing various type and nature of resources such as CD-ROM based resources, Indexing and Abstracting databases, Full text databases and e-journals etc. In this way, this article has discussed both the sides including the merits and demerits of e-resources.

Hickey, T. B. (1996).⁴⁰ The author has expressed his view on the impact of digital publishing industries on the libraries. Libraries have changed their nature due to the rapid rate of adoption of e-publishing materials. He opined various ways such as what is library, the role and impact of World Wide Web, electronic publication and access mode of e-resources etc. The academic libraries are using these new forms of reading materials and providing better services to their users. Hence, the traditional roles of libraries are transforming into digital counterpart and users are influenced with it. Article also described the raising problems regarding the easy accessibility and archiving.

Balas, J. (1998).¹⁰ In this article, author has highlight various views regarding the electronic resources training programme and web based facilities like Internet Information searching ways, various websites, chatting and gopher tool etc. She has conveyed that web is nothing but the treasure of knowledge. It is useful to teaching counterpart with assistance of Netscape Navigator. She has also expressed her view about the Internet basic online courses which are designed by Augsburg College which is very beneficial to e-resources oriented users and the said college provides instruction through email, chatting way, telnet and newsgroup.

Ray, K., and Bay, J. (1998).⁸⁰ Researcher has studied on the topic of “Students’ Attitudes towards Electronic Information Resources”. Study was undertaken to examine the usage of electronic resources and surrounding issues of electronic resources. 317 students’ response was collected through questionnaire. Study reveals that 96.4% of respondents acknowledged an awareness of access to a networked computer via university. Internet and CD-ROMs are most popular e-resources among students, less time and effective information retrieval skills are main barriers. Majority of students have acquired their skills through trial and error as well as from other sources of guidance. The result of the whole sample did not differ across Institution.

Jantz, R. (2001).⁴⁴ This article focused on new e-book technology and its impact on academic libraries. Author has explained the various types of e-books and library service models. He showed that new aspect of business models such as traditional ways of publishing on the Internet platform, Self-publishing, and new models of Internet publishing and emerging trends of partnerships with libraries for example, The E-bray Company, Questia etc. Article also described that e-book technology having pros as well as cons and technology users as well as publishers industry, academic libraries have influence of this electronic resources and technology.

Krishnamurthy, M. (2002).⁵⁶ The present article describes the term of digital library and its importance in this digital environment. There is need to change the library professionals as per the need expanded of users. Study also highlighted on the digital library gateway which is best platform for providing the electronic based resources such as e-book, e-journals etc. Author has selected the Indian Statistical Institute library for the study and showed that it is excellent model in providing the digital resources and information services to its end user. It is also indicated that the Importance of Internet and Computerization of library is playing significant role in providing such type of advanced services to the techno savvy users.

Ibrahim, A. E. (2004).⁴¹ The research study entitled “Use and User Perception of Electronic Resources in the United Arab Emirates University (UAEU)” has conducted survey to measure the frequency of use of e-resources, factors

influencing use of e-resources, computer knowledge and language barriers from United Arab Emirates University (UAEU) of faculty members of electronic resources. 125(89%) responses were received out of 140 faculty member through questionnaires for user Interface satisfaction (QUIS) along with Likert's Five Point Scale and SPSS statistical package has been used to analyze and manipulate the collected data. A stratified random sample was drawn to represent not only to overall population but also the key subject. Study reveals that, existing environment is effectively enhanced to learning and research process in UAEU Library. Significantly low use was reported for e-books, e-journals and databases and indicates the unawareness attitude of said library. Further results show that faculty members were with fairly good computer skills that enabled them to search and utilize e-resources. Computer skills are not only sufficient for efficient use of e- resources but also training program is must for faculties. Researcher has found out the barriers of Arabic language rather than English.

Zanin-Yost, A. (2004).¹⁰³ Carried out study on the topic entitled "Digital Reference: What the Past has taught us and What the Future will hold". In this research article author has described digital and virtual references. He has also explained that using internet and online services became helpful to patrons for their study purpose. Chat and e-mail services became important in ICT era. Author has explained all historical background from initial stage of ICT to virtual level reference. Digital reference provides unprecedented types of services to readers. The academic community and libraries around the country welcome it. Digital reference has introduced new opportunities as well as challenges for libraries.

Jackson, R., and Lorraine, J. P. (2004).⁴³ The present study focused on research project to determine the uniqueness of Internet Subject Guides among Association of Research Academic Libraries. In this view researcher has evaluated guide in the subject of Chemistry, Journalism, Philosophy and Astronomy. For this study, Authors have collected data from the websites platform of 112 libraries in various ways. And further study identified that more than 51% librarian's evaluations are not influenced by the quality of their guide. To get the solutions, they have attempted to re-design the questionnaires and circulated among the respondents.

Study also showed that Maximum sites are not relevant to the particular subjects and sites listed were linked to only one library. It is also found that most of the e-journals are including with links rather than e-books in the subject of Philosophy and journalism.

Tenopir, C. (2004).⁹⁷ Through this article author has expressed thought that how economical constraints became to lead and enhance the usage of digital resources among libraries and its manifold benefits will be raised to the academic community. Bob Murphy predict that the need of abstracting and indexing databases with highest quality level and its impact will be seen in future. Apart from these information services, it is also needed to cope up with technology to these resources beyond the linking to resources only. Federated search is realized in shorter period predicted by Needham and et al. author.

Sandhu, G., and Anna, S. (2005).⁸² The present study was conducted on the topic entitled “25 Years of Electronic Resources Collection Development at the University of Salfora: Some Issues and Challenges”. Study described the journey of e-resources collection building at the University of Salfora. In 1980, it has subscribed DIALOG Information retrieval service and online searches made available via telephone line and modem. Further, it has considered the need of time technology and adopted like JANET (Joint Academic Network), CDROM Network, ATHENS authentication system, ULIRANET CD ROM Network. Lastly in 2003 Salfora began to build-up electronic book collection and purchased 12000 Net library books as a part of MOWAL consortia. This study indicates that growth rate of e-collection is day by day increasing and e-learning-migration played vital role in Salfora. Net library was one of the first e-book services established within this reputed Institute. Now, a division of OCLC has over 90,000 e-books in its collection.

Dickenson, D. (2005).²⁹ Present study is entitled as “How Students and Faculty use Academic Libraries Differently”. Present article’s nature is survey reinforces in 2005 Colorado Academic Library undergraduate students and faculty from nine colleges and universities were asked about library services and usage of e-resources. On the basis of primary data, researcher has concluded that the access of library computer is more utilized by students than faculty. 52% faculty use print periodicals for their academic work. 84% used usually access electronic resources.

Srechaiwong, P. (2005).⁹¹ “The Usage of Internet among State University Students in North of Thailand” In this present study, researcher has set the objectives of studies which include use of Internet, its awareness among university students, to find out the usage, satisfaction rate and web design among students as well as benefit of Internet and problems encountered while searching information. Present study area is North Thailand University itself and chosen only UG and PG students as sample respondents from library and information science department. Total population of students is 57,462. Investigator has circulated questionnaire among students and collected data with random sampling technique. Researcher has conducted Pilot survey for testing the research in taking 50 students from Navesuan University, Phayao campus of Thailand. Researcher has distributed 800 questionnaires and received back with filling 652. Through this study, it is found that 82.7% were Undergraduate students and 17.3 % were graduates. 53.8 % students have own computers at home and remaining students were using computer outside the library for their study purpose. Near about all students have got their knowledge about computer and information technology at high school level. Study also found that majority students are aware about internet and technology and they get knowledge through self-rating on Internet. All students preferred their Thai language. Email, www and chat are mostly used by students and email is first choice by them. Internet is used for assignment, education and entertainment purpose. They use IT for Interaction communication rather than one way communication. Students generally use Google than Yahoo! Apart from this, they use vernacular search engine. Text format was mostly used for downloading by students and satisfaction of students indicated that information for retrieving from Internet is adequate. Out of 652, 268 students have created web pages.

Summary

Many studies have been carried out during the period of 1995 to 2005 related to use and utilization of electronic based resources by patrons of different types of libraries. Most of the studies were related to emerging resources in electronic forms, reshaping nature of libraries from traditional to digital, user attitude as well as searching behavior towards internet based tools and techniques, aim and objectives behind using e-resources and impact of electronic publication counterpart, etc. Major studies in this decade flashed light on use of e-resources by users of various

disciplines and streams in keeping view of various aspects of academic purpose. The previous studies observed poor situation about awareness relevant to usage of electronic based resources but there is also identified that patrons from abroad counterpart are more aware as compared to Indian educational institutes. Some studies indicated need of enhancement and improvement in electronic resources area in the information and electronic age.

Findings of the various studies during this decade observed that developed countries have moved towards providing sufficient scholarly resources as well as essential infrastructure to their patrons but developing countries are still away with fulfillment of required e-resources and adequate infrastructural facilities. Maximum studies indicate that e-journals are used in more number as compared to e-books and other e-forms based resources as well as Google search engine is more popular rather than other engine among the user community. It is also observed that majority users prefer print based resources and services as compared to non-print based resources.

2.4 Review of Literature from 2006 to 2015

Hadgali, G. S., Kumbhar, B. D., and Lakshmiraddy, S. (2007).³⁶ The Investigator has conducted the study in keeping view of the aims and objectives to examine the present status of use of e-resources, adequacy, purpose, impact and barriers while enjoying these scholarly resources among the faculties, researchers and post graduate students of science and technology stream regarding the six universities located in Karnataka State. For this present study, he has applied the survey method for collecting the primary data and circulated questionnaire among the selected population. Statistical method and techniques have been applied to analyze the data such as mean, standard deviation, co-efficient variation and ANOVA test to draw the systematic and scientific result and study revealed some major findings that majority user community took the benefit from visiting the library and preferred both type of print and digital resources for the purpose of research and teaching activity. User from Mangalore University use Internet at large scale as compared to other and access it at department, cafe and Lab besides library dependency as well as Google and Yahoo! which are playing vital role for seeking the e-resources at Internet. Users are well aware with electronic resources but information about subject gate way and various databases are more useful and they are well aware with content of databases than print

counterpart. Apart from the web based resources, they have found impact of device based CD-ROM materials and they are satisfied with these resources as compared to traditional form. Further study identified that the attitudes of library staff towards the current user needs are not better and their support is not positive. Lack of proper training, upgrading ICT facility, need of proper planning and increasing of e-resources are major difficulties showed through this study.

Gaikwad, T. D. (2007).³² Author has done his Ph.D. work on the topic of “Impact of Electronic Media on Special Libraries in Pune”. The objectives of the present study are to study the state of the art of Global electronic media technology, to examine the existing electronic resources and facilities available and to understand the application of electronic media resources in library services, collection, budget system and software impact, to access awareness, extent of use and evaluation of training systems. For this present study, researcher has selected 56 research libraries from Pune city. And questionnaire observation, and interview schedule has been applied for present study. Study found that, status and financial position of special and research libraries is that 55.35 % libraries are funded by central government, 32.14 % are self-funded and remaining by Government of Maharashtra. Study also observed that 100 and above users make use of 26% per day followed by 81-99. DDC classification system is used among 20 libraries. 15 libraries have applied for acquisition of resources 100%. SLICS gives preference to reference and non print materials such as 12.5% purchased data base, 8.9% acquiring standards and remaining 3.6 libraries preferred to reports, thesis and dissertation. Study also found that 807 online journals out of 998 are related to science and technology and data base is concerned to same subjects. 86 libraries give preference to social science and humanities disciplines. Study also found that awareness of e-resources is found among library professionals. Basic computer knowledge is 100% adopted by professionals. 80% and 95% researchers are familiar with the information about LAN, web camera, etc. 96% to 100% users opined positively about availability of Infrastructures. It is also found that bibliographic, literature services and Indexing/Abstracting services are provided by these libraries with response rate of 90 % and 89.3% respectively and 91% libraries provide Internet service to its readers.

Diane, H. (2007).²⁸ Present study is about faculties of humanities and social sciences and examined the attitudes of users towards use and non-use of digital resources in teaching in under graduate faculties of Liberal Arts colleges and community colleges affiliated to university of California. Researcher held discussion groups and conducted a survey of fulltime and part- time faculty as well as undergraduate students of university and colleges. The survey was conducted in 2004 and 2005 in targeted 4443 faculties from specific disciplines with stratified random sampling. Study found that majority of faculty use their personal collection for teaching in keeping view in time saving. One of the most cited obstacles was that the availability, reliability and expenditure of the necessary equipment both in classroom as well as in personal level.

Kumar, V. R. (2008).⁵⁸ The survey based study has been conducted among the college libraries and particularly chosen the sample from Arts and Science stream using the stratified sampling techniques. Study showed that some major findings that NAAC Grade Accredited colleges provide better services to their students than Non Graded colleges. For getting information sources from the library, the male respondents are mostly visited to library than female category user but female category spent more time in library than male community. Study also showed that patrons from both streams have usage of Internet and E-resources for their academic purpose and 67% respondents from both categories expressed their view about the accessibility are good as well as accuracy. Web page opening, browsing and slow downloading and out dated information have major barriers while enjoying the e-resources over Internet. Google search engine is playing highest role among both UG and PG students and their main purpose has been found that to preparation of project work. By 49 percent undergraduate and post graduate students use online journals. It is also opined by both groups having the problems such as lack of proper guidance for using the e-resources and not user friendly handling. Though no college library has found the independent website yet they are satisfied with library services and resources. Above 50 percent students prefer e-resources as compared to print materials and they said that the e-resources have positively influenced on their reading habit. Study also shown that there is not made available UGC INFONET Consortium by 83.00% respondents opined that majority students accessing the e-journals from their University websites and least number of users get from college websites. In this

way, researcher has attempted to show the significant results from the Arts and Science streams and which will contribute in the growth and development of college, Universities and higher education.

Gregory, L. C. (2008).³⁴ The present study entitled, "But I Want a Real Book: An Investigation of Undergraduates Usage and Attitudes toward Electronic Book" has focused the opinion of Mount St. Joseph's Archbishop Alter libraries undergraduates users how they are moving towards the electronic resources. Researcher has carried out this systematically considering the standard research procedures and collected data from the respondents. Actually, in this study, it is reflected that library has subscribed and made available e-book databases through Ohio link and asked the various questions regarding the e-books as well as prints books related. The present survey based practical study identified that the access status of Net usage of library has increased slowly during the period of 2000 to 2003 and decreased its usages from 2004 to 2006. Awareness about the e-resources is high but usage rate is low. Users of this library are using e-book and e-journal as similar manner. Further, it is also found that undergraduates gives more preference to print resources over e-literature due to the problem of easy handling, more aware with print resources and eyestrain etc.

Chetan, S. (2009).²¹ Author has studied on the topic of "Use and Impact of E-Resources at Gurugobind Singh Indraprastha University (India): A case study." He has used questionnaire for achieving objectives of availability of e- resources, frequency of e-resources and services used by teachers and research scholars, problems accessing and using, impact on academic work and to check productivity and quality of data retrieved through e-resources. The scope of study is limited to teachers and Research scholars only in GGS Indraprastha University Delhi. Questionnaire circulated randomly and collected data analyzed and showed the result as teachers and research scholars 88.46% and 93.33% prefer to e-journals, 50% and 30.77% Teachers and Research scholars respectively use the e-resources for their research work. Hence the only well-known e-resources are preferably used by faculties and researchers as compared to e-maps, e-bibliography, e-thesis, e-books. In case of accessibility of e-resources are not user friendly as well as library website is not convenient to users for searching data. Further author has suggested that training should be conducted regularly and website should be visited to access the electronic sources.

Ozoemelem, O. A. (2009).⁷¹ The Investigator has studied on the topic of “Use of Electronic Resources by post graduate students of department of library and Information science of Delta State University, Abraka, Nigeria.” Objectives of the studies were acquainting the level of ICT skill, mode of electronic resources, level and uses of e-resources, encountered problems by post graduate M.Sc. and Ph.D. students of library and Information Science of Delta State University, Abraka. Due to the small population area whole respondent were covered with questionnaire techniques used for collecting data. 78 questionnaires were distributed and 100% response got successfully. He adopted Descriptive Research Methodology for this research problem. And study found that, there is low level of skillfulness in the use of ICT among research scholars. Most of the student’s access e-resources from Internet café rather than department unit and their main source of finding the resources at Internet .Through this study it is observed that there is a high frequency of usage of e-resources by both male and female post graduate students. To overcome on the problem of PG scholars he suggested that ICT should be included into the curriculum. Role of the government is to involve in financial support for adequate Infrastructure and department of library science should appoint trained technical staff in concerned area.

Singh, R. J., Singh, K. A., and Chandel, A. S. (2009).⁸⁷ “UGC-INFONET Usage in Manipur University: A Statistical Comparison of Downloads from Different Publishers” under this topic, the researcher has studied considering objectives to determine and compare the downloaded articles from various sources by users in Manipur University library. Researcher has found out the awareness of usage of e-resources and made the statistical description with subject databases of multidisciplinary users. Present study has been conducted in the period of 2007 and 2008 in the Manipur University campus. They received data from publisher’s websites and used the Wilcox on rank test for the comparison. Study investigated that, except Emerald database, all e-resources are used in more frequently range. It is also revealed that, in single discipline publishers American Chemical Society is more popular rather than Royal Society of Chemistry. Further study also found that, usage of e-journals in chemistry disciplines is increased usage than physics. Chemistry department faculties and students are more aware about UGC Info net than physics disciplines. And JSTOR has the highest mean number of downloads (1334 annually) as compared to Springer link.

Mirza, M. S. (2009).⁶² Present study has been conducted in university Libraries from federal area of Pakistan in six public sectors general university libraries. Study attempts to find the historical development and extent usage of electronic resources and services in said libraries. Further, to investigate the problems among users, at the beginning, researcher has conducted Pilot study and next in October 2007, circulated questionnaire among users and LIS professional by e-mail. Using the SPSS statistical technique data has been analyzed and study concluded that, all six libraries have e-books and e-journals, four libraries have Electronic thesis and Dissertations (ETDs). Indexing and abstracting services are available in only one library. Further, study also reveals that 100% libraries have access to HEC- National digital library database. It is also identified that 50% libraries have 1-5 online databases purchased from their own budget. It is also found that, there is no plan about online databases as well as CDROM data base. There is a single library where the OPAC facility is available. Internet facility is available in 5 libraries and is service provided both to staff and students. One library provides internet facilities only to the staff. Moreover, two libraries have Internet policy whereas four have no policy. Printing facility found in four libraries. Four libraries provide IP address for searching online resources and two libraries provide IP as well as Password for its users. Lack of training programme is the major problem among faculties. Researcher has suggested some solutions as per the need of users.

Kaur, B., and Verma, R. (2009).⁵⁰ This study has been carried out considering the objectives to know the usage, awareness frequency and place where users find their resources. Present study has been conducted at Thaper University. Using survey method data has been collected from 504 students through questionnaire. Through this study, it is found that, all categories have positive approach towards usage of e-resources and majority students access the resources at hostel and computer center. Study also found that, there is decrease in the Print form Journals and Increase in the Electronic journals. 23.71% users are familiar with the UGC Info net facility and only 55.65 % users use the electronic resources. UG and PG students use e-resources in less quantity as compared to research scholars and faculty. Study also found that research scholars and faculties have more access to e-resources than UG and PG students. Central library is used by users in less preference. Majority students access the e-resources from outside sources.

Salhaudheen, E. (2009).⁸¹ The research article entitled “Use of E- journals by the PG Students in the Faculty of Medicine, AMU, and Aligarh: A Survey.” In the Master level Dissertation study, researcher has carried out investigation considering the objectives to examine the level of Information of e-journal service and purpose of using e-journals among PG students, the faculty of medicine in AMU preferred format, searching methods, awareness and problems regarding these e-resources among students. Survey method has been applied for this research and using questionnaire tools data has been collected from 76 PG students out of 100. Present study is limited to PG students from faculty of Medicine in AMU. Collected data has been processed and analyzed with statistical method and researcher has found out that majority students use e-journals for updating knowledge as well as examination assignment works and they feel that it is useful. Most of the students use keyword for accessing e-journals and they preferred PDF format for downloading. Study also identified that, they got problems while searching e-journals like slow speed of Internet and less number of computer for access. 97.37% respondents are aware of e-journals and they access it mostly at MEPLANS CENTER and majority students scan the latest issues of e-journals with 44.44% rate.

Babu, K. S., Sarada, B., and Ramaiah, C. K. (2010).⁹ This study focused on the usage of Internet among the Science, Social Science and Humanities user community. Investigator has framed the objectives and designed the questionnaire for gathering primary data from the selected population of Shri.Venkateswara University, Tirupati. Through this study many results are found such as Usage rate of Internet is high among the Science community rather than social science and humanities with rate of 98%. While using Internet facility there is slow speed of Internet, delay in downloading, unawareness regarding the e-mail facility etc. are barrier found among the said University users. Further researcher has suggested that providing the network based printing facility, need of increasing the terminals, USB port, CD-ROM drive, developing Subject gateway and essential of training programme at early stage of each semester are urgent needs to fulfill for growth and development in academic progress among the user community.

Koehn, S. L., and Hawamdeh, S. (2010).⁵⁵ The present article is gives detail information about Tulsa City Country Library which has implemented the acquisition and management policies regarding the electronic resources and their proper utilization in spending proportion of the cost. This library has created the special committee for evaluation of electronic resources, usage and collection policy of digital based resources. In this study, researchers have used the Statistical Performance Method for justifying the increased cost of electronic resources. Study concluded that databases should be evaluated in considering the merit base.

Singh, G., and Arora, T. (2010).⁸⁵ This survey based study has shown the usage of e-resources among the undergraduate students and teachers of various colleges of Delhi. Using simple random technique questionnaire has been provided for acquiring the feedback about the awareness, types, satisfaction and problems encountered by users' community and libraries of said colleges. Study showed the various types of results that 97.56% patrons are more aware with these resources and they mostly preferred e-mail as a resource as well as sharing channel, followed by www, e-books and e-journals are used by students whereas other sources such as e-manuscripts and e-maps are highest used by teaching community. Among both the categories the rate of frequency usage of e-resources materials are found sometimes and students spend their mostly time in middle of hour in a week for the assignment work and other hand to writing essay and other work purpose teachers used e-resources. Technical based problem is clearly found that lack of training of e-resources, inadequate infrastructure and decreased budget of e-resources which are essential to solve for enhancement of the library organization.

Kyrillidou, M., Plum, T., and Thompson, B. (2010).⁶⁰ This study is carried out on the topic of "Evaluation usage and impact of networked electronic resources through point of use survey; Amine for libraries TM study". The present article highlighted on different issues of library such as which electronic resources are used by patrons that should be evaluated at regular intervals for enhancing the quality of digital resources. Author of this article has identified the values and importance in keeping view of use survey. In this method sampling, plan option and articulate issues are related to the mandatory and optional version of point of use web survey protocols with an emphasis on non-response bias. Through this study it has been showed that

with the help of a point of use web survey greater promise is being able to capture effectively the value of networked e-resources towards improved research, teaching and learning process. This method has been used with random -moment sample in which specific time bound survey is stratified in some way and chosen randomly. Such type of research had been conducted at University of Connecticut of Uconn Library and found the results at successful rate.

Lamothe, A. (2010).⁶¹ This study has been carried out on the topic “Electronic Book Usage Pattern as Observed at Academic Library: Searchers and Viewing.” Present quantitative study is conducted at J.N.Desmara Library at Laurentian University, Canada in keeping aim of exploring online e-book collection. Researcher has observed usage of searching and viewing collection by patron with session wise entire e-books and non-e-book collection. This study reveals that viewings and searches have increased from 2002 to 2009 at greater pace than the size of the e-book collection. Further, study reveals the highest viewings per e-book and searches per e-book ratio between 2005 and 2007. It is also found that electronic reference collection has seen greater use than the electronic monograph.

Angello, C. (2010).⁷ Present article has described the “Use and Awareness among the Research of Tanzania.” The aim and objectives of the studies are to identify the Information, accessibility and usage of e-resources by research scholars of Tanzanian livestock Institute. Study has been conducted in the area of Dares Salaam, Morogoro and Dodoma in Tanzania. He has collected primary data through questionnaire tools and used non probability sampling techniques in three livestock research institutes and collected data from 65 respondents. Present study found the result that, near about all scholars has knowledge about searching of e-resources with 97.8% rate and 55.6% respectively and there is low awareness among them about the availability of e-resources. It is also found that 40% researchers have achieved skills of information literacy from both inside and outside of the country. Researcher has also applied the Interview method and showed the result about Information searching strategies that 16 researchers with the rate of means 35.6% opined that they had learned how to apply, 31.11% had learned how to use e-resources and it is found that there is need of enhancement in IL Programme. Keyword searching strategies are used by majority researchers. Maximum numbers of users prefer to

Google at first position and after that Yahoo. Google scholar- TEEAL CD ROM and AGORA database are mostly preferred with 42.2% and 24.4% response rate respectively. On the basis of findings author has recommended that need of awareness of information training as well as e-resources among scholars and availability of e-resources should be increased in livestock Institute in Tanzania.

Zinn, S., and Langdown, N. (2011).¹⁰⁴ This study of academic librarians in perceptive of the availability of e-books, choosing formats reason, impact on library professionals and usage pattern by library professionals in South Africa has been discussed. In this study, investigators have applied web based online questionnaire format for achieving the primary data and survey reveals that the trend of library professional is gradually moving towards using electronic books but it is not significantly seen impact between print and Non-print resources. Further, study also identified the reason behind using e-resources for browsing information as well as due to the attractive characteristics of search ability and availability with round the clock. Respondents from library professionals give preference mostly to PDF and HTML format rather than other form. While acquiring the digital collection to their library they mostly purchased or subscribed through aggregator and publisher from Net Library, E-brary, Blackwell and Safari etc. There are some barriers identified that reliability of Internet facility, higher cost of e-books and their supporting reading equipment that is e-reader. But it is the interesting result that those library organization having budget problems are subscribing or purchasing e-material than patrons of these libraries are moving towards the open access resources which are free of cost.

Sudhier, K., and Seethalekshmi, K. (2011).⁹³ The present article has described the picture of use pattern of electronic resources by students of PG, M. Phil and Ph. D research and faculties of Arts stream. Investigators have conducted the study in retrieving the 120 samples from the above maintained respondents. The study depicts that academic purpose based majority respondents are moving towards using resources as Google and Yahoo! search engine is mostly used for searching information from Internet. Good number of post graduate students are using Internet for doing education work and next preference is given to electronic mail facility, Moreover, users community from entire category (PG, M. Phil and Ph..D) do not spend their time more than half an hour in searching and using these digital resources.

Internet based resources are more popular among them as compared to CD, DVD by PG students and majority patrons are accessing these resources from their department than home or house point or central library. Internet connectivity is major barrier found while enjoying this scholarly content in electronic format.

Natrajan M.(2011).⁶⁷ The research paper has attempted to flash a light on the value and importance among the graduate students, teachers who usage the treasure of knowledge which is now freely available in the name of OER (Open Educational Resource). Author has explained his views and thought regarding OER with various aspects and depth level. ERIC (Educational Resource Information Center) which provides lot of information, it means more than 1.3 billion textual, bibliographic and multimedia records which are having potential knowledge are made available with the impact of National Knowledge Commission (NKC) such as NPTEL, Gyankosh Programme of IGANU and NCERT materials etc which are scholarly content available for educational purpose and made available for self-study oriented as well as growth and development for human beings. Study also showed that there is need of fulfilling the needs of the readers that is basic infrastructural, managerial and budget level requirements.

Doiron, R. (2011).³⁰ Researcher studied e-books collection and use of e-books in school libraries occurring challenges before teachers and libraries in creating and building of e-reading element in school library program. Study also shows that e-books are rising in popularity since they are more economical to produce and they can be updated more easily. E-textbooks are more frequently used with older reader. Again in this study expressed thought is about benefits and problems with e-books. Investigator concluded that teachers and librarians have a main role in motivating readers towards e-resources as well as reading redesign of content collection, systems and services to help them improve and maximize their experience.

Adegbore, A. M. (2011).¹ “University Faculty Use of Electronic Resources: A Review of the Recent Literature”. Present study examines usage of digital resources among academics by examining the resent literature. Major Issues of this study are resources being used among academics, purpose and satisfaction level of e-resources. The work of this study is based on theories that would emphasize the use of electronic resources. Academics use electronic resources for diverse purpose as demonstrated in the literature.

Tunji, M. B., Isah, A., and Adisa, M. Y. (2011).⁹⁹ Present study is entitled “User perception of electronic resources in Ilorin University, Nigeria (UMILORIN)”. The population of this study is fulltime academic staff of said university. 25% sample collected from 812 fulltime faculty, it means 250 questionnaires were administered during one day workshop at university auditorium on February, 24 in 2011. Purpose of this study is appraising frequencies of e- resources, examine the satisfaction level of users with e-resources and identify barriers that hinder usage of e-resources. Researcher has collected data and organized it in statistical manner with SPSS software for drawing the results in approach Standards deviation, mean, simple percentage. Study found that positive attitude towards the significance of computer literacy in the use of e-resources and most used e-resources were electronically journals with a mean of 2.82 online references at a mean of 2.75, virtual library with mean of 2.70 less used e-resources are bibliographic databases with a mean of 1.68. Through this study reasons of less used e-resources showed that due to the less time and lack of awareness by the library as well as power outage, slow network and inadequate searching skill. Study suggested some point to overcome on the problem about conducting training and power supply.

Chauhan, S. K., Chand, P., and Kaur, S. (2011).²⁰ Researcher has highlighted on the issue of “UGC Info net consortia usage among users of Himachal Pradesh University, Simla.” Authors have described the various types of e-resources, its role and how it is important in present scenario. Study investigated that, in the year of 2005 to 2007, 97% of the total articles had been downloaded by Himachal Pradesh University by users in the disciplines of the natural science. Only 1% and 2% articles are downloaded by social science, Arts and Humanities respectively. The present study showed problems such as lack of local network facility within university campus. Info net lab which is maintained by central library provides fewer computers to its users. It is also found that, lack of awareness about consortia among faculty and research scholars. Users are not skillfully with computer literacy as well as poor accessibility of online resources. On the basis of the findings, researchers have suggested solutions about establishment of LAN facility, increasing the number of node etc.

Singh, G. (2011).⁸⁴ The study is entitled as “A Survey of Resources and Services of Polytechnic College Libraries of Punjab and Chandigarh”. In this present study, researcher has found conclusion on the base of objectives such as to study the growth and development of Polytechnic education and college libraries, he also identified existing infrastructure, services, staff pattern, computer application and satisfaction of users as well as problems. He has selected 40 different types of Polytechnic colleges for his study. Researcher has applied questionnaires, observation as well as Interview and recording method for data collection. Researcher has distributed 425 questionnaires and returned respond 400 with response rate of 94.12 % while collecting the data he got many problems. After that he analyzed the data and found that most of the libraries with mean of 80% have no separate building, less numbers have computers, 50% libraries doesn't have additional staff except main librarian. Majority librarians are restricted from seminar and conferences due to their authority permission. There is no adequate budget provided to library development. It is also identified that in such libraries have books, book bank and Newspaper in less number. Majority libraries maintained their record in traditional way and most of the libraries open at 9 am to 5 pm. Due to the inadequate facilities library users do not come to the library daily. Free and open access applied in different libraries. On the basis of study he suggested solution for growth and development of libraries.

Khan, A. M. (2012).⁵³ The study is carried out to know the present position of commerce stream users about their usage pattern, purpose, used format, search strategy and problems while accessing these print as well as electronic resources in the Aligarh Muslim University Library. Collected data is analyzed and study showed that among the user community of faculty members and research scholars have given more preference to journals than any other reading materials whereas result is contradictory shown that students have more utilized to general books than journals. Moreover, in the digital resources counterpart e-journals are mostly used by faculties and research scholars for getting more information and knowledge and they consult with electronic publishers such as emeralinsight.com and science direct.com. Less number of journals, slow speed of Internet and inadequate computers are the main barriers faced by these library readers.

Kumar, V. D., and Manjunath, P. (2012).⁵⁷ The study is conducted at Sahyadri Science and Arts College from Shivamoga Districts in Karnataka with keeping view of objectives to know the use pattern, approach towards library resources and satisfaction level among the faculties of Arts and Science Stream. Feedback has been obtained from the faculties through questionnaire and presented comparative results from both streams. Major findings are identified that teachers from science stream are going to libraries for the purpose of getting requirement related to classroom teaching and refer journals and magazines more as compared to Arts faculties. Further study also showed that as compared to other library resources, books are mostly utilized by both stream community and maximum rate of satisfaction level about the Internet facilities have found by both user groups. Reference books are more popular among the science teachers than arts. For completing and fulfilling the research work, the use of library resource by science faculties are higher than other stream whereas for preparation of class room teaching work and support of library use is largely benefited by the arts faculty members. Through this present study some lacuna is found while using the resources by both faculties that are less number of references, low level net connectivity, decreased subscription of e-journals etc. and researchers have put some solutions like need of increasing e-journals and bandwidth Internet connectivity.

Stachokas, G. (2012).⁹² The e-book entitled, "Managing electronic resources: A LITA Guide" has described the changing role of traditional books and nature of libraries with various aspects. The researcher indicated that most of the professional communities especially humanities and sciences are using the resources in electronic form and these resources are becoming primary collection or services of the libraries. Therefore, there is need of the library consolidation. Digital information archival units are focusing on increasing the collection in digital way. Further, Author has explained the term of electronic resources, technical services, role of consortia, open access, collection development policies etc, which have changed the traditional nature of library with various angles.

Dhanavandan, S., Mohammed, S. E., and Nagrajan, M. (2012).²⁶ Researchers have studied on the topic of 'Use of Electronic Resources at Krishanasamy College of Engineering and Technology Library, Cuddalore. The aim

of the study is to assess the familiarity and frequency towards the e-resources among users, to find out purpose and utilization of e-resources, to know the satisfaction levels of users and difficulties encountered by patrons of Krishanasamy College of library, Cuddalore. Present study consists of only the e-resources users. There are 1500 UG, 250 PG students and 150 faculties in this college. 150 questionnaires were distributed and 118 were responded. Collected data has been organized and tabulated with statistical techniques and study reveals that more numbers of users preferred print version of resources for their convenience. Regarding visit to library 29% users visited once in week and 7% users rarely visit. It indicates that the response rate of visiting library is high. Most of students use the resources for their study purpose. Downloading and lack of proper searching knowledge are the major problems faced by library users.

Quadri, G. O. (2012).⁷⁴ Researcher has studied on the topic “Impact of ICT Skills on the Topic of the Use of e-resources by Information Professionals: A Review of Related Literature.” In the present research paper, author has described the various aspects of using e-resources, proper knowledge of information and communication technology for enhancing the library professionals and users. Author has studied review of literature deeply and expressed significance of ICTs scenario in various approach. Continuing professional development (CPD) is most important for maintaining the up-to date knowledge of expertise. Significance of CPD has been acknowledged by United Kingdom Chartered Institute of library and information Professional (CILIP) and United States American library association (ALA). In this article, he has expressed his views about e-books, e-journals, database, and online services in depth and suggested the importance of these resources in modern environment. He said that there are major ICT challenges viz. Rapid pace, transient nature of technology, sustainable funding, centralization of ICT services are the major challenges before the library professionals. To overcome these problems, author recommended that continuous sustainable funding should be reserved for the continuous development of Academia as well as Organization.

Navalur, S. A. (2012).⁶⁸ Studied on “Usage of e-Resources by Faculty, Research Scholars and Students of Bharathidasan University: A Study.” In this study Researcher has used questionnaire for collecting the data from the teachers, students

and research scholars of Bharathidasan University of Trichy of Tamilnadu. Present paper examines the existence of various E-resources, awareness about e-resources, and preference and access point of e-resources, purpose and problems faced while using e-resources. This study found that usage pattern and utilization of Electronic Resources has been enhanced among the Scholars in this University.

Jebamalar, A., Seethai, R. M., and Vanathi, B. (2013).⁴⁵ The research article describes the usage of digital resources by the research scholars, faculties and post graduate students of Arts and Science Colleges from Tamilnadu. Researchers have prepared the questionnaire in considering the objectives to evaluate the awareness approach, influencing factor, frequency of usage, purpose and satisfaction with ICT based resources and services by the user community of said colleges and distributed questionnaires among the 1500 users to getting the response from them. Present study identified that majority responses have got from PG students with 58.93 percent and followed by 27.63% and 13.44% from faculties and research scholars. Study showed their main purpose for using these resources and services that for doing research is major purpose of faculties and research scholars and among the PG category them doing study. Faculties are using these resources mainly due to the feature of e-resources having fast access and delivery. Same opinion is found among the research scholars and PG students also. Further, study showed the interesting result that nobody could use e-resources with research oriented purpose. Almost entire user communities are satisfied with highest rate in ICT based resources and services which are provided by the Arts and Science college libraries. In short, study showed that dependency on e-resources and services are mostly found among the faculties, research scholars and PG students concerned with usage of e-resources is common among the entire community.

Hema, R., Nagrajan, M., and Vanathi, B. (2013).³⁹ The present study has chosen the sample from teaching faculties; researcher and PG students of Arts and Science colleges in Pudhucherry for identifying the usage pattern of ICT based resources and services. Various results are found out of them and some major findings have been presented in the research paper. Majority respondents from both streams have usage with highest rate and they give preference to e-books, online databases and library websites etc. Faculties and PG students community use it frequently with

once in two days but research scholars enjoy it every day. Use with occasionally to e-resources is found in least average. Study also reveals that whole category spent their time below the one hour per day. Lastly, both Arts and Science stream respondents are satisfied with ICT based e-resources and services which is offered by libraries. Using ratio is found highly among them.

Shanmugamoorthy, P., Kanakraj, M., and Kathirvel, R. (2013).⁸³ The users' perception and using pattern of ICT based resources are discussed. Researchers have undertaken the study in keeping the objectives and providing questionnaire among the PG students, researchers and teachers related to the Arts and Science colleges which are aided with Bharathiar University. The present study showed that majority PG students learn their knowledge regarding the e-resources accessing through the way of formal training, courses and workshops etc. They mostly prefer books and articles to relate to their subject. For accessing and using e-resources, faculties have adopted the instruction and training through online than learning mode. Among the PG students, research scholars and faculties have found the common factor that they have experience of two years with e-resources by majority among them. Maximum PG students spend their time in searching and accessing to e-resources up to two hours and followed by research scholars more than one hour and faculties spend two hours. Google is popular as a search engine among whole respondent with highest rate and respondents opinion by Arts and Science stream are satisfied with the ICT based resources and services and positive impact and attitudes of users have been found through this study.

Kabiraj, N., and Roy, S. B. (2013).⁴⁶ The study focused on library services and usage among the undergraduate students of college libraries which are affiliated to the University of North Bengal. It is identified through this study that, in the digital environment until majority users are using print form resources especially textbooks. Users of this library have given least important to Internet and e-resources due to the inadequate facilities by the libraries. On the basis of the findings of the study, Researchers have presented the important suggestions such as urgent need of increasing the computer and Internet based facilities, providing more useful resources and conducting the library information programme, etc.

Kaur, A., and Singh, J. (2013).⁴⁸ The research article described library services and resources are whether utilized properly or not in this view setting some objectives and researchers have attempted to know the present situation of Khalsa College Lyallpur educational charitable trust of Jalandhar. The study showed the factual picture of this library and its user that 4.83% faculties of this institution frequently go to library to meet their educational needs on regular daily basis whereas least number of users are going to library center weekly, twice a week and occasionally. It means that majority users are visiting library with intention doing the preparation for study. Borrowing and return books is the major purpose indicated among these community and next to achieve other study materials. Study also presented that very least number of users are using the electronic format resources in particularly, CD-ROM and Online resources with rate of 8.89 and 5.66 percent by respondents. This picture is clearly show that the patrons of these trust are giving preference still to traditionally nature resources and overall opinion of faculties are found good level.

Adeniran, P. (2013).² Investigator has studied on the topic entitled “Usage of Electronic Resources by Undergraduate at the Redemer’s University, Nigeria.” Study was conducted to know various types of e-resources, to understand the level of awareness of electronic resources and examine the challenges faced by the students of Redemer’s University of Nigeria. Out of 256 students 200 respondents have chosen only those who use the library during the period of the study. Adopting survey method data has been collected through questionnaire. The study showed that the impact of digital resources on an academic performance is significant. On the basis of research results, he recommended that ICT should be included in the curriculum of university for undergraduate students. Study also reveals that majority of respondents had challenges with the use of electronic resources.

Ahmad, M., and Panda, K. C. (2013).³ The present paper ‘Awareness and Use of Electronic Information Resources by the Faculty Members of Indian Institutes in Dubai International Academic City (DIAC): A Survey’. Structured questionnaire has been implemented to collect primary data from the 30 faculty members from three Institutes and represented 10 from each DIAC. However, it is often generalized that

the resources are utilized by the faculty of this Institutes. Therefore, study investigates the awareness and use of e-resources subscribed by the libraries as well as outside the libraries. Present study found that maximum numbers of faculties are aware of and use the digital resources for their study and 100% faculties are satisfied with usefulness and importance of the electronic resources in their study. This study will play a significant role to libraries as well as faculty for enhancing the services and the need to collaborate in integrating information literacy skill.

Arora, J., Trivedi, K. J., and Kembhavi, A. (2013).⁸ The present article studied the impact of access to e-resources through the UGC INFONET Digital library Consortium on research output of member universities. Authors have selected their certain indices, these are science citation Index (SCI), social science citation index (SSCI) and arts and humanities citation index (AHCI) for the first 50 universities. Through this study it is found that lot of research articles produced by these 50 universities have increased by more than 75% in past five years as compared to previous five years. Further, study reveals that increase of science citation Index rather than social science as well as arts and humanities. He also stated that the role of UGC Info net in various universities, Institution and research centers is playing significant role. A result of the study is carried out through sampling techniques of first phase selected 50 universities and data is calculated and tabulated with statistical method. Citation data for 164,851 source article published by these 50 universities indicates that the average number of citation per article is 6.16 which reflect the quality of articles.

Ranjanjyoti, S. R. (2013).⁷⁷ The present study is carried out in the topic of “The Role of Library Professionals for Effective Use of Library Resources in the Present Context: A Study with Reference to the University Libraries of Assam.” On this topic researcher has studied in keeping view of objectives to identify reasons in less use of books, availability of resources in the libraries and actual needs of users, importance of university students in future scenario, create the awareness among students, etc. Population of this study has covered five universities; Such as Guwahati, Dibrugarh, Jorhat, Silcher and Tezpur. Systematic research method has been applied and through conducting the survey data has been collected through

questionnaires, observation, and interview. Study found that KKH Library is having 21 professionals as staff and 3 MP library having only 3 professional staff. Collection of library is less in comparison to their registered members. Working hour of central library Tezpur library is maximum and minimum in Rabindra Library. 3 libraries are automated with OPAC Abstracting and Indexing service is not found in any library. No publication, extension services are reported in this library; only user orientation programme is organized. All libraries have open access system. In book selection, policy has ignored students, scholars and teachers. On the basis of findings researcher has suggested some recommendations. 58.9% users are not satisfied with library services. 42.4% users as well as staff are satisfied and others are not satisfied.

Karmakar, G. S. (2013).⁴⁷ In this study, researcher has defined the objectives to know the trend and growth of online resources and usage among social science students in Assam University, regarding the problems of patrons, usefulness and helpful online resources. Present study has covered 4 universities viz. Assam, Dibrugarh, Guwahati and Tezpur University covering only social science disciplines. For this study, researcher has applied various techniques of research methodology like questionnaires, Personal interview, Observation and collected data for his research work. Study found that, citation number in 2007 is total 9950 and which include 5794 print citation and 156 are online citations. Further, it is identified that, the problems among scholars were as server down, slow downloading speed, availability of limited online resources, lack of guidance and training, etc. Moreover, study reveals that, majority users with 78.9% used online resources for saving time while accessing the resources and 100% preferred online resources. It is also found that, about the search approach by searching tools usage Title search with response rate is 89.5 % , as far as advanced search techniques have been applied, Boolean Operator is found at positive level among social science scholars in Assam university with rate of 73.1% and 42.9% quiet satisfied, 36.7 % satisfied and 18.9% slightly satisfied with online resources.

Balasubramanian, P., Beula, C. C., and M. Syed, I. (2014).¹¹ The study is carried out with the objectives and use of awareness, preferences of e-resources and search engines among the arts and science colleges librarians which are affiliated to

Manomanian Sundaranar University, Turunelveli. Researchers have distributed questionnaires among 70 librarians but responded by 60 questionnaires and collected data has been calculated with ANOVA statistical techniques and study revealed that majority respondents regarding male category responded with high and in age aspect mostly found below thirty age with rate of 58.33%. Study further identified that there is significant use of internet and e-books among the librarian community. They majority used Google search engine as compared to Yahoo!, Ask and Google Chrome etc. Collaborates with research project is a major purpose of using behind the e-resources and next is academic activity. It is also observed that more than 90 percent college libraries provided TCT based electronic resources to their patrons and majority librarian are satisfied with these facilities. Lastly, researchers have expressed their views regarding findings of the study to the orientation and refresher programme for keeping up to date knowledge and also necessity in increasing the more subscription of e-resources.

Thirumagal, A., and Bremala, P. (2014).⁹⁸ The survey based study is conducted to know the awareness, barriers and usage situation among the M .Phil and Ph. D students of arts colleges in accessing e-resources through N-List programme. The study examined that majority female category researchers are involved in this study with rate of 94.37% and among the researcher degree community, M. Phil students are highest than Ph. D holder with rate of 90.00% and 10.00% respectively. Further, revealed that although these user communities are unaware with N-list based resources but having utilized proportion is more as compared to aware and unaware. Users attitudes towards the resources showed that majority researchers with rate of 53.75 having purpose in using the e-resources for making and writing research report. Apart from it, these community usage for helping in writing research articles, keeping abreast knowledge and their day to day teaching activities purposes. E-journals are playing vital role in using frequently based rather than e-books and bibliographic databases which are included within the N-List programme. It is also realized that there is the urgent need to create the awareness among the researcher community. However, there are some barriers before the researcher that are lack of ICT skilled staff, low speed of Internet and inadequate computer terminals though these communities are high satisfaction level.

Hazarika, N., Gohain, A., and Saikia, M. (2014).³⁸ The present user study highlighted on services and facilities provided by college libraries in Dibrugarh University of Assam. Researchers have chosen the primary data from 14 colleges with various disciplines and presented the findings that maximum users of these libraries visited library daily with the percentage of 40.38 and followed by 2-3 times in week and 5 to 6 times in month but their main aim is to come towards the library for issuing books materials. 64.8% patrons opinion indicate that they are satisfied with the overall performance about the collection, facilities but still 40.19% are dissatisfied with provided facilities of this library organization. Lack of proper knowledge about the offered facilities and collection availability, inadequate reading materials and unaware about the OPAC etc. are the major difficulties found among the users of these college libraries. On the basis of the research study, researchers have recommended some suggestion and solution that the need of increasing the collections and enhance the library services to meet the patrons need and utmost necessity is to conduct the user orientation programme regularly.

Musib, S. K., and Kamila, K. (2014).⁶⁵ The present study covered the population from Arts and Science college teachers of Punilia District, West Bengal in keeping view of intention that zero ascertain the extent of use, awareness about electronic resources as well as computer and Internet literacy etc. Using questionnaire cum Interview method collected the data from 141 respondents. Researchers have included the various questions pattern in the questionnaire bank. Through this study it is identified that from both the male and female category are having the knowledge of computer with highest rate but among the arts and science stream, Science teachers are dominant than Arts. Usage rate of e-resources is found in both streams almost equally it means 50% average. Study also showed that maximum respondents use Internet with an experience of e-resources from one to two years. Majority users are locating their information from Internet at their home and first preference is given for documents downloading. Study also revealed that community is applying e-mail tool mostly for sharing the information. Study also presented the fact that maximum respondents are unaware with scholarly content involved in the UGC Info-net and N-List Programme with rate of 72.34 and 76.60 percent respectively. Therefore, study reflected that there is urgent need to conduct the awareness about consortium and N-List programme among the Arts and Science stream teachers. Awareness about e-journals is good found with 6056%.

Bellary, R. N., Rangattmath, A. C., and Naik, R. R. (2014).¹³ Researchers have carried out the study in keeping view of faculty's usage status regarding electronic resources in various aspects. For this present study, data has been gathered from teachers of science stream with the help of survey based questionnaire tools and analyzed it for drawing the result. Some major result showed that respondents of faculty members have mostly been using the e-resources daily with the percentage of 90.84. Study also identified that majority respondents have spent their time in searching, downloading e-resources activity to more than 4 hour per week and 75 percentage users have usage as a instrument to personal computer with highest number and Phone, Laptop and tablets are used by least number of users. As compared to CD-ROM format based resources, they still prefer electronic resources by 98.33% and particularly mostly use e-journals than e-books, thesis etc. Assistance and guidance from library is significantly found that 92.50 percentage users expressed their opinion in guiding to resources for patrons are good level. Library is convenient and attracting place is observed in locating the e-resources with highest number rather than department, home and cafe. The impact of e-resources is positively displayed that 84.16% users said that e-resources are very valuable to make their up to date knowledge and information. Due to the time saving, easy to use and most useful feature of e-resources have became more beneficial to their carrier. Overall study reflects the better impact and usage of e-resources among the science stream faculties.

Naqvi, T. H. (2014).⁶⁶ The present study is carried out at Jawaharlal Nehru Medical College, Aligarh Muslim University in keeping objectives of use of electronic resources, regarding electronic information services and its relevant problem etc. Investigator has chosen sample of 100 Undergraduate and Post Graduated students for this study and data has been collected through designed questionnaire and 60 students have responded. Study concluded that Majority students from both categories are using electronic based services such as Internet, Email and digital based databases and references for their academic purpose and it is a good sign of that academic center. Google and Yahoo! search engine is more popular among them than other. It is also found that the impact of User education programme among student's community and researcher has expected that the enhancement of such programme is compulsory.

Velmurugan, V., and Amudha, G. (2015).¹⁰¹ The researchers have studied in keeping view of objectives to ascertain the awareness, purpose, usage, searching places and mode, problems and frequency of users and their attitude with ICT based digital resources by faculties, research scholars, Post Graduate Students (PG) and library professionals of Arts and Science colleges within the Virudhunagar District. Investigators have applied the survey method for collecting the primary data through questionnaire tool. Total 1200 respondents were chosen and presented the major findings that maximum users of these libraries are aware with ICT based resources with the rate of 49.08 percent. Out of total 1200 respondents 58.59% are access these ICT based electronic resources on daily basis. Further, study also explained that the main purpose of using these resources behind is that purely research oriented with 37.58 percent. Readers of said libraries have spent their time in accessing, searching and viewing the e-form literature in the libraries are very least that is below the per hour per day. It is also identified that they like mostly Google search engine and locate their required information at the department rather than library and information center.

In short, overall study concluded that the users of Arts and Science streams are well in using ICT based resources and on the basis of findings researcher has suggested the guidelines for enhancement and improvement of future academic achievements such as availability of more number of ICT based resources and services, Providing the adequate financial support, proper planning and arranging regular mode training-orientation programme regarding the optimum use of electronic resources among the Arts and Science colleges.

Gurikar, R., and Gurikar, R. (2015).³⁵ Investigators have studied on the topic of, " Use of Library Resources and Services by Karnataka University Research Scholars: A Study". For this study, survey and stratified sampling method is adopted considering objectives of frequency, purpose, search strategies, problems and satisfaction level of users or research scholars by Arts, Commerce and Science faculty community. Data has been collected through structured questionnaire and analyzed with the help of SPSS software. Through this survey, it is identified that maximum scholars of Arts and Commerce stream have visited library on daily basis as compared to Science discipline. Science stream community could not visit to library daily due to

the practical and laboratory oriented work. Study also showed that their main purpose behind the usage of library is to consulte the material for their research oriented. Use of textbook or monographs is high among the Arts stream than science and commerce with rate of 64.60%, 57.10% and 38.50% respectively. But rate of reference material usage is comparatively high among all streams. Overall performance and satisfaction level is low among the entire community and there is the major problem found that is lack of Internet facility with high speed.

Brinkman, S. (2015).¹⁸ The present article entitled, "Attitudes toward e-books among visual Arts faculty and Students" showed that undergraduate students from the Arts stream preferred to traditional resources over electronic format. However, they possess the e-book reader such as Kindle or iPod devices. For this present study, researchers have used the Q- Methodology for drawing the results from the study. Study concluded that the patrons from this academic area are having bias and gives preference to print based resources still in this digital environment.

Ostergaard, K. (2015).⁷⁰ The present article described in various angles regarding the accessibility of electronic information resources and its relevant fundamental basic technology. Application of e-resources by academic libraries is increased but in that situation some questions are raised of accessibility to patrons with disabilities. Author observed that librarian community is facilitating the more number of e-resources with equal access and opportunities basis. Article also flashed light on the acquisition, strategies and licensed agreement of entire electronic resources process.

Biradar.B., S., and Kumar, V. D. (2015).¹⁷ The survey based study is conducted among the female science students of Kuvempu University with the usage and awareness about the scholarly literature contained UGC Info net Consortium. The study identified that Maximum users have usage of consortium with 85% and aware with 99%. Using pattern of frequently level it is found that the variation among them such as 35.29 percent users are using these resources several times in a week whereas 18.82% several times in a month but daily use of these resources is very low with rate of 11.76%. They mostly preferred central library place for finding these resources and followed by department and classroom. As compared to bibliographic databases, they mostly use the full text databases with 94.12% and J-gate Gateway portal is popular

among them. Further it is revealed that encyclopedia Britannica (Online) is mostly used by them and next gives preference to American Chemical Society, Cambridge University Press, and Science online etc. publishers' databases. Among the bibliographic databases BIOSIS is used at the highest rate with 28.24% as compared to others. The Majority communities have expressed their opinion about the need of training and orientation programme from INFLIBNET staff, library professionals and vendors of e-resources literature.

Dawngliana, J. M. (2015).²⁴ The study is carried out selecting 174 students respondent from Pachhunga University College and Government Aizawal College in Mizoram. Researchers have attempted to show the differential picture between both colleges concerned with the use of information sources and services with comparative level. Present study highlighted in various aspects regarding visit to library, Purpose of visiting library and availability of resources, students finding resources and their satisfaction with various services etc. Some major findings have been published through this research article that as compared to Pachhunga College, main source of information is found higher by students at Aizawal College. It is also revealed that only single student in Pachhunga College and six students in other college have been able to find the information. Study clearly stated that students from both the colleges have given preference to textbooks at large but regarding the online electronic resources their interest is very low and poor. Study ahead identified that only single student is fully satisfied with CD-Rom based resources. Hence, study reflects the poor situation in using and providing the e-resources services by the above mentioned college libraries and authors have recommended the valuable suggestion for improvement and overcoming the problems within it.

Kumar., U. and Amsaveni, N. (2015).⁵⁹ The present study highlighted the various aspects of users regarding accessing of resources, searching and viewing of the electronic resources. Researchers have chosen four degree colleges from Arts and Science stream which are situated in Bengaluru. In keeping view of objectives, the questionnaire has been designed and collected required data from the student respondents. The present study reflected some major findings that 68.9 percent users are still visiting library to get their required information but it is observed that reading the newspaper is main intention and followed by coming to library for borrowing the books and references etc. It is also identified that 67.8 percent users are aware with

book circulation facilities and 44.4% are with periodical and consulted to more traditional form material as compared to e-resources and least number users with rate of 24.4% refer to e-journals and CD based resources. Study also identified some difficulties such as lack of support staff, less e-resources and time bound factor etc.

Kaur, A., and Singh, J. (2015).⁴⁹ In this study, researchers have selected and investigated the library resource use and services which are provided by four women colleges in the Jalandhar District of Punjab state. Investigators have designed the well-structured questionnaire tools and received primary information from 375 girl students. The present research article showed that majority female respondents have felt the college library timetable as suitable by 72.22% whereas least number has expressed their negative marking. Maximum girl students go to library center to gain the academic knowledge with rate of 42.78% and they mostly preferred general books, reference books rather than journals, CD and Cassettes format electronic resources. Near about 50% users are consulting with catalogue and OPAC.

Sultana, A. (2015).⁹⁴ The present study focused light on electronic resources in Urdu language under the title of ‘Use of library and Internet resources by Urdu faculty, research scholars and PG students in university librarians of Andrapradesh.’ Purpose of this study is to examine awareness, availability, use of library and e-resources by the six universities of PG students, research scholars and faculty. Structured questionnaires were distributed to 500 in number and got response of 380 in percentage of 76% using the statistical techniques researcher has identified that frequency of visiting library as first rank with rate of 3.17. Yojana and Bazn-e-saharaurdu magazines are mostly used by patrons and Raza journal is less used. In terms of e- books website www.urdu.dodt.com is more popular than www.urduweb.in and www.urdupoint.com. It is also found that online newspaper is mostly followed by users. Further, in the digital era as concerned to the digital resources, print resources are preferred due to the unavailability of literature in Urdu language on web.

Benny, L. (2015).¹⁴ Present study is conducted in the population area of undergraduate colleges under Mumbai University for achieving the aims of finding out existing criteria of e-resources, limitation in acquisition and cataloguing web resources, to examine the method training as well as create awareness of e-resources. Investigator has collected 68 questionnaires out of 80 from undergraduate colleges

affiliated to Mumbai University. Collected data has been organized and analyzed. Further, results identified that majority of colleges subscribed to N-list databases with 61% rate. Another finding also reveals that out of all digital resources e-journals are preferred by patrons mostly. Most of users of this university used searching place for their required data at library by 79% faculty. It indicates optimum use of library for their education activity. Further, study revealed that multiple tool is implemented by libraries for selection of e-resources and 100 % subject relevancy criteria has been adopted by librarian for selecting e-resources. It is also found that, subscribed journals used by students are at most and available to its users than free based by the libraries and awareness of e-resources among users library orientation programme is playing vital role with rate of 77% and it is identified that most of the college librarian adopted multiple criteria for cataloguing e-resources.

E. Ani, O., Ngulube, P., and Onyancha, B. (2015).³¹ Present study entitled “Perceived Effect of Accessibility and Utilization of Electronic Resources on Productivity of Academic Staff in Selected Nijerian University”. The study explored the perceived effect of accessibility and utilization of digital resources on research environment at Nijerian Universities. For this purpose researcher has made three hypothesis and adopted survey method. With the help of stratified random sampling and adopting questionnaire tools, questionnaires were distributed among 586 and out of which received 324 were from the five faculties from the above university. In the study, data has been collected and tabulated with SPSS version 16.0. Study discovered that the accessibility and use of electronic resources have a significant perceived positive effect on research productivity in this university. On the basis of findings, researcher has recommended some suggestions about effective development of digital library as well as electronic collection development policy.

Summary

Many studies have been conducted during the period of 2006 to 2015 regarding the use of electronic resources and various aspects related to them in Universities, research Institutions and College. Such types of studies have been carried out among the Engineering, Technology and Arts, Commerce and Science streams. Majority studies showed that Google search engine is more popular among users and who are moved towards e-mail, web2.0 tools and OPAC, etc. It is also

observed that more techno savvy users are attracted towards the use of electronic resources which are available through Internet as well as Open Educational Resources (OERs). However, majority number of users is still giving more priority to print resources as compared to e-resources. In this decade also it is observed that developed countries have more positive usage of electronic resources among educational area than developing countries.

Majority studies indicate that users are moving towards electronic resources counterpart with proper manner and they are searching, viewing, downloading and preserving their reading materials in proper format. It means that their attitudes are positively changed and thinking levels came at micro level in keeping view of their academic purpose. In short, majority studies indicate that since 2006 onwards the use of e-resources is increasing slowly as more publishers are migrating towards digital publication industry. However, after 2010 more efforts towards use of electronic based resources were initiated by the publishers and subscription to the e-resources were managed through consortium policies. In this way, electronic resources popularity has been increased as compared to previous decade.

2.5 Review of Literature from 2016 to 2018

Singh, J. (2016).⁸⁶ The present study is conducted on the usage pattern of the faculties of Doaba College and it is found that almost entire population from faculty is having a good knowledge about information and communication technology. They mostly use e-resources but their access points are out of library and very few users having accessing it through library and department lab with rate of 8.89 and 4.44% respectively. Study also identified that Indian Journal database is more popular and utilized by faculties. They prefer to Oxford University press, Net Library, Springer e-book, E-bray etc. Study also showed that while using the e-resources, as and when they required the support from library staff is satisfactory opinion of respondents is expressed with highest rate 29 percent agree and 16 percent strongly agreed. Near about entire user community realized that the electronic resources are having best platform. These resources are playing important role in promoting study and teaching activities. It is also revealed that still there is need of handling the e-resources properly.

Further, Study showed that majority students are aware with e-resources and least are negligible with rate of 7.22% and 6.20% by male and female category respectively. It is also identified that majority users are using e-resources regularly on daily basis and followed by two times in a week. Their major purpose is reflected to update knowledge in relevant subject. Overall performances with relevant to digital resources are happy but they also expressed some major problems that Internet speed is much low. It is opined by large number with 39.53%. Another problem identified is lack of ICT facility, unawareness about the resources, system hang and proper utilization training of e-resources. Doaba college library provides e-resources to end users with round the clock adding with Wi-Fi facility and therefore performance is well satisfactory regarding these facilities. Present study reflects that Doaba college library is actually and honestly moving towards the digital or modern libraries in imparting the ICT based digital resources and services as per the techno savvy user's demand in this digital environment.

Singh, R. K. (2016).⁸⁸ The present study entitled, " Utilization of library resources and services by girls students of women college of Varanasi (UP): A study" has been conducted in keeping view of aims and objectives and showed that majority girl respondents from college libraries search and utilize Online Catalogue. Only seventy percent student's use CD-ROM based resources. Moreover, Researchers have attempted to find out the awareness regarding e-resources and result showed that 72.6% are aware and 1.5 percent are unaware. Maximum students with the rate of 60 percent have took assistance for accessing and searching digitized resources and quarterly students use their own smart phone for accessing it. Further, study identified that the highest number of students with 70% are fully satisfied with e-resources and services which are provided by libraries except 4.9% students.

Inouye, A. S. (2016).⁴² This research article entitled, " What's in store for E-Books?". Focuses light on the current situation of e-books spreading range and its impact on traditional libraries and their techno savvy users attitudes towards the virtual environment. According to Larue that the present situation of e-resources regarding the growth and development is plateau and it is challenge to utilize these digital resources. Thomas suggested that the growth of e-books is rapidly increasing but there is need to divert these resources among techno savvy readers who are until

away from it. Further, Albanese raised the questions regarding the impact of technology in significant innovations in digital products and in future there will be found significant changes where readers will mostly use the smart phones for reading the digital resources.

Chikkamanju, and Kumbhar, M. (2015).²² The present article highlighted the contemporary situation of utilization of electronic resources included under the N-List programme by the A Grade college students which are affiliated to Tumkur University. The study showed various interesting results that maximum students with rate of 63.73% are unaware with N-List based resources because of 26.16 percent libraries are providing these resources to their patrons. Particularly, the electronic resources named Economic and Political weekly are mostly utilized by the user community with the highest number of 85.03% and followed by Indian Journals for Universities and American Institute of Physics is used. Majority students with 65.24% said that library professionals are giving guidance and information regarding it. N-List resources are mostly used for the purpose of doing and completing their day to day assignment work by 51.34% and they preserve their material using in pen drive storage with PDF format by users. Users are also facing some problems while using these resources that are mainly varied search pattern which has become confusing for them in searching and accessing process. System hang, virus and unwanted information making barriers and take time mostly etc. Although, the performance of this facility is good, has been expressed by the majority students.

Bhatti, R., Muhammad, A., and Khan, S. A. (2016).¹⁶ The present study has used descriptive research method applying the questionnaire tool for data collection through random selection techniques. M.Phil and Ph. D scholars are selected from BZU (Bahuddin Zakariah University). 109 respondents have responded to the questionnaire and using statistical techniques drawn the findings and showed that Majority respondents with rate of 79.8 percent were using electronic resources for fulfilling their information needs. Chemistry and Physics departments have mostly preferred to e-resources and they are using it daily basis. It is also identified that with rate of 4.31 and 4.20 (mean) have their main purpose using behind these resources for study and research oriented and lack of digital literacy and power failure are major difficulties mainly found within them.

Kharade V. V. (2016).⁵⁴ The present study is regarding the subject of user needs and collection development policies by Arts, Commerce and Science college libraries affiliated to Shivaji University, Kolhapur. For this present study researcher has selected 40 colleges from Kolhapur, Sangli and Satara. Researcher has used Morgan sampling table for determination of the sample size. Study showed the major findings that, In 31.42% college libraries possess the reading collection in print format from 01 to Thirty thousand only few colleges have with rate of 8.5% which possess their collection above 9000. Study also identified that whole libraries follow the collection development policy for their enrichment. Further, interesting results are found that there is no single resource as manuscripts, patents or standards due to the rare and having useful documents only to industrial sector. Device based CD-ROM materials are found among the entire libraries of Arts, Commerce and Science stream. Majority readers from these academic libraries used e-books as compared to e-databases. Except translation service, entire library services are provided by these libraries. Only 32 libraries could not provide the translation services due to lack of proper trained staff but circulation and internet services are provided by 100 percent libraries.

Tamrakar, A. K., and Garg, R. G. (2016).⁹⁶ Under the topic of ‘Users Perception towards E-Resources and services of IIT-Guwahati Library. researcher has studied with objectives of whether library consider users view while selection of e-journals for library, frequency of patrons, awareness and availability of e-resources, purpose of using e-resources and attitude of library staff in supporting to users. Questionnaire technique of data collection is adopted and distributed randomly among PG students, faculty and library staff and collected data 394 respondent and tabulated in the statistical form. Investigation reveals that majority of respondents give preference to e- journals than other resources. Regarding User’s views opined that 44.89% PG student, 53.44% research scholars and 56.09% faculty responded positively. It indicates that IIT Guwahati library is user oriented. It is also found that staff of library is very courteous. There is good environment for fulfillment for user’s needs and indication of high qualities of said institutions.

Amusa, O. I., and Morayo, A. (2016).⁵ Present study was carried out on the topic of “Availability, Level of Use and Constraints to use of Electronic Resources by Low Lectures in Public Universities in Nigeria”. The title of the topic reflected the purpose of this study. Population sample size is 552 academic staff from 16 public universities in Nigeria. Due to the wide geographic area of population researcher has appointed assistance and librarian to collect the data through questionnaires. It is identified through study that the level of availability of electronic resources in the university is very low. It is also investigated that major constraints for the use of e-resources is lack of sufficient training programme of e-resources, lack of time due to high academic job, lack of publicity on the content, paucity of workstations to access and suggested the recommendation as per the findings of study.

Verma, S. (2016).¹⁰² Researcher has studied under the topic ‘Use of Online Databases in Central Science Library, University of Delhi: A Survey.’ The present study is done on the practical basis. Researcher has set a well-structured questionnaire and distributed among 100 PG students and received back with 80 % rate. Objectives of present study are to investigate the various online data bases as well as access rate of frequency and searching methods of online databases. Collected data has been tabulated and findings carried out that 41.6% PG students of said university have used online databases on daily basis whereas 34% use it on weekly basis. Similarly, by 97.22% PG students follow science directory by Springer link and phrases search techniques is more popular among students than other. Further study reveal that relevant information is found on web of science at 97% rate of percentage and 95.4% users give preference to ABI /Inform database. Users are much aware about online journals.

Dhanavandan, S., and Tamizchelvan, M. (2016).²⁵ Present article is regarding Directory of open access books. Title of the research is ‘Availability of Open Access Books in DOAB: An Analytical Study’. Through this study, researcher has given valuable information about DOAB. Objectives of this study were to know the author wise open access and publisher wise books available in DOAB, further to know the language as likeness-wise availability and number of pages vs. likeness books availability in the directory of open access books. For this study required data has been achieved from <http://www.openbooks.org/> on 25th October 2015. The total

number of books are 3379 as on 25 October, 2015 out of 3379 books, 13 books by Gobel Hans but 27 books with no author mentioned. In the angle of publisher wise distribution books 368 are by ANU press which includes 367 books which have no licenses and only one book has CC-by NCSA licenses. Similarly the study also reveals that 1584 books are published by English and only one book is published in the language of Russian, Swedish, webs are available in DOAB.

Bhat, N. A., and Ganaie, S. A. (2016).¹⁵ Researchers have studied on the subject “Use of e-Resources by Users at Dr. Y.S.Parmar University of Horticulture and Forestry.” For this study survey has been conducted at DYSPUH and distributed questionnaires to 140 respondents and received back with response rate of 103. The main objectives of this study are to determine the preferred format and mode of access among students. It is found that popularity of e-recourses as well as level of variation is given preferences to access. Researchers have calculated and analyzed data and drawn out findings that 80.76% preferred both print as well as non print resources. 90% by Ph.D. holder, 82.50% Scientists and 70.58% by PG students prefer it respectively. Another finding also found that majority user with 53.46 % rate prefer both offline and online mode AGRIS and CABI both databases used at highest rate. About e- journal collection identified that CERA- Consortium are most preferred by respondents with 94.23 % rate of percentage.

Kaur, K., and Kathuria, K. (2016).⁵¹ Researchers have studied on the topic of “Awareness and Use of Resources: A Case Study of Mohinder Singh Randhawa Punjab Agricultural University Library, Ludhiana.” This library is having rich collection like library housed about 2.43716 books, 36628 thesis and periodicals are 1, 03,040. Researchers have studied deeply in various angles in the light of objectives like to understand the awareness and usage of e- resources, to identify purpose, to find out the impact of CeRA and Digital library project and to suggest measure and impact of education programme. For the present study, they have used questionnaire and provided randomly basis to 150 respondents and returned back with filled 92. Using the statistical techniques, researcher found that users frequently visited the library for getting required data. Students are aware about e-resources with 72% rate. Sources point of knowledge is identified that friends and colleagues are the major source of information and response rate of 77% users are aware of library webpage.

Majority respondents told that they did not have any formal training about use of resources. Similarly e-resources are being used more for research and project work. It is a positive sign about usage of electronic resources. Open access e-resources are highly preferred by scholars rather than subscribed journals. CeRA database of books are more used apart from other. In this way, present study has highlighted on various angles in depth level.

Ramakrishana, K., Sasikala, C., and Gowridevi, R. (2016).⁷⁶ Present study has covered all aspects of library. Researchers have studied on the topic of ‘Library Resources and Services of Selected Deemed University Libraries in Andrapradesh, India.’ Basic objective of study is to determine the status of collection, staff services, facilities and infrastructures in selected Deemed university libraries as well as to identify the strength of prints and non-prints as well as online resources of said libraries in Andrapradesh. For this present study, he has received primary data with the help of questionnaire and he found that Gandhi Institute of Technology and Management (GITAM) University has various types of more collection than other. Study also finds out that, seven electronic sources were subscribed by three universities and GITAM University has subscribed all resources. This university provides CAS, CD copying, SOE, online, Internet and OPAC services to its users. The book lending service is the main service of the three university libraries.

Ramakrishana, and Raj, R. (2017).⁷⁵ The present cross sectional study is regarding the usage and services of e-resources among the PG students in various discipline M. Sc, M. Tec. etc. Researchers have implemented the descriptive survey method and collected data from 135 PG students of various disciplines of Oxford Group of Institution, Bangalore. Applying the MS-Excel, data has been analyzed and presented the results in graphs and table. Questionnaire and methodology is used in consideration of aims and objectives of frequency, purpose, difficulties and awareness of e-resources among the PG readers of library. The study concluded that less than 50 percent users of the library visit to library daily. Through this study interesting result is found that 100% students of MDS faculty give preference to the use of digital resources for their academic work. Near about all users are known and aware with e-resource but highest numbers are aware with e-journals as compared to e-books, CD-

ROM databases and ETDs. Frequently usage of electronic resources is highest by MDS students than other. Majority students opined that the effectiveness of library orientation programme. Extending the library time, subscribing the number of e-resource particularly e-journals and books are suggested by the researcher. Ultimately, the performance of this library is well.

Mohanty, R. (2017).⁶⁴ Author has done her study in the Tolani Commerce College, Mumbai to assess the users' point of view regarding the library services, facilities and collection etc. She has conducted the study in various department of commerce stream and collected primary data through questionnaire tool from 300 students. Gathered data has been processed with the help of MS-Excel Programme of computer and study reveals that most of the students give preference to study place for doing self-study with the rate of 66.30% and they also prefer to textbooks resources as compared to Non-books, Newspaper, and Journals etc. Study also showed that books typically competitive exam books are playing important role among commerce stream students for achieving their competitive level job opportunity. Overall perception about the library resources and services is satisfactory. However, study stated that N-List, Pro-Quest, CD-ROM and DVD resources of off-line and online mode are less used and still they give preference to traditional mode print resources in this digital environment.

Parvez, A. (2017).⁷³ Researcher has described the various aspects related to electronic resources acquisition process, selection, licensing agreement, perseveration and renewal part etc. In the digital resources environment, librarians and library role have changed and he or she should be aware of all these things while acquiring the e-resources. Present paper also highlighted the different resources model from publishers to publishers and publisher to aggregators. The Supreme Court judgment about Rameshwari photocopy and Delhi University has been explained. while purchasing and acquiring the electronic resources policy there is need to ensure the point such as user authentication define, IP and ID Password, location limitation, archiving, maintenance and vendor support etc. by the libraries. In short, the present article highlighted the different issues, challenges and solution of digital resources.

Mishra, M., Pattanaik, B., and Mahapatra, R. K. (2017).⁶³ The study entitled, "Accountability and Accessibility of Library Resources in Print Media of Odisha: A Study" is highlighted the Media library situation. Through this article, Author has conveyed the necessity of adequate knowledge and information of user category for developing collection and building the rich content in the library. Study also reflected that there are different types of users visiting the medial library for getting the required information and hence such type of library should focus on the quality based content within the newspaper resources. And lastly, they have suggested that there is need of accountability and accessibility of accurate and honesties of medial library and its professionals.

Singh, R. K. (2017).⁸⁹ Researcher has studied on the topic entitled, "Awareness and Usage of Digital Resources Available at Cyber Library Banaras Hindu University, A Case Study". In keeping of the objective, study identified the awareness, Usages and problems while using the digital resources the research scholars of BHU. He has adopted the census sampling techniques for collecting the data through structured questionnaire and response has positively got from 450 respondents out of 500 Scholar. Study found that majority scholars are aware with e-resources and 38.22% users have given preference to electronic journals and PDF is popular format among them. Further, it is identified that while using digital resources scholars category is facing major problems of networking. Investigator has recommended some guidelines such as need of solving the network based problems, arrangement of user orientation programme and providing the printed material along with online based resources.

Dalve, D. P., and (Nawathe) Sutar, M. S. (2017).²³ The present study has been organized considering to know the use of e-resources, various types and selection criteria while subscribing the digital collection by Arts, Commerce and Science college libraries affiliated to B.A.M. University, Aurangabad. The study has thrown light on various angles regarding the e-resources and obtained data from these college librarians. It is found that most of ACS(Arts, Commerce and Science) libraries have taken care in providing the e-journals and e-books to their patrons with 65% and 63.50% respectively. Apart from these resources, libraries are also providing Ref. books, dictionaries, Ref. databases in electronic format. It means that ACS colleges

are moving towards the digital resources providing in this digital and information age with better way. Maximum libraries have fulfilled the users need in providing remote access facility but still 28.75% libraries have not made available this facility but through N-List programme ACS libraries are fulfilling the needs and wants of the today's user dreams. Full text and abstract type resources are mostly selected and made available as compared to bibliographic, numeric and graphic databases to their readers. Study also noted that almost ACS colleges have taken care with concentration on selection criteria with subject relevant and as per the needs of the user in subscribing and selecting process of digital resources and rest of the currency, back issue, access period and preservation has given less value while achieving the electronic resources.

Libraries from Arts, Commerce and Science colleges get information regarding the e-resources through many ways. Most of the libraries are achieving the information through library training session, Library bulletin and Library web page with rate of 38.75, 32.50, and 23.75% respectively. But still these categories do not approach directly to the publisher, consortia and library databases in large numbers. Highest number with rate of 48.75% libraries have made available N-List resources and next to Dr. B.A.M.U.A. based remote access database. It is also identified that no one single library has touch with EDUCAT and ERNET. 17 libraries are providing e-journals through open access mode with the help of DOAJ. Libraries are also digitizing their collection documents and most of the Arts, Commerce and Science college libraries are providing their subject syllabus in digital form with rate of 32.5%.

Halder, M. (2017).³⁷ The present study highlighted on the post graduate students' attitudes towards the electronic resources and its usage among them from West Bengal state University. For this study, researcher has used random sampling techniques to gather primary data through questionnaire and 140 were distributed among the Arts, Commerce and Science streams of Post graduate students and 42.86% from Arts, 33.57 from Commerce and remaining 23.87% respondents from science students have responded. Study presented some interesting results that 100% users are aware with these electronic resources and 48.57% are known with UGC Consortia based resources and 51.43% are not aware with it. The study further

identified that Majority Post graduate students are searching e-resources through library Portals with rate of 55.71% and followed by given preference to search engine and website platform with percentage of 26.43 and 17.86% respectively. They refer to e-resources mostly on daily basis and spent time mostly 0-1 hour. Teachers are playing important role in supporting the information regarding the electronic resources to their PG students and it is opined by PG students with 30% and followed by library professionals. Majority PG students use these electronic based resources for the preparation of project and assignment work and followed by for article writings and notes. Through this study some barriers are reflected that availability of less number of resources, overload information on the Net, consuming time in downloading process etc.

Dhuri, K. R. (2017).²⁷ The present use and user study is conducted selecting 975 samples from teaching faculties, UG and PG students as well as librarians and data has been collected with the help of questionnaire and interview/ observation method. The researcher has studied in keeping view of objectives to assess the availability of print and e-resources, awareness, purpose, frequency, satisfaction and difficulties etc. among both the user in engineering and medical college libraries in Goa. The study presented the major findings that professionals from medical stream frequently visited libraries for getting their requirement than engineering and both category are having experience about the internet usage slightly same but frequency about internet using is slightly high among engineering professionals as compared to other stream. Use of search engine and e-mail service is significantly used by both category with highest rate of 87.30% and 85.62% by engineering and medical professionals respectively. The effect of conducting regular orientation activity by engineering libraries is found more awareness about electronic journals among the engineering professionals and post graduate rather than other community. Study also identified that library professionals from medical stream are playing role in using e-journals through internet way. Campus library is main access point to e-journals by medical professionals and usage rates of both stream communities are near about similar. Science Direct, IEEE databases, CABFand Agricola databases mostly used by both categories. In short, present study has highlighted various aspects of e-resources usage among the engineering and medical user community.

Rathode S. (2017).⁷⁹ The present study has attempted to examine the use, awareness and problems while using the resources from the UGC INFONET Consortium by the post graduate students, researchers and faculties from the Non-Agricultural Universities in Maharashtra. He has designed the research problem oriented questionnaire and circulated among 1000 respondents and actually got the response from 750 respondents. Collected data has been processed with the statistical techniques and SPSS software and presented the results that majority users with 72.80 percent have expressed their opinion about the current Internet facilities are suitable it means that maximum patrons are satisfied with it but overload information, privacy for searching and low Net speed are major difficulties found among them while accessing the resources on web. Study also identified the interesting result that 100% user community across eight Universities having knowledge of scholarly contained UGC INFONET Consortium. Highest number with rate of 38% readers are using this consortium in keeping main purpose to keep abreast with the latest development of subject knowledge. Overall opinion about the consortium is good but they told their major problems while using it that the less support of library professionals and requirement of user orientation programme. Study also examined that full text type databases are more used than indexing and abstracting format and they mostly preferred e-journals rather than print counterpart. The findings from this study have made valuable contribution to enhance the higher education system.

Sohail, M., and Ahmad, S. (2017).⁹⁰ Present study is entitled as “Use of Electronic Resources and services by faculty members and students of Fiji National University”. Main objectives of this study are to examine the awareness among the students and faculty about e-resources, identify the purpose and frequency, to determine the satisfaction level and problems encountered by users. Fiji is a country situated in South Pacific region. The FNU library is reputed as ISO certified. Sample size of present study is 150 faculty and students of said library. Questionnaire tool was formulated and distributed to 140 respondents and completed questionnaires have been returned back. Researchers have processed data and drawn out findings that 28.57% with highest rate library readers visited library daily and lowest 15%, two to three times in a week. 94% faculties are aware with e-library and all used Moodle online research tool. Near about overall students were aware of Moodle and OPAC,

Online research tool. 75.7% lowest awareness about F-Quick Reference service. Further study reveals that, response about training programme is at very satisfied level. It is also identified that 92% faculty and 82.22% students are using e-resources for research purpose. And majority users use Boolean search logic tool as well as search engine. Poor infrastructures and website blockage are problems while using e-resources.

Anasuya, V. (2017).⁶ Researcher has studied on the topic of “Usage of Electronic Resources by the Medical, Dental and Paramedical Science Professionals in Karnataka”. The aim of this study was to examine the place of access, frequency, extent of access, purpose and problem faced by users while using e-resources. The population area of present study is Medical, Dental and Paramedical college’s professionals as well as students in Karnataka state. Survey method was adopted and data was collected using questionnaire tool from 230 respondents with rate out of 300. Through this study, some findings showed that male are dominant rather than female. Similarly, majority of patrons access the internet from library point and 64.79% respondents gave preference to title search for getting information followed by author as a keyword. Further, study reveals that Internet is common among all respondents and mainly use of websites search as a document in the library. And medical technology respondents rank in 3rd position in their all over performance.

Paithankar. R., and Kamble, V. R. (2017).⁷² Present study is on the topic of “Use of Electronic Resources by M.Sc. Chemistry Students at Arts, Commerce College, Chopada, District Jalgaon”. The aim of this study is to examine the users’ opinion about usage of Internet, users' needs and expectations, reasons of Internet usage, problems faced while using e-resources. Questionnaire has been distributed among 25 students and study found that majority of the students has good knowledge of Internet with response rate of 88% for searching e-resources. Further study reveals that, students use Internet daily for learning process. E-mail and rediffmail tools are more popular among students for communication information. They spent their time for gathering information 3 to 6 hours per day.

Vanaja, E. (2017).¹⁰⁰ Author has highlighted on the impact of e-resources on the libraries through the title “Usage and Impact of Resources in Special Libraries: Attitudes, Aspirations and Problems of the Librarians” in this study. He

has found out in keeping view of objectives that, with what purpose of e-resources are used, its impact, and problems of special libraries in Hyderabad. Primary data has been collected using the questionnaire tools and study reveals that, majority respondent's rate with 87.5% librarian prefer top to print materials than Non- print. Study also found that majority 87.5% Librarians said that users mostly prefer online resources as compared offline and two librarians told that users prefer offline resources. Further, study investigated that in view of purpose in usage of e-resources among users that is requirement of current information and knowledge approach followed by everyday approach and lastly exhaustive approach with rate of 81.25%. Librarians strongly agree with importance and provision of e-resources in special libraries. Out of 16, 14 librarians are influenced with impacts of e-resources. Study also reveals that majority users are facing problems about accessing resources. In this way researcher has done study in the micro view.

Ng, P. L., and Andrew K.G. (2017).⁶⁹ Researchers have studied under the topic of “Determinants of e-Resources Used by Open Distance Learning University Students”. Study attempts to find out the Socio-demographic factors likely to affect utilization of e-resources and programme related factors likely to determined usage of e-resources among Open Distant Learning (ODL) University, Malaysia. Due to the various homogenous factors, researchers have applied stratified random technique tool. Researchers have conducted Pilot study among 10 students from Johor Baharu regional office. Interview method also applied was in this study and study identified that, students who are more likely to use the e-library in terms of older, recent enrollees and participants of the Orientation Programme among Chinese students are less likely to use the facility, related to their respective peers. Further study shows that maximum number of respondents possess diploma for achieving the highest level of education. Moreover, it is concluded that no evidence of incorrect model specification is present for both e-resources and the model fit the data as well as one or more of the total effect in the model are important in guessing the possibilities of the e-library LMS usage.

Gala, S. V. (2018).³³ In her research article the researcher has expressed views and aspects of leadership, ICT based organizational culture, sharing and information knowledge which are key ways to improve in the academic sector. Through this study

it is identified that more than 54% colleges are not aware with open access information and 77 percent Arts and Commerce degree colleges use the INFLIBNET N-List database for their academic improvement but rest colleges are still away from subscribing it which is scholarly content based database.

Behera, P. M. (2018).¹² The study is conducted for getting known with the present status of N-List resources and usage by Udayanath and Kendrapara college's students and faculties. She has adopted the survey based questionnaire in electronic format and provided by e-mail facility as well as physically visiting to the respondents for getting the essential data from both students and faculty community. Total response has positively got with 273 out of distributed 300 questionnaires. Present study showed that maximum user colleges are not aware with these scholarly content resources. To impress the value and awareness among the users is attempted by library professionals but apart from library professionals users have got self-knowledge about N-list usage from their colleagues and teachers also. Study also reveals that the main location in finding and accessing to these resources is at central library by student's category and faculties are enjoying these resources from their respective department. Faculty member use electronic resources for mainly to publicize the research papers and enhance their up to date knowledge whereas among the student counterpart mainly purpose is to use it for preparing projects and assignment work. Common problem is found among the both category having inadequate infrastructure facilities particularly less number of computers.

Rao., N. K., Kumar, S., and Tripathi, M. (2018).⁷⁸ Through this study, researcher has studied in keeping view of objectives to extent awareness about the availability of e-books, preference to format, perception regarding e-resources in future etc. For getting the trueness by the parents from (JNU) Javaharlal Nehru University, Delhi, study is conducted and applied the survey method for collecting the opinion data through questionnaire. In this study, Likert's five scale of five points and Kendalla tau-c test statistical technique is used to analyze data. Study identified that majority students with rate of thirty two are still strongly agreed with print materials whereas least numbers are positively with e-books. Further, it is found that 77.7 % respondents preferred e-books and used laptop as reading instrument. In this way, Users' perception about the usage of electronic resources especially e-books is found interesting.

Sumadevi, S., and Sampath Kumar, B. T. (2018).⁹⁵ Researchers have studied the issues of open access (OA) resources awareness among 11 Universities Science Stream Faculty members from Karnataka State. To achieve the aim and objectives of the study, survey method has been applied and using the hardcopy of questionnaire as well as online way the data has been collected for analysis and interpretation and study concluded that good number of science faculties are familiar with the open access type resources with the rate of 98.56 percent but it is also identified that low usage of patents and research report which are valuable documents among them. They mostly like Google and Google scholars as well as journals gateway as a source of resources. On the basis of the findings researchers have expressed some suggestions which are the need of creating the awareness by libraries and proper training and guidance should be provided by the library authority.

Kaushal, S., and Chakravarty, R. (2018).⁵² Researchers have undertaken the study to test the satisfaction level with the help of ANOVA techniques regarding the usage of N-List resources and its associated infrastructural facilities in the view of students and faculties' satisfaction by degree colleges affiliated to Punjab University, Chandigarh. In this study, it is focused particularly on library staff support and infrastructural facilities. On the basis of primary data of 144 faculties and 142 students, the study presented result that maximum users from both communities are satisfied with the help of library staff in supporting e-resources services under the programme of N-List but both groups have slightly negative opinion and less satisfied with delivering the articles and their mood with somewhat satisfied related in training which are provided by the selected libraries in this research. Excellent satisfaction opinion is expressed by both the user category about the sufficient quantity of computer facility and ICT based infrastructure. However, study showed that there is need to enhance Wi-Fi facility whereas 43.66% users opined with less satisfaction and necessity of content analysis.

Summary

Various studies conducted during 2016 to 2018 are reviewed by researcher and it is realized that there is still variation in findings, research methodology tools and techniques, impact of internet based resources and their satisfaction level as well as hurdles while enjoying the electronic resources by users of various types of streams

and disciplines. Majority studies during this period clearly indicate that usage of electronic resources, consortium platform resources, use of UGC Info net and N-List programme based resources have been raised with high rate as compared to previous decade but still there are embedded problems which are hurdles in the fullest enjoy of e-resources without disturbance such as poor networking, low Internet speed, inadequate technical staff and infrastructure facilities, etc.

Patrons of Arts, Commerce and Science streams are moving towards digital based resources in more numbers in keeping view of enhancement in their academic carrier but variation is found among same streams from one place to another. Although, the users from ACS streams are not fully aware and utilize e-resources as compared to other Agricultural, Engineering or technical streams but majority studies clearly indicate that the attitudes of users have been diverted towards e-resources with positive manner.

Previous literature has been studied by researcher regarding the topic of use of electronic resources and similar study is not found as," Use of Electronic Resources by Arts, Commerce and Science Libraries: A Study" with defined scope of Satara District only. The topic is not similar to the previous studies and the selection of the topic is proper. Hence, investigator wants to know and study the present situation usage of electronic resources among Arts, Commerce and Science College libraries in Satara District where maximum geographical area is affected with draught but educational culture is good. The present study is undertaken keeping various objectives at the center and setting some hypotheses for testing of knowledge using appropriate research methodology.

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Chapter - 3**E-RESOURCES: A REVIEW****3.1 Introduction**

The nature of libraries and information centers has changed due to the emergence of changing nature of library resources and operational method of providing services of libraries. In this electronic era, patrons prefer electronic based resources than traditional form of printed based library resources due to the various attractive and timely trusts of their information or knowledge as well as without boundaries accessible nature of these resources. In keeping view of the current needs of users and their changing ways of study, today's libraries and information centers have self-examined and moved their libraries' nature from traditional counter based libraries to desktop based libraries. Very long ago, libraries were not only settled within four walls but also they were bounded within cupboard with locked system. Users were not permitted to easily access, refer the books and enjoy it as per open access system. But this picture of libraries has been changed due to the Universal thought and contribution by S.R. Ranganathan with reader centric approach of utilization of library resources as well as the emergence of new technology.

When we look at the emergence and development of technological history, we found that there are many changes and generation processes of technological tools, techniques and its application in the library environment about acquiring, processing, disseminating and preserving knowledge and information in considering the user centric approach. ABACUS tool is originated in A.D.300 at Egypt Country which was used for calculation the numbers, then in 1617, John Napier' has developed the Logarithm system and established the Napier' bone tool for simple mathematical function. In this way, this technological journey is reached to computer generation and in 1896, Tabulation Machine Company has been established by Herman Helirath who was the father of computer based information system. Mark-I is a first digital computer in America and after that many steps of generation has occurred in the history of computer technology. (Bobade, 2017)

The technological revolutionary influenced each and every sector of human life and socio, economic and education picture has been changed at global level. This continuous generation and advancement in Information, Communication technology, www and Internet technology, Printing and Publication technology have affected on

education field and now teaching and learning ways or methods have been changed. Traditional based teaching methodology and learning resources are transferred into digital form such as e-learning, e-books, e-journals and e-databases.

3.2 Origin of knowledge

When alphabet, word, number and symbols are represented with systematic manner in data and when it got the meaning then it is considered as information. And this information became rational and generalize at universal level it is called as knowledge. In this way, knowledge is an important factor for growth and development of human beings and any organization from local to global level. In broad approach, it consists of facts, experience, information, description and skills. Wisdom is the highest step in the generation cycle from origin of data to wisdom level. In simple words, wisdom is an application of data, information and knowledge at right time and relevant to correct situation. (www.wikipedia.com)

Since ancient period to beginning stage of non-print based age, the library is considered as a store house of knowledge. Books, journals, reports, standard, patents, thesis and dissertation etc. were established in traditional print form. These resources are nothing but they reflect the Facts, figures, experiences, views and knowledge of human beings relevant to various disciplines.

3.3 Beginning of print resources

Man's first means of communication may have been gestures. He then erected heaps of stones to commemorate notable events. After sometime people memorized all that they considered was worth remembering and passed it on by word and mouth to succeeding generations. Collection of prayer, rituals, folk song and stories etc. were transmitted orally. In course of time people began to communicate with each other by the way of crude pictures carved on rock and stone. This pictorial writing was done on other materials, which were formatted on cloth, wood, bark, vegetable fiber, animal skin, clay and metal part. But only the writing on clay, metal and Stone have been survived. All our systems of writing came from these crude carvings and picture writing. The journey of the writing from Sumerian Civilization to today modern age is visualized in various form such as backed clay or tablets, Egyptians papyrus, the parchment in Greek era, uncial script writing with pen in Romans and writing with pen on paper and generated through printing technology.

The new printing technology was invented by John Gutenberg and Mainz in the thirties of the fifteenth century. The success of printing depended upon cheap substances on which to print, an Ink, which would adhere to type press which could apply heavy pressure over a large frame and a general knowledge to metal technology. By the second quarter of fifteenth century these needs has been met. Paper was a cheap and plentiful material for printing. A suitable ink was developed by adopting the Oil paints. The screw presses which were used pressing olives and grapes and in binding manuscript books were used to apply pressure over a large frame. The technical knowledge was borrowed from the goldsmiths and silversmiths. This initial platform and printing is gradually changed over the time and created various forms and literature, such as books, journals, magazines, reports, thesis and dissertations etc. These print based resources are the basic components to any type of libraries. Due to the several changes and upgrading within print technology new forms of books have been arrived before the reader which is popularity known as Electronic resources. (Thirumalaimurthuswamy, 1974)

3.4 Arrival of e-resources

E-resources are nothing but the books, journals, research report or any kind of documents related to any disciplines which re-arranges in softcopy in cyberspace environment or in compact disk technology made available to end users in global counterpart. Today it is popularity known as e-resources in short. Actually it has arrival with the impact and invention of print technology. Printing technology is a boon to entire sector for growth and development in respective field as per their vision and mission. In the educational counterpart, it appeared in 1971 with the name of Gutenberg project and it is popularized as first entry of books. But it is fact that the Memex device could not invent in 1945 then such e-resources would be taken long time with appearing in the hand of techno savvy users. After that there were number of inventions with various aspects of electronic resources had appeared such as Re-developed idea of Bush's by Alan Kay as notebook computer in 1960, Dynamic book of William Morriadge in 1986, Super book software project by Bell communicating research etc. These progressive technological steps are memorized in the historical part of electronic resources generation. And still today there is continuous progress in various aspects of digital resources going on. (Aswath and Reddy, 2016).

The role of various types of technology such as information technology, communication technology, printing technology, storage and media technology, computer and mobile technology have significantly impacted in the continuous progress in library services as well as nature in resources. Now we see the e-book, e-resource, e-journals, e-zines, e-reference, e-newspaper, e-thesis and different type of textual, graphical, sound, multimedia resources in hand of patron. Publication Industry moved towards the digital platform environment and generated plenty of electronic based resources such as Emerald, OCLC, J-Gate, Frauds Bacon, Springer etc. These Internet based platform have been made available different type of resources concerned to various types of disciplines and streams. But these resources directly obtained from these reputed publishers are not affordable to any type of library except economically rich library organization and hence consortia platform has been made available by effort of UGC to enhance the quality and status of higher education and its library in providing the reviewed, peer reviewed journals and other literature to Indian academic community. In this point of view, significant steps have been taken by University Grant commission through INDEST, INFLIBNET, N-List, e-Shodhshindhu, and Dyangangotri in disseminating scholarly literature regarding entire discipline to the particular libraries and research and development centers to enrich their academic development. Today, the platform of electronic resources has been expanded due to the innovative tools and techniques and it reaches toward the end users with free or paid basis. ERIC, LESTER (Learning Science and Technology Reposition) MERLOT which are multimedia based resources (Multimedia Educational resources for learning and Online Technology) etc. Subject Gateways, digital archives, Document delivery services, Audio-Video materials, course material and expertise are easily available to library and information centers. (Kumar, 2011).

Today electronic resources are not only arrived in the library organization but also have embedded as an essential component to thirst of knowledge of academic community. And hence Librarians and Library professionals have reshaped their collection development policy in keeping view of end user approach in electronic resources environment. In this counterpart many studies reflected the increasing rate and usage and e-resources for various purpose. In this way, electronic resources are playing important role in giving opportunities to off campus as well as through online platform to learner community. (Pilgrim and Dolabaille, 2011)

3.5 Electronic versus Print Resources

Since printing technology period, Conventional print based resources have been flourished and libraries have built up their collection development policy. Before this era we know that there were many resources in different form such as clay, tablets and manuscripts etc. Readers of the library are still using the books, journals, newspaper and so on in print form. Today, digital culture, needs and expectations of users have extended, their information seeking behavior has been changed and keeping this approach many studies have been done and presented their result regarding the electronic resource usage. According to Chuwadappa and et al conveyed that the degree of the use of digital based information resources Vis-a-vis the conventional print media. Another study conducted by Lohar, Manjunath and Kumbhar indicated that academic interest of the users' community has been diverted towards the online and offline based resources. Further, Patil, Parameshwara and Lihitkar Shalini explained through their research study that digital cultured resources are playing significant role among the user community and majority communities are satisfied with these resources. As mentioned above study result it is understood that library users have moved towards the electronic resources for getting their academic needs as quick as possible. Due to the many reason academic libraries have preferred electronic resources rather than print resources. But several studies in context of Arts, Commerce and Science and humanities shown that the usage rate of electronic resources is not over than print counterpart resources. It means that academic communities are still getting interest with print based resources.

The entire process from acquisition to dissemination of resources to the users is totally transformed in both print as well as non-print counterpart. In the environment of electronic based resources there is need to acquire recent trends skill such as selection of e-resources, negotiate with publishers, vendors or aggregators relevant to subscribing and licensing issues. In this way, library professionals have changed their convention role and adjusted with new technology as well as adopted new trends as per the need of hour. And hence, Amit Kumar Deval opined that the digital versus print argument frequently touts digital form as superior. It means that today's generation is attracted towards cyberspace for fulfilling their needs and wants in considering the academic view. And therefore academic, libraries have attempted to concentrate with balancing of both kind of resources in academic libraries and moved hybrid libraries. (Deval, 2011).

3.6 Electronic resources over print resources

Since long ago, libraries were acquired and preserved their reading collection in manuscript and print form and still now majority libraries excluding few are being provided in print format assisting advent technology. There is seen drastically changed nature of libraries and library resources in electronic format. Actually, such types of e-resources came in to existence in the 1960. And early stage it was presented among the user community in tapes and disk medium. Gradually, continuously up gradation occurred in technological area and its impact and effect reflected through changing the nature of e-resources in the form of e-books, e-journal, e-thesis, multimedia resources. Now, almost any type of reading resources have been existed in e-form and its impact has been seen on libraries and they have acquired recent trends from the process of collection building policies up to acquisition and dissemination level of electronic based resources. E-resources either than print resources are easy to access, less space for preservation, simultaneously same resource can be accessed by multiple users, high availability of data, environment protect, easy to save, search, download, share, process and retrieval etc. feature of e-resources are convenient and affordable over print resources.

These resources are much beneficial from point of view of libraries, publication Industries, and user community as compared to print based resources. In this context Dibyendu Paul (2011) opined that “Though this was stated in respect of legal deposit of non-print material but many of the lesson learnt over the years involving the collection building of processed materials should not be forgotten as soon as the world moves to the electronic environment, more importantly and with offers from electronic journal, books, database etc, there is an explicit link between print and electronic subscription”. This statement attempts to suggest that there should be equal preference in both counterpart and majority academic libraries have moved towards electronic environment in considering the fulfillment of academic needs through online way or off line based assisting with digital devices. (Paul, 2011)

3.7 Electronic Resources means

Electronic resources are known with different names such as digital resources, virtual resources, ICT based resources, Non-print resources, Paperless resources and so on. Basically, these type of resources are published in electronic mode via online or off-line way. Many authors have explained the terminology with various ways and now e-resources have become more popular among the academic community.

According to Mehar Singh and Ashok Kumar," The resources which are published in digital format and read by a computer are digital resources. Digital resources usually consist of e-book, online journal, databases, Institutional repositories in electronic form, OPAC and Web OPAC, websites, thesis and dissertation in electronic form, CD/ DVD based resources etc." This definition conveys that those resources which are generated in electronic format and applied and enjoyed with the assistance of computer and other electronic instruments. (Singh and Kumar, 2013).

Another definition is originated by AACR2, 2002 edition glossary that," An Electronic resource is defined as any work encoded and made available for access through the use of a computer. It includes electronic data available by remote access and direct access (fixed media). In other words Remote access (electronic resources) refers to the use of electronic resources via computer networks and direct access (electronic resources) refer to the use of electronic resources via carriers (e.g. discs, cassettes, cartridges) designed to be inserted in to a computerized device or its auxiliary equipment.

‘Acquire’ refers to any electronic resource, remote or direct access, which 1) the library provides access through official contractual, licensed or other agreements (any of these electronic resources may or may not be owned by or housed at the library) or 2) the library receives through its acquisition process (e.g. purchase, gift, exchange, copyright, deposit, ISSN request, and transfer). (Shalini and Hedau, 2014)

The above definition explained with entire feature of electronic resources in depth that the mode of access of e-resources is direct and remote counterpart. Direct means that those resources which do not need Internet for enjoying and accessing it which are CD, DVD based resources can be accessed, viewed and enjoyed with the help of computer, laptop and other electronic tools. And other type of resources which are dependent on Internet that are online resources. It means that without the connectivity of Internet these resources could not be accessed, viewed, searched, browsed or read. It involves also the part and process of acquisition, license, selection, perseveration and ownership rights regarding resources in electronic resources counterpart. In short, Electronic resources are nothing but which are published in digital format that acquire, distribute, download, access, viewed and browsed via virtually as well as offline mode with the aid of computer, desktop, laptop, tablet, book reader, smart phone etc.

3.8 Types of e-resources

The categorization of learning resources in electronic form can be divided mainly in two type's i.e. online electronic resources and offline electronic resources.

3.8.1 Online electronic resources

Resources can be classified as per their nature and features. The resources which are made available via online platform and can be provided, distributed, stored, preserved on web environment, accessed with the help of Internet connectivity are called as online electronic resources. Internet connectivity is important factor while accessing, searching, browsing, distributing, and publishing and preservation process. User can access and share these resources to each other from any location to any place at the global corner without boundaries of time and place. Today, there are different kinds of resources available on web platform and these are popularly known with various names such as digital resources, web resources, networked based resources, ICT based resources, virtual resources, and internet resources and so on. Academic libraries, publication industries and user community have been influenced by these new formatted resources. And communities from libraries, publication and users are happy with the beneficial characteristics of electronic resources in terms of easy access, least cost and timeliness etc. as compared to traditional based print resources.

Further, online electronic resources are classified in two groups of its generation nature i.e. digitized and digital resources. Those resources which are converted or digitized of original documents with the digitization process in assisting the scanning and photo copying are known as digitized resources. It means that these types of resources are generated from existing original resources and are made available in the digital environment via network. The second type of resources is called purely digitally resources which are born on purely in digital platform. These resources haven't existence in traditional or print counterpart. It is generated and originated from web environment. (Manoj Kumar Varma, Pratima Rajiv-2014, P.245) Today, many publishers and vendors like Gutenberg, Netlibrary.com, Amazon and Google are playing the important role in producing and disseminating of digitally based resources. (Varma, and Rajiv, 2014)

3.8.2 Offline resources

Generally, the resources which may be generated digitally or digitized and stored on CD, DVD, Floppy etc. storage tools and made available to the users with offline mode are called offline resources. While enjoying these resources in terms of searching, accessing and sharing of information and knowledge content contained within it, there is no need of Internet connectivity. Inserting the CD, DVD within computer, laptop and other similar technological instruments, it can be viewed, browsed, read, copied and downloaded. CD based resources are made available by Philips, Sony co. etc. Without requirement of Internet connectivity, it can be enjoyed and used with offline mode at anywhere, anytime and anyplace. (Ramakrishna and Raj, 2017)

3.8.3 Kinds of E-Resources

As like print based resources, the various kinds of e-resources are appeared in the digital environment. There is only difference identified that the mode, medium, format or ways of expression, thought, ideas, feelings or experiences are converted into digital counterpart such as e-book, e-journal, e-zines, e-newspaper, e-reference, OPAC, repositories, web databases, sound, recordings and images. With the birth and development of computer, communication, printing, reprography and information technology, gradually, these resources have started to employ student centric methods for growth and development in education sector. And now, it has changed the nature of teaching, learning, research and other activities. In considering this approach, various studies have been done and indicated the perception of impact of information technology and electronic resources towards the library patron community, publishers, vendors and aggregators.

3.8.4 The meaning and definition of e-book and text

The simple meaning of e-book is that the book which is presented in electronic, digital or virtual format. There are various authors who have explained the term of e-book with various ways. According to Armstrong, Edwards and Lonsdale (2002)," Any piece of electronic text regardless of size or composition (a digital object), but excluding journal publications, made available electronically (or optically) for any device (hand held or desk- bound) that includes a screen". The

above definition has been recognized and accepted by many authors due to the contained the basic feature of e-book such as without limitation of size, availability medium of electronically and suitable with any kind of hand held or similar devices. As per the opinion of Reitz," digital version of a traditional print book designed to be read on a personal computer or any e-book reader". (Loan and Refha, 2015 P.305) This definition conveys the meaning that e-book is nothing but the new digital based form of tradition, print based book and established on computer based technology or need for e-book reader for reading, sharing or enjoying it. (Ramakrishna and Raj, 2017)

3.8.5 The history of e-book:

The historical thinker of the electronic book study track its origins back to Vennevar Bush's concept of the Memex. The claim that the original concept of e-book is coined by Andries Van Dam in 1967 is established. (Aharony - 2013, P.67) The another approach and study found that the main source or genesis of e-book can be traced back to Project Gutenberg started by Michael Hart in 1971 and this is the first collection in electronic format which had been considered. (Loan et al., 2015 P.304) The above both perceptions have been explained by above authors in different opinion about the origin of e-book. After that many electronic based collection has been appeared in the historical background of e-book. During the period of 1970 to 2000, various natures and format of digital based collection have been appeared such as Oxford Text Achieves in 1976, CD Rom based books in 1980s, and united state libraries web based resources in 1990s. The growth and development in the publication industry has been increased and they have made available electronic resources to the libraries. In 1999, Net Library offered 2000 books and by Questia and e-Bray publishers of e-book have launched their products in 2000 and 2001 respectively. E-book library and my- library has started to provide the electronic collection in 2004. Moreover, there are Google, Amazon, Cambridge, Oxford University Press, Elsevier, Springer, Taylor and Francis; Ebsco etc. publication industries which have published their literature in various disciplines. (Aharony, 2013; Peggy, 2014)

3.8.6 Types of e-books

According to Noa Aharony, there are mainly two types of e-books viz. digitized books and digitally born e-books. About the types of books, there are many authors who have classified books various types as per their nature and functionality. As explained in Encyclopedia of Library and Information Science (Vol.59, P.125) that the types of e-books are those textbooks which contain and narrate textual matter on any disciplines, picture e-book included pictorial and images, Talking books consist of audio and sound effect, Multimedia e-book, Polymedia e-book, Cyber e-books and Moving picture books. These various types of e-books are originated due to the proliferation and advancement of technology and many libraries that are presently acquiring and disseminating their end users as per their requirement. (Bhagavat, 2007)

3.9 Kinds of E-Book Reader

The electronic instrument which is used for reading the e-resources is called e-book reader. Digital or electronic resources are read, viewed on computer as well as on similar technological tools. But due to the advancement of technology the new means of reading e-books are generated in the form e-book reader. There are many companies which have produced devices such as Dyna book device produced by Alankey in 1968. In 1992, Data Dicman Electronic book reader is originated by Sony Industry. During the period from 1993 to 1998, Cyber reader, Rocket e-book reader and Soft book readers are presented in the market but these devices were not popularized due to the lack of user friendliness and problematic nature in handling the devices. And therefore, considering the view of convenient usefulness, many e-book devices are arrived during the period of 2006 to 2009 such as IRex i Lian and Sony have produced by Sony Industry in 2006. Kindle named e-book reader is generated by Amazon in 2007 and Nook is produced by Barnes and Noble Industry in 2009. (Noa Aharony, Johnson Peggy- 2014 and Nancy M. Fousberg- 2011) In this way, in the age of electronic resources and information era, various types of e-book reader devices are arrived and at present, many libraries and academic community with web savvy preferred it and attracted towards e-book readers. (Bhagawat, 2007; Foasberg, 2011; Aharony; 2013)

3.10 E-Journal

Library collect, organize and spread the knowledge and information through various resources. The journal is one of documents which contain the specific disciplines current knowledge and findings. Since long decade ago, it has been preferred by Academician and Scholars for their teaching, learning and research oriented purposes in print format. But now, the nature of journals have been changed with storage, publication, distribution and preservation counterpart due to the innovative emergence of technology and these resources are presented in the form of e-journals, online journals, electronic serials, virtual journals, paperless journals etc. with varied names. In 1987, New Horizons in Adult education became the first peer - reviewed journals published via web technology with narrow approach as a newsletter and limited graphics. Due to the advancement in Internet and related technologies, modification with entire aspect has presented number of journals and peer - reviewed journals which have been made available at the user desk. According to Cole and Ulrich's web Global serials directory, 30,000 e-journals were made available up to 2004 and 89,888 titles were 2012 respectively. (Peggy, 2014)

3.10.1 Definition of E-Journal

There are some definitions created by many authors but still there is no any single definition recognized as a unanimously which contain entire feature of journals. In this part of research, researcher has given two definitions which are used in many research works.

As maintained in advanced learner dictionary, "A Journal as a newspaper of magazine that deals with a particular subject or profession." This definition conveys the meaning that a journal is a document that plays a role like newspaper in providing the current information of a specific discipline or area. As per the opinion by Lancaster (1995)," An electronic journal is one created for the electronic medium and available only in this medium. In general, any journal existing in an electronic format would embrace all periodicals available electronically as well as in paper copy, including the text of periodicals accessible through online network and those periodicals distributed in CD-Rom form." (Tanwar and Tanwar, 2017) The above definition explained the meaning of journal which is designed in the digital

environment medium and it is possible to access via web technology as well as through the offline version of CD-Rom based technology. This definition reflects that such types of documents are digitized documents which are having existence in print counterpart. (Peggy, 2014)

3.10.2 Types of Journals

There are many kinds of journals as per their nature and feature contained within them.

- a) Print based journal
- b) Online based journal
- c) CD-ROM based journal

3.10.3 Access based models of e-journals:

3.10.3.1 Free access with print subscription journals:

This type of model offers the free accessibility facility to individually or any academic library or organization once it subscribed the print based version of journal. It means that electronic journal facility is free provided with paying the charges of print counterpart journals.

3.10.3.2 Additional charges with print subscription:

In this model access counterpart, there is no facility of getting the free access availability of digital version of print based copies, although print journal is subscribed. There is need to spend some additional charges for acquiring the digital version of same print copy of journal.

3.10.3.3 Selective access based journal:

When subscribing any journals with selecting from the list or catalogue of publishers or vendors, library organization or individually users select some titles as per their need and requirement and agree with terms and conditions of publishers. As per their agreement journals from print or electronic counterparts are provided to their subscribers.

3.10.3.4 Consortium Based Access Model

This new approach of subscribing the e-journals through consortium is now becoming popular due to the decreasing of the individual library budget regarding

journals and e-journals. To overcome the serial crisis and increasing higher rate of journals, the similar objectives and need based libraries come together and subscribe the e-journals through the consortium model and fulfill the needs and trust of e-journals to their user community via network. In this concern, among the Arts, Commerce and Science College libraries community e-Shodhshindhu, N-List programme has become as a boon in providing scholarly journals in good numbers with least of economic rate as compared to direct subscription from publishers or vendors individually. (Sudhier, 2016)

3.10.3.5 Free of Charge Based Journals

Today, it is generally called that knowledge is free available and reached at the global corner. Specifically in e-journal counterpart, there are so many publishers, Academic agencies and centers which are providing e-journals and other e-sources on the free of charges basis. In this regard, Directory of Open Access Journals (DOAJ), JSTOR (Journals storage), Google Scholars database, Institutional Repositories from various academic centers and Universities, various websites have made available their resources in the electronically form to public counterpart on the basis of not for profit basis. (Tanwar and Tanwar, 2017; Pandita, 2013; Sahoo et al., 2017)

3.11 E-Databases

The base of data is depending upon systematic arrangement of data, information or knowledge. From birth of the library concept, it has been made available various types of databases in the form of print such as catalogue, Users guide, Manuals etc. In the database concerned, generally, some features found that the systematic arrangement set of data or information, logical sequence, specific disciplines data set etc. Today, Traditional based databases have transformed or reformed in the digital environment due to the generation of computer and peripherals technology and it performs as e-database, digital database, online database, virtual database and so on.

3.11.1 Meaning and Definition of Database

There are many definitions generated by various authors in various forms. Researcher has chosen some definition as following.

According to ODLIS (2012)," A large, regularly updated file of digitized information (bibliographic records, abstracts, full text documents, directories entry, images, statistics etc.) related to a specific subject or field, consisting of records of uniform format organized for ease and speed of search and retrieval and managed with the aid of database management system (DBMS) software. Content is created by database producer (for example, the American Psychological Association) which usually publishes a print version (Psychological Abstracts) and leases the content to one or more database vendors (EBSCO, OCLC etc.) that provides the electronic access to the data after it has been converted to machine readable form (PSY-INFO), Usually on CD-Rom or Online via the Internet, using proprietary search software". The above definition indicates the meaning of term of database that the data or information which is a set of data concerned with defined subject in various forms like bibliographic, full text or it may be images and sound recordings or statistical based data. Such type of informational databases are originated by any data producer or publication industry and it can be published individually towards the end users counter desk or it may be leases to vendor or aggregators on commercial basis along with the terms and conditions regarding the search, view, retrieve and download as well as preservation policy.

By Gray has described the definition that," A collection of bibliographic information stored in a computer or a central computer and retrospective search is made possible remotely from a distance computer through the use of software". This definition highlights on the bibliographic level databases only and expressed the computers, search system and network with specific software for accessing the databases through the remote mode. In short, above both definitions show the clear picture of electronic based databases with its major features. In considering the importance of these databases, now more number of academic libraries are moving towards the subscribing the various databases as per the need and requirement of user community.

Actually, when we look into the historical journey of databases we realize the developmental process up to the present era. In 1945, Information retrieval system has arrived and its nature has drastically changed in adopting the new tools and techniques of the computer technology and now it became as a machine based information retrieval system it has recognized a status after a writing of Vannevar

Bush. (Larson-2010) There are introduced the growth and development of databases generation such as Information Storage and Retrieval in 1929, Online Information System in 1977, Punched Card Data Processing System(1950), National Library Medicine and Medline, OCLC, RLIN, DIALOAG are introduced during 1985 and so on. (Williams, 1985)

3.11.2 Types of Electronic Databases

There are some databases designed as per the nature of content, producer of content, format of content and disciplines oriented such as following.

- a) Full text electronic databases
- b) Bibliographic databases
- c) Numeric databases
- d) Multimedia databases
- e) Reference databases
- f) Subject oriented databases
- g) Commercial based databases and so on (www.e-PG-pathashala.com)

Following are described in brief information of some databases.

3.11.2.1 Full Text Databases

The nature of these type of databases are in full description of documents of journals, books, reports etc. along with providing the facilities of searching, browsing, downloading, sharing and printing of entire articles or books including their graph, figure and many more. There are now various databases made available with free of charges and without copyright restriction and some have paid basis commercial publication industry and so on. J-STOR is a free based and not for profit basis database is made available on Internet platform. Apart from this, EMERALD, Wiley Online databases are available with commercial approach to the end users.

3.11.2.2 Bibliographic Database

Such type of databases provides the information in the form of bibliographic nature excluding details. It is used as a reference tool for their academic or other performances such as Index, Abstracts, Citation references are included within it and used by academicians and researcher for their task. SCOPUS, LISA, Indian Citation Index, Web of Science etc. are produced in Bibliographic format.

3.11.2.3 Numeric Databases

It provides the data and information in numeric form. PRO-QUEST, COMPUSTAT etc. databases are the example of numeric type databases.

3.11.2.4 Multimedia Databases

This type of databases include the data about text, images, audio - videos, recordings in multimedia form. Academic video online named databases is now made available on web environment in multimedia format including academic content of various disciplines.

3.11.2.5 Reference and Referred databases

The reference type of databases are used as a reference to current and further study and it contains the bibliographic information for reference to any academic task. It is such type of database which assists to users to achieve the further document of their work and its role as a directing towards the further, basic or original document. Electronic Yellow Page and Ulrich's Periodical Directory are the examples of such type of databases.

3.11.2.6 Subject oriented databases:

Such types of databases are produced with specific subject areas. Today, due to the advancement in tools and techniques there are more number of databases generated with specific and micro level subject oriented and made available to user community. MEDLINE database is made for medicinal community where as PSY-INFO named database is applied in psychological study.

3.11.2.7 Commercial Based Databases

These types of databases are created by publication industry on the commercial basis and sell it to individually user community or any academic unit through vendors or aggregators. Now, there are lot of databases available in market such as Taylor and Francis, Oxford, Cambridge University Press etc. Some databases are generated at Institution level and made available as Institutional databases like Eco-Lit (American Economic Association) whereas other databases are provided through aggregators like EBSCO, PRO-QUEST etc. (Williams, 1985; www.e-PG-pathashala.com)

3.12 Electronic Databases Concerned with Arts, Commerce and Science Disciplines

There are number of database packages available in publication area on the paid basis but these databases are not affordable to purchase or subscribe to the small type of academic libraries due to the budget constraint and therefore these scholarly contained resources are made available by University Grants Commission through the INFLIBNET Center to the college community with least cost under the N-List Programme. In this programme are involved these cited databases have contained the e-book, e-journals, reports and rare material are valuable regarding the disciplines or Arts, Commerce and Science streams near about entire subjects in the stream of Arts, Commerce and Science such as Oxford University Press, Cambridge University Press, Royal Society of Chemistry, American Physical Society, Annual reviews, Project Muse, J-STOR, Emerald, Taylor and Francis, Springer link, Wiley Online databases etc. (Bhatt, 2014)

3.13 Internet, Consortia and N-List Platform as an E-Resources and Open Electronic Resources

Internet is born in the land of America through Network which was developed in particularly defense area. Now it has spread over each and every corner of the world. And hence today 'Karlo Duniya Mutti Mai', 'global to village' such type of slogans or phrases have become popular and reached at the tip of the tongue of the community. It means that Internet is considered as all in one. Since long ago, there are many organizations whether is it government or non-government that have been impacted and increased use including education system.

Changing nature of libraries like digital library, virtual library, automated library or hybrid library has been reformed due to the only environment of technology and particularly because of popularity of Internet world. In general, it is said that Internet is nothing but treasure of knowledge. Today, no one library in the world could fulfill each and every academic needs of their readers in the print counterpart of library but it will be possible with the help of Internet world. Hence, since long years most of the libraries are providing various types of services and sources with excellent contest for enhancement in academic performance of their user community. Global network platform has made available different type of facilities such as electronic mail (e-mail), file transfer protocol (FTP), Remote login (Telnet) and so on. Besides,

it has navigational tools like World Wide Web (www), Gopher, Archie, WAIS (world area information server) etc. These tools and techniques are enabling academic libraries to satisfy the thirst of knowledge and information to academic community performed as ‘just in case’ rather than ‘just in time’.

At present, Internet Platform has made available the plenty of e-resources in the variety format such as e-books, e-journals, e-patent, e-thesis, power point presentation, images, sounds, music, multimedia resources etc. with paid or free basis. Now, various disciplines forum, e-learning platform, subject gateway etc. are the advanced features of internet world. But it is the need of hour to librarian or library professionals to achieve the ICT skills for providing better services and sources to their technology based reader. In this way Internet is nothing but the source of resources as well as the treasurer of knowledge in the digital scenario. (Naqvi, 2012; Nagraju, 2008)

3.14 E-Resources Under the Consortia mode

To cooperate, to help and share anything or resources to each other is a way of living of human being which is going on continually since generation of human life. This way or method enables community for solving the problems which they survive in day today life. Basically this co-operation, sharing concept is caught by library organization and established interlibrary loan service to sharing resource within the library. Sharing of resources concept is expanded in digital era and arrived as Consortia. Since long ago, libraries are facing many problems regarding journals and magazines, books in context of shrinking budget of resources, expanded needs of the user community, increasing rate of prior based books and journals, to fulfill the academic needs in adequate budget etc. To overcome these problems, Consortia concept is generated and now it has become very popular among the library organizations. In the process of consortia there are basic terms and conditions formatted within members of library or information centers, or research and development centers and come together with common goal and are being subscribed e-resource databases as per their common needs of academic community. Among the consortia members of library one lead and perform for doing entire process of resources regarding licensing, sharing and agreement process with publishers, vendors or aggregators. In this way, this facility is beneficial to academic libraries with various approaches. (Idowu, 2011)

There are various kinds of consortia playing important role in discriminating the e-resources from National and International publishers with core scholarly peer-reviewed journals and databases. Library consortium has been implemented across the world. United State and America, France, Virginia, Georgia, China etc. countries have developed and spent a lot of money for deployment to platform as a Consortia. Libraries and research centers from these countries are providing excellent services and resources to their user community. There are some popular consortia such as OHIO Link, China's CALLS, HEAL Link, Virginia's VIVA, and Georgia's Galileo etc. (Chauhan, 2015)

In Indian environment, there are many consortia playing important role in providing discipline wise resources to their library members. CSIR e-journal consortium is fully devoted to purely science discipline and it holds more than 4500 e-Journals regarding science and technological subjects. FORSA consortium is nothing but the forum and rescues sharing platform in particularly Astronomy and Astrophysics and provides online resources to the above mentioned disciplines. Apart from it IIM Library consortium, TATA consortium, HELINET consortium are giving opportunity to access the electronic, resources with management, social science and Health Science disciplines respectively. UGC INFONET, INDEST (Engineering Science and Technology Disciplines) are major consortium established in India by great effort of University Grants Commission for fulfillment of academic needs of academia in higher education system in India. Under these consortia scholarly electronic based resources are made available to universities, Colleges, Research centers and libraries in India. The impact of these consortia is reflected through various user studies that academic performance has been increased due to the availability of scholarly literature. In such a way, the platform of Consortia has become boon among the academic community and higher education system. And realizing good achievement of academic performance further initiatives have been taken by UGC and INFLIBNET center. In this way, consortia is playing significant role in academic libraries with providing rich and qualitatively standard resources in affordable subscription rate to their user community via network based facility. (Sinha, 2017)

Figure No.3.1
Screenshot of N-LIST (National Library and Information services for Infrastructure for Scholarly Content)



(Source: www.nlistinlibnet.ac.in retrieved on 14 April 2019)

3.15 N-List Platform and INFLIBNET

University Grants Commission has played significant role in enhancement and development for higher education system and National knowledge center has contributed in directing knowledge resources through technology. INFLIBNET Center (Information and Library Network) is one of the Independent autonomous Inter-University centers of UGC which is established in 1996 at Gandhinagar in Gujarat State. In keeping objectives of UGC INFONET and Network connectivity establishment, to improve the quality and standard, to preserve the thesis and dissertations databases at centrally level and development and deployment of computerized library and information centers in higher education system etc the Center has made available scholarly sources and services to higher education system across India. In this approach, UGC- INFONET, INDEST-AICTE consortium has been established to provide the scholarly content in electronic form at universities as well as engineering and technological institutions all over India. But these valuable resources were not available at college level which comes under the 12(b) and 2(f)

status up to 2009. Academic communities of college level were away from enjoying these National International levels of scholarly resources. When realized this fact, N-LIST (National Library and Information Services Infrastructure for scholarly contest) project was established in 2009. N-LIST is nothing but the consortium platform which provides the scholarly resources to those colleges which are recognized as 12(B) and 2(F) of UGC Act. This platform is only available to those colleges which recognized as 12(B) and 2(F) but further it has been opened to uncovered colleges not under 12(B) and 2(F) with the initiatives as ‘N-LIST Associates’ scheme with requisite fees.

3.15.1 Components of N-LIST

As mentioned on <http://nlist.ac.in> there are four components of N-LIST as following.

- 1) To subscribe and provide access to selected UGC-INFONET e-resources to technical Institutes (IIT, IISc, IISERs and NITs) and monitor its uses.
- 2) To subscribe and provide access to selected INDEST e-resources to selected universities and monitor its usages.
- 3) To subscribe and provide access to selected e-resources to 6000 Government / Govt. aided colleges and monitor its use.
- 4) To act as monitoring agency for the colleges and evaluate, promote, impart training and monitor all activities involved in the process of providing effective and efficient access to e-resources to colleges.

Out of four above mentioned components, the INFLIBNET Center is responsible for component number 3 and 4 for developing and deploying activities and remaining two components' responsibility comes under INDEST and UGC INFONET.

3.15.2 N-List facility of Membership

Under the National Mission of Education through NME-ICT Scheme under UGC and an initiative of MHRD (Ministry and Human Resource Development) has opened this project under the monitoring of INFLIBNET Center, Ahmadabad to facilitate the scholarly e-resources regarding Pure Science, Social Science, Humanities, Language and Arts to students, faculties and researchers via network system of proxy server. This facility is made available with affordable annual

subscription fee of 5900/- to those colleges which come under the 12(B) and 2 (F) and those colleges which are not covered under this university Act and are non-aided have to paid 34,400/- rupees per annum subscription fee but this facility is not available to Agriculture, Engineering, Management, Medical, Pharmacy, Dentistry and Nursing Colleges. After the subscription process completed, the center provides the ID and password to authorized person of colleges and he or she is responsible to create and provide IDs password to their college user community. The INFLIBNET center also provides service regarding receipt and quotation or any query via mail of paymentinfo@inflibnet.ac.in and college@inflibnet.ac.in

3.15.3 The present status of N-LIST

At present, N-List project has become popular among the academic community and it has achieved 'Manthan South Asia Award' in 2010 as well as it has bagged 'SKOCH digital Inclusion award' in 2011. As on date 14th April 2019, there are 471185 users using these resources in current month of April 2019 and 243 users are newly added. Lady Shriram College for woman, New Delhi, Government College Rajahmundry from Andra Pradesh, St. Xavier's College at Mumbai etc. are topper among ten colleges all over India for utilization of N-List project. At present, there are 6000 e-journals and 31, 35000 + e-books are available to remote access. In this way, N-List has become boon to academic community in digital era.

3.15.4 The treasure of e-resources under N-List

The N-List platform made available vast amount of electronic information and knowledge in the form of e-books, e-journals and database of various subjects regarding pure science, humanities, social science, languages and Arts. Currently, it has purchased scholarly reviewed and peer-reviewed journals and other e-resources from National and International level reputed authors, publishers, agencies and vendors. As on date 14th April 2019, there are made available several resources under heading of 22 titles: such as Cambridge core holds 224 titles with ten year back files, Institute of Physics have 46 reputed journals, 206 titles and ten years back archives from Oxford University Press Publications, Royal Society of Chemistry holds 29 titles and 10 years back issues, Single titles as well as back dated achieves from 1966 have made available of Economics and Political weekly journal, specially Indian publications through Indianjournals.com are available more than 250 titles in various

disciplines with access back tiles from 2007, JSTOR holds 2500 titles, EBSCOHOST database which is the publication of H.W. Wilson and NET Library houses 1124 titles, Library books and My library McGraw e-books holds 13400 of 1124 titles respectively. Cambridge books online have 1800 titles, Oxford scholarship e-books have more than 1400 titles, Publication from Hindustan books agencies have 65 titles, Institutes of south East Asian Studies books holds more than 332 titles, Sage knowledge publications books have 1000 titles and largest e-resources hold from world e-book library that is 33 Lakhs titles. Apart from it, the N-List platforms has made available e-resource from South Asian Achieves, Annual various with 33 titles, Springer's and Taylor Francis e-books holds more than 2300 and 1800 titles respectively. When we look at these resources deeply, it will realize that such treasure of knowledge would never be possible to purchase or subscribe to any individual library or any organization across the world. Hence this opportunity is as boon to academics to Arts, Commerce and Science stream for their academic prosperity. (Rani, 2012 ; www.nlistinflibnet.ac.in)

3.16 E-Shodhshindhu as a New Platform

E-Shodhshindhu is a new consortium designed by MHRD due to the recommendation of an expert committee for providing the entire resources through single window. E-Shodhshindhu formed with merging three consortia initiatives, namely UGC-INFONET digital library consortium, N-List and INDEST-AICTE consortium. At present, it has made available to its members Institutions, universities and colleges which come under the 12(B) and 2(F) of UGC Act with more than 15000 revised, peer reviewed and core journals, various databases and factual information from well-known authors, Publishers at national and international level. This consortium covers all disciplines such as Physical, Chemical, Life and Computer science, Mathematics, Statistics as well as Arts, Humanities and Social Science etc.

Under this Consortium, majority recourses there are included from pure science disciplines with rate and 28.27% and 13.33% in applied sciences. After that, Social Science resources have been involved with rate of 25.88%. When we look at this consortium deeply, we understood that it will be very beneficial to academic community as well as library organization in providing the scholarly content without time consuming are made at single platform. (Lal, 2017)

3.17 Free Based Scholarly Resources or Open Educational Resources (OERs)

In keeping view of broad approach to extend and enrich education among end learners is the main aim of Open Knowledge Movement. Today, there are lot of OERs resources made available to the learner community with free of cost and without restriction of permission in public domain. UNESCO has explained the nature of OERs that such type of resources anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbook to curricula, syllabi, lecture notes, assignments, tests, projects, audio-video and Animation. Free information is a fundamental of human right and it should be utilized for lifelong learning and development of knowledge society. In keeping this approach, there are lot of resources are made available by great support and effort of UGC, NME- CET, Universities, IITs, Iisc level Institutions and excellent and eminent experts etc. In Indian scenario, many initiatives have been taken to extend the knowledge with free basis.

3.17.1 NPTEL (National Programme on Technology Enhanced Learning)

The first initiative programme was launched by seven Indian Institutes and Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) during the period of 1999-2000. Under this programme, 100 courses and 100 videos are designed and made available to the learners regarding science, technology and engineering disciplines.

3.17.2 EKALAVYA

Ekalavya Portal is playing significant role among the teachers, professionals and learners in creation and absorption of knowledge. Academic materials are made available in public domain portal. It is very valuable to academic community to perform and fulfill academic purpose.

3.17.3 E-GRID

This platform is designed with the effort and support of IIT Kerala and MHRD. Now plenty of e-resources are made available to the learner community regarding several disciplines.

3.17.4) E-GYANKOSH

Indira Gandhi National Open University has led in creation of E-Gyankash portal with support of Open and Distance learning Institutions in India and digital learning resources are made available with free of cost.

3.17.5 SAKSHAT launched in 2006 by MHRD.

3.17.6 E-PGPATHSHALA

The e-contents are made available in 77 disciplines at post-graduation level.

3.17.7 E-LEARNING PORTAL OF UTTARCHAND OPEN UNIVERSITY

(Through link of elearning.eovov.ac.in)

3.17.8) VIRTUAL LEARNING ENVIRONMENT OF DELHI UNIVERSITY

(vle.du.ac.in):

It holds e-resources particularly to undergraduate and postgraduate level.

3.17.9 CONSORTIUM OF EDUCATIONAL COMMUNICATION (CEC)

This platform has made available e-resources with 87 disciplines and concerned with under graduate level through <http://cec.nic.in/e-contents>.

3.17.10 NSDL (National Science Digital Library)

It provides the electronic based resources as well as discussion forum amongst NSDL users.

3.17.11 NROER (National Repository of Open Educational Resources):

Here are e-resources available to entire school and teachers education curricula of country.

3.17.12 AGROPEDIA

It is devoted to agricultural disciplines.

3.17.13 SPOKEN TUTORIAL PROJECT**3.17.14 FLEXILEARN OPEN COURSE PORTAL**

It holds more than 1000 open courses.

3.17.15 A-View (Amrita Virtual Interactive e-learning world by Amrita University)

3.17.16 SWAYAM

This platform offers many courses and materials in multimedia form which is initiated by Government of India.

In short, Open Educational Resources are benedictory for e-learner community due to its scholarly content and free availability nature via network. Knowledge Resource Center, University Grants Commission and many more institutions have contributed their efforts in development and deployment of OERs platform. And hence, academic learners should take this golden opportunity for enhancement and prosperity in academic career. It is nothing but the storehouse platform of scholarly resources with free availability. (Rao, 2017; Sundarrajan, 2016; Ganaie et al., 2014)

3.18 Electronic Resources Management and Data Security System

Management and Security of any type of resources is important and essential part of any type of libraries in providing quick access and user friendly searching resources. Today, per hours and per day on the cyber space is being stored with various types of information in digitally or digitalized form. Publication industry is generated and published various type of resources according to the need of academic community and libraries as well as information centers are acquiring a lot of resources and database to their persons for academic purpose but this situation has become critical due to many challenges before the library professionals regarding proper management, preservation of electronic resources and so on. According to Sanghmitra Pradhan, Keeping of varying access conditions, changing licensing terms and conditions, subscription and renewal dates, authentications, resource sharing limitations, usage data collection etc. are some of the challenges that libraries have to cope up with managing e-resources'. In this way, in electronic resources environment there is necessity of electronic resource management system. (Pradhan, 2013)

Information Library system (ILS) is already existed to manage the resources such as OPAC, MARC etc. But these tools and mechanism would not be suitable in electronic resources environment and ERMs (Electronic Resource Management System) has been designed and deployed in electronic resources environment counterpart to manage the e-resources. ERM is a single package platform where entire function can be done such as subscriptions, licenses start and end, payment, prize, contact, user interface, authentication link etc. Today, there are advanced features and

standards have been developed by Publication Industry, Digital Library Federation (DLF) and National Information Standard Organization (NISO) like ERMS, E-Metrics, CUFT, CORAL, DLF, ONIX-PL, COUNTER, CORE, KBART, SUSHI and so on. This invention concerned with e-resources management has become as a boon to handle and manage electronic resources. (Pradhan, 2013; Weir, 2013; Fuller and Jill, 2008)

As far as Electronic Resource Management System is important, its security is also become essential part to preserve and achieve process of resources in digital environment. Generally, any text or multimedia in nature resources are kept in CDs, DVDs, tapes, pen drives and hard disk media etc. But in keeping view of large number of threats which may or might be corrupt, damage or wipe out to databases due to the reasons of natural or technological level like floods, fires, earthquakes, corrupt and damaged by user community with intentionally or accidentally or hacking, viruses level damage of data etc factors may finish valuable databases in digital environment. These environmental, physical or technical threats are very dangerous in damaging electronic resources and therefore, it is essential need of the establish of electronic resource system. At present, Academic libraries and Information centers are being utilized with standard security system to keep data in fully secure manner. Recently Unified Threat Management System (UTM) is recognized as comprehensive security product that includes protection against multiple threats. (Gautam et al.,2011)

3.19 The Role of Librarian and Library Professionals in Electronic Resources Era

Impact of Information and Communication Technology and invention of growth and development resources have changed the traditional way of conventional libraries into electronic, digital, virtual, cyber or wall less libraries etc. It has not only reshaped in the library and information centers but also changed the role of librarians and library professionals in digital environment. In this context, the changing modern role of library professionals as mentioned by Rajwat Kaur and Sharma A.K. is as," Library professionals have come a long way from the time when they were considered caretakers of the book collection. Now they are Information Providers, Consultants, Curriculum activists, Instructional designers, Informational leaders, Production

specialists and most important as teachers". This citation clearly depicts that library professionals should possess various skills, knowledge and competencies and be as multidimensional, multidirectional and multifaceted personality to cope up the new trends and challenges in this modern information society era.

Today, electronic and digital based resources became important component of academic libraries and hence the librarian should know the entire cycle of electronic resources from acquisition process to dissemination and achieve level to catering better services to their academic community in this electronic environment. At present, needs, wants expectations, desires and learning ways have been changed in digital scenario and therefore librarian should play a role of Information Scientist, Information architecture, Information Provider, Library Manager, Information Officer, Knowledge broker and banker, Information facilitator and Information repositories developer and so on. In the 21st century, the impact of ICT has been reflected in both counterparts in teaching as well as learning. E-learning platform has been gradually spreading in the higher education system across the world. And this environment of e-learning resources with free or paid basis as well as online or offline learning resources have exploded. Most of the academic communities are away from it and poorly aware with it. These resources are very useful to perform the excellent academic work and as being researcher I would like to suggest that librarian and library professionals should reshape their traditional look as a custodian of library resources and make themselves as e-learning content manager, e-learning objects librarian, e-learning information service officer as well as he or she should play role as cybrarian rather than librarian and Institution developer.

In this electronic resources era, academic librarian should acquire the knowledge and skills of hardware and software technology, continuous up gradation with new trends in electronic resources environment, posses various searching and browsing skills, be alert with explosion of information etc. In short, as mentioned long ago in 1937 by Gullick and Urwick the term of 'POSDCORB' means P-planning, O-organization, S-Staffing, D-directions, C-co-ordination, R-reporting and B for budgeting these managing skills are still essential in this digital age in keeping view of electronic resources. (Kaur and Sharma, 2018; Sudhambika, 2011; Pen, 2012)

3.20 E-Reader and E-Book Reader

Emergence of technology and arrival of e-resources have changed the nature of user community and their information seeking behavior. Today's user is considered as e-reader or techno savvy reader. Library and information centers are developing its reading collection as per the requirement of techno savvy users. Due to the attractive nature of learning resources, users preferred e-resources rather than print form resources. They are searching, viewing, downloading sharing and preserving data in different format such as word, excel or PDF, HTML format for their reference work. Even in traveling or journey from one place to another, they are using their Smart Phone, Laptop or Touch pad for accessing resources. Faculties, researchers are teaching their contest with the help of power point tools linking with e-resources through hypertext link. Library users are not coming directly to borrower desk for borrowing books or any learning material. Before it, they look and search desired resources through OPAC or Web OPAC. Techno savvy user communities are spending their lot of time for getting required information through various websites and its Institutional repositories, archives etc. Today's users are not only satisfied with accessing and browsing e-resources, they are also joined with the platform of forum, Whatsapp Group, E-mail, Facebook, Google Classroom etc. tools that have attracted them for Chatting, discussing, expressing their thoughts, view, experience in academic approach. In this way, readers in the electronic resources era have become as E-reader or techno savvy readers. (Ahmad and Mark 2016; Yadav and singh, 2016)

In keeping new behavior or habits of reading nature of user community, many companies and factories have made available electronic devices for reading and enjoying the learning resources that is called E-book reader. The Rocket and several others arrived and were introduced around the 1998 but due to many errors they could not be popularized among user community. Further, in 2009 kindle named device has been produced by Amazon Company and it has got more popularity due to attractive nature and convenience to readers for reading material. After that, there are so many e-book readers or devices that have been reached in the market such as 'Sony PRS-500' in 2009, 'Nook' developed by Barnes and Nobel Company, Apple Co. has launched 'i pad' and 'Kobo' is made available in 2010 and became very popular. In this way, In the digital and Electronic Information age, Academic libraries are being developed and purchased various types of e-book reader for reading the various types of resources as per the demand of techno savvy user community. (Prasad, 2013)

3.21 Information Retrieval for E-resources

Retrieval of Information or sources of knowledge and information is an important component of Electronic, digital or virtual library. For effective utilization of electronic resources in various formats requires extensive planning, co-ordination of various sections, workflow, and record keeping system, resource management and so on. Users in the electronic environment expect information as up to date, easily available user friendly access, and rich content of e-resources for their academic purpose. And hence, the retrieval system includes many factors such as Architecture of system, searching process, search engine and interface, display of results, queries regarding the retrieval data etc. Cross-organizational access management for web based resources has emerged as a topic of great interest among many information consuming institutions and information resource provider. Two technical infrastructure components are minimally needed to any type of system that is Authentication to identify to users and Authorization for browsing, searching or accessing required information from the database of resources. Many searching methods have been developed which are Simple search, Advanced search, Boolean logic way, Federated searching and so on. Using these searching tools patrons could fulfill their academic needs as early as possible without consuming valuable time.

In this information retrieval area, there are many advances and architectures models have arrived such as locally customized server model at initial stage. Gradually, newly models are invented such as Web server delivery based model, Broker model, Cross-organizational Access management by Proxy, Cross-Organizational access management via cryptographic module and so on. Apart from it, various retrieval protocols are available and their use and application depends upon the requirement and architecture employed in library. (Shiva, 2010)

3.22 Changing Nature of Libraries and Electronic Based Resources: The Need of Hour

Technology has been influenced and affected each and every sector which is related to human life. Education system has adopted new trends of technology and deployed progress and development in teaching and learning area. Today, the convectional library term has been changed and it is newly considered as various names viz. knowledge resource center, Learning resource center, electronic library, digital library, hybrid library, virtual library, Global library, Wall less library,

Paperless library and so on. These changing terminologies clearly indicate that Information and Communication technology has been embedded in library and information center area and made available new ways of learning resources. Now, in recent report by NAAC (National Accredited and Assessment Council) it has been focused in context of library and it has expected library as platform for learning resources. In this way, the traditional based libraries are moving towards the electronic and information society based library.

Resources are nothing but the soul of any library organization. Without resources we can't imagine library. Today, the nature and format of library resources have been transformed into digitized or born digitally documents. Now, Academic libraries are struggling with many challenges like budget expenditure on resources, inadequate financial support, space, timely accessibility of resources via limited manpower facility, extending desire and expectation of academic community, changing reading habit and information seeking behavior of user community and so on. In this situation, ICT and www-Internet facility has become as a boon to academic libraries to overcome challenges which are arrived before the library organization. Internet and Networking platform is a source of electronic resources and now there are good numbers of e-resources available with paid as well as free basis. There is essential need of proper utilization of these tremendous resources which will surely assist for excellent performance of the academic community. In short, in considering broad approach about higher education system for enhancement in teaching and learning area, proper utilization of electronic resources according to globalization world to stay in competitive environment is the need of hour.

3.23 E-Resources: A Review in Arts, Commerce and Science College Libraries in Satara District

Libraries are important components in higher education system. Libraries can be run and established without education system but any education system cannot be run without libraries and therefore the significance of library in education system is like heart. There are various kinds of libraries as per their nature such as Traditional Library, Automated Library, Digital or Electronic Library and Virtual Library. In another view libraries can be divided as Public Libraries, National Libraries, Special Libraries and Academic Libraries. Although there are many types of libraries, their basic operations are same like acquisition of resources, organization, classification,

cataloguing, dissemination of information and retrieval etc. Today, all sectors are influenced with Information and Communication Technology including libraries. The housekeeping activities, management of all type of resources, information dissemination ways and expectation of users have changed due to the advancement of technology. And libraries are ready to fulfill the demand of users in digital environment with the help of technology. Academic libraries, in the stream of Arts, Commerce and Science are playing important role in information explosion and electronic resources era. Researcher has given brief information of Arts, Commerce and Science colleges and their libraries which are selected to the present study.

3.23.1 Dhananjayrao Gadgil College of Commerce, Satara

This reputed Institute is established in 1971 and provides education especially in commerce discipline with various courses from B.Com to M. Phil and PGDCA. It is only one Institute in the Satara district which provides Commerce discipline education. Apart from these regular courses, it has made available certificate based courses such as vocational, junior college, library management and chartered accounts basic foundation etc. which are value added courses for the students. The students who cannot attain college regularly, college has set-up the distance mode education through Indira Gandhi National Open University. The academic performance has assessed and college has achieved the A Grade by NAAC and Institution has been certified with ISO-9001-2008. The DG College is having well qualified teaching staff with 36 and out of them eight have achieved doctoral level Ph. D degree. It has 11 departments in various subjects such as Computer Application, Commerce and Management, Bank Management, Accountancy, B.Com IT, IBPS Banking, NCC, Business Economics, IBPS Center, B.Com Bank Management and Library. This Institute has got the autonomous college status from UGC and providing excellent education to the students. At many places such as Admission process, examination system, official work etc. have adopted the information and communication technology to maintain the transparency and quality.

Library and information center of this college has rich collection and provides the print as well as Non-print based services to the end users. At present, this College has well Information and communication Infrastructure and provides the ICT based facilities through their library portal. The links are such as Shivaji University Kolhapur, Rayat Shikshan Sanstha, Online examination Portal, E-Scholarship, and

Online Syllabus etc. Library is well equipped and provides electronic resources and services to their patrons. As on date 3.3.2018, Total library collections including non print based resources having 54456 and out of them 12283 and 42173 are textbooks and references respectively. There are 14 journals and 33 magazines available in various disciplines. Library also made available ICT based resources in numbers e-books 2034, e-journals 7371, Power point presentation 52, and CD and DVD based resources with 333. The physical space of this library is 878.02 square meters. At present, Library has adopted the Library Management Software of MKCLs Libreria and it has become fully automated. The major services of this information centers are to display the new arrival resources through the notice board mode as well as via e-mail, Current awareness service, Reference service, Information literacy, Newspaper clippings and Internet etc. Besides this, it offers and conducts other activities such as Marathi Bhasha Din, Vachan Prerana Din, Book exhibition etc. The DG College is popularly known as Autonomous with potential of excellence and more number of students are learning through this academic center of Satara (Maharashtra). (www.dgccsataraedu.in8080/lindet.jsp)

3.23.2 Chhatrapati Shivaji College, Satara

Chhatrapati Shivaji College is the first institution established in 1947 in Satara by Rayat Shikshan Sanstha. This institution at present runs only arts stream. But in the past, during the period of 1958 to 1959, it had started science and commerce streams and these streams had been initiated in separate colleges as D.G. College of Commerce and Y.C. Institute of Science College Satara. Now, this reputed College is providing education of arts and humanities based education from Bachelor of Arts (B.A) to M.A., M.Phil. The college faced the 3rd cycle of NAAC and achieved the Grade A+ with 3.51 CGPA. It has been impacted by Information and communication technology and majority teaching and learning based services have been made available to teachers and students. The Institution provides education in nine subjects at post graduate level in various disciplines such as Marathi, Hindi, English, Sanskrit, Economics, Political Science, Sociology, Geography and History. In this college, B.A. in Marathi subject has been started in 1960 at graduation level and Post-Graduation was opened in 1964. At present, in the Marathi department there are total five teaching faculties working and out of them three have acquired Ph. D., M. Phil education.

The Institution has total fifteen departments at graduation level in various subjects such as Marathi, Hindi, English, History, Geography, Psychology, Aradhmagadhi, Sanskrit, Statistics and politics etc. The total fulltime faculties working with the number of 72 and out of them 27 faculties have achieved the doctoral degree. The college provides excellent education in different subjects in particularly humanities disciplines. Apart from these regular academic teaching works, it has progressed in competitive examination center, National Service Scheme, Sports, Cultural activities and its impact is found that many students have got the rank in M.P.S.C., U.P.S.C. results. This is one of the model colleges in humanities disciplines in Satara district. The Library has a large scale and it occupied with 5302 square feet area. Now there are 1, 30,126 books available including the texts and reference books. Systematic sections have been created as per the need of users and library science. In this library, there are 79 periodicals available. Besides these print based resources, there are 41 thesis and dissertation, 1150 bound volumes of back issues of periodicals, CD based resources are total 253 and 14 State, National and International level Newspapers are made available for getting the update knowledge. Open Access System is notable feature of this library and library provides the traditional as well as digital based services to their readers. Library is open from 10.30 a.m. to 5.30 p.m. and reading room is open. Daily excluding the national holidays during the time from 7.00 a.m. to 10.00 p.m. Except this regularly services, Library also conducts many courses and programmes such as library orientation, certificate course in library management etc. to guidance programme of scholarly, senior citizen services, special service for competitive exam are the popular services among the user community. (www.cscsatara.com)

3.23.3 Yashwantrao Chavan Institute of Science, Satara

The present college has status of autonomous college which is located at Satara and Institute is popularly known as YCIS. This Institute is devoted to the science discipline and provides education from B.Sc to Research degree level. The college has established well equipped laboratories for doing research for research scholars. The institute caters the education with excellent and growth development of this college is increasing. Institute offers various short term and long term courses to enhance the science skills among the students in science and information explosion era. By the Assessment of 3rd cycle NAAC, it has been ranked and has achieved the

A⁺ Grade with 3.57 CGPA. And also it has been selected as potential with excellence Institute by UGC through STAR college scheme. In 1965, the college was established in the name of Science College Satara and further, from 1986, it has been renamed with Yashwantrao Chavan Institute of Science.

The college has achieved many awards and schemes and proved itself excellent institute through various achievements such as the four students have ranked among universities regarding as top ten in the subject of bachelor of computer science course, one ranked from BCS Biotechnology disciplines. Faculty community have published six books and 95 research papers at National and International level and three major research projects have been sanctioned. In this way, The Institute has proved as an excellent education unit in science disciplines. At present, it offers the education in the subjects of food processing and packing, Nano-science and technology, forensic science, animation and bio technology etc. Online admission system has been implemented by this institute and remote students are benefited by this system. Besides this, The Institute offers various courses and short term programme for enhancement of the learners and made available knowledge and skills through Competitive Guidance Center, Parijatak, Placement Cell, NCC, NSS, Sports and Earn and Learn scheme etc.

Learning resource center of this college has well performed and is popular among the user community. It offers the print as well as ICT based resources and services through library in subscribing the electronic resources such as learning scheme, INFLIBNET and INDEST databases, free based resources database etc. Library organization also provides the Institutional Repository database as well as free based literature especially in Marathi language through its link www.ycis.ac.in. There are now 55304 print based resources available including the various reference and text books. Dui Decimal Classification Schedule of 19th edition has been applied to classify the resources. There are periodicals and newspapers available in number of 50 and 11 respectively. The special feature of this library is identified that it has maintained the 13541 books for needy and poor students under the scheme of book bank facility. 'Ask a Librarian' facility is provided through online network mode. In this way, library and information center of YCIS is playing the important role in providing various services to the students, faculties and research scholars. (www.ycislibrary.weebly.com)

3.23.4 Lal Bahadur Shastri College of Arts, Commerce and Science, Satara

The college provides higher education in Arts, Commerce and Science streams from B.A., B.Sc., and B.Com, up to M.A., M.Com and M.Sc. and further research level. It is well known Institute of Vivekananda Sanstha, Kolhapur. It provides many facilities and services to students based on carrier. The Sanskrit subject department of this Institute is the unique center for pursuing the research center for M.Phil and Ph. D center under the Shivaji University, Kolhapur. Till today, 27 students have achieved the award and scholarship scheme from Shivaji University Merit Scholarship Scheme. Shastri Trust Merit Scholarship Scheme is important feature of this institute. Those students achieve the merit in the particular discipline who are eligible for this college level scholarship. The college has made available the facilities to fulfill the goals and objectives of the institute and constructed Computer lab, Research laboratory center, N.S.S., N.C.C., SET/NET Guidance Center, and Placement Cell and Gymkhana. The Institute conducts the programme of Birth and Death Anniversaries of great personalities of India.

The Library is nothing but the soul of any academic center and in this view, the library of this Institution facilitates various services such as open access system is allowed to Third year students and all faculties, reader club facility, reprography, Internet based services, free and paid based resources availability, earn and learn scheme, additional borrower card systems for scholarly students etc. There are eleven staff working in the library and provide the library service to their readers. 1, 13,763 total books are in the library. It has applied the information and communication technology and number of services and facilities are made available through their URL website www.lbscollegesatara.edu.in such as online feedback, departmental blog etc. And in this way, NAAC Peer Team has assessed the college and considering the overall performance, A Grade with CGPA 3.15 is declared by NAAC. (www.lbscollegesatara.edu.in)

3.23.5 Savitribai Phule Mahila Mahavidyalaya, Satara

The women college has been established in 1989 by Rayat Shikshan Sanstha, Satara for imparting education especially to women category. It comes under the 2(f) and 12(b) as per the UGC Act and achieved the status from 2006. The college has been started in the large area with 5184.54 square meters and there is 6198 square feet campus area reserved for playground. The women college has made available the

following facilities to the students such as Playground, Gymkhana, Ladies hostels, Canteen and Health center etc. The Institute runs the projects keeping in view of protection to environment that are Biological water disposal, Water harvesting, Solid and waste management etc. At present, college offers B.A., B.Com. and B.C.A. education at graduation level and Master of Commerce has been started during the period of 2016-2017. Post graduate diploma is also made available to the students for the duration of one year and any graduates are eligible for admission to this course. Entrepreneurship, Journalism, Fashion design certificate courses are offered by this institute to their students to get the additional knowledge. There is currently twenty seven staff working including the non-teaching category. Seven faculties have achieved the doctoral degree and ten have obtained the M.Phil degree. Total strength of the students as on 16.10.2018 with the reference of website (www.spmmsatara.com) is 893. There is great achievement of this institute that it has been awarded the “Karmveer Paritoshik” by Rayat Shikshan Sanstha in 2004. College magazine named BHARATI has got the prize from Shivaji University, Kolhapur for the best articles. B++ with 2.80 CGPA Grade has been achieved in the 3rd cycle assessment by NAAC.

Library of this college is fully automated using the LIBERERIA software and having rich collection in both traditional and digital format. Network Resource Center, Circulation Service, Reading facility separately for staff and students, Reference service based on digital, book bank services etc. are provided by this library. Library is open to users during the period of 8.30 a.m. to 5.30 p.m. excluding Sunday and National holidays. At present, library hold the resources collection including the text and references are 7165. Apart from these traditional resources, it has subscribed the N-List database and preserved the other free based resources and made available to the end users through the network resource center using the ID and Password scheme. (www.spmmsatara.com)

3.23.6 Arts and Commerce College, Satara

It is one of the best institutes run by Satara Maratha Vidya Prasarak Samaj. And it is established in 1972 at Satara city in the area of Shukrawar Peth. It has two streams: Arts and Commerce. Education in the subject of Marathi, Hindi, English, and History and Economics at graduation level is available. Accountancy and marketing

subjects are taught to third year in commerce disciplines. Now there is 18 teaching staff and 3 CHB. Most of the faculties are qualified with SET/NET/Ph. D and M. Phil. VIDYAMRUT named college magazine is published by this college at the end of year. It publishes the various inter disciplinary issues and research papers also and due to this research feature it is known as research book. The college offers valuable courses such as Marshal Arts, 3D Animation, DTP, Tally, Business Administration, Share Marketing, Fashion Design, Modi Scripts, and Beauty Parlor etc. The performance in the research and development is good and it has been reflected through the achievement in Major and Minor projects sanctioned and completed till today by the faculties of this Institute.

The library of this college is fully automated and it has used the Librarian Software. Now there are 39946 books available and out of them 21149 books are references and remaining 18797 are textbooks. Apart from these collections, there are 337 CD/DVD based resources, 1562 are back volumes of periodicals. Library purchased the 35 periodicals in various subjects and 10 newspapers are in both Marathi and English language made available in the reading room. Reading room is established with providing the adequate furniture. In keeping view of technology influenced readers, it has subscribed the N-List database as well as preserved free based resources through their library portal. Library also provided purchased e-books and e-journal resources through ID and Password based without geographical boundaries on the network based. It also provides the other e-resources such as e-journals, e-newspapers, e-pathashala, National digital library links, and Shodhganga and shodhgangotri links through their library portal. Bharati books and Dnyanachi Shidori are the best practices and well known activities of this information center. Library gives the various services to their users such as book bank scheme, user tracking, free internet, newspaper clippings, special library services zone to senior citizens, OPAC and separate reading facility to boys and girls. Rare book collection and preservation system in digital format is outstanding service rendered by the library. All digitized collection is made available with free access on Internet network through their www.accollegessatara.in. In this way, in this digital environment Arts and Commerce college of Satara has designed the well websites and provides the ICT based services to their end users. (www.accollegessatara.edu.in)

3.23.7 Kisanveer Mahavidyalaya, Wai

Janata Shikshan Mandal has opened the door of higher education in the form of Kisan Veer Mahavidyalaya at Wai in 1962. At the beginning, it had offered two streams only in Arts and Commerce and later in 1982; it has started the Science stream to impart the knowledge in science disciplines. The Institute has total seventeen departments in different subjects such as Chemistry, Botany, Physics, Psychology, Marathi, English etc. The college provides the separate residential facilities for boys and girls through hostel facility. The performance of sports, NSS, NCC and cultural activities is well. Sports department regularly organized the zonal, Inter-zonal and University level competition and have achieved many awards. In view of students centric programmes in the digital environment, College has started the bachelor of computer application degree course. It has also opened the distance education center approved by Yashwantrao Chavan Maharashtra Open University, Nashik and more than 2000 students are learning in different disciplines. Parent teachers scheme, Earn and learn facility, Health care center and Vocational education etc. are the major services provided by this Institute. Now there are more than 6000 students learning on regular mode.

Library and Knowledge center of this institute is set-up in old tradition buildings but there are rich knowledge resources with 71191. It has stored and preserved various resources in the print as well as digital form. The library of this Institute is joined with senior and junior education unit. Book lending, Cataloguing, Reference and Referral service, News paper clipping etc. services are provided by this organization. Newly purchased resources are immediately provided and displayed towards the end users with the help of ICT modules. Today there are total fifteen library staffs working and providing the library services. The library of this college not only offers the traditional based services but also has changed its nature in digital environment. It has adopted the VRIDDHI library management software for automation process and library is providing the services on computer to their readers. Today the status of this library is fully automated. It has designed the library website and provides the library services through their library portal. Library services, staff of the library, downloadable material, online OPAC and Ask the librarian etc. are the major features of that website. Through the download option, it provides various valuable and important resources such as e-books, e-journals, ETDs, Institutional

repositories resources, Competitive Exam desk, subject gateways and portals of important Universities and information centers etc. In this way, the Institute of Kisan Veer Mahavidyalaya and its library are imparting the excellent education and resources to their students and staff. It is one of the oldest and the best Institute in the rural area of Wai. (www.kmvwailibrary.weebly.com)

3.23.8 Aamadar Shashikant Shinde Mahavidyalaya, Medha

ASS College is located in Javali Taluka at Medha which is imparting education at graduate level in Arts, Commerce and Science streams. It is run by Jayant Pratishtan, Hungaon and started this college in 2002. The Institute has approved the permanent affiliation from Shivaji University, Kolhapur on 5th June 2012 and it come under the UGC Act of 2(b) and 12(f) on 11th June 2013. In this college, there are 13 departments of various disciplines and at present, CBSE pattern has been applied in admission process. In the Arts stream, Marathi, Hindi, English, Economics, History, Political Science and Geography subjects are taught and Chemistry, Physics, Zoology etc. subjects are available at graduation level. The college authority has planned various committees for distributing the academic work among the faculties such as lead college committee, examination, cultural; research, library, anti- ranging committee etc. Total twenty five committees are prepared. There are well equipped science laboratories, ICT based lab, study room, Xerox facilities etc. Presently, there are near about one thousand students getting education in various courses and programme. Distance education cell also has been started by this Institute for imparting the education to remote located students as well as irregular learners. The college also provides many services and facilities to end users through their website designed as www.assmmedha.edu.in.

Library of this college is fully automated and used E-Granthalaya software for doing the library activities. Today on dated 17.10.2018, total collections of library resources are 7929 including non-print reading material and out of them 3105 are titled, 3200 and 4729 books are references and textbooks respectively. It provides the periodical service to their patrons and there are now forty journals and magazines made available in the library. 29 CD/DVD based resources and 10 Newspapers are made available regarding National and International News. Apart from this, library provides the electronic databases subscribed under N-List scheme from INFLIBNET.

Online free based resources are provided through their library portal. It also preserves and organizes the information links of Shodhganga, Shivaji University library resources, etc. Book bank facility, Inter library loan system, Bibliography, Information service, Newspaper clipping file, reference and referral services are provided by the library to the academic community. (www.assmmedha.edu.in)

3.23.9 Yashwantrao Chavan Mahavidyalaya, Pachwad

YCM College is located at Pachwad in Satara district. It is started in 1999 and provides education especially in Arts and Science stream. The status of this college is permantely affiliated to Shivaji University and recognized under the UGC Act of 2(f) and 12(b). It is excellent college of Rayat Shikshan Sanstha and imparts education in hilly and rural area. In 2011, the institute has been awarded B Grade by NAAC in Reaccreditation assessment cycle. It has made available education through various subjects and it runs 11 departments in both streams such as Marathi, Hindi, English, History, Accountancy and Industrial Management etc. Besides the academic degree, it offers the career oriented and short term courses to fulfill the extra knowledge of students. Sports and Gymkhana, Cultural activity, National Service Scheme, Anti-Ranging, RTI and Grievance committees have been established to make all round personalities of student community. Computer lab has been set up with well instruments to impart the ICT based teaching and learning education to their students.

Library provides many resources and services to their patrons with the help of computer facility. Now, there are total books 16865 and 23 periodicals in various disciplines. Library has also made available 9 newspapers for reading the current events and information. Book circulation and book bank facilities are the major popular services among the academic community which are provided by library. In view of digital environment, college library has well designed the library website and provides some ICT based services such as Rayat Knowledge Bank, Gazetteer, Online syllabus, Audio-videos lectures, Newspapers, e-book, e-periodicals and e-references etc. An institutional repository also is maintained by the library and it has included the previous question papers, major and minor research reports, research papers and some rare books. Photos and Images are preserved by this library in digital form and which are uploaded on Net. (www.ycmpachwad.ac.in)

3.23.10 Shripatrao Kadam Mahavidyalaya, Shirwal

The senior college is established in 1983 by parent institute of Rayat Shikshan Sanstha at Shirwal on Pune-Kolhapur Highway. The institute offers Arts, Commerce and Computer educational courses at graduation level. Recently, it has started the post-graduation programme in Hindi discipline. SUBHANMANGAL named college magazine is an excellent piece of literature and it covers the current issues regarding suicides of the farmers, water pollution, global warming etc. Due to the value added contents it has achieved the award from Shivaji University, Kolhapur. In the year of 2013-14, Yashwantrao Chavan Pratishthan, Mumbai has selected as Best Magazine and awarded it. Academic calendar is playing an important role in academic performance and provides better services to their students. The Institute has achieved B Grade by NAAC with CGPA 2.73. In view of financial level of students' educational problem, it has started the Earn and Learn Scheme and for this scheme college has made policy and deposits and preserves 12000 Rupees for per year. Poor boys fund is maintained and provided for poor and needy students. Youth festival, NSS, NCC, Nature club, health center and exam guidance center services and facilities are provided by this college to their students.

Knowledge resource center (Library) of this college has collected various types of print and Non-print based resources. Now, 19979 total resources including text and reference books are available. Library provides the book bank facility with the assistance of Shree Shiddhivinayak Ganapati Mandir, Trust Mumbai. 9 Newspapers and 50 periodicals are made available to their readers for getting current and research knowledge through these resources. Library committee regularly organizes various programmes such as Library Introduction programme, Birth Anniversary programme of eminent leaders, counseling and guideline to competitive exam students etc. Due to these extra co-curricular activities, user community is attracted towards the library. Library is fully automated and uses the MKCLs Libreria software. Institute has built up well equipped reading hall with peaceful environment where more than 100 students can seat and enjoy the study. Near this reading hall, there is made available digital based resource center which is useful to readers while studying and referring the e-resources through Internet. Library has also made available open access system to all students. Apart from this, it provides library membership to those students which are alumni. Special extra borrower card is

provided to physically disabled students. The library is open from morning 9.00 am to 4.00 p.m.. 19th edition of DDC is applied for classification process. N-List database is subscribed to provide electronic resources to their patrons. Besides this, library provides the e-reference sources such as biographies, encyclopedias, newspapers and various important links of competitive exams portals through their website name as (www.skms Shirwal.in).

3.23.11 Smt. Meenalben Mehata College, Pachgani

This Institute has been started in 1990 with the help of parent body of Shri Swami Vivekananda Shikshan Sanstha, Kolhapur. It offers higher education at B.A., B.Com, and B.Sc. graduation level. From 2017, M.A. and M.Com course have been approved by distance education department of Shivaji University, Kolhapur and made available post-graduation programmes to learners. It is B Grade ranked college situated at Pachgani in Mahabaleshwar taluka. Science stream of education is started from 2013 on the 100% grantable basis. The major features of this college are well infrastructure building, qualified staff, rich collection maintained library, well equipped sports zone, excellent competitive exam center etc. GIRISTHAN named college magazine is published at the end of every year. In 2013-14, it has been awarded with a prize by Shivaji University for the “cause of toxicants” articles. The admission process and other co-curricular activities are performed as per Shivaji University, Kolhapur and parent Institute. From 2018, it has implemented the choice based credit system (CBCS) pattern as per the guidelines of University.

Library having good collection of resources provides many services to the readers such as book circulation; reference service, newspapers, journals and magazines, bibliography and ICT based resources etc. Library and reading room is daily opened except holidays during the timing of 9.00 a.m. to 4.00 p.m. and on Saturday from 9.00 a.m. to 1.30 p.m. library provides the reading resources for off campus students on identity card basis. Books and other reading materials' validity period are restricted up to a week. Per day two rupees late fine is charged for delayed books. Only single book is issued per student and for lost and damaged books double price is recovered from readers. Library organization has set up Electronic Resource Center where 5 computers with Internet facility are made available to students free of charge. (M.M.College Edu. Board, 2017-18)

3.23.12 D.P. Bhosale College, Koregaon

The well-known Institute is established in 1967 by Rayat Shikshan Sanstha. The college imparts education in Arts, Commerce and Science streams at graduation as well as post-graduation level. Apart from it, institute offers the Bachelor of computer application (B.C.A) programme. It also provides the open education through Yashwantrao Chavan Maharashtra Open University, Nashik. It runs various COC and short term courses to their students. At present, there are fifteen departments in various disciplines such as Marathi, Hindi, English, Physics, Psychology, Mathematics, Zoology and Commerce etc. Institute has acquired the approval of post graduation in Marathi, Hindi English and M.Com in advanced banking and financial system subjects are made available for getting higher education to their students. It also provides support services such as NSS, NCC, Gymkhana, Placement and skill development, Cultural activity and library etc.

Library is important factor of any academic center and in this aspect library is designed and constructed of this reputed Institute as per the library science rules. It provides various services such as Network Resource Center (NRC), Comfortable reading room facility, Newspapers, Periodicals, Online Public Access Catalogue and reference service etc. Newspaper stands are established at entry point of the library which is convenient to readers for reading the news and events. Books and other reading materials are issued to the library users during the period of 10.a. m. to 5.00 p.m. and reading room is open between 8.a.m. to 5.30 p.m. The main feature of this library is that it also opens in holidays between 8.00 a.m. to 10.p.m. Apart from the book circulation functions; library conducts the other activities such as user orientation, book exhibition, Vachan Prerana Din, etc. It also developed Institutional repositories and important photos and images collections are preserved in digital form by this information center.

Presently, library has rich collections with various references, journals, reports and thesis etc. Now, there are total 33137 books available and kept with open and close access manner. Out of the entire collection resources, 13099 in numbers are titles. 40 journals and magazines, 10 newspapers, 188 CD/DVD based resources are made available to their patrons. Library has been influenced with information technology and it attempts to provide the ICT based literature to their staff and students. Institutional repository is maintained by this library organization which

contained the research papers of faculties, research reports of various projects, organizational valuable documents, some pamphlets, etc. It has subscribed the N-List database through INFLIBNET and provides the e-books, e-journals and various databases through their library portal platform. In this way, the academic performance of this Institute is excellent and it bagged the A Grade by NAAC in 3rd cycle. (www.dpbck.org.in)

3.23.13 Dahiwadi College, Dahiwadi

It is one of the best and first Institutes in the Man and Khatav, Tehasil among the higher education systems which has achieved 'A' Grade by NAAC in 3rd Cycle with CGPA 3.25. It started to impart higher education to the needy students of draught areas in 1965 with Arts stream but in future time it opened the science and commerce streams in 1983 and 1984 respectively. Now in Arts stream there are Marathi, Hindi, English, Economics, and Geography and Political subjects as special subjects and are taught at graduation level to achieve B.A. Honor degree of Shivaji University Kolhapur. An accountancy subject is also available there for getting degree in commerce. In science stream, there are Botany, Chemistry; Physics and Zoology subjects available for choice at graduate level. This Institute has also been approved and sanctioned for post-graduation programme from Shivaji University Kolhapur and provides the post-graduation education in Chemistry subject. Further, it has established the well-equipped two science laboratories for doing research and University has approved this laboratory and it is recognized as research laboratory for doing M. Phil and Ph. D level research. Apart from this regular mode of education, it has started the Bachelor Education Programme (B.C.A.) in computer disciplines during the period of 2008-2009. PG Diploma in Green Chemistry and Crop Production, certificate courses are also made available to students from 2010-2011.

The college has been influenced with ICT based services due to the digital environment of today's age. The department of Office and Library have applied the ICT tools for offering digital based services to the students. Essential and important database is created in digital form and made available to students through the website of www.dahiwadi.college.in. The major facilities and services of this college have Library, IQAC (Internal Quality Assurance Cell), Computer lab, Botanical garden, boys and girls hostel etc.

Library is main part and heart of any academic institutes and in this way, library of this college is playing excellent role in providing the various services to their readers. Recently, Library is shifted in new building which is designed with all sections as per library and information science rule. It is fully automated library and applied the MKCLs library Management software and provides various valuable services such as Book circulation, Institutional repositories, online public access catalogues (OPAC) etc. There is presently having rich collection with 77609 in various kinds of book, reference, encyclopedia, almanac etc. It has also preserved and subscribed the 38 journals in various subjects. 11 Newspapers are made available in Marathi, Hindi and English language which is openly kept in reading hall. Library staffs are well qualified and support to their patrons in locating and assisting as per the needs and wants of students. It has maintained the digital based reading sources through their library portal such as E-brary database, E-books, Library Images collection, Rayat Knowledge Bank etc. Under the Institutional repository system, library has preserved various PPTs, Reports, Research papers, Question paper of previous examinations etc. to their readers. Library and reading room remain open between 8.30 a.m. to 5.30 p.m. (www.dahiwadi.college.in)

3.23.14 Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

RSBM College is established by Aundh Shikshan Mandal, Aundh in 1994 on Non- grant basis. It has achieved grant in 2000 and came under the 2(f) and 12 (b) as per the UGC Act of 1956. The college has a historical background with heritage and 1st Rajesaheb Barr. Balasaheb Pantapratinidhi has contributed his energy in growth and development of Aundh Sansthan. After that, during the period of 1994-95, Shripatrao Pantapratinidhi opened this college to provide higher education to economically affected and poor needy students. Presently Shrimant Gayatri Devi Pantapratinidhi, Ranisaheb Aundh is working as Chairman of this Sanstha and she has changed the quantitative and qualitative look of this Institution. Hon. Ajitdada Pawar is the President of Aundh Shikshan Mandal, Aundh and his valuable contribution is reflected through growth and development of this reputed institute.

The Institute has two streams: Arts and Science. It provides education at degree level in Chemistry, Botany, Physics, Geography, Economics, Marathi, Hindi and English. It has started the post-graduation level education in geography on regular mode affiliated to Shivaji University, Kolhapur. Institute has made available the open education through Yashwantrao Chavan Maharashtra Open University, Nashik and

Distance Education unit under Shivaji University, Kolhapur in various subjects at PG and UG level. There are total 29 teaching staff working with a well-equipped computer lab, Science laboratory, Gymkhana, Badminton hall, Playground and library etc.

Library of this college is established in 1994 with a very less number of books and its growth and development is increasing day by day. At present, there are 19487 books available in various disciplines and it provides resources to their patrons on open access mode. This Institute is having historical heritage and therefore there are some rare collections which are published before the year 1947. These valuable print based resources are donated by Aundh Shikshan Mandal Aundh. And these resources are kept in well manner and also made available to library patrons as well as giving membership to senior citizens, external students. Library has adopted SOUL software for atomization of library collection. Book issue and receive membership of library user, OPAC etc. functions are done through this system software. Library and reading facilities are provided to their patrons during the period of 9.00 a.m. to 5.00 p.m. Information services unit of this library gives various services on traditional as well as ICT based resources to their readers. The main feature of this library is that there are about 2500 books which are very rare and they have been preserved in well conditions. It provides the library services and facilities to their users such as circulation, reference, internet, OPAC, audio-video based resources, book bank facility etc. Library has subscribed electronic resources under the consortia of N-List by INFLIBNET and it has made accessible using ID and Password. Now library has been shifted in new building and is providing better service to end users with the help of ICT. At present, Chairman of Aundh Shikshan Mandal Aundh has constructed new building which is extended to science laboratory, Library and special reading room are well equipped with intake capacity of seats more than hundred. Library organized various co-curricular activities such as Library day function, Books, Journals, rare resources, newspaper clippings exhibition programme regularly. User orientation programme and Information literacy course is main feature of this library where users are provided with the valuable information regarding library resources and digital resources to their user community. The future plan of the library is to make available reading room facility on 24*7 bases to the students. Library caters free services especially to physically disabled students as well as smart borrower card is freely provided to scholarly students. (RSBM College Magazine, 2017-18)

3.23.15 Mudhoji College, Phaltan

Mudhoji College Phaltan is established by the Phaltan Education Society to cater the need of higher education in rural and draught areas. It is one of the oldest Institutes and provides education jointly to senior and junior systems. Institute has Arts, Commerce and Science Streams and imparts education in various disciplines such as Philosophy, Geography, Economics, Political Science, History, Marathi, Hindi, English, Electronics, Mathematics, Statistics, Physics, Chemistry, Zoology, Botany and Commerce. National Service Scheme is one of the best services of this college and it has been awarded as a best team by government of Maharashtra as well as by Shivaji University, Kolhapur. IQAC (Internal quality assessment cell), Anti-raging cell, Anti sexual harassment, Students Council, Sports, Cultural units etc. are working actively and received many awards and medals. More than 5000 students are learning in this institution. It has made available the post-graduation education as well as short term courses to their students. Students can take PG education in Marathi, Hindi and English. B.C.A., B.C.S. and B.B.A. degree courses are opened here. In 2017-18, it has been awarded B Grade by NAAC Assessment for 3rd cycle.

The Institute has a separate well equipped library built up with two floors. It provides different type of services such as Bibliography, Current awareness service, Reprography, Printing, Circulation, Newspapers etc. There are book bank, internet, inter library loan, OPAC, previous question bank, new arrival etc. facilities made available to students. Apart from this, library conducts book exhibition, external student's library membership, current information, providing soft copy of syllabus, user orientation course etc. It has total collection of 110798 and out of them 17682 books are for the junior college education. There are also various types of resources such as 17 gramophones, 41 manuscripts, 10 maps, 235 CD/DVD based resources, and 1127 are bound volume of journals and magazines. Library subscribes regularly about 50 periodicals and 14 newspapers for their patrons. Excluding these traditional based resources, it has subscribed the N-List database and provided ID and Password to their authentic users to access at global corner. In this way, Shrimant Shivajiraje Naik Nimbalkar Library of this institute is providing value added services to their students. (www.mudhojicollege.ac.in)

3.23.16 Mahila Mahavidyalaya, Karad

Shikshan Mandal's Mahila Mahavidyalaya Karad, is one of the best colleges situated in Karad city for catering the higher education especially to female category. It provides the higher education in Arts and Commerce stream at gradation level. Now there are total eighteen teaching faculties including the principal and librarian are working on permanently basis. 14 faculties are appointed on clock hour basis as well as visiting faculty. College has opened the M.A. geography for post-graduation education. This department provides excellent education to PG students in organizing study tour, seminar, conferences and many more activities under the lead college scheme. Ladies hostel facility, Center for skill development, N.S.S., and sports facilities are provided to their students.

The library is established in 1986 and provides valuable services to their users. During the period of 2016-2017, it has been shifted in new building and set up various sections within it. Applying the library system software, automation process has been completed by library and now provides the services on computer based. There are resources including print as well as non-print reading material and at presents it housed 19112. It has maintained ETDs (Electronic Thesis and Dissertations) and Institutional repositories. Institutional repositories include the research articles, PPTs, college magazines, reports etc. 37 periodicals and 08 Newspapers are made available for acquiring the current and update knowledge. 140 back volumes are preserved by the library. Open access system is implemented for entire students and staffs. Besides these regular resources, library provides electronic resources as per the need of hour to their readers such as N-List databases, Shodhganga Linking, DOAJ (Directory of Open Access Journals); National Digital Library (NDL) link is provided through their information and resource unit. Rules and regulation of the libraries are strictly implemented as per the library science rules. Library advisory committee has been composed with five members and it conducts the other activities such as Dr. S.R. Ranganathan Jayanti, User Orientation Programme, and Vachan Prerana Din etc. Library is open from 7.30 a.m. to 4.00 p.m. Book bank facility is provided by this library. (*Annual report 2017-18*)

3.23.17 Yashwantrao Chavan College of Science, Karad

Shri Shivaji Education Society has opened this Institute in 1972. It provides the excellent education in science disciplines only and achieved ISO 9001:2015 certificate as well as 'B' Grade by NAAC in 2011. There are various subjects available for doing graduation degree such as Micro biology, Physics, Chemistry, Mathematics, Electronics, Statistics, Pollution, Botany etc. It also offered the post-graduation, M.Phil and Ph. D in Microbiology discipline. Advanced courses like Biotechnology, Computer Science are started by this college. Ph. D in Zoology and M.Sc in Analytical Chemistry has been started from 2013. There are presently thirteen departments run in various disciplines. National Service Scheme, National Cadet Corps (NSS), Sports and Libraries are major services and facilities provided by this Institute. Besides these facilities and services, it offers the short term courses in computer science and pure science.

Library organization is well organized and set-up in special building. The reading room has good and comfortable furniture set up. The collection of reading material is rich and now there are total 38528 books and references available. 2677 back volumes of periodicals are preserved by library and 42 journals and magazines are subscribed for patrons to update their knowledge. 10 Newspapers are made regularly available in the library. Out of 38528 books 13918 books have as a single title. INFLIBNETs N-List database is made available to their users by this library. Library not only organizes and preserves the resources collection but also it caters various library and information services such as book issue and receive lending service, current awareness and specific dissemination information, book bank service, referral service and digital based services etc. library has changed its traditional ways services and focused on digital based. Science and technology, Research board forum, CSIR, UGC, Shivaji University Kolhapur, M.P.S.C. and U.P.S.C. websites links have been made available to their users to search and get information in user friendly manner through their library portal. And users are benefited by this service. (*Yashwantrao Chavan College Prospectus 2016-17*)

3.23.18 Venutai Chavan College, Karad

It is next branch of education system of Shivaji Education Society, Karad which impart education particularly in Arts and Commerce Streams. It has been

opened in 1971 at Karad City in ten acres area. Formerly, it was known as “Karad College of Arts and Commerce” but later in 1985 it was renamed as Venutai Chavan College, Karad. It has become eligible to receive grants from UGC under the 2(b) and 12(f) from 1972. Institute offers B.A. and B.Com education and it has started the post-graduation education in two subjects that are M.A. in Marathi and M.Com. M.B.A. (Master of business and administration) has been started with approval from YCMOU Nashik. Remedial Coaching for SC and ST communities, Special Courses for Minorities, Certificate courses in Banking, Spoken English, Journalism, and Administrations etc. courses are offered. Admission process is strictly followed and provides the information regarding it through their prospectus.

Library provides different type of services such as book bank, reference, referral; ICT based linking service, current awareness, SDI, OPAC etc. well-equipped reading facility is one of the best feature of this library. Journal, magazines and newspapers are made available to their users. Now there is well qualified staff and support to their readers as per their need of knowledge. (Venutai Chavan College, Prospectus 2017-18)

3.23.19 Shikshanmaharshi Bapuji Salunke Mahavidyalaya, Karad

The Institute is established in June 1984 by Shri Vivekananda Shikshan Sanstha, Kolhapur. Today there are about 2000 students learning in various disciplines of Arts and Commerce streams. Institute runs various departments such as Marathi, Hindi, English, History, Sociology, Journalism, Commerce, Geography, Economics and Political Science. It has developed ICT based classroom for teaching and learning purpose in digital environment. College offers various facilities such as Laboratories, Seminar Hall, Gymkhana, IT lab, Ladies room, Playground, Guest House, Xerox Center, and Jain Solar Plants etc.

Library is having rich collection with 18299 and out of them 13020 books are purely references. It has collected and organized journals, CD/DVDs, Audio-videos resources and Newspapers are 49, 81, 13 and 14 numbers respectively. 30 computers are made available for searching and learning the ICT based resources through their computer lab with the supporting facilities of ten printers, 03 televisions, 16 CCTV cameras, 10 laptops. Departmental library is the main feature of this institute and it covered 1341 books in various departments. Majority books are in department of

Economics as departmental library collection with 283. There are 222 books in History departmental library and remaining books 172 are in geography etc. In this way, all departments have established the departmental library and students as well as faculties are getting benefit from this facility. With the help of LIBMAN and GIS software library has become fully automated and presently all basic traditional functions of the library activity are being done through it and are providing the computer based services to their users. (SBS College Magazine, 2017-18)

3.23.20 Sadguru Gadge Maharaj College, Karad

The College with potential for excellence, A Grade College was established in 1954 with single faculty of Arts by Rayat Shikshan Sanstha. It is first college in India that has opening at Tehsil Place. The institute runs many courses and degrees from graduation level to post graduation as well as M. Phil and Ph. D level. At present, there are above 11581 pupils taking the education in various disciplines. Out of 11581, 6225 students are the senior college and remaining are of Junior College. It offers the programme such as B.A., B.Com, B.Sc., B.C.S., B.C.A., and Biotechnology, M.A., M.Com, M.Sc., M. Phil and Ph. D level. Now it offers the post-graduation in 13 disciplines such as History, Economics, Political Science and Sociology, Chemistry, Mathematics, Geography, Zoology, Computer Science and M.Com in Accountancy. The college is recognized as a research center and there is availability of the M. Phil programme in Marathi and Ph. D in Chemistry and Zoology affiliated to Shivaji University, Kolhapur. Institute also runs 7 COC and 27 short term level courses at affordable fees to their students. YCMOU center is approved and made available higher education with open education mode to irregular and remote area students. Apart from this regular mode of education, institute provides other facilities, Curricular and Co-curricular activities such as Cultural, Sports, NSS, NCC, Competitive exam and placement cell etc. In 2017-18, 235 students were selected and achieved job. Sport department's performance is excellent and achieved many prizes and awards in many events. Akash Surve has achieved the National Sports Award through the National traditional wrestling federation competition. Institution has built up the separate boys and girls hostel and there is intake capacity of 578 boys and 213 girls for living with excellent facility.

Library and information center of this institute is excellent and provides valuable information services to the patrons. Library is open from 8.00 a.m. to 5.30 p.m. and reading room facility is made available 24*7. Separate reading room for each category is a feature of this library. There are special study rooms for boys, girls and staff. NRC (National Resource Center) is opened for students to access the digital resources in the library. The library has subscribed the digital scholarly databases and made available through this platform for searching, accessing and downloading the electronic resources to their patrons. Periodical section is rich and subscribed the 91 journals and magazines in various disciplines and also there are 16 newspapers made available in the reading room for acquiring current information of news and events. 329 CD/DVD based resources are preserved and made available to issue these electronic resources. 120 cassettes are purchased by this library. At present, there are 1, 14,691 books available including various references with various disciplines. Book Bank facility is provided to final year students with affordable deposit scheme. SADGURU named college magazine is published with excellent content each year by this institute. (www.sgm.edu.in)

3.23.21 Shahajiraje Mahavidyalaya, Khatav

This higher education Institute is jointly working with senior and junior education system. It is opened in 1965 by Shikshan Prasarak Mandal Khatav to impart education to students who survive in drought area around the Khatav Tehsil. It is the first and the oldest college in Khatav Tehsil. Late Chandrahar Patil was the founder of this Sanstha and he contributed his knowledge and financial supports in growth and development of this Institute. College imparts the education in Arts, Commerce and Science stream. Here education is available in Marathi, Hindi, English, History, Geography, Physics, Botany, Chemistry and Commerce at graduation level. There are more than 5000 students taking education. The institute is not only providing the regular mode education, it is also offering various short term and certificate level courses such as Basic Accountancy, Computer Education and Tally etc. Although it is now situated in traditional based buildings, but its qualitative progress is excellent and it has achieved many awards such as in sports activity Ghadage Pavita Pralhad stood 1st rank in 100 mtr Running competition of Satara Zonal under the Shivaji University, Kolhapur. Shri Tode A.S. has achieved Gold Medal in Inter University level Competition in Maharashtra. The Institute conducts and organizes various seminars, workshops and conference to explore their talents and attempts to make

platform to students and faculties on the topic of Changing climate in 2007, Jansanchar Madyemome Hindi in 2009, recent trends in Astronomy in 2009 etc. has been organized by this college. It provides the facilities that are boarding facility, health care center, catering, transport, sports, library facility etc.

The library has a more than fifty thousand books including the text and various disciplines of references. It provides library services with traditional mode as well as ICT mode. At present, there are four computers with Internet, Printing and Scanning facilities made available to the users. Free based e-resources such as J-stor, DOAJ and many more websites links are provided to the remote access. Journal, Magazine and Newspapers are kept in periodical section. And as per the need of patrons, newspaper clipping service is provided to the readers. Reading room and circulation section remain open from 8.00 a.m. to 4.00 p.m. Library organizes various activities such as Ranganathan Jayanti, Book and journals exhibition, Rare collection of articles, User orientation Programme etc. It has used the SOUL (2.0) software for automation to library and partially process is completed. (www.shahajirajecollege.org)

3.23.22 Kakasaheb Chavan College, Talmavale, Taluka Patan

This college is opened in 1967 at Nagtekadi hilly area of Talmavale by Shri Swami Vivekananda Shikshan Sanstha, Kolhapur. It offers B.A. and B.Com programmes in various subjects and there is also Open Education Center under the YCMOU Nashik. National Cadet Corps (NCC) is the best activity awarded in 2016-17, N.C.C. 19 MAH Battalion, Karad sanctioned the open unit to this Institution. It is assessed by NAAC in 1st cycle and C+++ with 69.00 grade achieved and in 3rd cycle B Grade. Presently there are total 15 faculties working and out of them two have been awarded with the Ph. D degree. Now there are 827 students taking higher education through this academic center. Library collections of resources are total 41810 including the texts and references. These resources are organized and classified as per the DDC Classification Scheme. This organization has preserved various types of e-resources with online and offline mode based. There are only 10 CD/DVD based electronic resources available but it has made available e-books, e-journals, valuable videos, lectures in audio video format, Power point presentation, slides etc. By this periodical section, 36 periodicals are subscribed in various subjects. It has applied the Library Management Software for Automation process. Library is updated and

provides library services through LAN facilities and OPAC is actively run. Book exhibition, library orientation course, various anniversaries of Indian thinkers are celebrated and conducted by the library. (*KKC Talmavale College SSR Report, 2014-15*)

3.23.23 Krishna Mahavidyalaya, Rethare BK

Shetkari Shikshan Prasarak Mandal opened Krishna Mahavidyalaya at Rethare (Bk) to impart higher education in Arts, Commerce and Science streams. There are more than 1700 students learning in this higher education system. 85 teaching staff and 33 non-teaching staff are presently working in this Institute. It is joined with junior education system. There is availability of post-graduation education in Hindi Subject. Information Communication Technology facility, well equipped science laboratories, hostel facilities, canteen, botanical garden and research center etc. are major facilities of this institute. Sports and library facilities are provided in keeping view of user centric to their user community.

Library and information center of this college is providing many services such as book bank facility to poor and needy students, Online Public Access Catalogue, book circulation with automation system, e-book and e-journals services, periodical and magazines, links providing various free based e-resources, institutional repository, etc. Librarian has created Id and Password and provided to the students and faculty community for remote access. It has collected both the type of materials in prints as well as digital form. Now, there are 26351 books kept and made available to students as well as faculties with open access system. Besides it, library organization has started the senior citizen scheme for accessing the print based resources with minimum deposit fee basis. 507 back volumes are also preserved and made available to their patrons. This library gives the service of Xeroxing, scanning, uploading documents to their students. There is reading room facility having excellence with good furniture. In the reading room, there are made available the newspapers, magazines and Internet facility for accessing the electronic based resources while studying in the reading room for referring any document on the Net. At the beginning of new academic year, library orientation programme is organized by library to acquaint the library resources and services to new admitted students. Hence, this library is doing excellent work in disseminating the valuable services to their users. (*KMRBK College Prospectus, 2017-18*)

3.23.24 Sharadchandra Mahavidyalaya, Lonand

The Institute is established by Rayat Shikshan Sanstha in 1986 to impart education in hilly and drought prone area at Lonand in Khalndala Tehshil. It has three streams i.e. Arts, Commerce and Science. It comes under the 2(b) and 12(f) in 2007. The institute has five departments in the subject of Marathi, Hindi, English, and History and Geography regarding the arts stream. And Physics, Chemistry and Electronics subjects are concerned science disciplines. Commerce subjects are taught at degree level. A Science laboratory has been connected with internet facility and having advanced instruments within it. Gymkhana provides indoor and outdoor game facilities to their students. PARIVARTAN named magazine of college is published every year which contained the articles regarding the topic of education, women, cultural, sports and politics.

Library housed 26000 books including texts, references, reports, projects and rare books. Thirty journals and magazines are subscribed by this information center and made available to their patrons. It has also subscribed the N-List e-resources under the INFLIBNET scheme which is available to this institute due to the eligibility of 2(f) and 12(b) College. Librarian provides ID and Password to individual user. LIBRERIA software is used for automation of library and provides the library services on computer. OPAC facility is available in this library. Book bank facility is the popular service of this library and it provides this service with deposit scheme. Books are borrowed to the students for seven days period and one semester for faculties. Faculties and last year graduate students are permitted to open access of library resources. Apart from this, library provide the Internet facility, Printing and Scanning facility in keeping view of ICT as need of the hour. Library spent more than 15000 rupees on periodicals, Magazines, Newspapers for providing current knowledge of particular disciplines. And hence, it has subscribed one or more journals and magazine regarding the arts, commerce and science subjects. Library and reading facility is provided daily eight hours and two hours in holiday's period. (www.spmlonand.org)

3.23.25 Sou. Mangaltai Ramchandra Jagtap Mahila Mahavidyalaya, Umbraj

This purely women's college is located on Kolhapur- Mumbai highway at Umbraj. It is single faculty Arts Stream College of women started in 1989 by Rayat

Shikshan Sanstha. It runs B.A. programme in various subjects i.e. Marathi, Hindi, English, History and Sociology at graduate level. Psychology and Economics subjects are taught at B.A. second year level. It has been reaccredited by NAAC in 2011 and with has been awarded B Grade. Sports, library, hostels, computer lab and Information resource center are the best services of this academic unit. Ladies hostel intake capacity is 60 students only. Mini mobile library is designed and provides the newspaper and internet facility to users at their desktop. College magazine named TRIVENI is published by this Institute and it has been achieving the award since last three years.

There are 10718 books available. Library collected and organized 56 CDs, 12 Cassettes, 26 Models and Maps. It has subscribed and made available 26 magazines and journals in various disciplines to their readers. Nine newspapers are circulated to reading room section. Library has developed the institutional repositories collections with power point presentations (PPTs) and this database is made available at Internet Unit. Question bank of previous examination has been preserved and students can utilize for examination preparation. Adequate reading room facility is provided to girl community and separate section is made available to faculties and researcher with Internet and other necessary tools such as printing, scanning etc. Library and reading room facility is daily open between 8.00 a.m.to 5.00 p.m. excluding the Sunday and holiday. Other activities such as book exhibition, user orientation and Ranganathan Jayanti are conducted by this information center. (SMRJ College Prospectus 2017-18)

3.23.26 Prof. Sambhajirao Kadam College, Deur

With the motto of “Bahujan Hitay” Shri Mudaaidevi Shikshan Sanstha has opened the senior college in1999 at Deur Tal. Koregaon, Dist. Satara. It provides degree level education in Arts and Commerce stream. Marathi, Hindi, English, History and Economics subjects are available for acquiring B.A. Honor Degree of Shivaji University, Kolhapur. Business Regulatory Framework, Business Environment, Co-operation Development, Modern Management, Advanced Accountancy subjects are taught in commerce disciplines at degree level. There are total 25 staff both teaching and non-teaching. Gymkhana, NSS and Library are major facilities of this institute.

Library houses 10201 resources including general, reference and text books. Out of them 2486 books are references and 6758 and 957 books are text and general respectively. 21 journals and 21 magazines are available with different subjects. It makes available 11 newspapers to their patrons. There are 93 CD/DVDs, 24 Audio-Videos files and 30 software collected and preserved for their users. Library also purchased 12 geographical tools and made available to their students and staffs. Apart from these resources, library provides the 4.12.096 online resources in linking with National Digital Library. Electronic based service is more popular among the user community due to the proper guidance and well equipped library facility. Each and every student has provided the User name and Password of N-list service. Excellent reading room facility is provided by this library. More than 50 students can seat in this room and separate space is provided for boys and girls. Library is fully automated and presently entire house keeping activities are done through computer system. There is some collection preserved in digital form such as question paper of B.A. ,B.Sc. and B.Com programmes, Important and valuable report of library and college management, research papers of faculties etc. (www.pskcollegedeur.ac.in)

3.23.27 Shankarrao Jagtap Arts and Commerce College, Wagholi

Koregaon Education Society has established the senior college named Shankarrao Jagtap Arts and Commerce College, Wagholi. It imparts education in Arts and Commerce stream with seven departments at graduation level. There are more than five hundred students who take education in both the streams. Library of this college fulfills the users' needs in providing various resources such as bibliographic resources, encyclopedias and other references. There are 4700 books which are purely latest versions. Library has employed the MKCLs software for automation of library and at present, it became fully automated. it provides the software based services and electronic resources through Internet to their users. It has total collection of resources of 8543 and out of them 2086 books are with references and remaining are general and text books. It facilitates various library and information services to their readers such as reference, periodical, cataloguing, printing and reprography services etc. book bank service is more popular among the user community due to its free of charges basis. There is only three staff working including the librarian in this library organization. Library has moved towards the electronic resources and provides the e-books, e-journals, ETDs and subject gateways etc. in linking with library portal. In

this portal there are Marathi Mati, Marathi free based recourses that hang to the library portal. It has designed the library websites and provides the ICT based resources and services to their readers through (www.sjaccwlibrary.weebly.com).

3.23.28 Arts and Commerce College, Vaduj

The Vaduj is tehasil place in Khatav Taluka. The Institute is started in 1995 by Chhatrapati Shivaji Shikshan Mandal Vaduj. This higher education system provides education from primary to graduation level and its all branches are together in single campus. In admission process, this education system follows criteria of merit basis. It imparts higher education at graduation level through Arts and Commerce College Vaduj. In keeping view of parent and students demand of science education, it has started the science faculty from 2017-18 on the permanent non grant basis. Institute offers education in the subject of Marathi, English, Hindi, Geography, History, Sociology, Economics, Political Science and commerce. It facilitates the various services to students that are Sports, NSS, and Library etc.

Library lending services to readers such as book borrowing, newspaper clipping file, previous question paper, inter library service, bibliography, reference and referral etc. book bank collection is preserved by library and it provides to the needy and economically affected students for the one year validity period. Only T.Y. B.A. and B.Com students are allowed an Open Access System for location and searching the information recourses. Library collection is small with 9948 books. Out of 9948, 500 books are regarding competitive examinations. There are 125 encyclopedias and 75 dictionaries available in various subjects. There are 23 journals and magazines subscribed and 7 newspapers made available to users for getting current information and update knowledge. There is reading room adjusted within the library. In keeping view of digital environment, it has purchased 50 CD/DVDs and e-books, e-databases are provided through the N-List programme. Library is open from 8.00 a.m. to 4.00 p.m. (www.accvaduj.org)

3.23.29 Balasaheb Desai College Patan

BDS College is established in 1969 at Patan by Kokan Education Society to cater the higher education needs at graduation as well as post-graduation level. At the beginning, it has started Arts and Commerce streams and later in 1992, science stream has been opened. It provides the support services such as social work, lead college, staff-student welfare, placement cell, competitive exam center, NCC, sports, hostel

and library. It has collaborated with various agencies and academic center under the MOU (Memorandum of Understanding Scheme) such as MOU with colleges, laboratories, co-operative banks and agro industries etc. It is excellent academic center and achieved awards in Aviskar research competition. College magazine Daulat has got five awards till today for the excellent articles published within it. 246 research papers have been published by faculties in various topics. In this way, it has been awarded A Grade by NAAC.

The library and information center of this college provides valuable information resources to their user community. It is a large library occupied with 3600 sq. ft. Library has made various services information sections within it such as Internet, Electronic information network, Book bank Unit etc. library has used DDC classification system. The library advisory committee has established including seven members and work as guide for growth and development of library. Annual library calendar has been designed for planning of library work and library functions are being performed as per calendar. There are total 28705 printed books and 56 periodicals available in the library. CD based resources are purchased by library that is 150. There are 1389 back volumes are available. There are 1389 bound volumes preserved. 10 ETDs and 05 Manuscripts are kept by it. Ten newspapers are made available for reading the current information within library. 10 ETDs and 05 Manuscripts are kept by it. Ten newspapers are made available for reading current information within library. It also offers the N-List based resources to their users. Library provides print as well as digital resources and services such as E-database, new arrival, inter library loan, public movement library, study room, OPAC, user orientation course, reprography, M-OPAC, mobile library, career guidance and earn and learn scheme. Library is fully automated and numbers of services are provided to users with the help of computer and technology. (Balasaheb Desai College Prospectus, 2017-18)

3.23.30 Sardar Balasaheb Mane College, Rahimatpur

Panchakroshi Shikshan Mandal Rahimatpur opened the graduate degree college in 1992 to impart the B.A., B.Com and B.Sc. level education in rural area. At the beginning of college opening, it was single faulty with Arts stream and later it has been approved the commerce faculty on non grant basis. In 2017, institute has started the science faulty on permanent non grant basic. Today there are more than 1000 students learning in different streams. College offers graduation level special subjects

that are Hindi, Marathi, English, History, Geography, Sociology, Economics, History, Accountancy, Marketing, Physics, Chemistry and Botany. Academic center has started the Bachelor of Business Administration (BBA) programme. It has started the various certificate courses such as basic computer; tally etc. The post-graduation education in history made available on regular mode affiliated to Shivaji University, Kolhapur. Distance education is also opened. The institute is collaborated with Bhai Academy, Pachagani under MOU scheme. There are excellent facilities such as nature club, language circle, talent search, Vivek -Vahini, yoga course etc. presently; the institute is renamed as Sardar Balasaheb Mane College, Rahimatpur.

Library organized the 16580 total collection and entire resources are classified by DDC. Lib Man Library management software is applied for automation and now provides the software based services such as acquisition, cataloguing, membership, book issue-receive etc. Internet and OPAC facilities are set up with LAN systems. There are more than two thousand books which are in the library. 27 periodicals are subscribed and ten newspapers are available. 267 CD/DVD form resources are purchased by library and provide the electronic based resources to their readers. More than 100 books are circulated daily. Library as well as reading room is open between 10.00 a.m. to 5.30 p.m. except Sunday and other holiday. Book bank and open access systems are popular and it is an important feature of library. E-books, e-journals and ETDs are provided through the N-List and Shodhgangotri database from INFLIBNET. (Sardar Babasaheb Mane Mahavidyalaya SSR Report 2013-14)

3.23.31 Shreemant Bhaiyyasaheb Rajmane College, Mhaswad

Mhaswad place is located in Man Taluka on the Satara- Phandarpur Highway which is fully drought affected area. And in this area there was no facility of higher education before the period of 1997. The need of higher education was considered by Phaltan Education Society and established the senior college at Mhaswad in 1997 on the non-grant basis affiliated to Shivaji University, Kolhapur and it has become grantable since 2000. At present, more than 1200 students are learning in rural place at post-graduation level. Now there are 40 teaching faculties working including the contract basis teachers. The institute offers education in Arts, Commerce and Science streams. It has opened the post-graduation in history subject on regular mode. College provides extra activities and supportive services such as Health care center, Gymkhana, Computer lab, laboratories, canteen and library.

Library provides most of the traditional based printed resources due to the inadequate facilities and infrastructure. Now, there are 12065 books available including text, reference, reports etc. There are least numbers of CD/DVD resources available. But Library is providing free resources through Internet connected computer and librarian has made awareness regarding e-resources and user mobile application for academic purpose. Library system has applied both open and closed access systems. Faculties and post graduate students are allowed to open access system and remaining students take books and other materials through closed system. Library provides the two borrower cards to each students and extra borrower card is provided to physically disabled students as well as scholar students. Each academic year, Library spend the amount on the periodicals very least due to the budget constraint. There are 12 periodical and 05 newspapers made available to their readers. Reading room facility is adjusted in the corner of stack section where seating intake capacity is up to 20 students. Apart from these regular functions, it conducts and celebrates Dr. Ranganathan Jayanti and Book exhibition, e-resources acquaintance lecture and created the study culture among the user community. (Shriman Bhaiyasaheb Rajmane College Prospectus, 2016-17)

3.23.32 Arts and Science College Mayani

The single Arts stream grantable college is established in 1991 by Mayani Bhag Shikshan Prasarak Mandal, Mayani. It started science stream on permantely non grantable basis from 2016. There are five departments available for graduation level education in Marathi, English, Economics, History and Politics. Today there are 450 students taking higher education through this institute. Fifteen teaching staff is appointed on permanent basis. It provides sports, cultural and social activities and services to their students. National Service Scheme is actively run by this institution.

Library collection is small with 7672. It has preserved the 18 CD/DVDs and subscribed the 24 journals and magazines regarding arts and science disciplines as well as competitive examination oriented. Ten newspapers are provided to their study room for reading the news. Library provides Internet facility, Printing and Xeroxing facility to their students and faculties with minimum affordable charges. Digital resources are made available through N-List programme as well as links have been provided to the e-resources such as National digital library, Indira Gandhi Open University free based resources, Jstor, Directory of Open Access Journals etc. Library

organizes the User orientation programme and provides the valuable information regarding utilization of mobile application and valuable digital resources which are freely available on the Internet. Book bank facility is provided to those students who are economically backward. Strength of this college is more of female category than male students. In such a way, College is located at rural place and still provides excellent education at graduate level. (Mayani College Prospectus, 2017-18)

3.23.33 Arts, Commerce and Science College, Pusegaon

The institute is situated at Pusegaon in Khatav Taluka and opened in 1994 by Rayat Shikshan Sanstha, Satara. In this institute, there are Marathi, Hindi, English, History; Economics subjects available at Third Year level for acquiring the degree from Shivaji University Kolhapur. Apart from this academic programme, this reputed institute conducts various programmes but cultural activities are very excellent among them. SEVAGIR MAHOTHSV of Pusegaon Yatra regularly organizes youth festival programme which are totally organized under the guidance of this higher education system.

It has also started science stream on permanently non grant basis. College has made available education in Hindi subject for post-graduation. Fashion design, Arts and culture, tally, accountancy and basic computer etc. short term certificate based courses are provided by this college with affordable fees. There are more than 800 students taking education in different disciplines. NSS, IQAC, cultural, library and Sport centers perform with excellence. Library has built up separate zone and there are made various sections such as Text, Reference, Periodical, Newspaper, e-resources zone, Internet and printing center, Rare and old valuable book section, Back volume Unit etc. The Library has used the Libreria Software for automation process and now it has status of fully automated library and delivered the borrowing resources, OPAC and user tracking services on computer. It has developed the print and digital resources in keeping view of ICT era. N-List database is made available for accessing online and offline resources to their resources. There are now 17689 books and 29 periodicals available. 67 CD/DVD form resources are purchased and made available various e-resources with arts, Science and Commerce disciplines. Book circulation, book bank facility, special service to disabled students, reference and digital based resources are the major services of this information center. Reading room is open for 24*7 round the clock basis. (Arts, Commerce College, SSR Report, 2012-13)

3.23.35 Arts and Commerce College, Nagthane

Arts and Commerce College of Nagthane is one of the colleges which come in Satara Taluka. It is permanently affiliated and grantable college established in 2000 by Swami Vivekanad Shikshan Sanstha, Kolhapur. The college authority made systematic plan for each academic year to conduct the upcoming programmes and activities. Admission process is strictly followed as per the guidelines of Shivaji University Kolhapur and Government of Maharashtra on the merit basis as well as reservation policy. The Institute has two streams: Arts and Commerce. Marathi, Hindi, Economics, History and Commerce subjects are taught as special subjects to acquire the graduate degree. Presently, there are more than 1000 students learning from remote and rural area. Apart from this regular education, institute offers job oriented value added courses such as the spoken English, tourism; basic computer etc. Certificate courses are provided to their students with no profit based fees.

It is said that Library is the Soul and Core Part of any education system. In keeping view of this thinking, library of this college has collected and preserved various types of print and non-print based resources. Many type of services and facilities are provided to their user communities by this library such as book lending, New arrivals system for newly added title in the library, Newspaper clippings, Rare books are preserved and displayed at visual place, Internet service, ICT based service, User awareness programme, Information Literacy course, E-resources facilities etc. Rural and remote areas students are mostly benefited by these valuable services. Actually, It has housed less number of book collection that is 16726 but in that collection it has taken care regarding variety of resources. There are more than 270 CD and DVD based resources available including donated books. Study room facility is made available to their students in separate division as like study room for boys and girls. It is kept open minimum for 8 hours. Periodicals and newspapers are made available with separate sections where students from any class and year can enjoy them. Library has implemented both open access and closed access system. Open Access system is made open to Third year students and faculties only. In this way, this Institute is playing significant role in disseminating services as per the needs of students. (Arts, Commerce College Prospectus, 2017-18)



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Chapter - 4**DATA ANALYSIS AND INTERPRETATION****4.1 Introduction**

The purpose of the present research study is to find out the different use of electronic resources among the user communities in the Arts, Commerce and Science Colleges in Satara district affiliated to Shivaji University, Kolhapur. The researcher attempted to investigate the use of both online and offline electronic resources by fulltime faculty and postgraduate students of the Arts, Commerce and Science Colleges.

In this study, Researcher has designed the structured questionnaire including qualitative and quantitative based questions for collecting the required data from the restricted population of the present study. Data is collected from the fulltime faculty, PG students and librarians of colleges from Satara district. Data is collected through various ways like personal visit to colleges, by sending the questionnaires through postage, personal interview, E-mails. In the present research study, questionnaire is prepared separately for user community and librarians. Researcher had distributed 842 questionnaires among fulltime faculty, PG students and librarians of the Arts, Commerce and Science Colleges in Satara district. 707 questionnaires are returned back out of 842. Out of 707 questionnaire, 42 questionnaires were with mistakes, and incomplete and these questionnaire are rejected and only correct, valid 665 questionnaires are selected for the present research study. The collected data has been organized, classified, coded and tabulated the view of from data analysis. Data has been analyzed using MS-word, Excel and other tools. The present chapter explains in details the analysis and interpretation of responses of fulltime faculty, PG students and librarians' opinion from Arts, Commerce and Science Colleges in Satara District. The present study has used descriptive survey method. The collected primary data processed using appropriate research methodology, tools, techniques, sample and population which are described as following.

4.2 Research Methodology

Research is a systematic process used for generalization and formulation of theory. It is a scientific and systematic process which includes the formulation of problem or query, detailed study of existing specific problem oriented literature, development and designing of objectives and hypothesis, determination of research design plan, formulation of population and sample design, collection of primary data, pilot study, analysis and interpretation process, drawing conclusion and findings, hypothesis testing and so on. In this way, researcher tries to find answer to the research question. For doing successful research work there is need of proper and accurate research methods, tools, techniques, sample design etc. There are many types of research such as Descriptive research, Analytical research, Applied, Fundamental, Qualitative and Quantitative research, etc. The present study has used descriptive research method and data has been collected for findings of the research problem using survey method. According to Burns, “Research is a systematic Investigation to find answer to a problem”. It means research is systematic and proper procedure which plays a significant role among entire process in successful fulfillment of research work. Nobody can move towards research solution without appropriate research methodology and its tools and that is why it will be useful for getting the answers of the research problems.

The present study focus on the use of electronic resources by Arts, Commerce and Science College Libraries in Satara District. The researcher has used survey method for this study. The study is concentrated in keeping view of objectives for getting answer of the research problem and researcher has included questions within questionnaire regarding library resources, facilities, services etc. and their use among fulltime faculty and postgraduate students of the colleges. Researcher has collected data regarding library facilities and services formulating a separate questionnaire for librarian community. For present study, following research methodology and its relevant tools and techniques have been used.

4.2.1 Variable Used for the study

In the present study following four variables are used which are quite independent in nature:

1. Fulltime faculty
2. Postgraduate Students
3. Librarian
4. Stream: Arts, Commerce, Science colleges

4.2.2 Operational definition of the study

1. **Electronic Resources:** “Electronic resources are the resources made available in the form of non-print mode which can be accessed both online and offline with the use of electronic devices”.
2. **Faculty:** In this study, the faculty refers to the teaching staff from the select affiliated colleges to Shivaji University, Kolhapur and in the jurisdiction of Satara district.
3. **Students:** As the study intends to focus on the use of electronic resources by college students, the researcher has selected PG students intentionally from the select colleges from Satara district.
4. **Librarian:** The main thrust area of the study is to explore the electronic resources and services provided by the libraries from the select colleges which provide education in the streams such as Arts, Commerce and Science. The librarians of these colleges have been chosen as the respondents for collection of primary data.
5. **Arts:** The word ‘Arts’ refers to the college in which humanities, fine arts and social science subjects are taught.
6. **Commerce:** It refers to the colleges that impart knowledge in the subjects of business, management and commerce.
7. **Science:** The word Science is used for the colleges that provide knowledge to the students in the subjects of science discipline.
8. **Study:** The word ‘Study’ refers to the problem to be investigated through this research.

4.2.3 Selection of Sample

Selection of sample from the defined population is important part of any research. The samples are selected to present study as per the Morgan table formula. In this present study, 665 respondents are selected for further analysis and interpretation process for drawing the findings of research study. Selected samples are categorized as 279 from fulltime faculties, 351 respondents from post graduate students and 35 from librarian category.

Researcher has distributed questionnaire to 42 colleges visiting physically as well as via postage and e-mail. He tried many times via visiting to faculties, students, librarians and telephone regularly, mailing about reminder etc. for getting filled questionnaire for research purpose. There are 42 Arts, Commerce and Science Stream Colleges in Satara district. Researcher has distributed questionnaires to all these 42 colleges but the correct and errorless response got from only 35 colleges. So 35 colleges are taken for the present study. For this present study, data is collected during the academic year 2016-2017.

The primary data is collected through two types of questionnaires that are questionnaire A is used for librarians and questionnaire B is used for users' category including only permanent fulltime faculties and postgraduate students are selected. Researcher has assumed that Postgraduate students have acquired more skills for using electronic resources than Undergraduate students; therefore only postgraduate students are selected to this present study. Authentic statistical information is achieved regarding faculties and post graduate students from authentic source of www.unishivaji.ac.in through statistical information section of Shivaji University, Kolhapur as well as researcher has referred and accessed required data from Joint Director Kolhapur websites during the period of 2016-17. This data is presented at a glance as following.

A) Total fulltime faculties (permanent) and post graduate students in 2016-17

1. Faculty- 986
2. Post graduate students- 3822

Therefore, According to sample size determination table of Krejcie and Morgan table, sample size has been decided as below. (<https://home.kku.ac.th>)

Table No. 1
Table of Krejcie and Morgan for Determining Sample Size

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size.
S is sample size.

Source: https://home.kku.ac.th/sompong/guest_speaker/KrejcieandMorgan_article.pdf

As per Morgan table, samples are selected from whole population as per following

a) Fulltime faculty (permanent) population-986

Sample -279

b) Postgraduate student's population-3822

Sample-351

4.2.4 Pilot Study

Pilot study is important for testing the questionnaire whether it is correct or is having error. And hence researcher also applied such type of study in determination of 50 respondents from fulltime faculties, post graduate students and librarians from Dhahiwadi College, Dhahiwadi and Sardar Mane College, Rahimatpur. After collecting the primary data through questionnaire, investigator has removed errors within it and consulting with guide as well as expert in library and information science questionnaire has been finalized for further research process.

4.2.5 Use of Simple Random Sampling Techniques

There are many sampling techniques available for collection of primary data and for this present study researcher has used simple random sampling techniques and required data has been collected randomly from colleges selecting the respondents as fulltime faculty, postgraduate students and librarians of Arts, Commerce and Science colleges in Satara district affiliated to Shivaji University, Kolhapur.

4.2.6 Sample Population

Table No. 2

Sr. No.	Category	Total Population	Sample Selected * as per the Morgan table
1	Faculty	986	279*
2	PG Student	3822	351*
3	Librarian	35	35

Above table indicates that, the total population of the faculty of all Arts, Commerce and Science colleges are 986 but as per the Morgan table 279 samples are selected. In addition, as per the Morgan table 351 PG Students have been selected out of total population 3822 and 35 Librarians have been chosen for the present study.

4.2.7 Data Collection Tool

Researcher has applied the two types of questionnaire i.e. Questionnaire for Library users and librarians which is used as separate for respondents as fulltime faculty, PG students and Librarian and questionnaire was made separate to librarian for getting the required information about library. Good and Hat explained the meaning of questionnaire as, “In general, the questionnaire refers to a device for securing answers to questions by using a form which the respondent fills himself”. In this way questionnaire is an important tool for collecting the required data from respondents. In keeping view of respondents, researcher has made questionnaire in bilingual mode that is Marathi as well as English.

4.2.8 Sources of Data

Required data for this present study has been collected from primary and secondary sources. Primary data is collected through the observation method while

researcher personally visited various libraries as well as primary data is collected through questionnaire tools. Apart from the primary data which was essential for the present study that is secondary data is collected from books, journals, thesis, published and unpublished research reports and various websites.

4.2.9 Statistical tools and techniques used for the present study

Researcher has applied various tools and techniques for this present study. Questionnaire is an important tool for collecting the primary data from respondents. So, questionnaire is prepared with the guidance of research guide and in consultation with Library science experts. This tool is made in user friendly bilingual method (English and Marathi). Two questionnaires are made separately such as Questionnaire 'A' for Librarian and Questionnaire 'B' for User which includes only permanent faculty and post graduate students. The data collected for the study was analyzed using Microsoft word, Excel, Statistical Package for Social Science (SPSS), Percentage, tables & diagrams, etc.

4.2.10 Style manual used

Researcher has used APA style manual (6th edition) for citation of references in this present study.

4.2.11 Distribution and response to questionnaire

Researcher has distributed 350 questionnaire among faculty and 310 are returned back with response rate of 88.57%. Further, 450 questionnaire were distributed among PG students and 355 are returned back with filled questionnaire with rate of 78.88%. Moreover, 42 questionnaire were distributed among librarians and received back 42 with response rate of 100%. Investigator has sorted out all filled questionnaires and found that some are incomplete and with error in number 31, 04 and 7 among faculties, PG students and librarians respectively. Therefore, these 42 questionnaires are not selected for present study. Only 279, 351 and 35 correct questionnaire from faculties, PG students and librarians respectively are selected and analyzed present study. In this way, total 665 questionnaires are finally selected from faculties, PG students and librarian category for this study.

4.2.11.1 Stream wise Nature of colleges

Table No. 3

Sr. No.	Stream wise Nature of Colleges	Total Number of Colleges	Chosen Colleges for Study
1	Art	1	1
2	Commerce	1	1
3	Science	3	3
4	Art and Commerce	14	11
5	Art and Science	1	1
6	Art, Commerce and Science	22	18
Total		42 (100%)	35 (83.33%)

Above table No. 3 indicates the Arts, Commerce and Science Colleges in Satara District have various streams. There are 3 colleges with science streams only and one college is with Arts and one with Commerce stream as well as another one is including both streams i.e. Arts and Science. 14 colleges run both streams such as Arts and Commerce. Moreover, 22 run colleges three streams i.e. Arts, Commerce and Science. In this way, there are 42 colleges with run include or exclude Arts, Commerce and Science streams in Satara District. Researcher has distributed questionnaire to all these 42 colleges but the correct and errorless response got only 35 colleges. So, 35 colleges are taken for present study.

4.3 Analysis of data

The analysis of data is basically based on the research activities carried out through structured questionnaire covering different areas and most of the respondents belong to various levels, such as:

- 1) Librarian of Arts, Commerce and Science College in Satara district.
- 2) Users of Arts, Commerce and Science College in Satara district.

4.3.1 Analysis and Interpretation of questionnaire 'A' (librarian questionnaire)

In keeping view of objectives, researcher has designed questionnaire under the guidance of research guide and expert in library and information disciplines. Researcher has made two types of questionnaires. Out of two one questionnaire is for librarian of Arts, Commerce and Science Colleges and another is for library users of ACS colleges in Satara District which includes only permanent fulltime faculty and post graduate students.

Questionnaire 'A' is formulated for librarian community which includes two sections. The first section is relevant to general information of institutions and library organization which consists of five questions from Question No. 1 to 5. The second Section of questionnaire consists of study oriented information through questions and in this part 24 questions are designed from question No. 6 to 30. In this way, questionnaire 'A' includes total 30 questions.

4.3.1.1 SECTION I: General Information of Institution

Ques. No. 1: Name of the College, Website and Phone number

The researcher has asked above question to librarian category with an intention to update information about institution name, website and contact number which is at present situation. In this regard, researcher has got information through questionnaire and presented as per following table and figure.

Table No. A-1
College Status with Websites and Contact

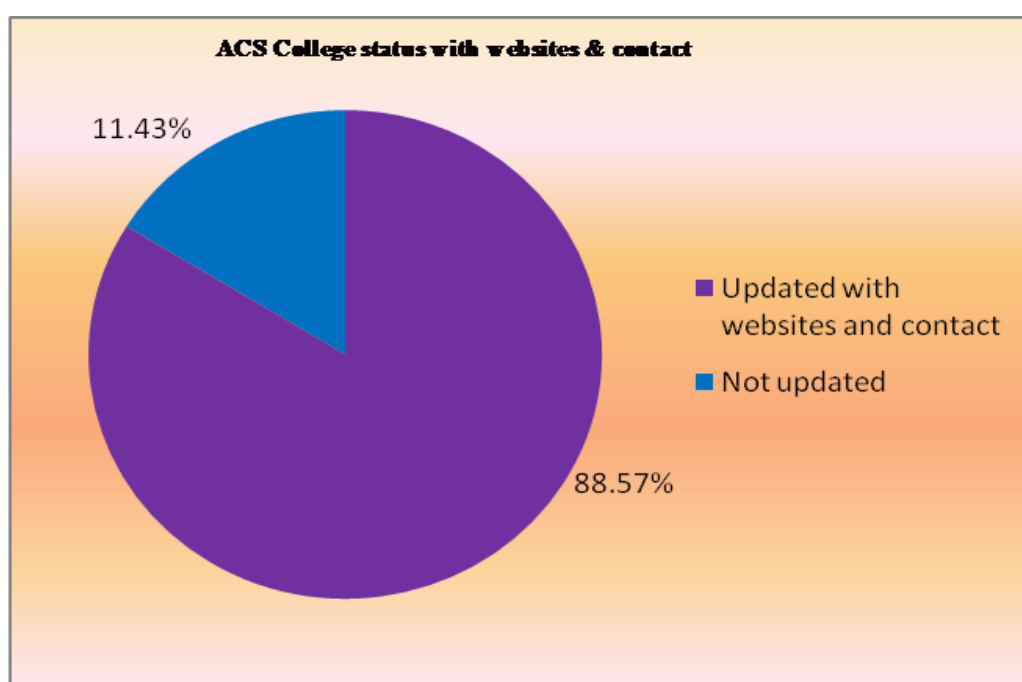
College status with websites	Total No.	Percentage
Updated with websites and contact	31	88.57%
Not updated	04	11.43%
Total	35	100%

(ACS: Arts, Commerce and Science College libraries)

Table No. A-1 explained the present research study position of academic institutions in Satara District. Out of 35 colleges, 31 have designed and created their websites and current contact number which are important for any academic

community for getting information from global corner in this digital era. But still there are few colleges which could not complete this need. This Study clearly indicated that Arts, Commerce and Science colleges from Satara districts have moved towards ICT environment which is need of time in this electronic age. 88.57% Arts, Commerce and Science institutions have created their updated websites and contact number and remaining 11.43% are away from this environment. This platform is important in view of library and information science for providing and displaying current information among user community. Following Graph no A-1 shows the current picture of academic institution.

Graph No. A-1



Observation

This Study observed that Arts, Commerce and Science colleges from Satara district have moved towards ICT environment which is need of time in this electronic age. Majority institutions with rate of 88.57% have created their updated websites and contact number and remaining 11.43% are away from this environment.

Ques. No. 2: Name of the Librarian and their Gender wise Information.

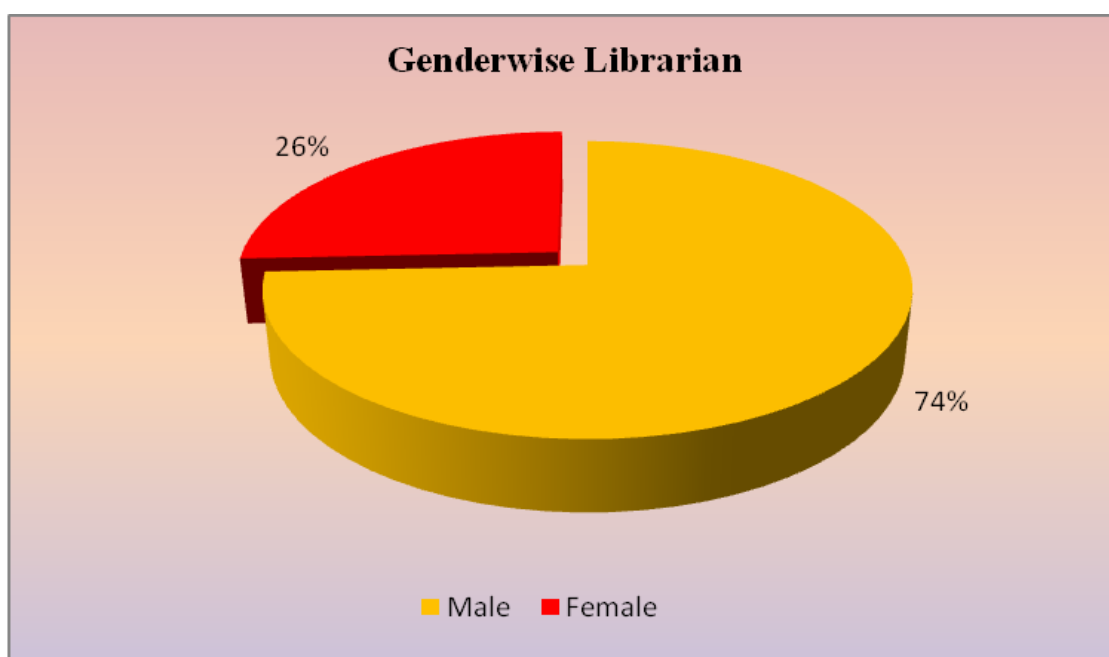
The question No. 2 was asked to librarian community to know the data or information as per gender wise. These respondents have opined through questionnaire and presented by researcher in the form of table and graph as per following.

Table No. A-2
Gender wise librarian category in Satara District

Gender	Total	Percentage
Male	26	74%
Female	09	26%
Total	35	100%

Table No. A-2 presents the picture of gender wise librarian community of college library in Satara District. The Researcher had circulated 42 questionnaires among librarian community. And only 35 were selected for analysis and remaining were rejected due to human error, incomplete and invalid reason. The investigator has attempted to analyze gender wise librarian community distribution among them and study reflected that majority community is with male category with rate of 74% (26) and remaining community is from female category that is 26% (09). Following graph no 'A-2' states the proportion of both genders clearly. In this way, the study clearly shows that librarian from male categories are working in more number of Arts, Commerce and Science libraries in Satara District than female librarian category.

Graph No. A-2



Observation

Investigator has observed that majority librarians in Satara District belong to male category with highest rate of 74% and fewest belong to female category with rate of 26%. It means that at present in Arts, Commerce and Science streams male librarian are dominant than female.

Ques. No. 3: Wwhat is the Status of Colleges in Satara District?

There was intention of the investigator to achieve the exact data about ACS (Arts, Commerce and Science) Colleges whether it is under 12b/2f (as per UGC act 1956) or not. The achieved information regarding this is mentioned above analyzed and presented through table number A-3.

Table No. A-3
12F/2B Status of College

Status	Total	Percentage
Under 12B/2F	35	100%
Not Under 12B/2F	0	0%
Total	35	100%

Table No. A-3 indicate that the status of colleges which have been selected for study. Out of 35 Colleges, there is entire colleges got status as 12B/2F. It means that total colleges have achieved status of UGC as 12B/2F with rate of 100%

Observation

It is observed that there are total 35 colleges which have achieved status of 12B/2F and it is a good sign that they are able to get financial support and other schemes from higher education system and UGC for enhancement of their academic institutions.

Ques. No. 4: Which types of Colleges are in Satara District?

To know the type of colleges available in Satara District which are relevant stream of Arts, Commerce and Science disciplines. In this regard, the researcher had asked question to librarian community for getting information and the collected data has been presented in the form of table.

Table No. A-4
Status of Colleges

Status	Total	Percentage
Aided	35	100%
Non Aided	0	0%
Total	35	100%

Table No. A-4 states the status of colleges in terms of aided or Non- aided. 35 colleges with 100% having status of aided. Present research study clearly reflected that all Arts, Commerce and Science colleges have got status as Aided.

Observation

Investigator has physically visited colleges for getting information regarding the present research topics as well as primary data is received through questionnaire mode and it is observed that there are total 42 colleges under Satara district and out of them 35 are aided in nature and remaining are non-aided.

Ques. No.5: Establishment of Arts, Commerce and Science Colleges in Satara District

There was intention of the researcher to get the information regarding range of establishment of Arts, Commerce and Science Colleges in Satara District. The relevant information of this question is provided as per following graph and table way.

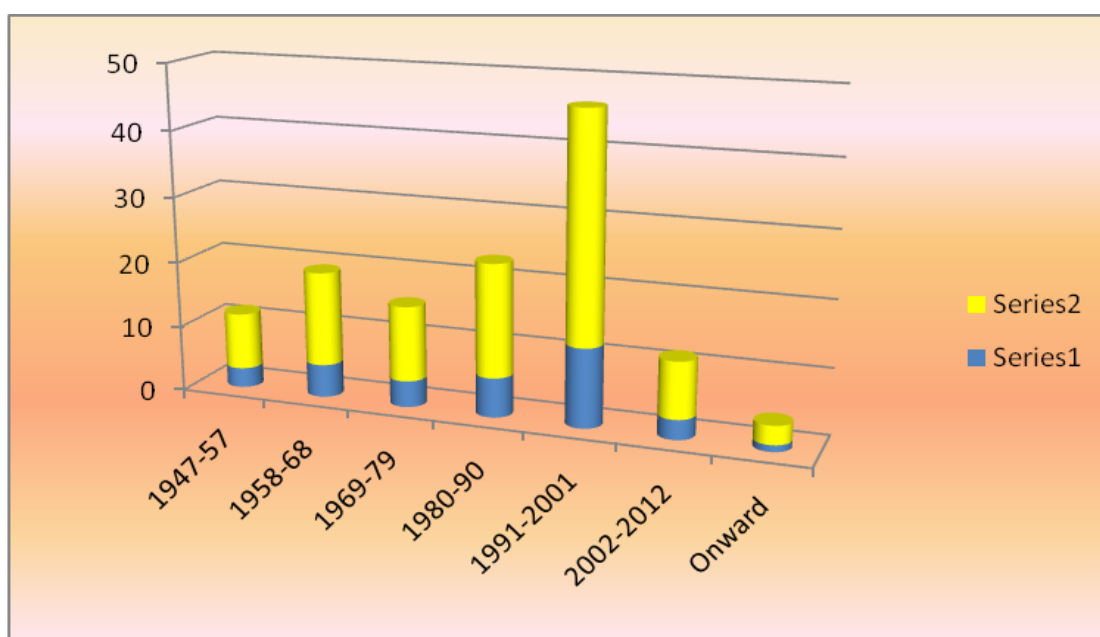
Table No. A-5
Establishment of Colleges

Duration	Total	Percentage
1947-1957	3	8.57
1958-1968	5	14.28
1969-1979	4	11.42
1980-1990	6	17.15
1991-2001	12	34.28
2002-2012	3	8.58
Onward 2012	2	5.72
Total	35	100%

(ACS: Arts, Commerce and Science College libraries)

Present research study identified that ACS colleges in Satara District have been established from 1947 up to 2014. Maximum number of colleges have been opened during the period of 1991 to 2001 with rate of 34.28% and the remaining have been established in number as 6,5,4,3,1 during the period of 1980-90, 1958-68,1969-79, 1947-57 and onward 2012 respectively. In this way, the study indicates that majority colleges have been established during period of 1991-2001 and two colleges are established onward 2012. This picture is presented as following graph no A-5.

Graph No. A-5



Observation

It is observed that Arts, Commerce and Science Stream Colleges have been started in Satara District since 1947 but majority colleges have opened during the period of 1991-2001 that is 12 and least colleges are open onward 2012 that is only two.

4.3.1.2 SECTION-II: Study Oriented Questions**Ques. No. 6: Library Staff of Colleges in Satara District**

What is present situation of library staff of Arts, Commerce and Science stream is important for studying use of electronic resources by user community. Without adequate human resources each and every academic need of users can not be fulfilled by academic libraries. Library staff plays important role in providing electronic resources service. Hence, the investigator has attempted to know the present situation of these streams as below.

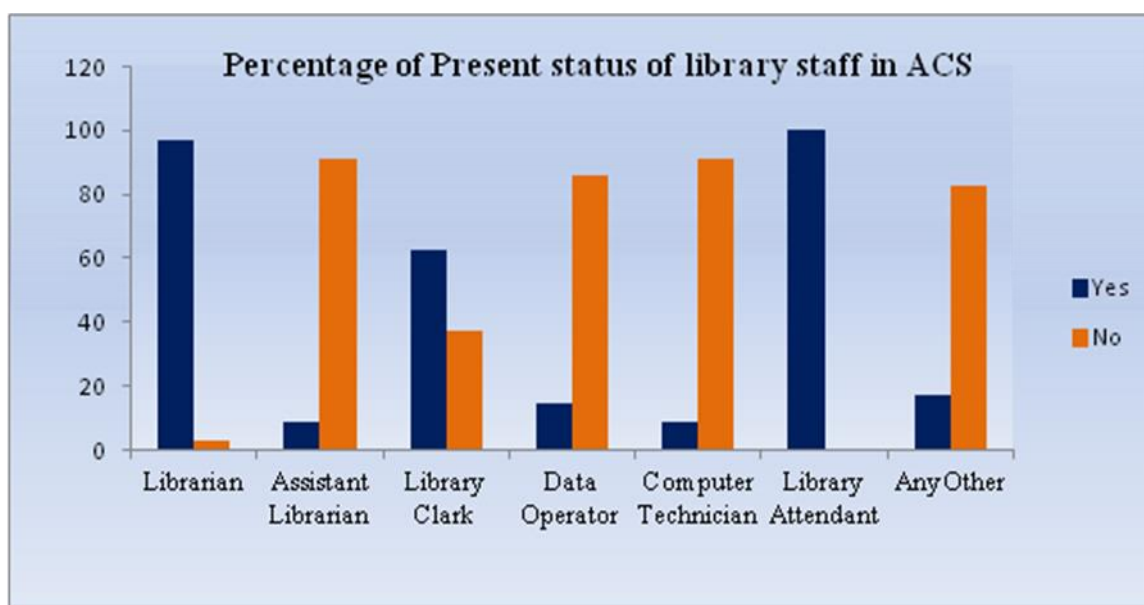
Table No. A- 6
Present status of library staff

Sr. No.	Library Staff	Available Staff		Total
		Yes	No	
1	Librarian	34 97.14%	01 2.85%	35 100 %
2	Assistant Librarian	03 8.57%	32 91.42%	35 100 %
3	Library Clark	22 62.85%	13 37.14%	35 100 %
4	Data Operator	05 14.28%	30 85.71%	35 100 %
5	Computer Technician	03 8.57%	32 91.42%	35 100 %
6	Library Attendant	35 100%	00 0.00%	35 100 %
7	Any Other	06 17.14%	29 82.85%	35 100 %

(ACS: Arts, Commerce and Science College libraries)

Table No. A-6 shows present information about library staff of libraries in Satara District. At present, 97.14% librarian staffs have been fulfilled and when researcher had visited to data collection, it is observed that a single librarian was retired. It means that fulfillment of librarian community is satisfied. Further it is also observed that although there is more number of library attendant's categories available but they are fully aware regarding electronic resources and ICT based services. The study also indentified that the Data Operator and the Computer Technician posts are least founded. Such type of manpower is most important in assistance of automation process; digitization and ICT based services as well as electronic resources environment. The following below graph indicates the present position of library staff.

Graph No. A- 6



Observation

Majority librarians opined with 100% that these libraries are having sufficient staff with library attendant. Maximum librarian's posts have been filled that is 34 out of 35. It is a good sign found that highest number of librarian posts have been fulfilled by Arts, Commerce and Science authority which is important post in learning counterpart for support growth and development of entire education institutions.

But it is also identified that there is poor situation among libraries about fulfillment of other posts except librarian which are necessary for providing better and effective services to their students and academic community in this digital and

electronic resources era. 5% and 3% opinion of librarian indicates that there are number of posts which have been filled up such as data operator and computer technician but still majority numbers with rate of 91.42% and 85.71% have told about poor situation regarding such type of posts which are vacant but are essential for providing e-resource service.

Questions No. 7: Departments Run by Arts, Commerce and Science Streams in Satara District

The researcher has asked question to librarian community for getting the exact information about, which type of departments are run by Arts, Commerce and Science streams with the aim to find out the impact of use of electronic resources as per department wise. Therefore, the investigator has presented departments of colleges as per following.

Table No. A-7
Departments run by Arts, Commerce and Science streams

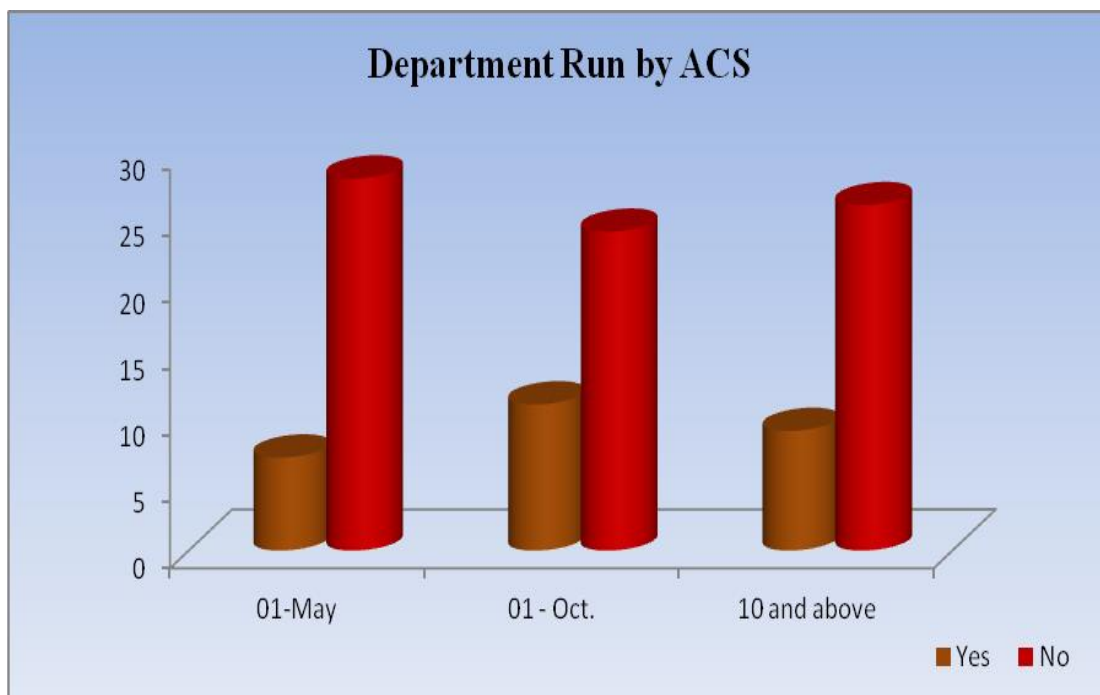
No. of Departments	Available Departments		Total
	Yes	No	
1-5	17	18	35
6-10	11	24	35
Onwards 10	07	28	35

(ACS: Arts, Commerce and Science College libraries)

The above table no. A-7 shows the present picture of departments which are run by Arts, Commerce and Science colleges. The present research study found that 17 colleges have made available 1-5 departments in various subjects for getting education in special subject to graduate as well as post graduate students. Further, it is identified that among 11 colleges, more than 6 and below 10 subjects departments are available in various disciplines. Only 7 institutions run more than 10 departments in various subjects. It means that least number of colleges run more departments and more number of colleges that is 17 run least number of departments.

Present study found the controversy result in view of higher education system that students from each institution are unable to get education as per choice based discipline system due to unavailability of more number of departments. Therefore, majority institutions should move towards establishment of more departments in more number of disciplines as per interest and need of students.

Graph No. A- 7
Department runs by Arts, Commerce and Science Institutions



Observation

The present study observed that 7 institutions out of 35 run more than 10 disciplines 7 institutions out of 35. But majority colleges in number 17 run departments up to 5 disciplines. The study also identified that 11 institutions have made available departments for getting education in 5-10 subjects. It means that still more number of institutions are unable to make more departments available in various disciplines.

Ques. No. 8: Total enrollment of students in last four year

The aim of behind this question is to know the total enrollment of students regarding UG, PG, M. Phil and other of Arts, Commerce and Science institutions in Satara district from 2014 to 2018. This current information has been presented in table and graph mode as per below.

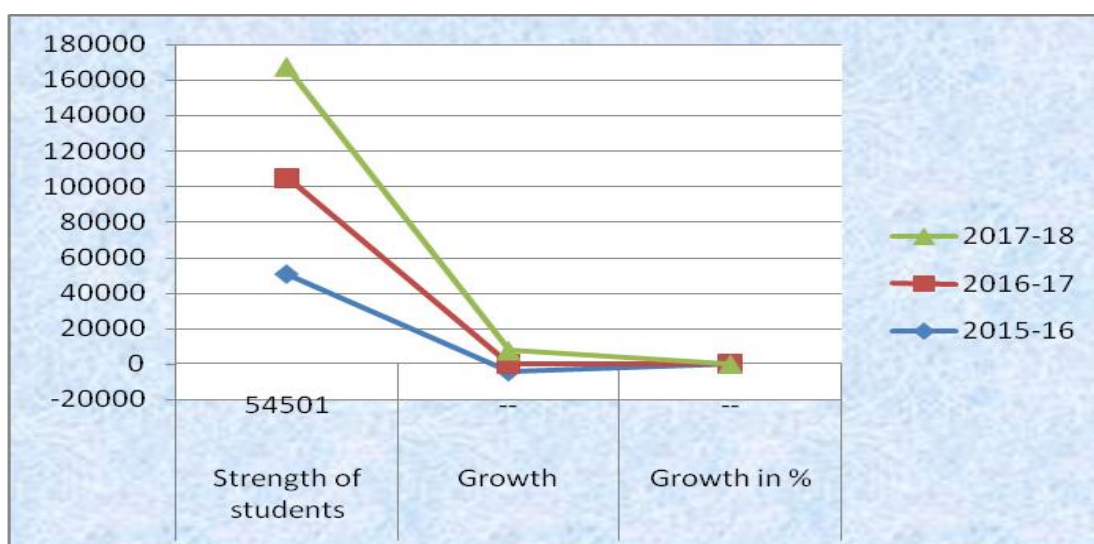
Table No. A-8
Student Strength of Colleges

Period	Strength of students	Growth	Growth in %
2014-15	54501	--	--
2015-16	50318	4183	-7.67
2016-17	54741	4423	8.79
2017-18	62070	7329	11.80

(ACS: Arts, Commerce and Science College libraries)

Above table No. A-8 shows the statistical information of students' enrollment in last four years from ACS colleges in Satara District. In this research study indicates that maximum enrollment is found during 2017-18 and minimum depicts in the period of 2015-16. Following graph shows about it in details.

Graph No. A-8
Student Strength of Colleges



Observation

Through this present study it is observed that majority students enrollment is found during the period of 2017-18 and followed by 2016-17, 2015-16 and 2014-15 years. It means that day by day growth rate of students enrollment is increasing among the Arts, Commerce, and Science stream of Satara District. It is good sign that students are moving toward higher education in more number in this ICT based teaching-learning environment culture.

Ques. No. 9: Total Number of academic staff in Arts, Commerce and Science Institutions

The researcher intended to know the present academic permanent staff of institutions in Satara district and hence he received factual data through questionnaire.

Table No. A-9

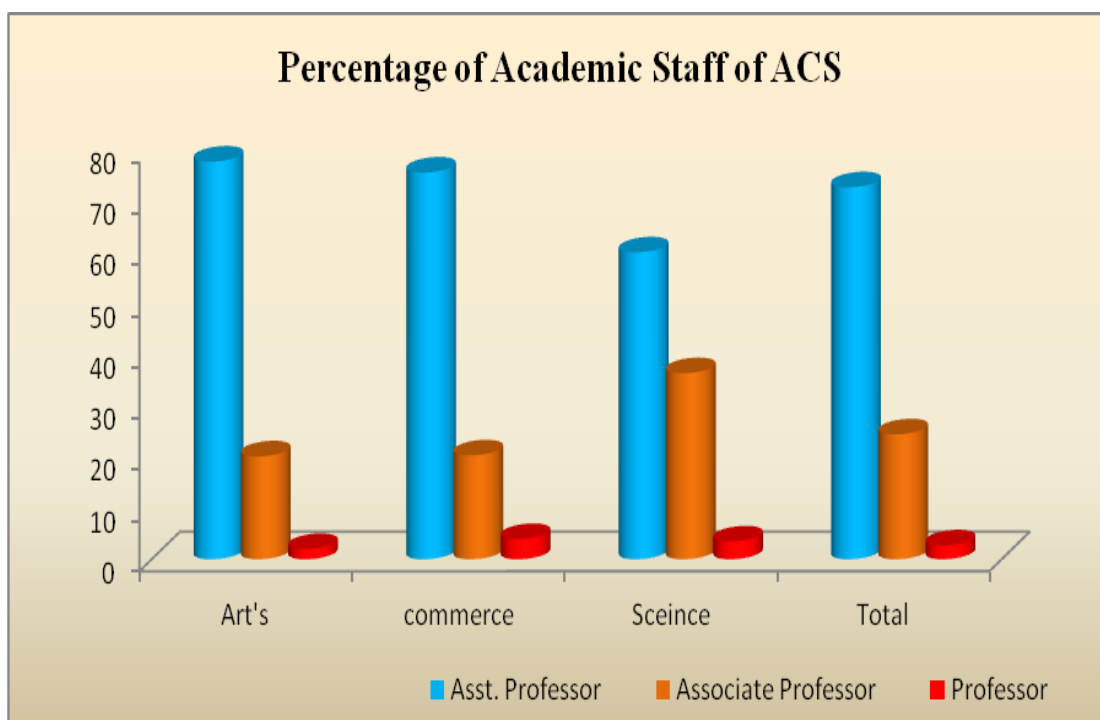
Academic Staff

Category	Asst. Professor	Associate Professor	Professor	Total
Arts	429 77.85%	111 20.14%	11 1.99%	551 55.88%
Commerce	134 75.70%	36 20.33%	07 3.95%	177 17.95%
Science	155 60.07%	94 36.43%	9 3.48%	258 26.16%
Total	718 72.81%	241 24.44%	27 2.73%	986 100%

(ACS: Arts, Commerce and Science College libraries)

Present research study found the statistical information about academic staff which is working as permanently position in various cadre of Arts, Commerce and Science colleges in Satara District. Above table No. A-9 shows this information stream wise as well as professor grade wise. It is identified through this study that, majority academic staff is working as Asst. Professor with the highest rate of 718 and very least number is found among professor category that is only 27. The present research study also reflects that maximum number of staff is relevant to Arts stream which is in number of 551 and minimum number of 177 is from Commerce stream. The researcher has analyzed this data and presented also in graph medium as per following.

Graph No. A-9



Observation

Investigator has studied research problem and it is observed that majority fulltime teaching faculties are working as Assistant Professor Status among entire stream in number of 718 out of 986 and followed by Associate Professor with number of 241 but study realized that fewest numbers are found as Professor Cadre that is 27 only. It is serious matter identified that higher educational qualified staffs are in fewest number and there is need of encouragement for getting higher education for enhancement in qualitative education of higher education system.

Ques. No. 10: Which services are provided by your library?

Library services are important part of any type of academic libraries and in this way, the researcher has asked the question for getting present situation of type of services which has been currently provided by libraries in Satara District. Various types of services have been presented through following graph and table.

Table No. A-10
Services provided by Library

Services	Yes	No	Total
Reference Service	34 (97.14%)	01 (2.86%)	35 (100%)
Bibliographic service	30 (85.71%)	05 (14.29%)	35 (100%)
Indexing service	19(54.29%)	16 (45.71%)	35 (100%)
Abstracting service	14(40.00%)	21 (60.00%)	35 (100%)
CAS service	27 (77.14%)	08 (22.86%)	35 (100%)
SDI service	25(71.43%)	10 (28.57%)	35 (100%)
E-Resources service	28 (80.00%)	07 (20.00%)	35 (100%)
E-Resources (consortia)	20(57.14%)	15 (42.86%)	35 (100%)
Online search service	24 (68.57%)	11 (31.43%)	35 (100%)
Internet	31 (88.57%)	04 (11.43%)	35 (100%)
OPAC	25 (71.43%)	10 (28.57%)	35 (100%)
Any others	1 (2.86%)	34 (97.14%)	35 (100%)

(ACS: Arts, Commerce and Science College libraries)

Table No. A-10 presents the opinions of library community about library services which are provided by ACS libraries. The reference service is provided by majority colleges with rate of 97.14%. Followed by Internet, Bibliographic, E-resource and CAS services are provided with percentage of 88.57%, 85.71%, 80.00%, and 77.14% respectively. OPAC, SDI, Online Search, Consortia, Indexing and Abstracting services are provided with least percentage with rate of 71.43%, 68.57%, and 57.14%, 54.29% and 40.00% respectively. It means that 100% ACS libraries are not providing entire services to their academic community. There is not identified any single library which provides the above mentioned services to their users. Internet, E-resource service, CAS, SDI, OPAC etc. services are important in this electronic environment era but these services are made available by majority ACS libraries to their patrons. Following graph no A-10 shows at a glance the picture of available services among ACS libraries in Satara District.

Graph No. A-10



Observation

Through this present study it is identified that maximum libraries are providing reference services with rate of 97.14% and next prefer Internet based service, bibliographic service, and e-resources etc. with rate of 88.57%, 85.71%, and 80.00% respectively. It is also observed that more than 50% and below 80% libraries have moved towards providing other type of information services which are also important for getting specific information as per the needs of users that services are CAS, SDI, Indexing, consortia based services and OPAC. But their attitude towards abstracting service is found poor which is also important in specific time.

In short, it is observed that reference service in traditional environment is still dominant in this digital culture and there is urgent need of library professionals to provide entire services with highest rate which will be beneficial to users for their growth and development in academic performance.

Ques. No. 11: Does your library have automated?

The researcher wants to know the present situation of libraries in term of automation and hence he has analyzed the received data and showed the picture of automated libraries and not automated libraries in Satara District in the mode of table and figure.

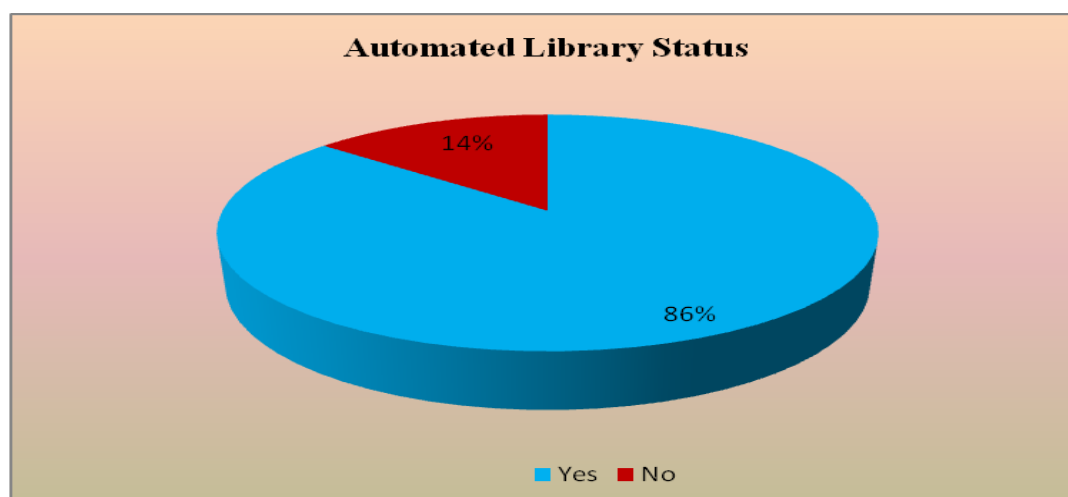
Table No. A-11
Status of Libraries in terms of Automation

Automated Library	Total	Percentage
Yes	30	86 %
No	5	14 %
Total	35	100

(ACS: Arts, Commerce and Science College libraries)

The researcher asked question to know the present status of atomization of ACS (Arts, Commerce and Science) libraries and study shows that, 30 libraries have applied various type of software and became as automated libraries. But still 05 libraries are working with traditional ways in digital environment and have not been automated. It means that majority libraries have got their status as automated and few have not completed this process. It is urgent need to make fulfillment of automation for providing better services to academic community in this electronic era.

Graph No. A-11



Observation

It is observed that maximum libraries from Arts, Commerce and Science stream are automated using various types of library management softwares in large number that is 30 out of 35 and least number of libraries are still away from automation status which is essential for providing quick and timely services to their readers in this electronic resources era. Now, there are many library softwares available with free of cost like KOHA. Therefore, there is urgent need to move towards the automation area of libraries for the fulfillment of required information as per their needs of techno savvy users of Arts, Commerce and Science streams.

Ques. No. 12: Which Software is used for Atomization of Library?

There was intention behind this question in asking to librarian community to know the specific information about software technology which is used by ACS libraries for their automation process. The researcher has presented data about currently used software which is implemented by ACS libraries. The following table No. A-12 and graph No. A-12 indicates the picture of used software.

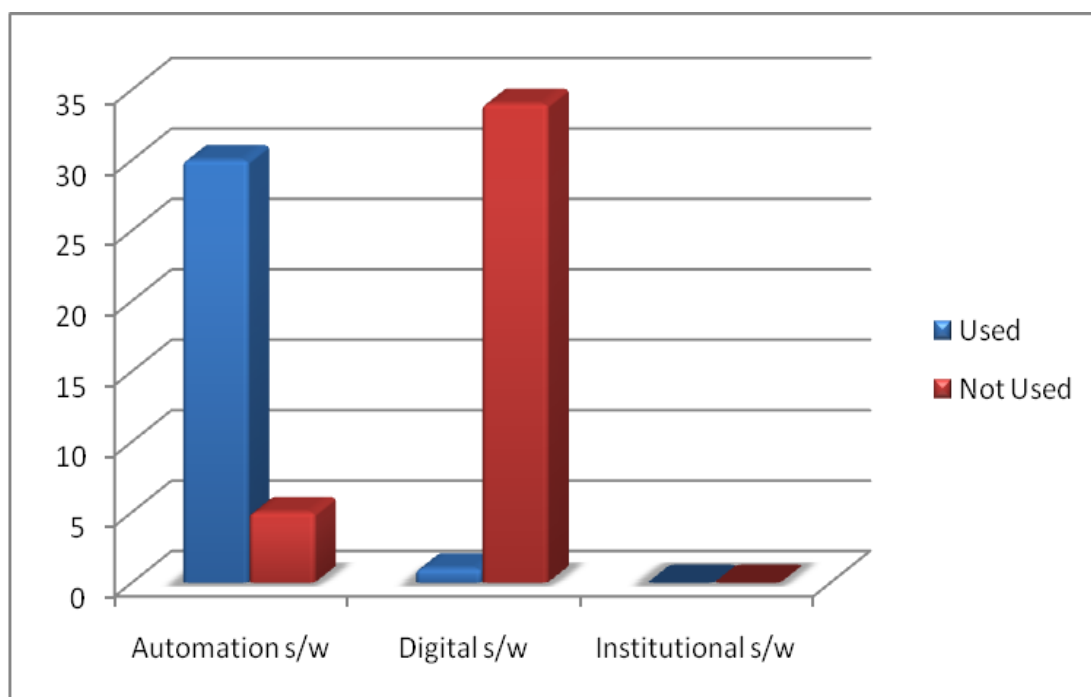
Table No. A-12
S/W Used by Libraries

Type s/w	Used	Not Used	Total
Automation s/w	30 (86.00%)	05 (14.00%)	35 (100%)
Digital s/w	1 (2.85%)	34 (97.14)	35 (100%)
Institutional s/w	0	0	0

(ACS: Arts, Commerce and Science College libraries)

Today's age is known as digital age and hence the researcher wants to know the present situation in this approach of digitization. The above given table indicates that have the most of ACS libraries forms Satara District are using various type of software and moved towards automation of library. The present research study found that maximum libraries have implemented software with rate of 86.00%. But in digitization area the condition is found poor and only a single library used D-space named software for this area. It is also indicates that there is no any library which have developed and used their designed software for automation or digitization. Through this research study it is realized that majority libraries by 13 in number used LIBERIA software for automation process. And remaining ACS libraries have applied various types of library management softwares such as Virdhi, Soul etc. Following graph No. A-12 shows about this picture.

Graph No. A-12



Observation

While doing this present study it is found that majority ACS libraries have applied various types of library management softwares for their automation process with rate of 86.00% and fewest libraries are still away from this automation environment. It is also observed that only single library has applied digital software out of 35 for digitization process. It is urgent need to move towards digitization area apart from automation to Arts, Commerce and Science College libraries in Satara District. Further, it is also found that there is no library found in the Satara District which has created their own institutional software for providing information services to their academic community in this information age.

Ques. No. 13: Is Internet Connectivity Facility available in your Library?

If these libraries make available internet facility to their patrons can enjoy the electronic resources. Offline based resources do not require internet but online based resources cannot be enjoyed without internet facility. And hence, the investigator has asked this question to librarian community. Current factual information is presented as follows.

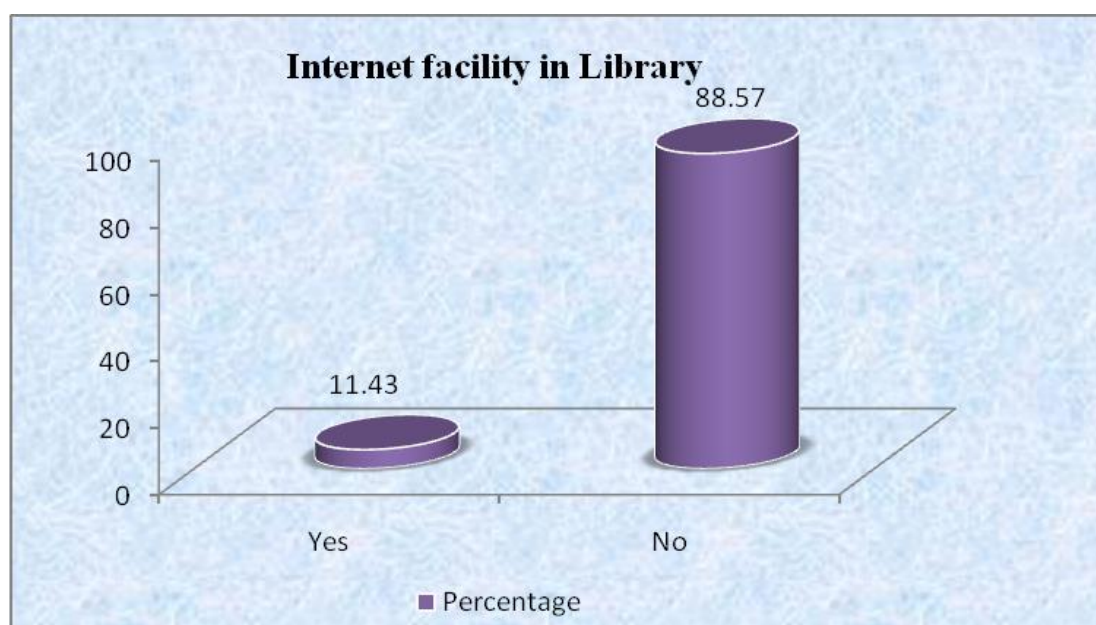
Table No. A-13
Availability of Internet facility among Libraries

Internet Connectivity	Total	Percentage
Yes	31	88.57%
No	04	11.43%
Total	35	100 %

(ACS: Arts, Commerce and Science College libraries)

Above table No. A-13 shows the present situation about availability of Internet connectivity within library of Arts, Commerce and Science Stream of Satara. In this research study, it is identified that 88.57% libraries are having availability of Internet connectivity but still 11.43% libraries are unable to establish Internet connectivity. Today most of the library services are dependent upon Internet connectivity and it is the need of hour to fulfill the changing needs of user in digital environment with the help of electronic resources. The present research study identified those maximum libraries which are 31 in numbers having internet facility and the remaining 04 still could not fulfill this facility in this electronic resources era. Following graph No. A-13 indicates the picture of availability of Internet connectivity among College libraries.

Graph No. A-13



Observation

The present study identified that most of the Arts, Commerce, and Science libraries have made available Internet facility with rate of 88.57% and still 11.43% libraries are unable to make available this facility in their libraries for their users. Urgent efforts should be made by libraries and institutional authority on unavailability of internet facility for fulfillment of recent and emerging academic needs to their readers as well as for enjoying Internet based varied valuable resources.

Ques. No. 14: What is Internet Service System?

The researcher would like to know the utilization of Internet Service System among ACS College libraries. In this regard, he asked the question giving various options and result has been found as follows.

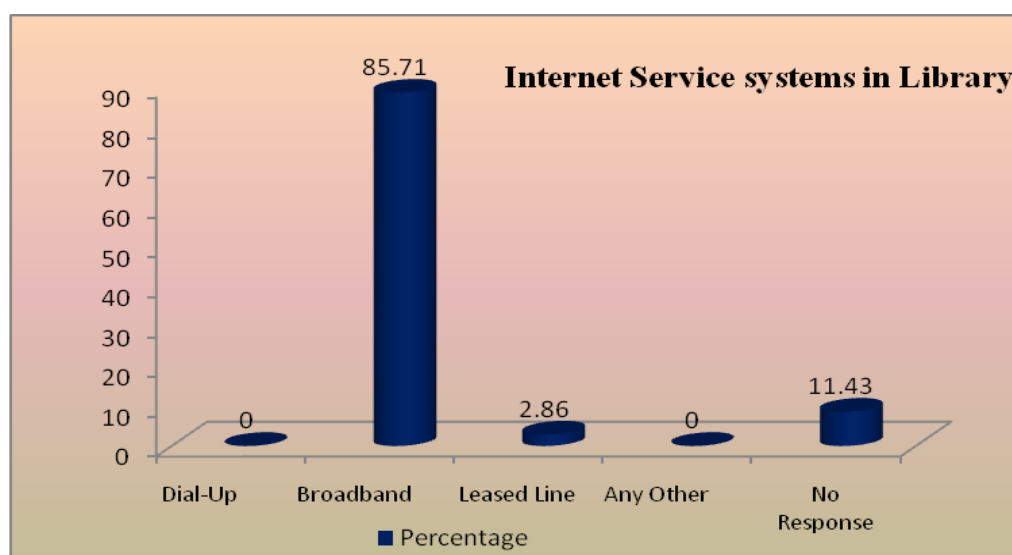
Table No. A-14
Internet Service system

Internet Service system	Total	Percentage
Dial-Up	0	0
Broad band	30	85.71
Leased Line	1	2.86
Any Other	0	0
No Response	4	11.43
Total	35	100

(ACS: Arts, Commerce and Science College libraries)

There is not only need of Internet connectivity but also Internet speed system is important factor within library for providing efficient and effectively library services to their user community and hence, the researcher has attempted to know the Internet speed system within library and study found that majority libraries in number of 30 have Broad band facility and a single library has Leased Line facility and remaining 04 libraries could not make available this facility. The present research study indicates that majority libraries are moving toward broad band facility and it is needed to enhance in making availability towards the Leased Line or Wi-Fi facility. Following Graph No. A-14 shows the current picture of Internet speed within ACS College libraries.

Graph No. A-14

**Observation**

Through this study, it is observed that maximum libraries with rate of 85.71% have adopted Broadband Internet service system and few libraries provide internet services using Leased line in the percentage of 2.86. It means that still these libraries are not moved in more number towards upgrading recent and faster technology.

Ques. No. 15: what is speed?

For accessing or enjoying electronic based resources, not only availability of Internet facility is important but also the speed of Internet is important for quick downloading, sharing or accessing to e-resources in various forms. In keeping this purpose, the researcher has attempted to know actual condition in this regard among ACS College libraries. Following table shows clear picture about it.

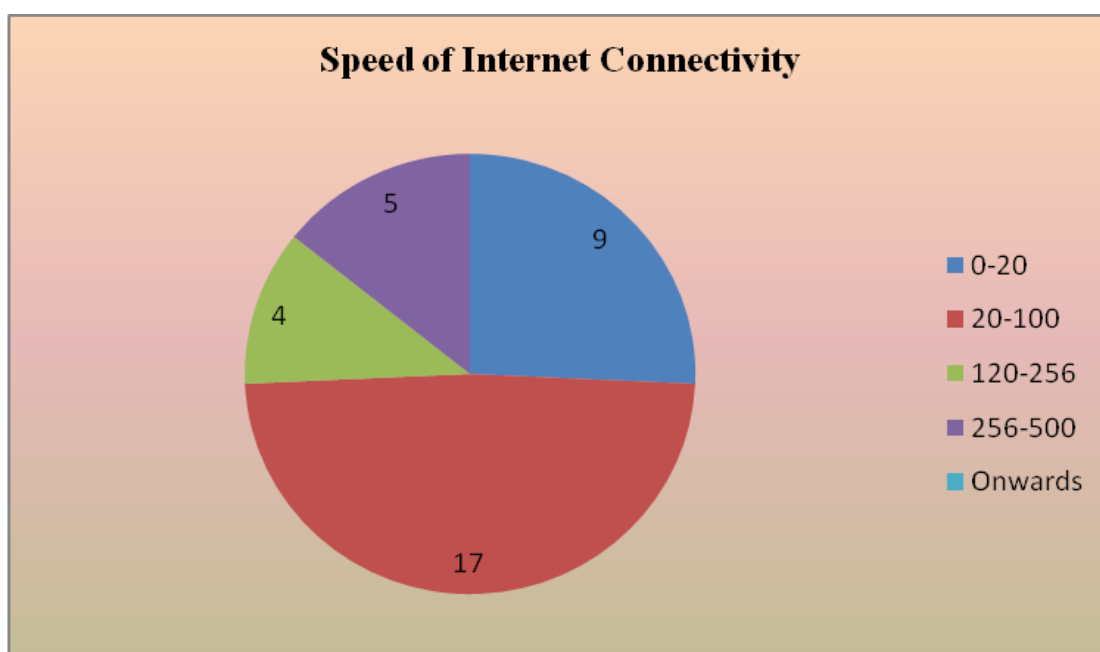
Table No. A-15
Speed of Internet Connectivity

Speed with Mbps	No. of Colleges	Percentage
0-20	9	25.71%
20-100	17	48.57%
120-256	4	11.43%
256-500	5	14.29%
Onwards 500	0	0
Total	35	100%

(ACS: Arts, Commerce and Science College libraries)

As mentioned above table No. A-15 shows that Majority libraries with rate of 48.57% have made available Internet speed range from 20-100 Mbps. Besides this, the research study also found that 09 libraries used it as 0-20 Mbps, 2 libraries used 120-256 and 05 libraries used speed of internet as 256-500 Mbps. Further research study identified that there are 02 libraries which have not made available internet facility to their user community. It is a serious matter in this digital age which is essential part for techno savvy users to get information in electronic form. Least number of libraries with rate of 14.29% provide high speed from 256-500. There is need to implement and apply high internet speed based system or plan for freely enjoyment of e-resources without any hurdle. Following graph no.A-15 presents the picture of Internet speed by ACS College libraries.

Graph No. A-15



Observation

It is observed that 50% Arts, Commerce and Science College Libraries have made Internet speed within 20 to 100 Mbps and 25% ACS libraries provide below 20 Mbps and remaining 25% libraries moved towards above 120 to 500 Mbps speed. It means that majority libraries still adopted lowest Internet speed which becomes difficult for downloading electronic based resources from Internet platform. It is urgent necessity of adaptation of high speed Internet system for enjoying textual or multimedia electronic based resources timely.

Ques. No 16: Which type of Power back up facility available?

If there is no power back up facility then library will be unable to fulfill the ICT based user needs at anytime. Therefore, the investigator has attempted to know the present situation regarding this issue and got variation in opinion about power back up availability. Present situation about power back up facilities are presented through following table and graph medium.

Table No. A-16
Availability of Power back up facility

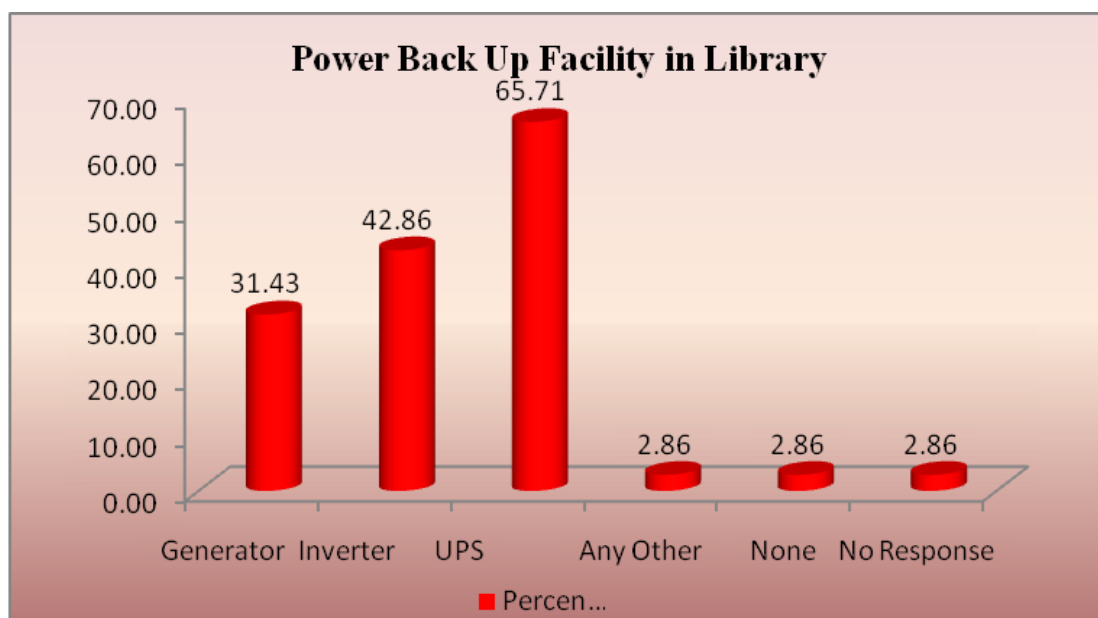
Back Up Facility	Yes	No	Total
Generator	11 (31.43)	24 (68.57)	35 (100)
Inverter	15 (42.86)	20 (57.14)	35 (100)
UPS	23 (65.71)	12 (34.28)	35 (100)
Any Other	1 (2.86)	34 (97.14)	35 (100)
None	1 (2.86)	34 (97.14)	35 (100)
No Response	1 (2.86)	34 (97.14)	35 (100)

Note: Numbers in to the bracket indicate percentage.

(ACS: Arts, Commerce and Science College libraries)

Researcher was intending to know whether power back up facilities is available in ACS College libraries or not and in this regard librarian community opined their several opinions about this facility. 11 libraries said Generator facility is available, 15 libraries have Inverter, 23 libraries expressed their opinion having UPS facility and a single library says another facility regarding the power back up facility. A single library is without such facility and another one didn't response about it. Following graph shows the entire picture of power back up facilities which are available in the ACS College libraries. In this way, the present study clearly indicates that majority College libraries with rate of 65.71% have made available power back as UPS but still maximum libraries are unable to make available power back up facilities for enjoying the electronic based resources to their users.

Graph No. A-16



Observation

The present study identified the present situation of power back facility which is made available by Arts, Commerce and Science College libraries in their libraries. It is observed that, majority libraries with rate of 65.71% are still working on UPS power back system which is having a very few time power saving capacity. 11 libraries have made available Generator and 15 libraries have made Inverter facility within their library organization. In this way, is found the variation through this study among power back up facility. Without disturbance of power back facility, users can not enjoy electronic based resources and therefore, Arts, Commerce and Science institutions should moved positively towards making excellent power back facility to their libraries.

Ques. No. 17: Which types of online and offline e-resources are available in your Library?

There is main objective behind this question in asking to librarian community to know which types of electronic resources are available in the libraries of Satara District. And hence, question covered online and offline based resources for getting the answer of this question. Present situation about availability of various types of electronic resources are showed in graph and table mode as per following.

Table No. A-17
Online and offline e-resources

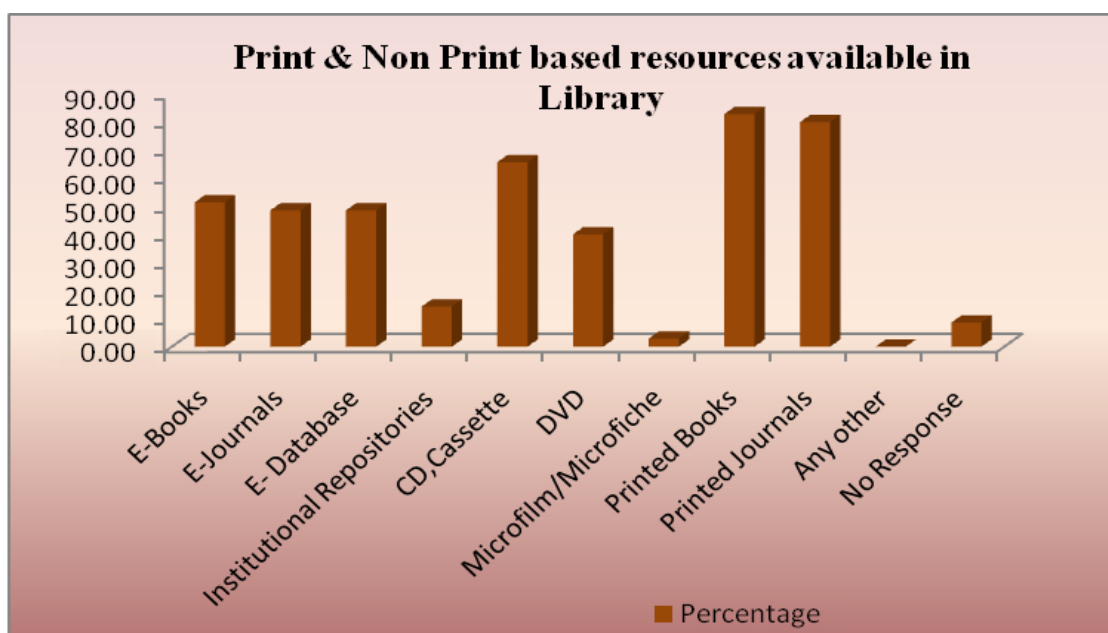
E-Resources	Yes	No	Total
E-Books	18 (51.43)	17 (48.57)	35 (100)
E-Journals	17 (48.57)	18 (51.43)	35 (100)
E- Database	17 (48.57)	18 (51.43)	35 (100)
Institutional Repositories	5 (14.29)	30 (85.71)	35 (100)
CD, Cassette	23 (65.71)	12 (34.28)	35 (100)
DVD	14 (40.00)	21(60.00)	35 (100)
Microfilm/Microfiche	1 (2.86)	34 (97.14)	35 (100)
Printed Books	29 (82.86)	06 (17.14)	35 (100)
Printed Journals	28 (80.00)	07 (20.00)	35 (100)
Any other	0 (0.00)	0 (0.00)	35 (100)
No Response	3 (8.57)	32 (91.43)	35 (100)

Note: Numbers in to the bracket indicate percentage.

(**ACS:** Arts, Commerce and Science College libraries)

Table No. A-17 shows the picture of online and offline resources available in ACS libraries of Satara District. Researcher has asked question to librarian community to get answer about the print and non print resources available within library and the present research study indicates that printed books and journals are dominant among entire print and non print resources as per opined by 29 and 28 librarian community. Followed by there are more available CD, Cassette based resources opined by 23 librarian. Libraries have made available e-books, e-journals, e-databases and DVD based resources to their academic community by 18, 17, 17 and 23 libraries. There is also made available e-resources through Institutional repositories platform and a single library preserves microfiche and microfilm based resources. Three librarians could not express their opinion regarding it. In short, the research study reflects that academic libraries have made available both types in terms of printed and non printed resources but still print resources availability is found in large number of libraries as compared to electronic based resources. Following graph shows it clear picture of availability of print and non print based resources in ACS libraries.

Graph No. A-17



Observation

The present study showed the availability of various types of resources including print and non print and it is observed that majority libraries with rate of 82.86% and 80.00% possess the print based resources including books and journals respectively. The present study clearly indicates that, at present Arts, Commerce and Science College libraries have moved towards electronic based resources including online and offline based e-resources in less numbers as compared to print resources. Further, study identified interesting results that only single library has preserved Microfilm form offline resource. Institutional repositories are created by 5 libraries of Arts, Commerce and Science stream in the Satara District.

Ques. No.18: Is there Hardware software infrastructures facility availability and expenditure?

There is important need of basic infrastructure like hardware and software level facilities to provide library services as well as usage of electronic resources among the academic community. That is why; researcher has asked this question to know the current situation of availability of infrastructure level facilities in the ACS libraries in the Satara District.

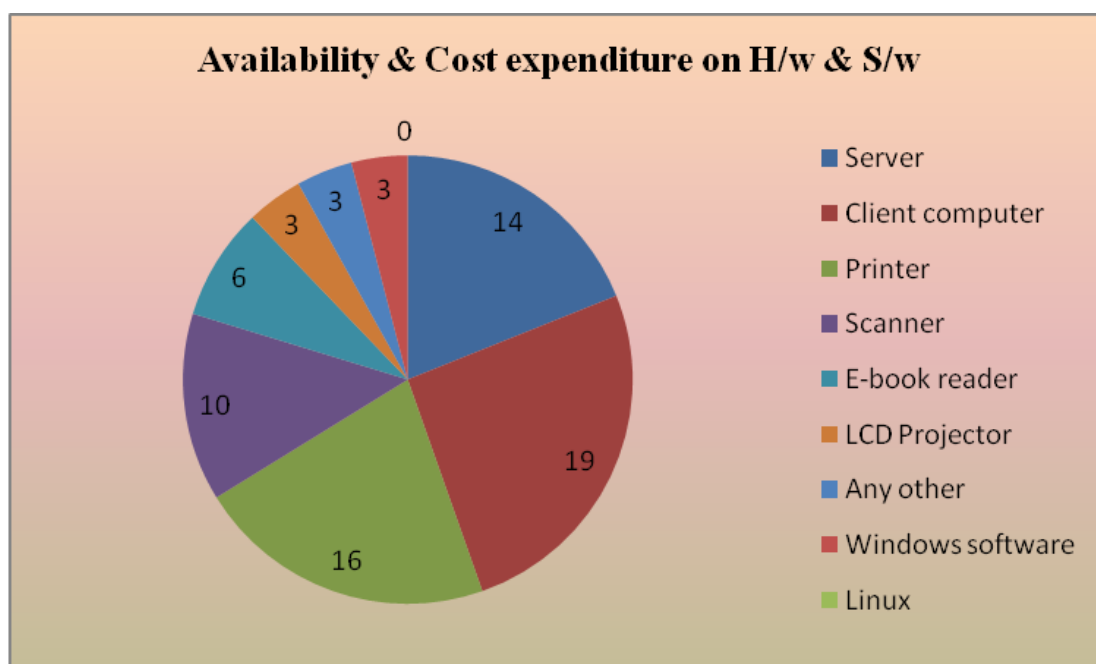
Table No. A-18
Expenditure on Hardware and Software

Name of Item	Responded	Cost	No.
Server	14	5,34,500	21
Client computer	30	20,45000	05
Printer	16	29,9700	19
Scanner	10	10,1700	25
E-book reader	6	124500	29
LCD Projector	3	2,20000	32
Any other	3	1,92000	32
Windows software	3	1,40,000	33
Linux	0	0	35
Unix	0	0	35
Database s/w	0	0	35
CDS/ISIS	0	0	35
Any Other	0	0	35

(ACS: Arts, Commerce and Science College libraries)

Table No. A-18 depicts present nature of availability of hardware and software facilities and their expenditure which is important for effective utilization of electronic based services. Therefore, the investigator has achieved factual data through respondents. Present research study found that server, computer, printer, scanner, e-book reader; LCD projector and software are available in numbers of libraries 14, 30, 16, 10, 6, 3, 3 respectively. But in this research study, maximum number of library community did not respond to this question. The research study also found that these libraries have spent amount on its purchase but as compared to students enrollment it is not sufficient. Moreover, it is observed that any college library could not spend single money on software based infrastructure that is Linux, UNIX, and Database S/w, CDS/ISIS etc. which are essential components for effective and proper utilization of electronic based resources and services in this electronic age. Following Graph No. A-18 shows the picture of it.

Graph No. A-18



Observation

It is observed that maximum libraries have made available computers in their libraries in number 30 but server facilities are available in the 14 libraries only. Moreover, it is identified that printers, scanners, e-book readers, LCD Projectors are available in less number of libraries. Expenditure on infrastructures is inadequate as compared to strengthen enrollment of students and staff of Arts, Commerce and Science Institutions in Satara District. Further study found that there is no any single library which has spent single money in purchasing of software based infrastructure such as Linux, UNIX, Database s/w, CDS/ISIS etc. In this way, overall availability and expenditure on infrastructure facilities is inadequate and there is need to strengthen infrastructural area of ACS libraries.

Ques. No. 19: How many teachers published their books in last four years?

This question is asked to know the academic publication development of academic community as well as the impact of usage of e-resources in terms of increasing their publication work such as books, articles, etc.

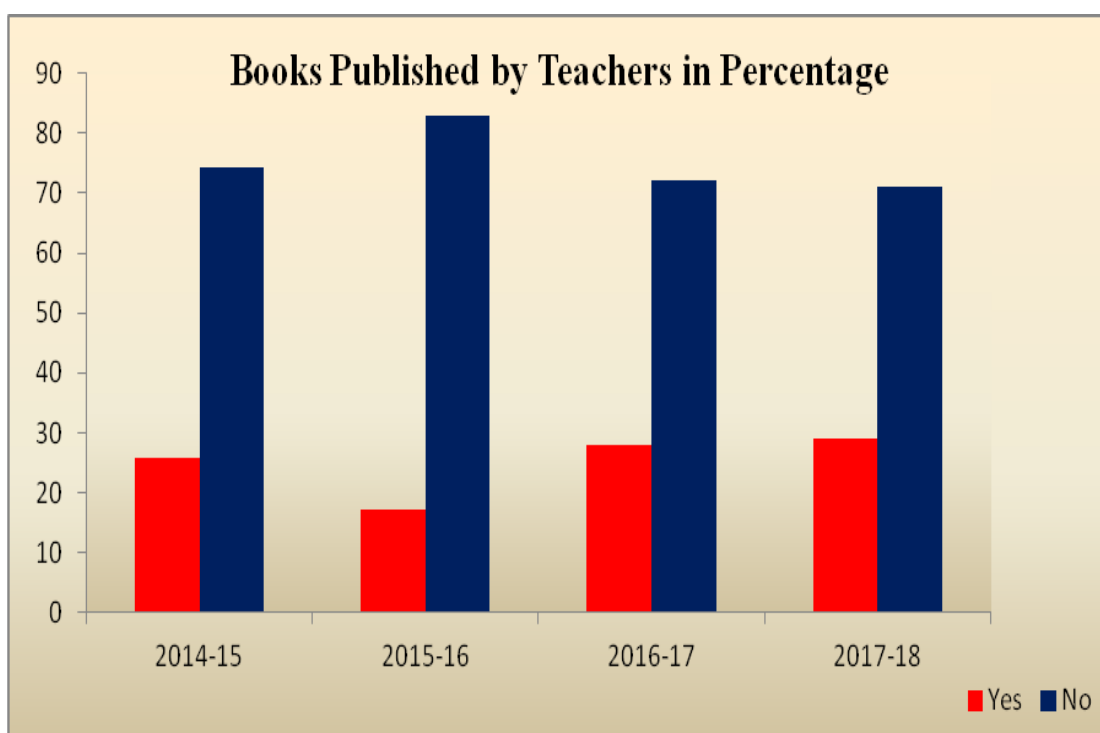
Table No. A-19
Books Published by Teachers

Period	Total Books published		Total
	Yes	No	
2014-15	72	207	279
	25.80%	74.19%	100%
2015-16	48	231	279
	17.20%	82.79%	100%
2016-17	78	201	279
	27.95%	72.04%	100%
2017-18	81	198	279
	29.03%	70.96%	100%

(ACS: Arts, Commerce and Science College libraries)

Above table depicts the research papers published by faculties in last four years as mentioned in table No. A-19. The purpose of the researcher was to know the graph of paper publication which is published by their academic community. It means that large number of faculties have published books during the period of 2017-18. That means majority teachers in number 81 and 78 research papers have been published in 2017-18 and 2016-17 respectively. Further in 2014-15 and 2015-16 publications by teachers in number 72 and 48 papers have been published. Actually, this published data is not more as compared to the period and academic community ratio. Today, there are good numbers of scholarly literature available in print as well as electronic form therefore there is need to encourage academic community in this field of publication.

Graph No. A-19



Observation

Researcher has realized that majority teachers in number 81 books have published by ACS faculties during the period of 2017- 2018. Followed by this, teachers have moved towards book publication in 2016-17. The present study clearly indicates that majority teachers are still away from publication of books but least numbers have slowly moved towards growing rate of book publication since 2014 up to 2018. Therefore, there is need encouragement to ACS faculties for enhancement in their academic good performance by which automatically higher education performance will be increased.

Ques. No. 20: From which consortia your library has accepted membership?

This question is asked to respondent for getting information regarding the membership of consortia which is playing important role in providing scholarly electronic resources with minimum cost. The researcher has achieved this factual data of ACS libraries and presented in the form of table and graph as below.

Table No. A-20
Membership of Consortia

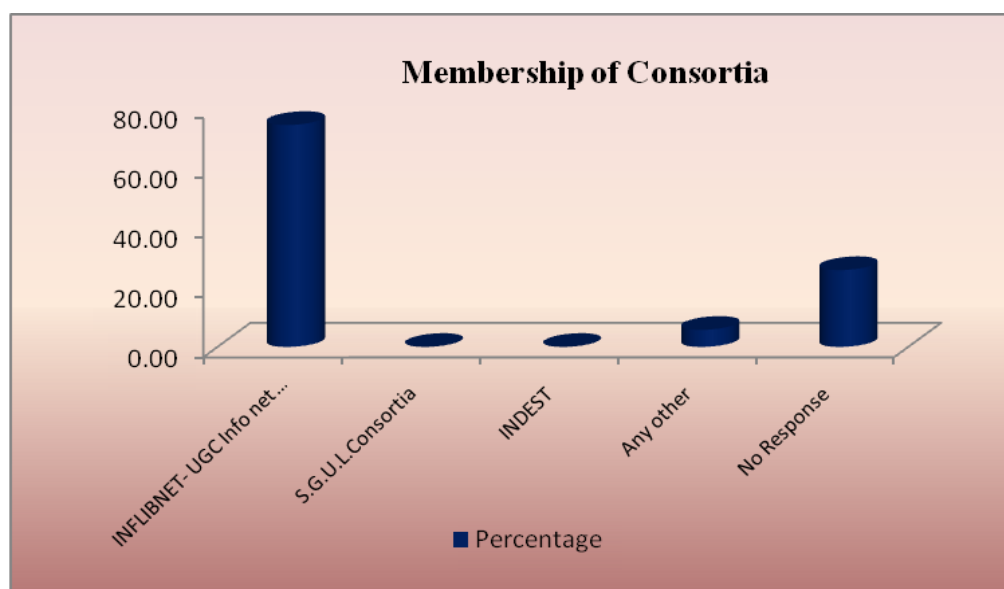
Consortia	Yes	No	Total
UGC Info net Consortia/ N-List	26 (74.29)	9 (25.71)	35 (100)
S.G.U. Library Consortia	0 (0.00)	0 (0.00)	35 (100)
INDEST	0(0.00)	0(0.00)	35 (100)
Any other	2 (5.71)	33 (94.28)	35 (100)
No Response	9 (25.71)	26 (74.29)	35 (100)

Note: Tables in to the bracket indicate percentage.

(**ACS:** Arts, Commerce and Science College libraries)

Table No. A-20 indicates that current status of ACS libraries that's got membership from various consortiums. The research study found that there are 26 Arts, Commerce and Science libraries which achieved membership of consortium from INFLIBNET under N-List programme for subscription of scholarly resources to their academic community. There is no single academic library which has got membership from SGU (Amravati) Library Consortia and INDEST. But two libraries got membership from besides as mentioned above consortia. The present research study also found that response is not given by nine academic libraries. It means that majority academic libraries have achieved membership from INFLIBNET with rate of 74.29% rather than other consortia. Following graph No. A-20 shows data about it.

Graph No. A- 20



Observation

It is observed that maximum libraries with rate of 74.29% from Arts, Commerce and Science stream in Satara District have achieved consortia membership through UGC Info net/ N-List platform where plenty of exist electronic resources in various forms regarding various disciplines of ACS stream. Moreover, two libraries have got membership except above mentioned consortium platforms.

Ques. No. 21: Do you maintain the Information of Research Papers Published by your faculty and students in the Library?

It is important to know the preservation policy of academic libraries about research papers which are published by their academic community. Such type of publication is nothing but the intellectual property of their own institutions which is important to maintain and preserve for further reference and hence, the researcher has asked this question for getting this policy of resources.

Table No. A- 21

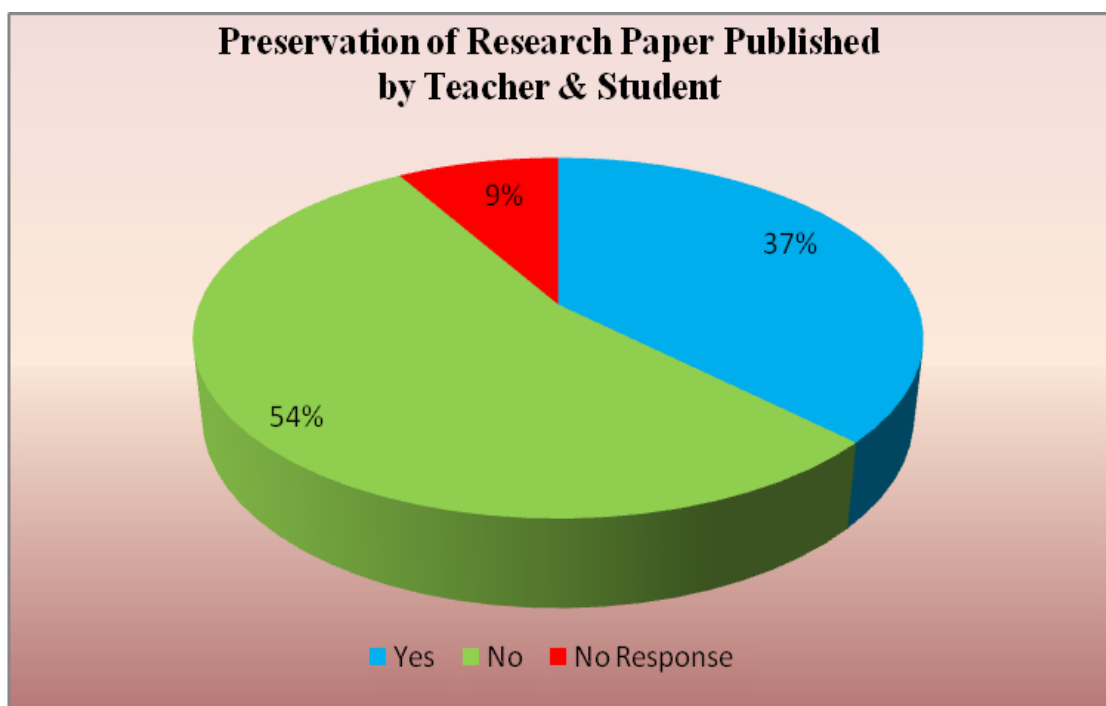
Preservation of research papers published by student and teachers

Information	Total	Percentage
Yes	13	37%
No	19	54%
No Response	3	09%
Total	35	100%

(ACS: Arts, Commerce and Science College libraries)

The researcher has attempted to get the information of preservation data of research papers which has been published by students and faculties of their institute. Above table No. A-21 shows that only thirteen librarians have preserved such type of data and majority libraries could not preserve research papers at their own platform with rate of 54%. Further, it is indicates that the response is not given about it by 9% libraries. The present research study clearly indicates that maximum libraries have not moved towards the perseveration of research publication which is published by their own academic community. It is the need of time to maintain regularly such scholarly own publication to their platform and preserve as institutional repository gateway platform. Following graph No. A-21 indicates the picture of research paper published by ACS libraries in Satara District.

Graph No. A-21

**Observation**

It is observed that Arts, Commerce and Science College libraries with rate of 37% have preserved research papers which are published by their patrons but still maximum libraries with rate of 54% didn't take steps about preservation of scholarly research papers for future use. It is the need of time to preserve such type of articles which are nothing but the intellectual property of their academic institutions.

Ques. No. 22: If yes, how many papers have been published on seminar platform during the following year?

In this regard, the researcher has asked question again to know whether they are preserving such publications then, how many papers have been preserved since 2014 to 2018 by ACS libraries. It was aimed to know how these academic libraries have moved towards creating their own databases in this digital environment. In future this database is considered as electronic resources of the particular academic institutions. Hence, the investigator has presented factual information as per following table and graph.

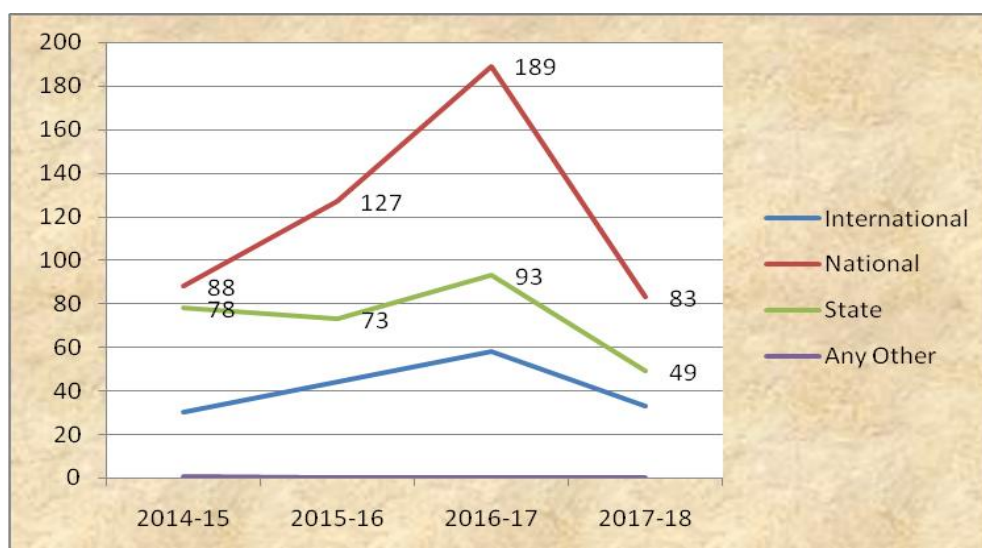
Table No. A-22
Seminar wise paper publication

Seminar	2014-15	2015-16	2016-17	2017-18
International	30	44	58	33
National	88	127	189	83
State	78	73	93	49
Any Other	1	0	0	0

(ACS: Arts, Commerce and Science College libraries)

This question is included by the researcher to get data of research publication which has been published via seminar platform. Through this questionnaire it is found that academic community have published their talent at International, National and State level seminar platform and they have more papers published at National level and State level seminar as compared to other platform. During the period of 2016-17, they have published more number of papers that is 58 at International level seminar and at National level seminar also they have published maximum papers as compared to other duration. Further it is identified that only a single paper is published by academic community during the period from 2014 to 2018 at another level platform. It was intended to know also the impact of electronic based resources on their academic performance and above table shows the satisfactory result and further it is the need to enhance in academic progress. Following graph shows the picture of seminar wise paper publications by ACS academic community.

Graph No. A-22



Observation

The present study observed that maximum research papers have been published by faculties on above mentioned entire platform during the period of 2016-17 but variation is found least number published papers that are only 30 research papers published during the period of 2014 at International level seminar. 83 and 49 papers have been published during the period of 2017-18 on National and State level seminars respectively. In this way, variation is found about research publication among the Arts, Commerce and Science institutions in Satara District.

Ques. No. 23: What is the purpose of subscribing e-Resources?

The purpose of asking this question is to know the purpose of reason behind subscribing of electronic resources by Arts, Commerce and Science libraries. The question includes various options to understand the purpose behind it. The present research study found the variation among purpose which is presented in following table and graph No. A-23.

Table No. A-23
Purpose of E-Resource Subscription

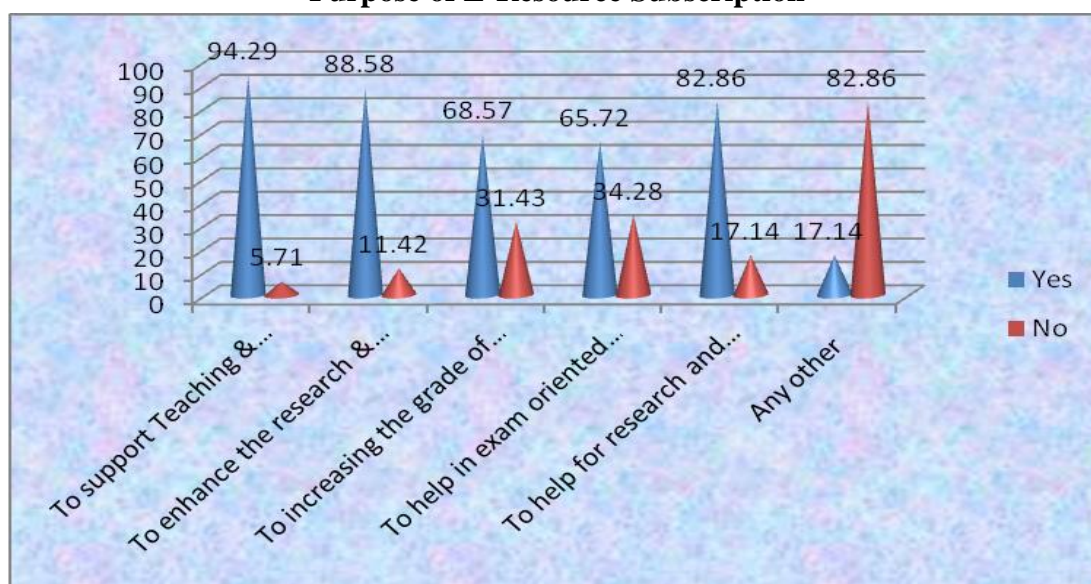
Purpose of E- Resources	Yes	No	Total
To support Teaching and learning Activity	33 (94.29)	02 (5.71)	35 (100)
To enhance the research and Development	31(88.58)	04 (11.42)	35 (100)
To increasing the grade of college	24(68.57)	11 (31.43)	35 (100)
To help in exam oriented activity	23(65.72)	12 (34.28)	35 (100)
To help for research and book publication	29 (82.86)	06 (17.14)	35 (100)
Any other	6 (17.14)	29 (82.86)	35 (100)

Note: Tables in to the bracket indicate percentage.

(**ACS:** Arts, Commerce and Science College libraries)

Above table No. A-23 shows the research purpose behind the subscription of electronic resources. Various types of opinions have been received through this question. Majority libraries with rate of 94.29% have subscribed e-resources in keeping objective of supporting to teaching and learning activity. Followed by their intension is found that regarding the enhancement in research and development as well as in book publication with rate of 88.57% and 82.86% respectively. Further, the research study also identified that in keeping narrow approach for increasing college grade and exam oriented libraries are subscribing e-resources for their academic community and it is expressed opinion by 68.57% and 65.71% librarian community respectively. Result of present research study clearly indicates that ACS libraries are keeping broad approach for subscription of e-resources. Six librarian opinioned another purposes besides as mentioned in the questionnaire. Following graph No. A-23 shows proportion of purposes behind the subscription of e-resources. In this way, present research study indicates that academic libraries from Arts, Commerce and Science stream are moving towards subscribing to electronic based resources in keeping view of various objectives.

Graph No. A-23
Purpose of E-Resource Subscription



Observation

Through this study, it is observed that the intention behind subscription to electronic resources is having variation among the Arts, Commerce and Science College libraries in Satara District. Majority libraries have kept purpose behind subscription of e-resources for supporting teaching and learning field and opined with

highest rate of 94.29%. Apart from this purpose, these libraries moved towards keeping purpose as to enhance research, increase grade of the institutions, to help in exam oriented activity etc. with rate of 88.58%, 68.57%, 65.72% and 82.86% respectively. Moreover, the present study identified that ACS libraries have kept purpose to increase grade of the college is narrow thought which should not be realized in the higher education system.

Ques. No. 24: Are you satisfied with availability of e-resources in your Library?

It is identified that ACS libraries are subscribing various types of e-resources with keeping view of various objectives but it is also important to know whether these community have been satisfied or not. In keeping this intention, the researcher has asked this question and got opinion from librarian community which will be helpful to overcome the barriers while providing and enjoying electronic resources among user community and librarian of ACS stream.

Table No. A-24

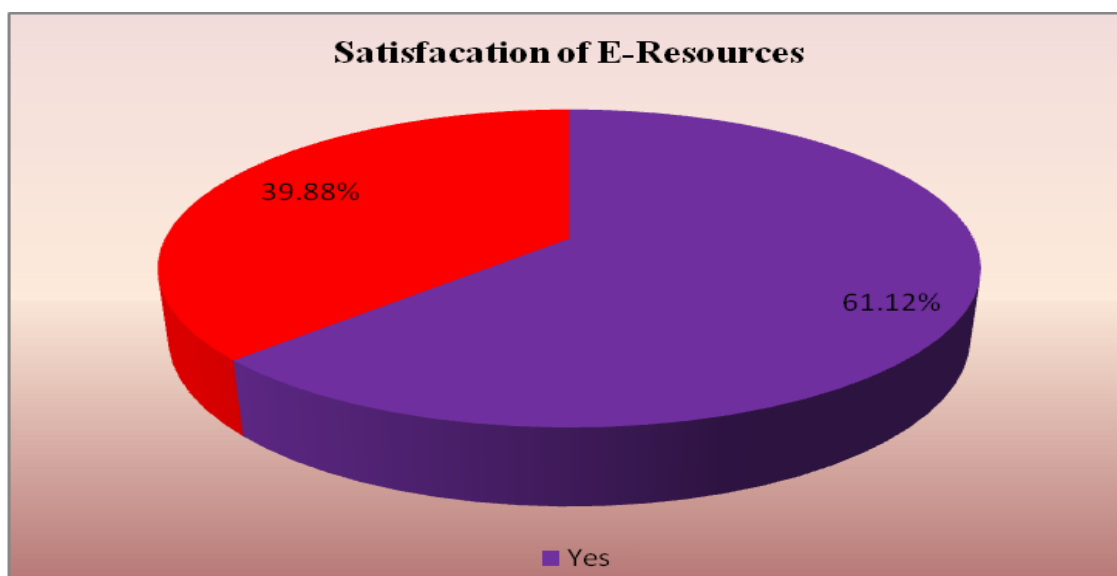
Satisfaction with availability of e-resources

Satisfaction	Total	Percentage
Yes	22	61.12
No	13	39.88
Total	35	100

(ACS: Arts, Commerce and Science College libraries)

The researcher got satisfaction by asking question about availability of electronic resources within library and the present research study found that majority librarian communities are satisfied about it with rate of 61.12%. But still less than 50% librarians are not satisfied with availability of e-resources. It means that there is need of enhancement in removing barriers before these communities. Electronic resources are playing important role in providing various types of needs of user community and in this situation, librarian should be fully satisfied about availability of e-resources within library. Result of this present research study is reflected through graph No. A-24 shows the picture about it in at a glance.

Graph No. A-24

**Observation**

It is observed that most of the libraries have enriched their e-collection and are satisfied with rate of 61.12% and about satisfaction with e-resources have negative opined with rate of 39.88%. It means that majority libraries are satisfied with their electronic based resources within their libraries.

Ques. No. 25. Is there any problem regarding collection development policy of e-Resources?

With barriers any type of academic library cannot develop its library collection at rich level. Therefore, researcher would like to know whether there is a problem or not while developing or increasing their collection development policy particularly of electronic resources. The present research study identified different type of problems and which are presented in the table and graph form as per below.

Table No. A-25**Problems related to e-resource collection development policy**

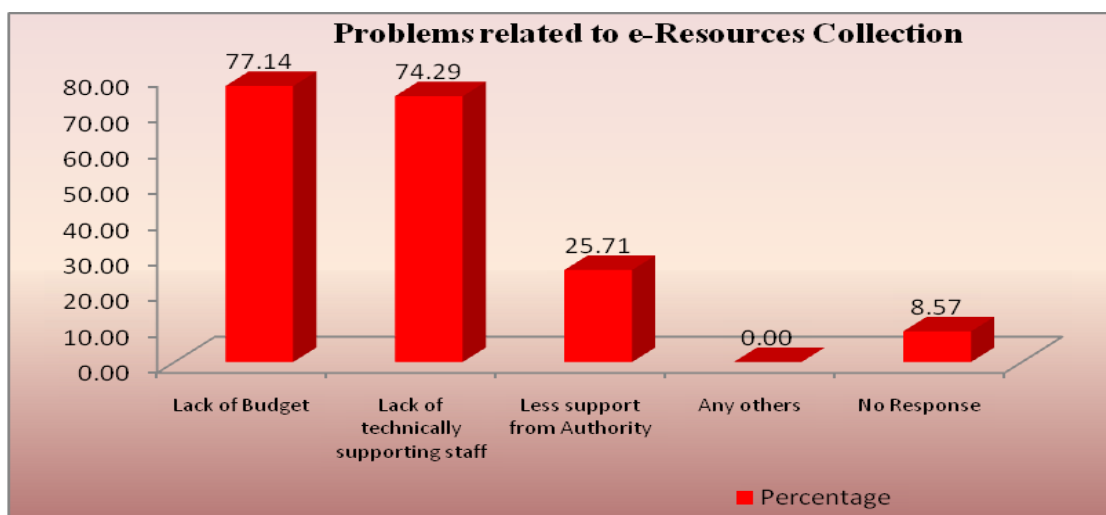
Problems	Yes	No	Total
Lack of Budget	27 (77.14)	8 (22.85)	35 (100)
Lack of technically supporting staff	26 (74.29)	9(25.71)	35 (100)
Less support from Authority	9 (25.71)	26 (74.28)	35 (100)
Any others	0 (0.00)	35 (100.00)	35 (100)
No Response	3 (8.57)	32 (91.42)	35 (100)

Note: Tables in to the bracket indicate percentage.

(ACS: Arts, Commerce and Science College libraries)

Table No. A-25 shows the barriers before librarians while maintaining the collection development policy of electronic resources. Lack of budget is a major hurdle opined by majority community with rate of 77.14%. Followed by inadequate technical supporting staff is the next problem found among the ACS College libraries with rate of 74.29%. Further, it is also found that the less support of authority of institute and opinion is expressed by 25.71% community. And three respondents could not give their any opinion regarding it. In this way, present research study clearly depicts that academic libraries are facing major problems as lack of budget, inadequate technical staff and least problem is less support of authority. Following graph No. A-25 presents the picture of barriers while developing collection of electronic. There is urgent need to overcome barriers by management and higher authority which are reflected through present study. Today's age is considered as electronic age and in this scenario user community have more expectations from academic libraries to fulfill their academic needs. Therefore it is urgent need to withdraw constraints which occurred while developing policy of electronic based resources among the Arts, Commerce and Science libraries in Satara District.

Graph No. A-25



Observation

The present study observed that various problems are still existed within libraries in Satara District which becomes hurdle while enjoying electronic based resources. Lack of budget is a major problem opined by maximum librarians with rate of 77.14%. Besides, lack of technically staff is realized with rate of 74.29%. Moreover, interesting result is identified that there is the negative attitudes of higher authority of Arts, Commerce and Science institutions about electronic resources development. In this way, there is identified problems in various nature among the Arts, Commerce and Science libraries in Satara District.

Ques. No. 26: Do you know about open e-Sources

Since long ago, Open Educational Resource movement has been spread and there are lots of electronic scholarly resources that made available in public domain which are free or with least cost basis. The researcher was intending to know whether these resources are familiar to librarian community or not which are playing important role in this digital environment teaching and learning counterpart. Keeping this approach question was asked to librarian community and opinion of this question is presented as following graph and table.

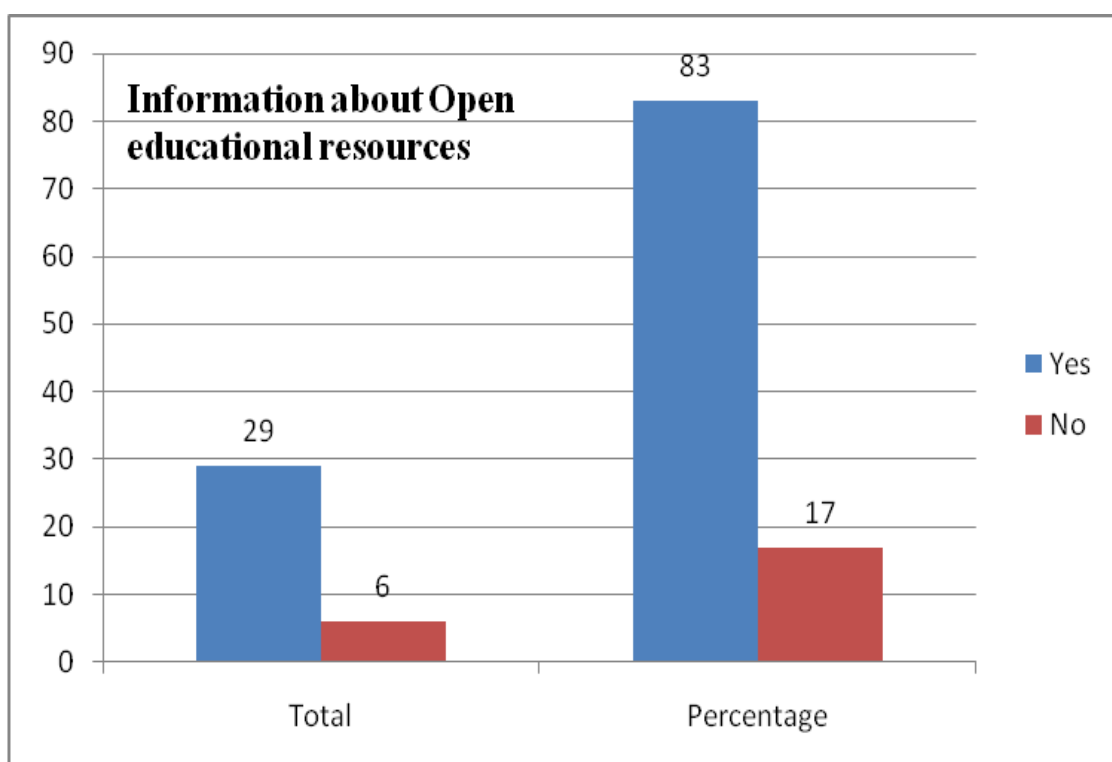
Table No. A-26
Information about Open educational resources

Opined with OERs	Total	Percentage
Yes	29	83
No	6	17
Total	35	100

(ACS: Arts, Commerce and Science College libraries)

Above table No. A-26 indicates the awareness regarding open educational resources among the librarian community from ACS Colleges in Satara District. The present research study indicates that majority communities are aware regarding open educational resources with rate of 83% and least number are not aware about these scholarly resources with rate of 17%. It means that need of time to have 100% awareness among librarian community where established tremendous scholarly electronic based resources which will be helpful to thrust the academic needs of user community at global corner. Present research study clearly reflected that majority communities are aware with this literature in the form of open educational resources. Following graph No. A-26 depicts the opined by respondents about OERs.

Graph No. A-26



Observation

It is observed that majority librarians in Arts, Commerce and Science streams are aware with Open Educational Resources (OERs) with rate of 83% and remaining 17% are unknown with this scholarly resources platform where a lot of resources are stored in electronic form with free of cost. OERs reference service will be beneficial to overcome financial problems of their institutions.

Ques. No. 27 Do you use it and recommend to your readers?

The purpose of asking this question to librarian category was to understand whether these communities are using or applying these resources for their academic improvement and are recommending them to their user community about its valuable importance in increasing academic performance. In this regard, the researcher has received answer of this question through questionnaire and result is presented as per following table and graph No. A-27

Table No. A-27

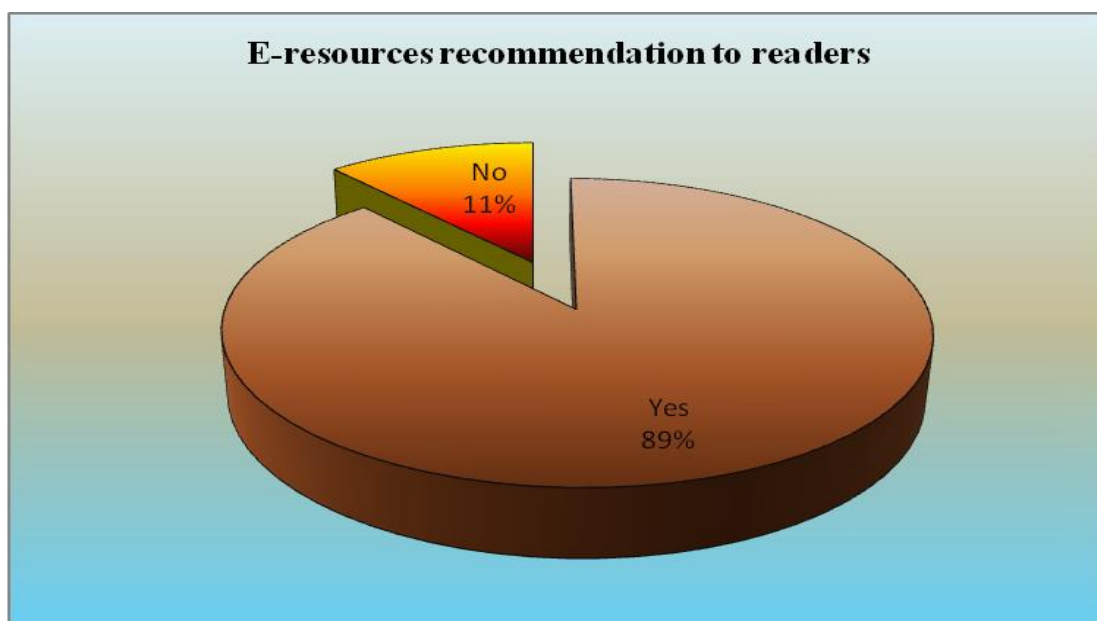
E-resources use and recommendation to readers

Use and Recommendation	Total	Percentage
Yes	31	89
No	4	11
Total	35	100

(ACS: Arts, Commerce and Science College libraries)

Above table No. A-27 depicts the picture about open educational resources which are recommended by librarian community to their patrons. Majority librarians with number of 31 out of 35 have made awareness and importance of open educational resources among the user community with percentage of 89. And remaining least number of four librarians still could not move towards the new culture of electronic resources which are available through open educational mode. Open educational resources value is now spread in digital based teaching learning environment. With the help of this platform, any type of academic library can overcome the barriers on poor resources which are presently available within their libraries as well as it is easily possible to fulfill the variety level academic needs of user community. The present research study shows the opinion of ACS libraries in Satara District.

Graph No. A-27



Observation

It is found that majority numbers of librarians from Arts, Commerce and Science stream are using Open Educational Resources as well as they recommended and indicated the value of these OERs for their academic activity to faculties. Besides, there are few librarians who are still away from utilization and recommendation to their readers with rate of 11%. But it is a good sign that most of the librarians are moved towards OERs platform with positive attitudes.

Ques. No. 28: Does your readers use open sources in the library?

The aim behind asking this question is that to know whether the user community is practically using these resources in the libraries. The librarians have expressed their opinion and observation about usage of open educational resources by academic community. Answer of this question is presented by the researcher as below in the form of table and graph.

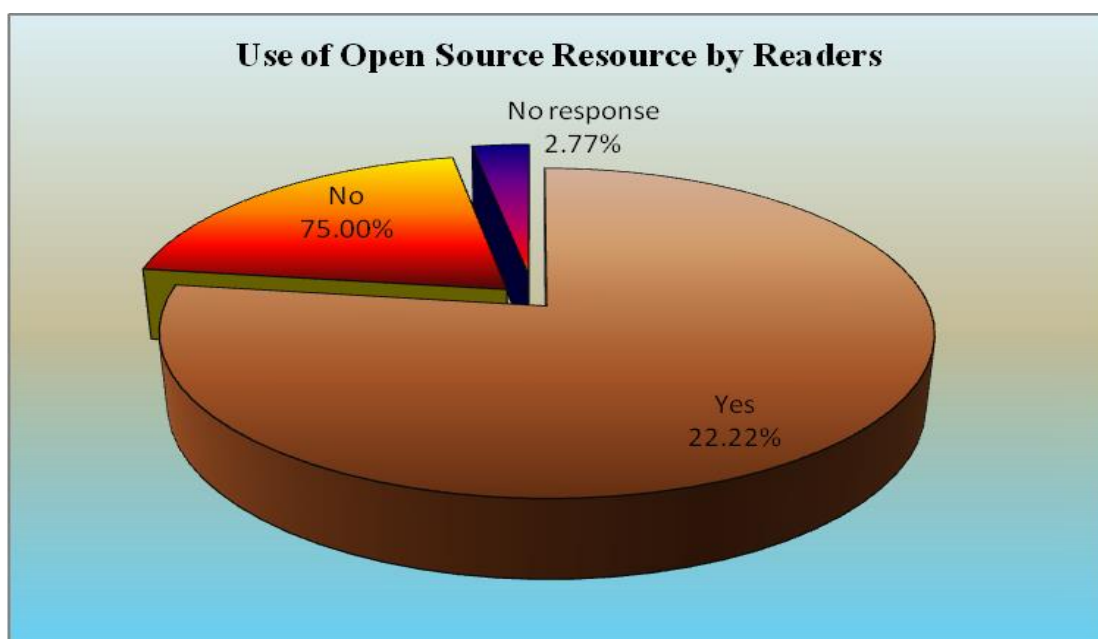
Table No. A-28
Usage of Open Educational Resources

Usage of Open Resources	Total	Percentage
Yes	27	75.00
No	7	22.22
No response	1	02.77
Total	35	100

(ACS: Arts, Commerce and Science College libraries)

In this research study Investigator was intending to know the use and application of OER (Open Educational Resources) into teaching learning activity. Table No. A-28 shows the opinion of librarian that OERs are used in maximum number by academic community and further it is identified that least usage of OER based resources which is opined by seven librarians. It means that maximum usages of OERs are found. In this research study one response is as neutral and he or she didn't give any response. Following graph No. A-28 shows the picture of usage of Open Educational Resources by ACS academic community. The present research study indicates that majority academic community use these resources with rate of 75% and 25% users are still away from it. It is the need of extending the awareness programme among the academic community which is unaware about these scholarly resources.

Graph No. A-28



Observation

The present study identified that although librarians and library professionals are making efforts about awareness of OERs but the fact found is that a few number of users are using these platforms and still large number with rate of 75.00% are not using these resources. There is need to enhance efforts by librarians of ACS for awareness and attracting towards this treasure of knowledge platform.

Ques. No. 29: Mention the user supportive training programme which is conducted by your Library?

The purpose of investigator was get current information regarding user supportive training courses which are conducted or organized by ACS libraries. Such types of programme plays a role as assist in increasing use of electronic resources. The result of this study is presented as below through table and graph.

Table No. A-29
User Supportive Programs conducted by libraries

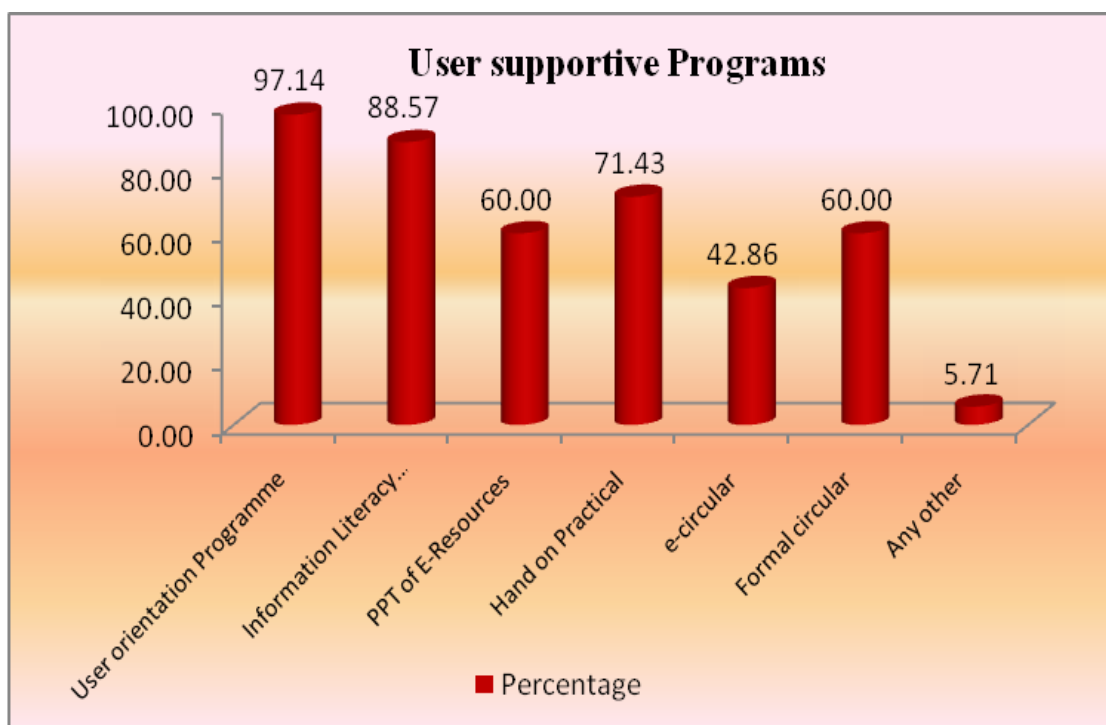
Programme	Conducted	Not Conducted	Total
User orientation Programme	34 (97.14)	1 (2.86)	35 (100)
Information Literacy programme	31(88.57)	4 (11.43)	35 (100)
PPT of E-Resources	21(60.00)	14 (40.00)	35 (100)
Hand on Practical	25(71.43)	10(28.57)	35 (100)
e-circular	15(42.86)	20(57.14)	35 (100)
Formal circular	21(60.00)	14(40.00)	35 (100)
Any other	2(5.71)	33(94.29)	35 (100)

Note: Tables in to the bracket indicates percentage.

(ACS: Arts, Commerce and Science College libraries)

Above table No. A-29 reflected the user supportive programme or courses which are conducted by ACS libraries for making awareness and information of library services and sources among user community of library. Present research study clearly shows that User Orientation Programme is conducted by majority libraries with rate of 97.14%. Followed by Information literacy, Hand on Practice and PPT presentation of e-resource courses are conducted by large libraries with rate of 88.57%, 71.43% and 60.00% respectively. Apart from these, ACS libraries are providing various type of information through e-circular and formal circular to their patrons with rate of 42.86% and 60.00% respectively. In this research study found that these libraries also use other type of programme with least percentage of 5.71. In short, present research study clearly indicates that majority libraries are giving preference to user orientation and information literacy programme conducting to their academic community. Following graph No. A-29 shows picture detail about it.

Graph No. A-29



Observation

The Investigator observed that Arts, Commerce and Science College libraries are providing various types of services to their readers such as user orientation programme, information literacy, PPT of e-resources, hand on practice and circulars etc. User orientation programme is popular among these institutions and this supportive service is provided by majority libraries with rate of 97.14%. Apart from this, these libraries are providing information literacy programme, hand on practice, PPT of e-resources, e-circular and formal circular with rate of 88.57%, 71.43%, 60.00% and 42.86% respectively. It means that ACS libraries are providing various types of supportive services to their readers with satisfaction level. It clearly indicates that these libraries are moving towards electronic resources environment.

Ques. No. 30: Explain your valuable opinion and suggestions.

Behind this question there was purpose of the investigator to make free platform to explain their views, problems and suggestions regarding this present research study. The respondents have explored their opinion with various issues which are categorized by the researcher as following manner.

Table No. A-30
Opined by librarian

Opinion regarding	Opined by librarian	Not Opined by librarian
Need of information literacy	27 (77.14)	8 (22.86)
Budget problem for e-resources	16(45.71)	19(54.29)
Need of e-resources	31(88.57)	4(11.43)
Lack of information about e-resources	7(20.00)	28(80.00)
Not responded	4(11.42)	31(88.58)

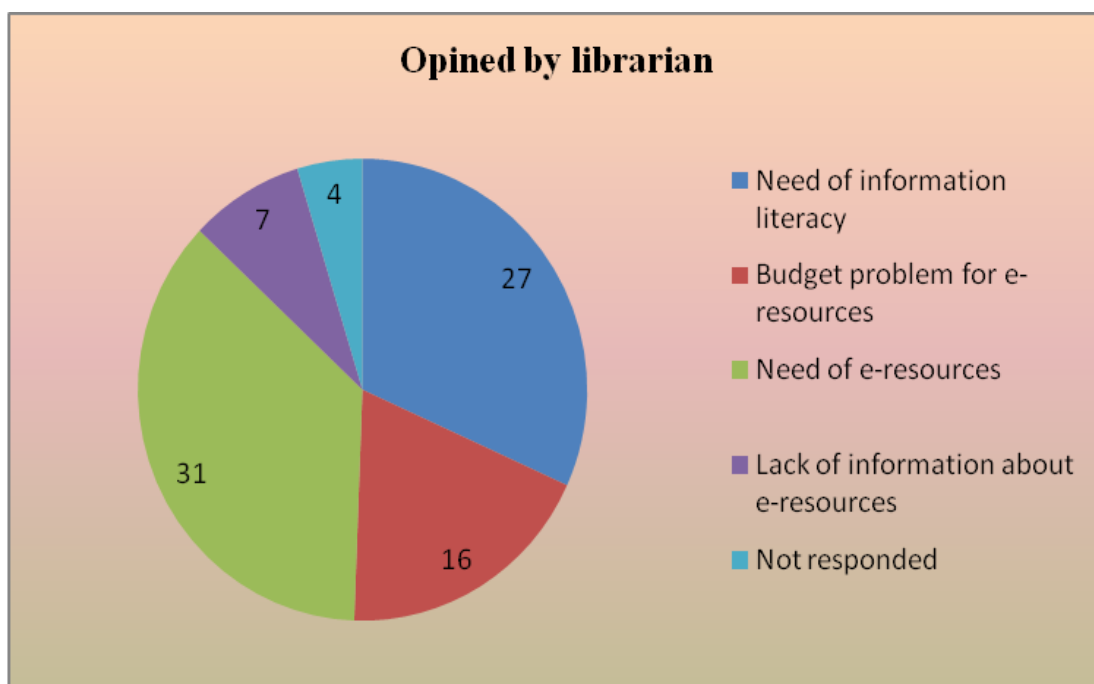
Note: Tables in to the bracket indicates percentage.

(ACS: Arts, Commerce and Science College libraries)

Above table No. A-30 shows the various opinions which have been expressed through question number 30 which is open ended question in nature. The researcher has observed and analyzed their views, problems and suggestions and classified them into four parts which have been mentioned in the above table. Maximum number of librarian community suggested that there is urgent need of information literacy course which should be implemented compulsory for academic community by which it will be easy to literate detail terms and information regarding ICT based services as well as various type of electronic based resources which are generated quickly with fraction of second and minute on Internet platform. Today, there is lot of electronic based scholarly literature available but user community is not fully aware about it. Hence there is the need to organize the information literacy programme in this digital era.

Further, near about 50% community have expressed their opinion about insufficient budget allocation for purchasing or subscribing electronic based resources which have become popular among techno savvy community. 88.57% librarian community has told that these resources are very essential in this electronic era to fulfill the academic needs of patrons in this changing world. Besides this, present research study indicates some respondent with rate of 20 % have expressed their experiences that they themselves are not fully familiar with this platform based resources. And lastly, by 11.42% community could not express their opinion about this question. Following graph indicate proportion of their opinion as below.

Graph No. A-30



Observation

It is observed through open ended question which was asked to librarians that majority librarians in number of 31 have realized the need of information literacy to their users in this digital based resources era. By 27 librarians clearly opined that there is lack of knowledge and unawareness about whole treasure of knowledge in electronic format based resources. Moreover, urgent need of electronic resources is for realized fulfillment of academic needs of users. Besides, it is identified that librarians with rate of 45.71% still survive with budgetary problems for enrichment of their electronic resources collection development. In this way, this open ended question has expressed their views and difficulties on this question platform. As being researcher it is suggested that everyone should be moved positively towards electronic resources area which is essential and need of time for really growth and development in academic performance of their institutions as well as higher education system in this digital culture.

4.3.2 Analysis And Interpretation of Questionnaire 'B'(for user)

4.3.2.1 Section I: General Information Oriented Questions

In this research study researcher has designed two types of questionnaire i.e. Questionnaire 'A' for Librarians and Questionnaire 'B' for Users (consist of only fulltime permanent faculty and post graduate students). Questionnaire 'B' is analyzed and interpreted in this part. This questionnaire is divided in two sections: First section is covered by general information of user community that includes the name of user, college, department, gender wise explanation and their e-mail id contact. There was the intention of the researcher behind designing this section to know and collect the basic information of user community. In this part almost user community have filled their information. The following table and graph reflect the gender wise response to questionnaire 'B' which is specially designed for user community.

Ques. No. 1: Response to questionnaire as per gender wise.

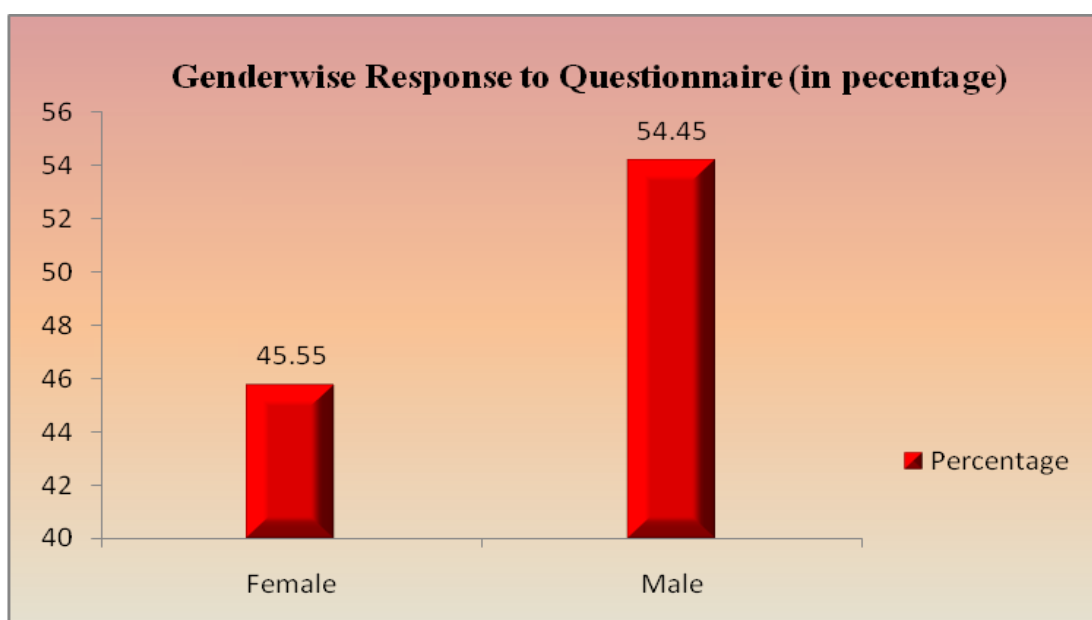
Gender wise response

Table No. B-1

Gender	Total	Percentage
Female	287	45.55%
Male	343	54.45%
Total	630	100%

The above Table No. B-1 shows the gender wise distribution of the responded questionnaires which were distributed among them. The present research study result shows that the sample of 287(45.55%) female and 343(54.45%) male respondents have responded to the questionnaire issued to them. Majority of male category have responded more than female. The following graph No. B-1 clearly reflects the gender wise response to the questionnaires. The present research study depicts that near about both categories have responded to questionnaire with 50% rate excluding 5 to 6 % difference among them. In this way, the researcher has presented gender wise distribution of user community in the form of table and graph. Following graph clearly indicates the ratio and proportion of responded user community to questionnaire 'B'.

Graph No. B-1

**Observation**

It is observed that majority respondents from male category have responded to this questionnaire with rate of 54.45% and female category have responded to this questionnaire with rate of 45.55%. It means that near about 50% response is received from both categories to this questionnaire.

Ques. No. 2: Responded stream wise library user to questionnaire

This question was arranged within questionnaire to know the facts and figure of respondent to questionnaire. Opinions of this question clearly demonstrate that how many user communities have involved in this study as per Arts, Commerce and Science stream. Following graph and table indicate the picture about it.

Table No. B-2

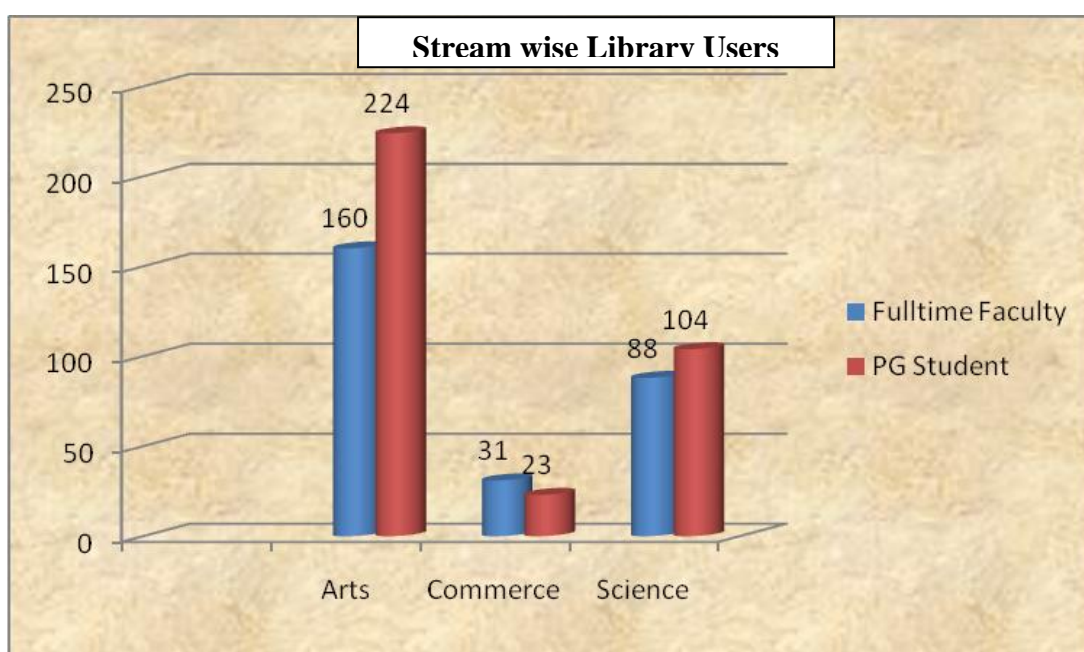
Stream wise Library Users

Category	Fulltime Faculty	PG Students	Fulltime Faculty %	PG Students %
Arts	160	224	57.34	63.81
Commerce	31	23	11.11	6.56
Science	88	104	31.55	29.63
Total	279	351	100	100

(F.F.: Fulltime faculty, P.G.: Post Graduate student, ACS: Arts, Commerce, Science)

Above Table No. B-2 describes the stream wise library users of overall respondents among ACS Colleges in Satara with Fulltime faculty and PG Students. Majority respondents are belonging to Arts stream with rate of 57.34% and 63.81% F.F. and P.G. followed by 11.11% and 6.56% F.F. and P.G. respectively from Commerce stream. And 31.55% and 29.63% F.F. and P.G. belong to Science Stream. Following graph No. B-2 shows the overall pictures of stream wise respondents.

Graph No. B-2



Observation

The present study reflects that majority respondents as fulltime faculties and post graduate students have responded to this questionnaire with large percentage of 57.34% and 63.81% from Arts stream respectively. Next responded from science stream with large number in both categories that is 88 and 104 respectively. From commerce stream got lowest response to questionnaire as compared to other streams.

Ques. No. 3: E-mail status of user category

This question was included within questionnaire to know the present status of academic community whether they are aware or not with e-mail platform which is essential for sharing and getting information with electronic mode in this information era. Received information through questionnaire is analyzed and presented as below:

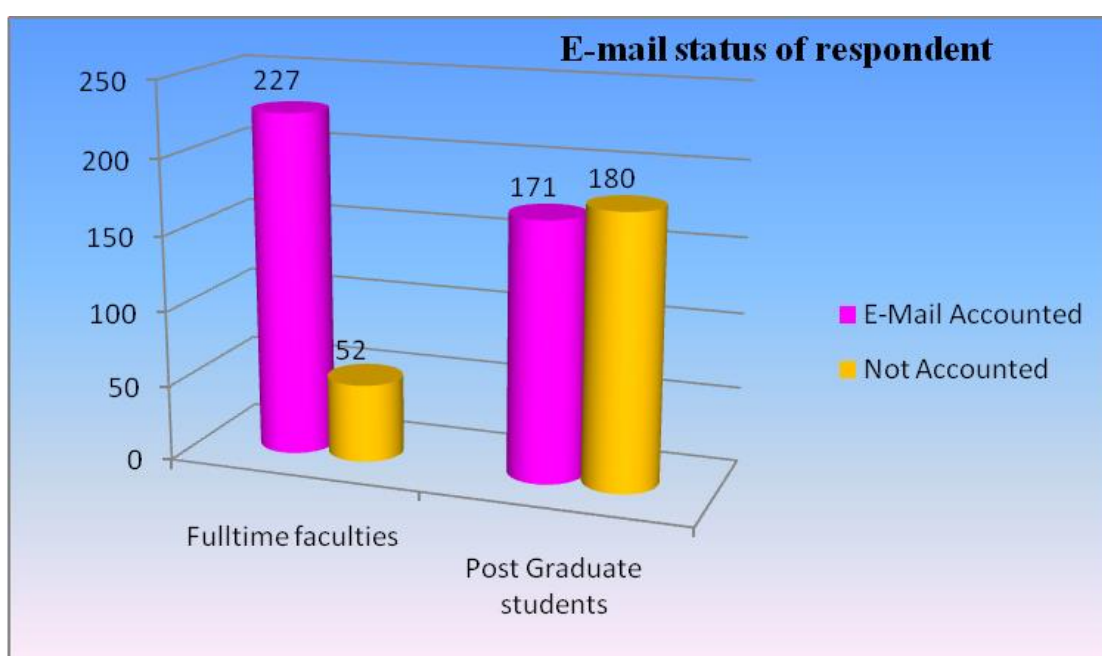
Table No. B-3
E-mail status of respondent

E-mail Status		F.F.	P.G.	F.F.%	P.G.%
E-Mail Account Holders		227	171	81.36	48.72
Not Account Holders		52	180	18.64	51.28
Total		279	351	100	100

(F.F.: Fulltime faculty, P.G.: Post Graduate student, ACS: Arts, Commerce, Science)

Above table No. B-3 depicts that present situation of fulltime faculties and post graduate students whether they are aware or not with e-mail platform. In this present research study identified that majority users from F.F. are aware and have created their e-mail account with rate of 81.36% and least number with rate of 18.64% have not still created their e-mail account. Further, it is found that near about 50% have opened e-mail account by P.G. category and remaining patrons still away are from this platform. There is urgent need to make them literate with e-mail platform which is essential in this electronic age for sharing and getting electronic information to their academic performance. Following graph No. B-3 indicates the present picture regarding it.

Graph No. B-3



Observation

The above graph reflects the present status of created e-mail account of users from Arts, Commerce and Science stream in Satara District. It is observed that majority respondents from F.F. with rate of 81.36% have created their e-mail account in large number and few numbers have not opened their e-mail account on any platform. Besides, it is also identified that the present situation about post graduate respondents that 48.72% have opened their mail account and 51.28% have not opened their e-mail account in this digital environment. E-mail is nothing but quick and free platform for sharing any electronic based information to each other. In this electronic resources era, there is urgent need to make importance and awareness among the library users who are still away from this valuable platform.

4.3.2.2 Section II: Study Oriented Information/questions

Ques. No. 1: Do you visit your college library?

This question was asked to user community to know about library visit for getting resources in this digital environment. Respondents have responded to this question and present situation is presented as per following table and graph.

Table No. B-1

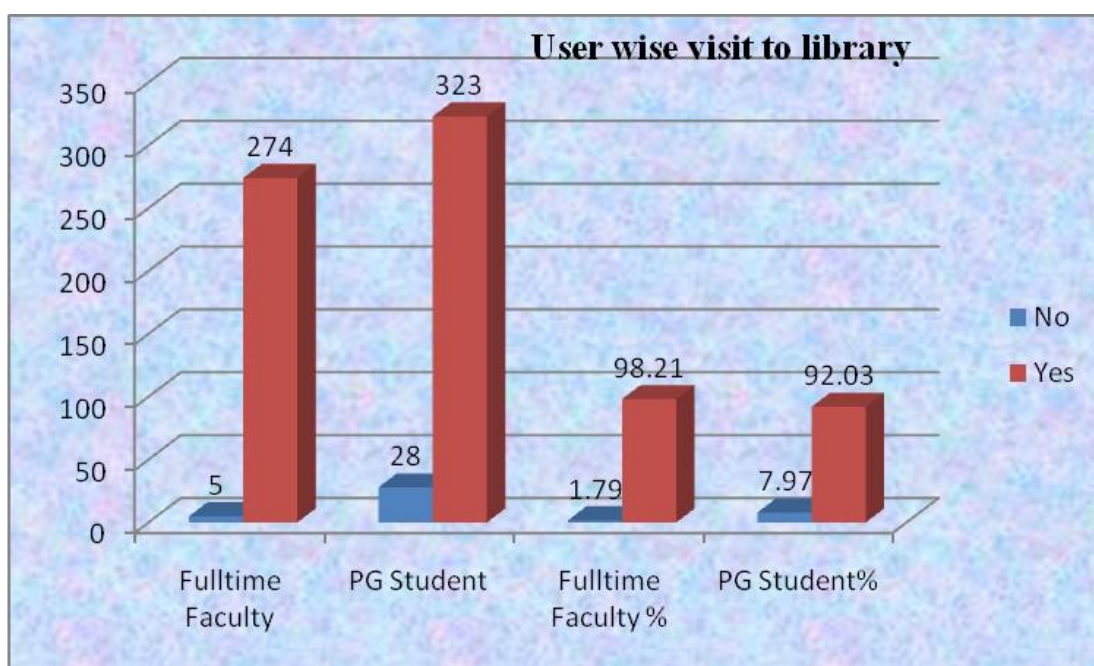
User wise visit to library

Category	Fulltime Faculty	PG Student	Fulltime Faculty %	PG Student%
No	5	28	1.79	7.97
Yes	274	323	98.21	92.03
Total	279	351	100	100

(F.F.: Fulltime faculty, P.G.: Post Graduate student, ACS: Arts, Commerce, Science)

Table No. B-1 is designed to analyze data in keeping view of category wise visit to library. This table shows that 92.03% PG students and 98.21% fulltime faculties visit to library. 7.97% and 1.79 % PG students and Fulltime faculties respectively do not visit to library for knowledge resources. It means that when we look at both the academicians type of tables which clearly indicated that majority respondents or academics are still going to library for getting their academic needs. The present research study also found that fulltime faculties mostly visits to library rather than P.G. students with rate of 98.21% and 92.03% respectively.

Graph No. B-1



Observation

It is observed that majority users from both category (F.F. and P.G.) visit library for getting their academic needs but among both category fulltime faculties mostly visit rather than post graduate students.

Ques. No. 2: Do you know the information services provided by library

There was purpose to know the awareness of academic community regarding library services which are provided by their academic library. In this regard, academic community from both categories has opined and the researcher has analyzed data as below.

Table No. B-2

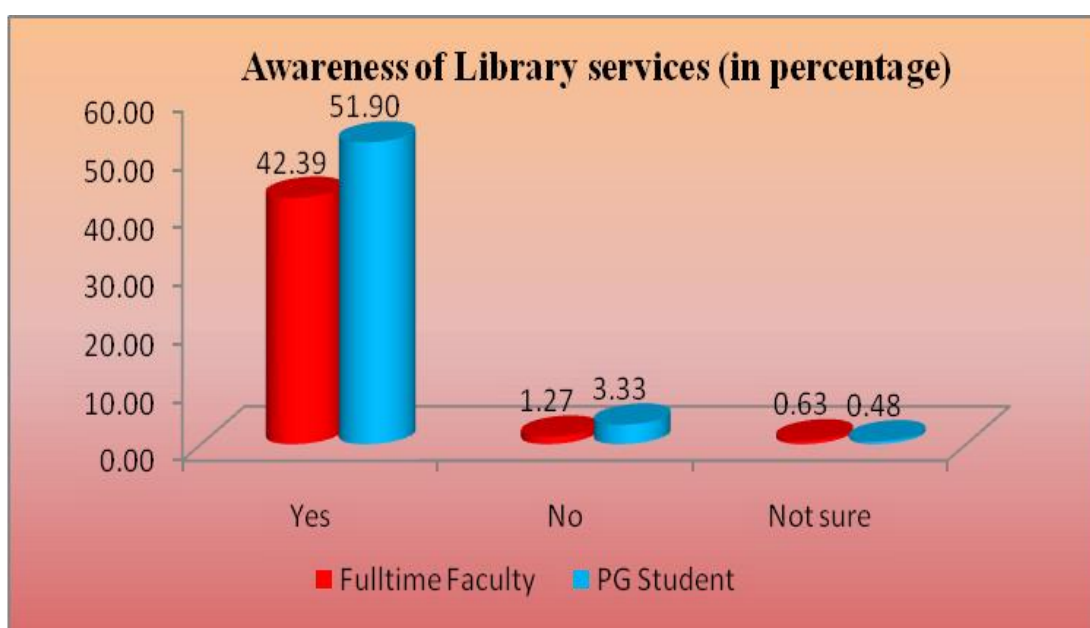
Known with Library services

Category	Yes	No	Not sure	Yes (%)	No (%)	Not sure (%)	Total
Fulltime Faculty	267	8	4	42.39	1.27	0.63	279 (44.29%)
PG Student	327	21	3	51.90	3.33	0.48	351 (55.71)
Total	594	29	07	94.29	4.6	1.11	630 (100)

(F.F.: Fulltime faculty, P.G.: Post Graduate student, ACS: Arts, Commerce, Science)

In this research study, the researcher intended to know the awareness about the library services which are provided by the ACS collages libraries for the fulltime faculty and PG students. Table No. B-2 indicates that 42.39% fulltime faculty and 51.90% PG students have opined that they know library services and 1.27% F.F. (fulltime faculty), 3.33% PG students (Post graduate) are not aware about the library services which are provided by the said libraries. 0.63% and 0.48 and F.F. and PG students respectively have not given their opinion. So, above table indicates that majority user community is aware as compared to unaware and not sure. Following graph B-2 shows the awareness of library services among the fulltime faculty and PG Students

Graph No. B-2



Observation

It is identified that maximum users from both type of category (F.F. and P.G.) are fully aware with library services which are provided by Arts, Commerce and Science libraries in Satara district. Fulltime faculties are aware with library services with rate of 42.39% and post graduate students are aware with services in large number percentage of 51.90%. It is a good sign that majority students still visit library for getting information of their academic purpose in this digital environment.

Ques. No. 3: From which way do you get information?

The investigator had purpose in asking this question that to know by which way user community can became aware about library information and services. Today, there are many ways and mediums available for providing information of library services and in this digital environment ACS libraries are various types applying for their academic community. Question included various options from traditional based ways to ICT based. Research study indentified results and presented as below table and graph.

Table No. B-3
Information ways for getting information to users

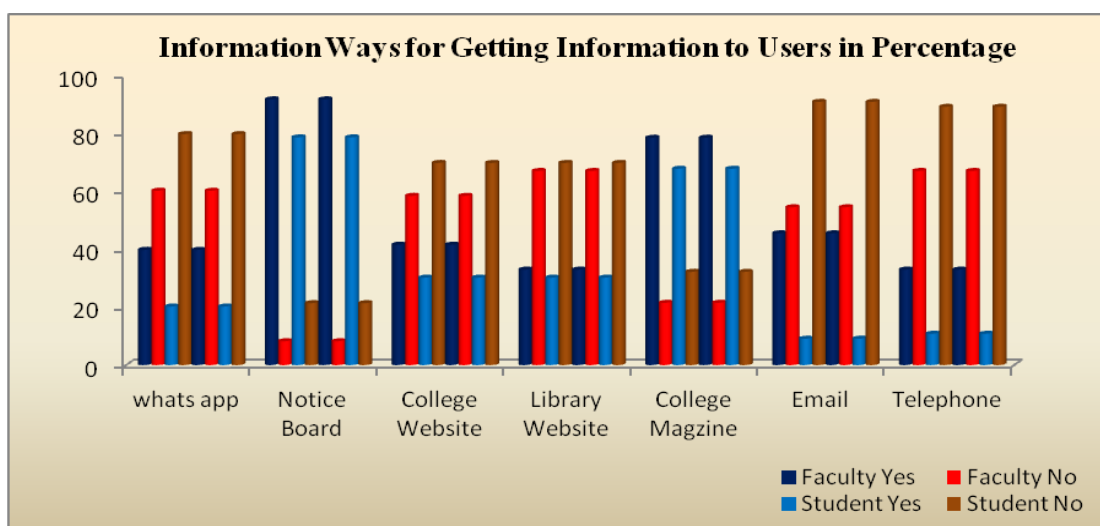
Information ways	Information Users					
	Faculty			Student		
	Yes	No	Total	Yes	No	Total
Whats app	111 39.78%	168 60.20%	279 100%	71 20.22%	280 79.77%	351 100%
Notice Board	256 91.76%	23 8.24%	279 100%	276 78.63%	75 21.37%	351 100%
College Website	116 41.57%	163 58.43%	279 100%	106 30.20%	245 69.80%	351 100%
Library Website	92 32.97%	187 67.03%	279 100%	106 30.20%	245 69.80%	351 100%
College Magazine	219 78.49%	60 21.51%	279 100%	238 67.80%	113 32.20%	351 100%
E-Mail	127 45.51%	152 54.49%	279 100%	32 9.11%	319 90.89%	351 100%
Tele phone	92 32.97%	187 67.03%	279 100%	38 10.82%	313 89.18%	351 100%

(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-3 indicates the information ways by which library users get the information about library services. Notice board is the first position among the fulltime faculty with response rate of 91.76%, followed by College Magazines 78.49%, E-mail 45.52%, and College website 41.58%, Whats app 39.78% among the fulltime faculty of ACS colleges in Satara. Further research study found that Library website and Telephone got equal response with rate of 32.97%., 0.36% respondents have not expressed their opinion about this question. Among the PG students, it is identified that for 78.63% notice board is playing a major role for getting information about library service. Followed by 67.81% College Magazine, College website and Library website 30.20% similar and 20.23%, 10.83% and 9.12%, Whatsapp, Telephone and E-mail respectively get the information about the library service

through these ways. And 1.71% respondents have not given response. Among both respondents group, notice board is most useful way for getting information and E-mail is least used among the students category by the libraries for providing information to them and library website and telephone are less used by libraries for providing the library Services among the fulltime faculty. Following graph No. B-3 shows the details of information ways by which library services are known to user's community.

Graph No. B-3



Observation

The present study observed that notice board is the first choice among the fulltime faculty with response rate of 91.76%, followed by College Magazines 78.49%, E-mail 45.52%, and College website 41.58%, Whats app 39.78% among the fulltime faculty of ACS colleges in Satara. Further research study found that Library website and Telephone got equal response with rate of 32.97%., 0.36% respondents have not expressed their opinion about this question. Among the PG students, it is identified that for 78.63% notice board is playing a major role for getting information about library service. Followed by 67.81% College Magazine, College website and Library website 30.20% similar and 20.23%, 10.83% and 9.12%, Whatsapp, Telephone and E-mail respectively get the information about the library service through these ways.

The study clearly indicates that notice board and college magazine platform is mostly used by ACS libraries for providing information to their readers. In this digital and electronic age, there is need to apply ICT based platform for getting quick information to their readers. Besides, it is also observed that less number of both type of users are getting information through Whatsapp, websites etc. It means that these libraries have moved towards digital platform for disseminating their information.

Ques. No. 4: Which Services do you use or like?

The researcher would like to know about the user community that which type of services they are using for their academic purpose. Hence, it is attempted by the investigator to realize their preference regarding the library services which are provided by ACS libraries in Satara District.

Table No. B-4
Use of Library services

Library Services	Total Numbers									
	Fulltime Faculty					Student				
	Yes	%	No	%	Total	Yes	%	No	%	Total
Abstracting	53	18.99	226	81.01	279	20	5.69	331	94.31	351
Bibliographic	97	34.76	182	65.24	279	100	28.49	251	71.51	351
CAS Service	58	20.78	221	79.22	279	08	2.27	343	97.73	351
E-mail	02	0.71	277	99.29	279	00	0	351	100	351
E-Resources	145	51.97	134	48.03	279	65	18.51	286	81.49	351
Indexing	97	34.76	182	65.24	279	33	9.40	318	90.60	351
Internet	224	80.28	55	19.72	279	244	69.51	107	30.49	351
Online Search	156	55.91	123	44.09	279	107	30.48	244	69.52	351
OPAC	96	34.40	183	65.60	279	130	37.03	221	62.97	351
Reference	261	93.54	18	6.46	279	226	64.38	125	35.62	351
SDI	38	13.62	241	86.38	279	01	0.28	350	99.72	351
Any Other	01	0.35	278	99.65	279	00	0	351	100	351

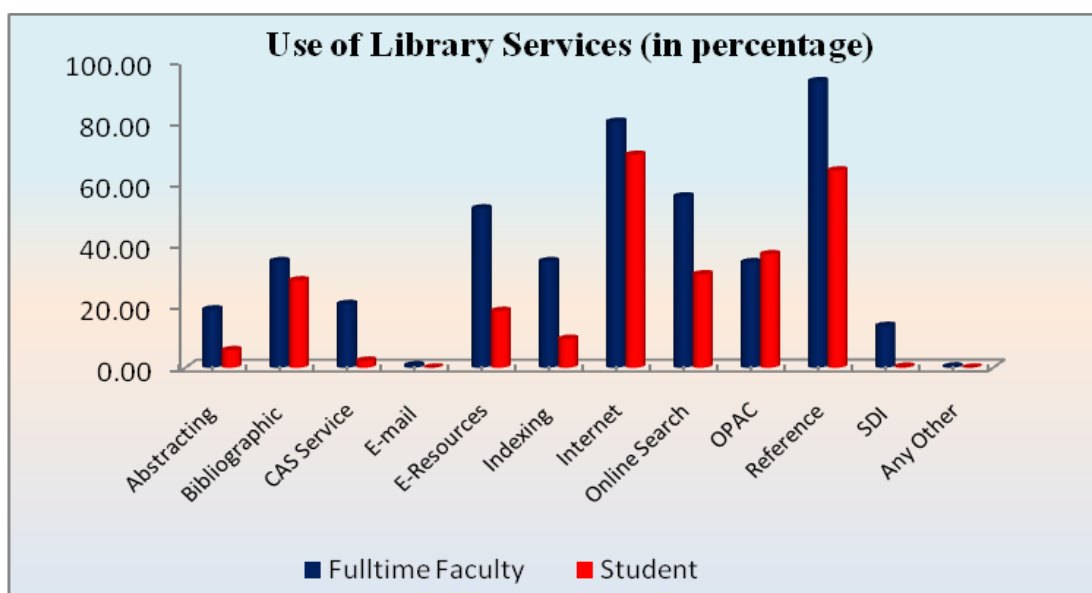
(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Table No. B-4 shows the result of which library services are mostly used by the user community of ACS colleges in Satara district. In this research study found that reference services of library is more popular than other library services among the fulltime faculty and PG students of ACS with rate of 93.54% and 64.38% respectively. Majority P.G. students mostly prefer to Internet based resources rather than other. Internet is popular with rate of 80.28% and 69.51% among the F.F and PG users of ACS. Electronic resources (e-books and e-journals) are mostly used by fulltime faculty with rate of 51.97% than PG students. It is also found that online search service is more popular among the fulltime faculties than PG students with

percentage of 55.91% and 30.48% respectively. Bibliographic, OPAC, indexing with rate of 34.77% and 28.49%, 34.41% and 37.04%, 34.77% and 9.40% among the Fulltime faculty and PG students respectively. Apart from these services CAS, SDI and E-mail services are less popular as compared to other services. Following graph No. B-4 indicates the picture vividly about the usage of library services by faculty and PG students. Any other services have been mentioned only by a single fulltime faculty member with rate of 0.36.

In short, the study clearly indicates that Reference, E-resource and Internet service is highly preferred by fulltime faculties and Internet, Reference and OPAC is highly popular among PG students community respectively. There is the need to make awareness among both categories about less used services which are also valuable in enhancement of academic carrier. Following graph no B-4 shows detail picture of library services which are provided by Arts, Commerce and Science College libraries in the Satara District.

Graph No. B-4



Observation

The present study identified that reference services of library are more popular than other library services among the fulltime faculty and PG students of ACS with rate of 93.54% and 64.38% respectively. Internet is popular with rate of 80.28% and 69.51% among the F.F and PG users of ACS. Electronic resources (e-books and e-journals) are mostly used by fulltime faculty with rate of 51.97% than PG students. It

is also found that online search service is more popular among the fulltime faculties than PG students with percentage of 55.91% and 30.48% respectively. Bibliographic, OPAC, indexing with rate of 34.77% and 28.49%, 34.41% and 37.04%, 34.77% and 9.40% among the Fulltime faculty and PG students respectively.

In short, it is observed that reference service is still popular among both category users of ACS libraries in Satara District. But majority P.G. students prefer internet than traditional based resources. Further, it is also realized that readers are moved towards electronic based resources in various forms. It is the need of time of efforts by library professionals to motivate to their readers because there is hidden treasure of knowledge stored in electronic form at various platforms.

Ques. No. 5: Does your Library has adequate computer, Internet and Infrastructure

It is important to know about availability of basic infrastructure facilities like computer, internet connectivity and so on. Without these basic facilities academic libraries cannot fulfill academic needs with electronic based to their users as well as with the lack of availability of basic technological part academic community could not enjoy the electronic based resources. Therefore, researcher has asked this question to know present situation of ACS libraries. Factual information is presented in the form of table and figure as below.

Table No. B-5

Availability of Computer, Connectivity and Infrastructural Facilities

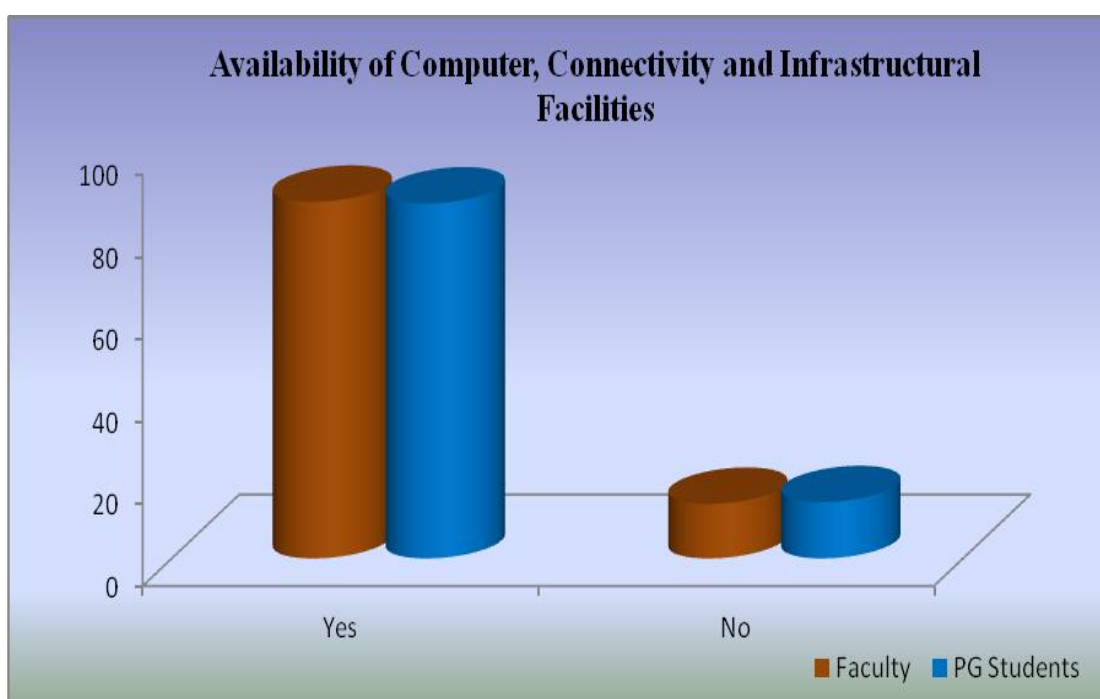
Category	Infrastructural Facilities		Total
	Yes	No	
Faculty	242	37	279
	86.73%	13.27%	100%
PG Student	303	48	351
	86.32%	13.68%	100%

(F.F.: Fulltime faculty, P.G.: Post Graduate student, ACS: Arts, Commerce, Science)

For getting the opinion about availability of adequate Computer, Internet and Infrastructural facilities researcher has asked the questions to the users and present

research study found that 86.73% of fulltime faculty says ‘yes’ and 13.27% says ‘No’. Similarly the PG students’ community with the rate of 86.32% says ‘Yes’. Table No. B-5 clearly indicates that there are the adequate computer, connectivity and infrastructural facilities in the Arts, Commerce and Science colleges under Satara district. It means that Majority respondents opined that there are sufficient facilities but less number of respondents is not positive about these facilities therefore there is need to make available these 100% facilities in this digital environment.

Graph No. B-5



Observation

The present study identified that Arts, Commerce and Science college libraries have infrastructure facilities like computer, connectivity, etc. which is opined by majority respondents from both category of fulltime faculties and post graduate students with highest rate of 86.73% and 86.32% respectively. But study clearly indicates that fulltime faculties and post graduate students opined negatively about unavailability of sufficient infrastructure level basic facilities with rate of 13.27% and 13.68% respectively. It means that still there is need of fulfillment of infrastructural adequate facilities for fully enjoyment of electronic based resources to their entire users.

Ques. No. 6: Are you familiar with e-resources?

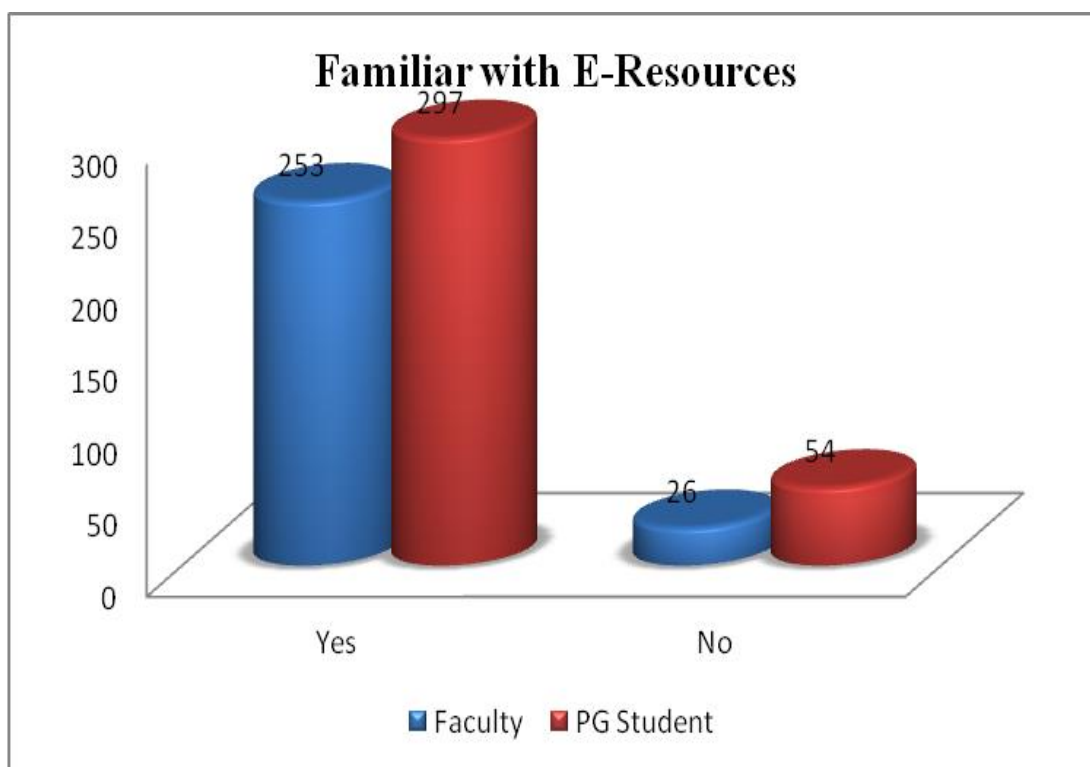
This question was asked to user community to know whether they are familiar with e-resources or not. Arts, Commerce and Science Institutions from Satara District are survived in draught area and hence the researcher wants to know their awareness and familiarity with electronic based resources. Following table and graph depicts picture about it.

Table No. B-6
Familiar with e-resources

Category	Familiar with e-resources		Total
	Yes	No	
Faculty	253	26	279
	90.68%	9.32%	100%
PG Student	297	54	351
	84.61%	15.39%	100%

In this digital era electronic resources are most important aids in the information and communication technology. Keeping this view, the researcher intends to know whether fulltime faculty and Postgraduate students are familiar with e-resources. Table No. B-6 shows the results of this study that majority respondents belong to fulltime faculties and Post graduate students category who are familiar with e-resources and the number is 253 and 297 respectively whereas 26 and 54 in both category are unfamiliar. It means that the less number from both respondents groups are unfamiliar with e-resources. But it is needed to train and guide those respondents to make familiar with e-resources. Graph No B-6 indicates the clear picture of the same.

Graph No. B-6



Observation

It is observed that maximum respondents from fulltime faculties are familiar with e-resources with rate of 90.68% and rest of 9.32% users are still away from these valuable electronic resources. In the student's counterpart, majority students are familiar about e-resources with rate of 84.61% and only 15.39% are unfamiliar with electronic based resources. It is also needed that those faculties as well as students are still unfamiliar with e-resources should move towards e-resources.

Ques. No 7: If no, what is the reason?

Under this question, there was intention of the researcher to know their reason behind unfamiliarity with electronic resources. In this regard, question has included various reason with multiple choice based. Table no. B-7 and graph no B-7 shows the picture about reason.

Table No. B-7
Reasons behind non usage of library e-resources

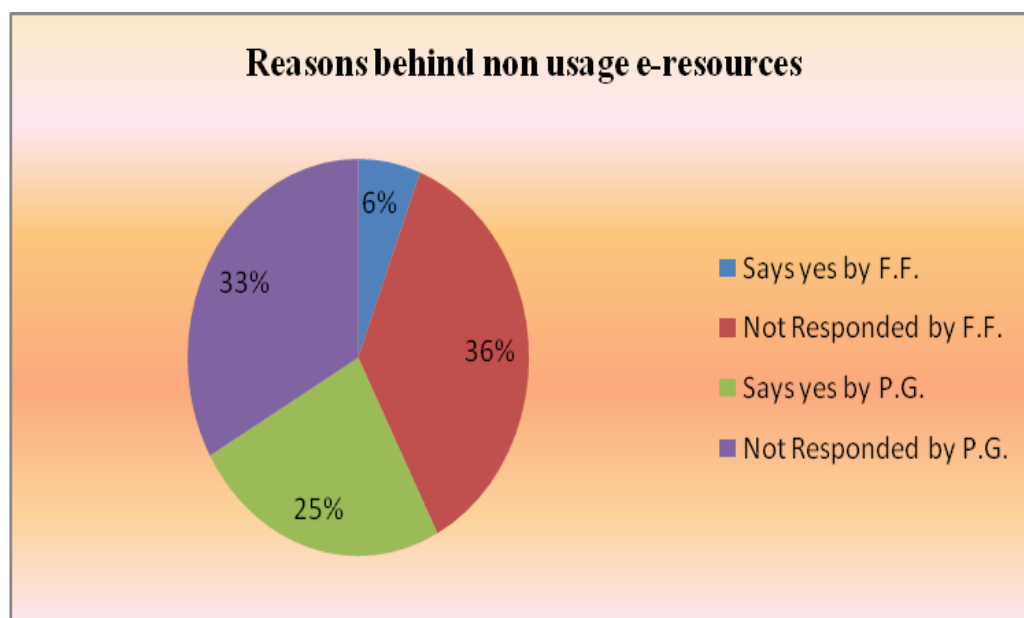
Reasons	Yes by F.F.	No by F.F.	Total	Yes by P.G.	No by P.G.	Total
I have my own book	63 (22.59)	216 (77.41)	279 (100)	145 (41.31)	206 (58.69)	351 (100)
I do not need library for e-resources	29 (10.40)	250 (89.60)	279 (100)	179 (50.99)	172 (49.01)	351 (100)
I use e-resources at home	120 (43.02)	159 (56.98)	279 (100)	127 (36.18)	224 (63.82)	351 (100)

Note: Tables in bracket indicate percentage.

(F.F.: Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-7 indicates the various reasons behind non usage of library e-resources. Present research study clearly found that majority users from fulltime faculties as well as PG category could not respond their opinion about it. But as compared to F.F. community PG have responded more. I have my own book is expressed reason by 63 and 145 numbers community from F.F. and PG respectively. I do not need library for e-resources are opined by 29 and 179 with F.F. and PG community respectively. I use e-resources at home is expressed more number that is 120 and 127 by F.F. and PG category respectively. Need not of library for e-resources reason is serious to undertaken by authority of institution to enhancement and progress of library platform by then community can be attracted towards academic library. Following graph No. B-7 showed picture about this situation.

Graph No. B-7

**Observation**

It is observed that fulltime faculties and post graduate students have their own books. Therefore, they are not using e-resources with least percentage of 22.59% and 41.31% respectively. Besides, they do not need library for e-resources, this reason is opined by fulltime faculties and post graduate students with rate of 10.40% and 50.99% respectively. Further, study identified that due to using e-resources at their home F.F. & P.G. category are not using library e-resources with rate of 43.02% & 36.18% respectively.

The present study clearly indicates that majority P.G. students do not use library e-resources due to above mentioned reasons. But this situation is found among F.F. category in least number. Nevertheless, ACS librarians should consider the reasons opined by their users and efforts should be increased for attracting towards the library e-resources.

Ques. No. 8. Which of the following resources do you uses?

To understand the frequency of usage of electronic based resources by academic community of ACS libraries was the basic purpose behind asking this question. In this study, Researcher wants to know how these academic communities are using electronic based resources, whether they are using daily, twice in a day, monthly, weekly or never. Result of present study is reflected as per following table and graph.

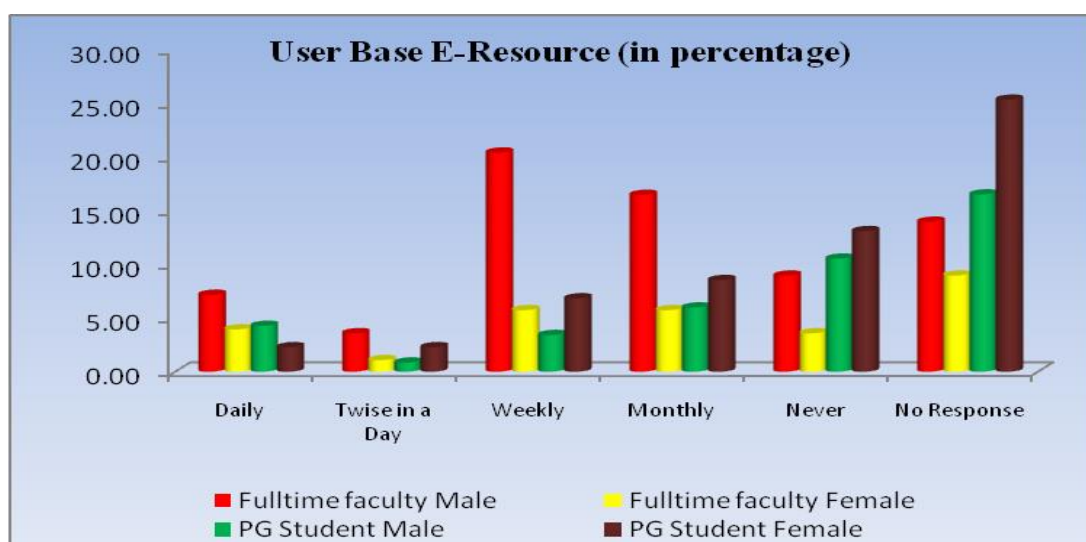
Table No. B-8
Frequency of usage of e-resources

Category	Fulltime faculty		PG Student	
	Frequency	Percentage	Frequency	Percentage
Daily	31	11.12	23	6.56
Twice in a Day	13	4.66	11	3.14
Weekly	73	26.17	36	10.26
Monthly	62	22.22	51	14.52
Never	35	12.54	83	23.64
No Response	65	23.29	147	41.88
Total	279	100	351	100

Table No. B-8 and Graph No.B-8 indicate that majority of the fulltime faculties and Post graduate students are using to e-resources monthly with rate of 22.22 and 14.52% respectively. But present study observed that maximum P.G category with rate of 23.64% have expressed that never usage of electronic resources. In this research study also indicates that F.F. and PG community gives preference to e-resources on weekly basis with rate of 26.17 % and 10.26% respectively. Followed by daily and twice in a day use of e-resources by both communities is found least as compared to other like 11.12% and 6.56% by F.F. and P.G category respectively.

The present research study further reflected that never use of e-resources by both communities is on high rate among P.G. as compared to F.F. with rate of 23.64% and 12.54% respectively. Present research study significantly shows that no response rate is also higher responded by both categories. Therefore, in this research study table No. B-8 indicates that there is urgent need to increase the awareness and regular usage of e-resources among the users category by libraries of Arts, Commerce and Science College libraries in Satara district. Following graph No. B-8 indicates the picture of frequency usage by academic community of ACS.

Graph No. B-8

**Observation**

The present study observed that maximum users from fulltime faculty are use e-resources on monthly basis and followed by they use weekly and daily with rate of 26.17%, 22.22% and 11.12% respectively. Most of PG students use e-resources on monthly with rate of 14.52% and followed by weekly and daily with rate of 10.26% and 6.56% respectively. Further, study found interesting result that majority students with rate of 23.64% never use e-resources.

There is need to encourage among both user category for frequently use of resources for their academic carrier. In this way, variation among usage of e-resources is found.

Ques. No. 9: Do you get these facilities free of cost?

It was intended to get an idea whether ACS libraries are providing e-resources facilities with free or cost or payable basis. The investigator has got the information regarding this issue and presented as below.

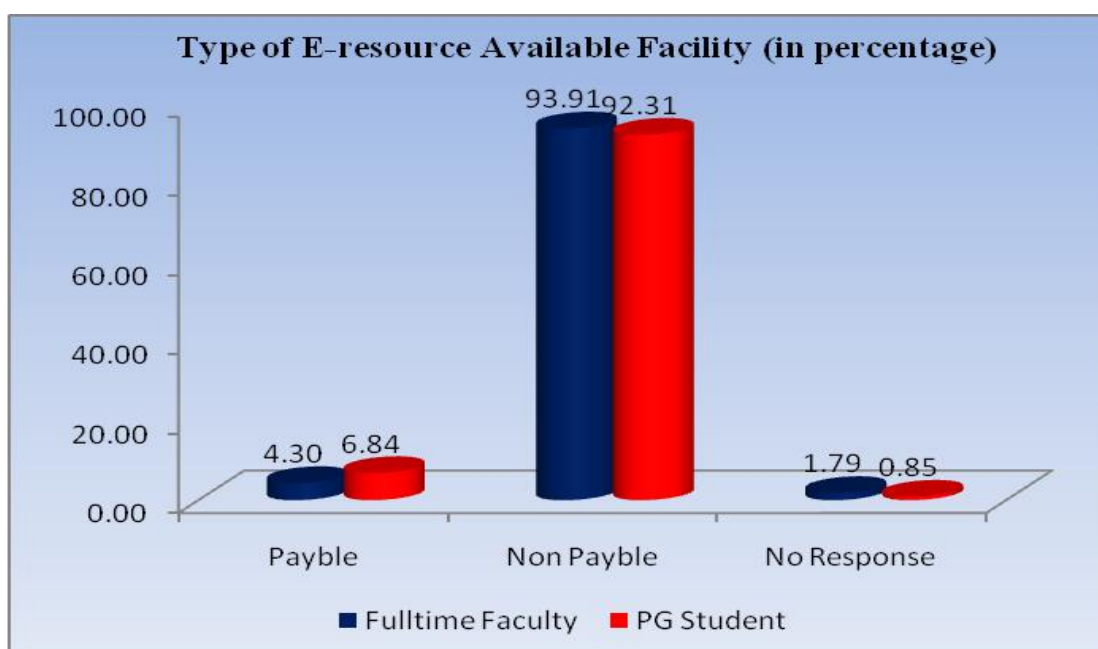
Table No. B-9
Nature of facility

Class	Fulltime Faculty	Fulltime Faculty (%)	PG Student	PG Student (%)
Payable	12	4.30	24	6.84
Non Payable	262	93.91	324	92.31
No Response	5	1.79	3	0.85
Total	279	100	351	100

(F.F.: Fulltime faculty, P.G.: Post Graduate student, ACS: Arts, Commerce, Science)

Above Table No. B-9 and Graph No. B-9 indicate that majority respondents have said that facilities of electronic resource is available with free of cost with rate of 93.91% F.F. and 92.31% PG respectively. It is a good indication which shows that there is availability of free of cost facilities in the ACS colleges from Satara district. And rate of payable is very least as compared to Non-payable. But it is the need to consider the opinion about Payable to make available 100% free of cost for whole respondents because most of the colleges come under the rural and drought prone area. Therefore, there is the need of increasing these facilities with free of cost for enhancement and encouragement among the respondents. In this regard, some respondents have opined that average 10-20 Rs. Per hour Internet and printing charges have been taken from students.

Graph No. B-9



Observation

Through this study it is observed that only 4.30% and 6.64% opined that e-resources are available on payable basis with least fees in the Arts, Commerce, and Science College libraries in Satara District. But majority users from both category opined about non payable availability of e-resources. It is good sign that majority ACS libraries have made available scholarly resources to their users with free of cost.

Ques. No. 10: If no, what are the charges?

In this study researcher wanted to know whether these charges are expensive or affordable to student community. The respondents opined about range of charges which are recovered by ACS libraries and this factual information is presented as below.

Table No. B-10
Charges for e-resources

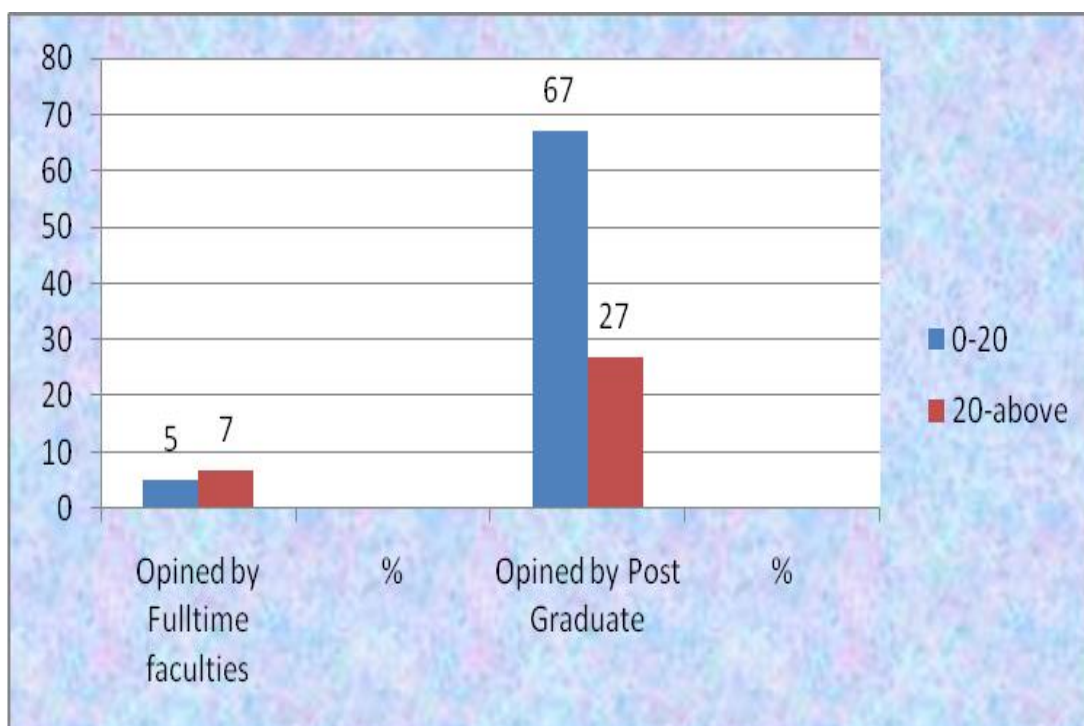
Range of charges in Rs.	Opined by Fulltime faculties		Total	Opined by Post Graduate		Total
	Yes	No		Yes	No	
0-20	5 (1.80)	274 (98.20)	279 (100)	67 (19.08)	284 (80.92)	351 (100)
20-above	7 (2.50)	272 (97.50)	279 (100)	27 (7.69)	324 (92.31)	351 (100)

Note: Tables in bracket indicate percentage.

(F.F.: Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-10 explains the opinions about charges which have to pay for e-resources usage by academic community. In this regard, the study identified that a very least number of user from both category have opined charges about itself. 1.80% user from F.F. category and 19.08 percent from PG community said that they have to pay up to 20 Rs. Charges for e-resources use. Further, 2.50% and 7.69% user from both category opined that they have to pay more than 20 Rs. In this research study clearly indicates that these charges are actually by the fewest user communities which are affordable but it is the need to make available e-resources facility to use for poor student community. Following graph indicates the present picture of ACS libraries in Satara District.

Graph No. B-10



Observation

It is observed that least number of users from both category with rate of 1.80% and 19.08 (Fulltime faculties and PG students) opined that up to Rs. 20 have to be paid for e-resources usage in libraries. But majority P.G. with rate of 80.92% do not agree about pay charges more than Rs. 20. The present study clearly indicates that ACS libraries provide mostly free service to their readers which is opined by majority F.F. and P.G. with rate of 97.50% and 92.31% respectively. Only fewest numbers have opined that have to more than Rs. 20.

Ques. No. 11: For what purpose do you use the e-resources?

In this study researcher is eager to know get an idea about purpose of using these electronic based resources. Hence, investigator has included various type of option as purpose of using e-resources. The respondents have expressed their purpose behind applying these resources

Table No. B-11
Purpose of e-resource usage

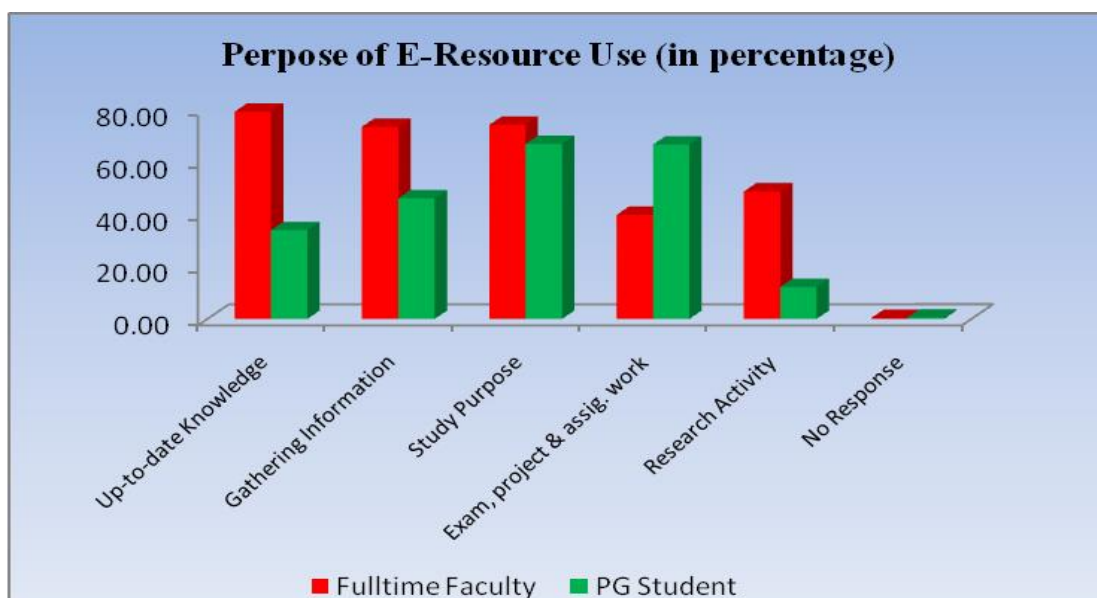
Purpose of use e-resources	Fulltime Faculty			PG Student		
	Yes	No	Total	Yes	No	Total
Up-to-date Knowledge	221 (79.21)	58 (20.79)	279 (100)	119 (33.90)	232 (66.10)	351 (100)
Gathering Information	205 (73.47)	74 (26.53)	279 (100)	162 (46.15)	189 (53.85)	351 (100)
Study Purpose	207 (74.19)	72 (25.81)	279 (100)	235 (66.95)	116 (33.05)	351 (100)
Exam, project and assign. work	111 (39.78)	168 (60.22)	279 (100)	234 (66.66)	117 (33.34)	351 (100)
Research Activity	136 (48.74)	143 (51.25)	279 (100)	43 (12.25)	308 (87.74)	351 (100)

Note: Tables in to the bracket indicate percentage.

(F.F.: Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

The researcher asked question to collect information related to the purpose of using e-resources. The perception of the end users has been collected on the aspects such as to update the knowledge, just gather the information, for study of purpose, Exam preparation, projects, assignment works and research activity, etc. In this study table no B-11 shows the data collected, which indicates that the maximum number of full-time faculty as well as PG students use e-Resources to update knowledge with rate of 79.21% and 33.90%, for study purpose 74.19 % and 66.95%, for gathering information 73.47 % and 46.15%, for research activity 48.74 % and 12.25% and for preparation of exam, projects, assignments, etc. 39.78% and 66.67% respectively. Present research data indicates that much variation in the use of the e-resources from purpose point of view from user to user. The maximum fulltime faculty use e-resources to update knowledge whereas least number of students uses it for the same. In this study, on the other hand maximum students use them for exam preparation whereas minimum faculty use for evaluation purpose. As far as research component is concerned, more faculties prefer the use of e-resources whereas least number of students use for the same. It means that the faculty is more active in the usage of e-resources in comparison with the PG students. As today's PG students are tomorrow's teachers, the PG students must be given more exposure to these resources by creating awareness among them.

Graph No. B-11



Observation

The present study identified variation about purpose behind use of e-resources among both type of user category. It is observed that majority fulltime faculties used e-resources in keeping purpose of update knowledge with rate of 79.21% and followed by study purpose, gathering information, exam oriented, and research activity with rate of 74.19%, 73.47%, 39.78%, and 48.74% respectively.

The purpose behind using of e-resources found among PG category is contradictory as fulltime faculties that their main purpose is study and exam oriented with rate of 66.95% and 66.66% followed by gathering information, up to date knowledge and research oriented with rate of 46.15%, 33.90% and 12.25% respectively.

The result of the present study clearly indicates that fulltime faculty's use e-resources in keeping view of broad approach by maximum numbers whereas PG students' intention is narrow like study and exam, project oriented. But least number of students has moved in keeping view of research and up to date knowledge purpose.

Today, there are a lot of scholarly and valuable resources available on various platforms which will be beneficial for doing excellent research work. Therefore, librarians have to take efforts in proper guidance and encouragement about use of e-resources database.

Ques. No. 12: if you are using e-resources, how many research papers have you published?

In this study researcher has asked this question to user community in keeping view of impact of use of electronic resources. The investigator had an aim to find out enhancement in academic performance in terms of research publication. The present study is reflected in the following table and graph way.

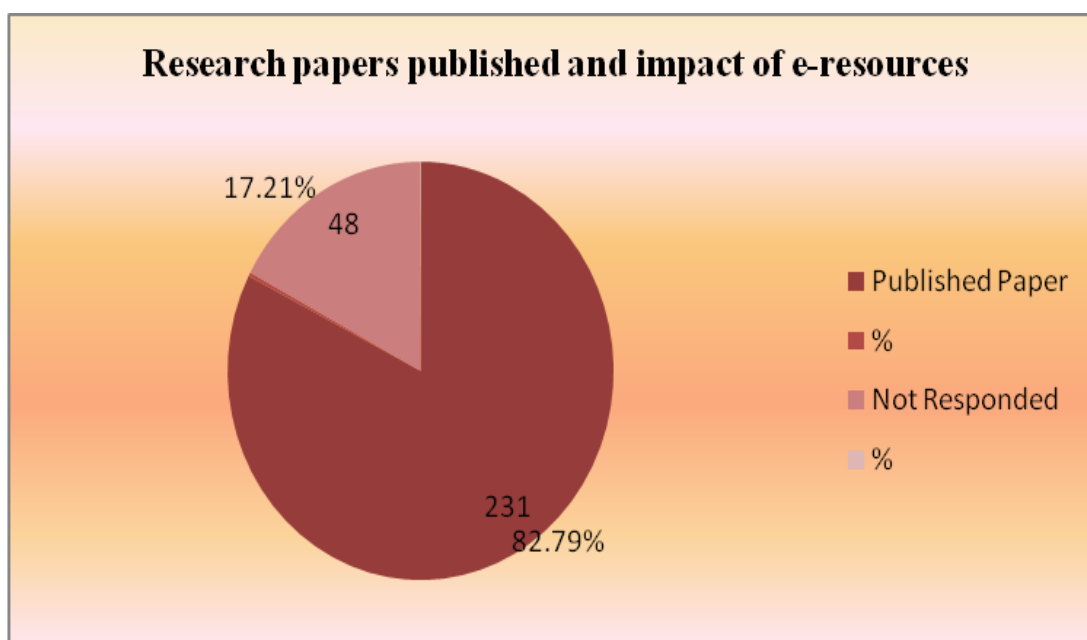
Table No. B-12
Research paper published

Category	Published Paper	%	Not Responded	%	Total
Fulltime	231	82.79	48	17.21	279 (100%)
PG Stud.	0	0	351	100	351 (100%)

(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

In the present research study shows the impact of using e-resources on academic community which is reflected through their research publication. This research study indentified it and realized impact of using e-resources among fulltime faculties. In this regard, majority fulltime faculties have published their research work with rate of 82.79%. and 17.21% have not responded to this question. Further, it is found that there is no one published a single paper by PG community and 100% not responded by them. In short, good impact of e-resources is observed among F.F. category. Following graph No. B-12 shows about it clearly.

Graph No. B-12



Observation

It is observed that majority fulltime faculties have published research papers with rate of 82.79% and still 17.21% are away from it. Moreover, interesting and serious result is identified that nobody have published a single research paper among PG students. There is urgent need to encourage among PG category as well as those fulltime faculties who have not published research papers.

Ques. No. 13 Do you know UGC Info net Consortia/N-List Programme?

UGC Info net consortia holds scholarly literature which is valuable for Arts, Commerce and Science Stream academic community and therefore researcher would like to know whether ACS community are familiar with it or not. The present situation is presented as below.

Table No. B-13**Known with UGC Info net consortia/ N-List Programme**

Known with UGC Info net consortia/ N-List Programme	Fulltime Faculty	Fulltime Faculty (%)
Yes	151	54.12
No	127	45.52
No Response	1	0.36
Total	279	100

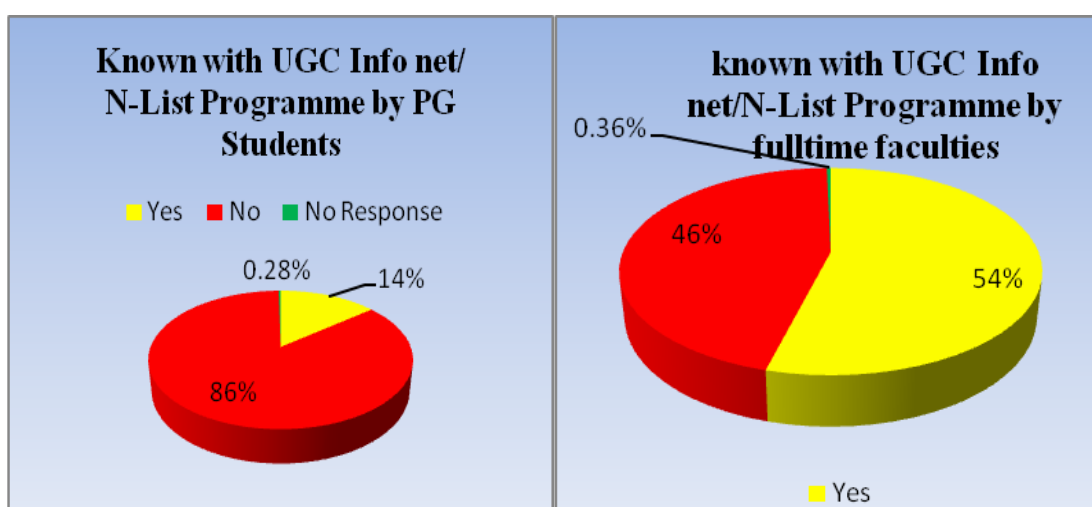
Known with UGC Info net consortia	PG Student	PG Student (%)
Yes	50	14.25
No	300	85.47
No Response	1	0.28
Total	351	100

(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above Table No. B-13 shows that 151 faculty with 54.12% rate are familiar with UGC Info net consortia whereas 127 faculties with 45.52 % rate are unfamiliar with this facility and 1 faculty with 0.36 hasn't given response. It is a serious matter that 45.52 % faculty needs to be trained properly through awareness about this facility. Further it indicates more serious situation in case of the awareness about

UGC Info net consortia/ N-List in a sense that very few students i.e. only 50 out of 351 students with the rate of just 14.25 % are familiar with this facility. 85.47% post graduate students still are away from this valuable platform. There is urgent need to increase awareness among both user communities about consortium platform which holds and fulfills academic needs of them. The present research study clearly depicts that Fulltime faculties are more aware and familiar with UGC Info net consortia than PG student's community but both category are not fully aware with this scholarly platform in this digital era. The following pie-charts show the familiarity status of user community.

Graph No. B-13



Observation

It is observed that 54.12% fulltime faculties are familiar with UGC Info net/ N-List Programme but still 45.52% are unknown with this valuable platform. Further, it is serious situation about familiarity with UGC Info net/ N-List Programme among PG students that majority respondents are unknown with this platform with rate of 85.47% and least numbers are known with UGC Info net/ N-List Programme with rate of 14%. The present study clearly indicates that there is urgent need of training and increasing familiarity about UGC Info net/ N-List Programme among both type of user's category.

Ques. No. 14: Are you familiar with other Consortia except UGC Info net/ N-List Programme?

Today, there is more number of consortium platforms which have arrived in the market including valuable scholarly resources with different discipline to discipline. The literature from this platform will assist as references to academic community regarding Arts, Commerce and Science stream also. Therefore, the researcher had purpose to know whether these community are familiar with this consortium platform.

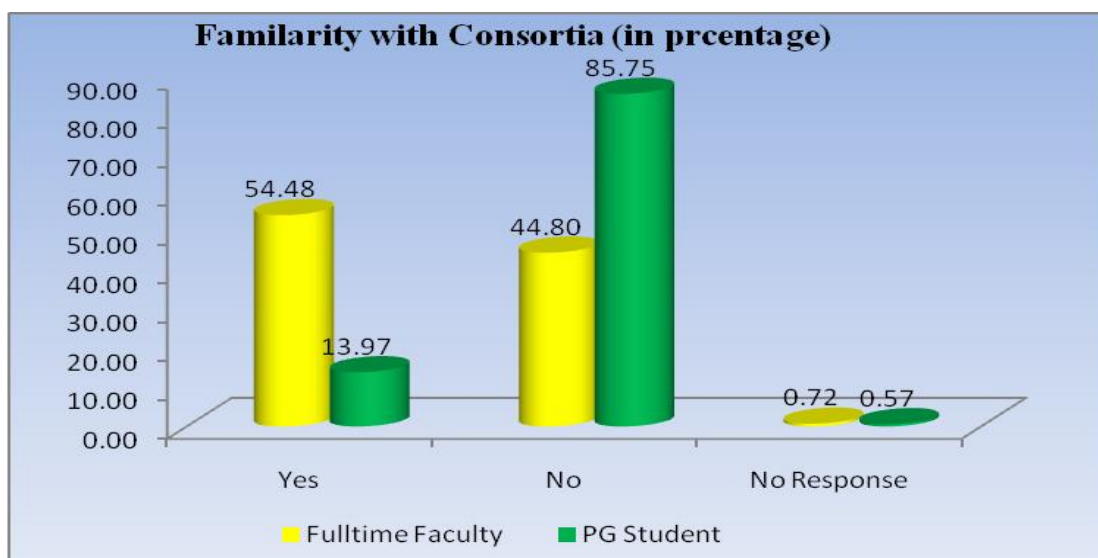
Table No. B-14
Familiarity with other Consortia Platform

Access	Fulltime Faculty	PG Student	Fulltime Faculty (%)	PG Student (%)
Yes	152	49	54.48	13.97
No	125	301	44.80	85.75
No Response	2	1	0.72	0.28
Total	279	351	100	100

(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-14 exhibits the data showing familiarity of the user community with other consortia than the UGC Info net consortia. In this present research study data indicates that the percentage of full-time faculty awareness about other consortia is more with the rate of 54.48 % than the PG students with the rate of 13.97%. The proportion of unfamiliarity among the PG students is also more with the rate of 85.75% than the faculty with the rate of 44.80%. Hence, the present research study indicates that unfamiliarity with other consortium is very poor among post graduate community and still 13.97% fulltime faculties also are not aware about it. The following graph states this variation of other consortia familiarity except UGC Info net consortia:

Graph No. B-14

**Observation**

The present study identified that majority fulltime faculties are familiar with other consortia except UGC Info net/ N-List Programme and majority PG students are unknown with other platform with rate of 54.48% and 85.75% respectively. It means that still near about 50% F.F. and 85.75% PG students are unknown with other educational consortia platform.

Ques. No. 15: From which consortia do you get information?

There was intention to know from which consortium platform mostly they access electronic resources. Question holds various type of consortium platform for getting preferable choice platform. Opinion of both type of user community is presented as below in the form of table and figure.

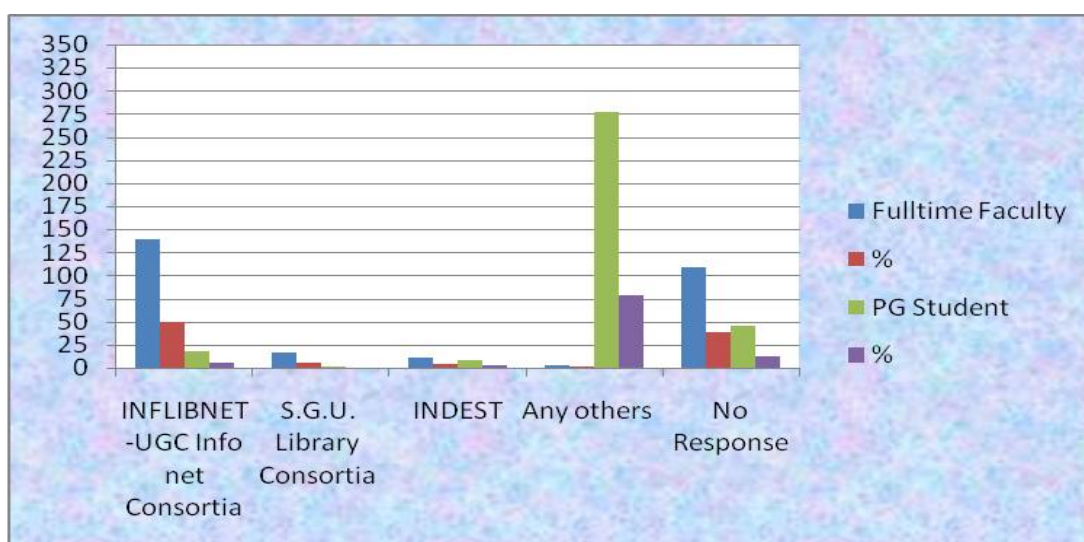
Table No. B-15

Information Accessibility through Consortia Platform

Name of consortia	Fulltime Faculty	%	PG Student	%
UGC Info net Consortia/ N-List Programme	139	49.82	18	5.12
S.G.U. Library Consortia	17	6.09	1	0.28
INDEST	11	3.94	9	2.56
Any others	3	1.07	277	78.91
No Response	109	39.06	46	13.10
Total	279	100	351	100

The above table No. B-15 shows the various consortia used by the users who are familiar with consortia as information sources. The present research study full-time faculty and PG students use other consortia like INFLIBNET – UGC Info net/ N-List Programme with the number of 139 and 18, SGU Library Consortia with 17 and 01, INDESST with 11 and 09, any other with 03 and 277 respectively. The data also focuses on the variation of number in respect of the use of other consortia by the Full-time faculty and PG Students. It's again a serious factor that the 109 Full-time faculty and 46 PG students have not responded to this question. The following graph No. B-15 shows the accessibility of electronic resources from various type of platform by both type of user community.

Graph No. B-15



Observation

It is observed that 49.82% users from fulltime faculties access UGC Info net/ N-List Programme and followed by 6.09%, 3.94%, and 1.07% access from S.G.U., INDEST and Any other platform respectively. Further, it is found that a very least number of PG students access e-resources from except UGC Info net/ N-List Programme, S.G.U and INDEST 5.12%, 0.28%, and 2.56% respectively. It means that near about 50% faculties still do not access valuable UGC Info net/ N-List Programme platform.

The present study found interesting results that any other platform is preferred by majority P.G. students with rate of 78.81%. Therefore, study indicates that there is need to find out about exactly any other platform which are opined by majority number among P.G. category which will be beneficial to library professionals for providing better and interesting resources to their patrons.

Ques. No. 16: From where do you access electronic resources from the consortia or other platform?

To understand the access place where patrons go to find, search, download and sharing electronic resources the researcher has asked question to both community.

Table No. B-16
Access place to E-resources

Access point	Fulltime Faculty			PG Student		
	Yes	No	Total	Yes	No	Total
At Library place	203 (72.76)	76 (27.24)	279 (100)	162 (46.15)	189 (53.85)	351 (100)
Through Computer Lab	137 (49.10)	142 (50.90)	279 (100)	160 (45.58)	191 (54.42)	351 (100)
Through Laptop, Smart Phone	187 (67.03)	92 (32.97)	279 (100)	262 (74.64)	89 (25.36)	351 (100)
Through Internet Café	105 (37.63)	174 (62.37)	279 (100)	141 (40.17)	210 (59.83)	351 (100)

Note: Tables in to the bracket indicates percentage.

(F.F.: Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

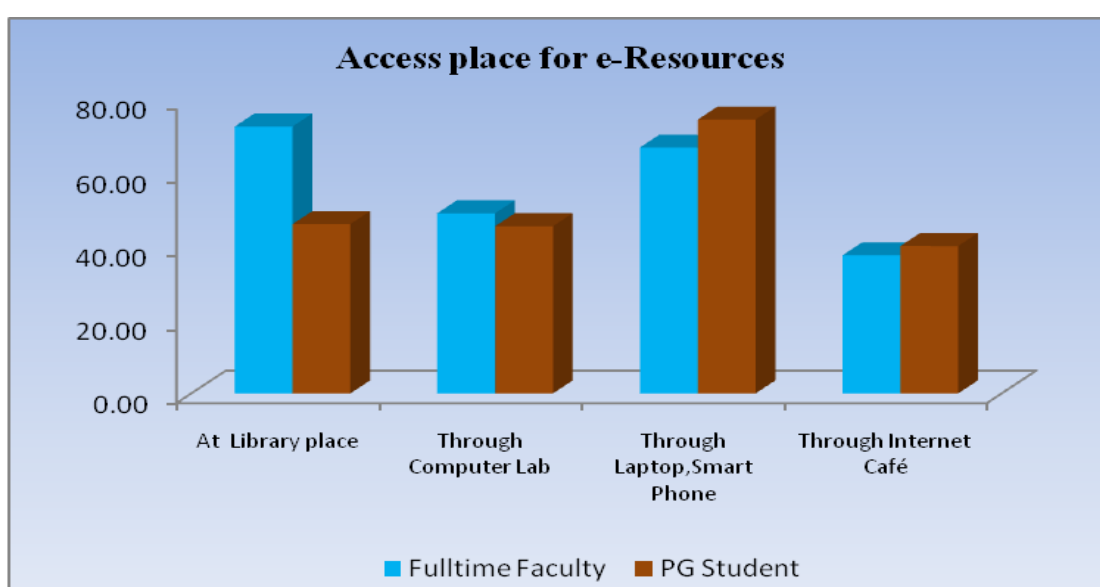
Above table No. B-16 contains the data regarding access place by which e-resources are enjoyed by user community of ACS libraries. In this present research study shows that majority full-time faculty access electronic resources in the place of central library whereas PG students prefer individual Laptops and Smart phones for enjoying these resources. Full-time faculty and PG students utilize to electronic resources at library point with the rate of 72.76% and 46.15%, in the computer Lab with 49.10% and 45.58%, through Individual Laptops, Smart phones with 67.03 and 74.64, and Internet Café with 37.63% and 40.17 % respectively.

In short, the study clearly indicates that fulltime faculties still prefer central library as comfortable place for enjoying electronic based resources whereas students community is not interested in using electronic resources at library place with maximum number and they prefer to latest technological tools as their own laptop and smart phone. Present research study also found that near about 40% from both category users go to Internet cafe. It means that ACS libraries need to develop and

extend facility to academic community for using and enjoying electronic resources with comfortable place and time. In this way, the study identified variation among both type of user community about access place by ACS libraries in Satara District. The following graph indicates the variation in the medium of use of electronic resources.

The present research study identified that majority fulltime faculties prefer to access the resources at library place and students' community prefer to their own laptop and smart phone with rate of 72.76 and 74.64% respectively.

Graph No. B-16



Observation

In this present research study observed that majority full-time faculty access electronic resources in the central library whereas PG students prefer individual Laptops and Smart phones for enjoying these resources. Full-time faculty and PG students utilize electronic resources at library point with the rate of 72.76% and 46.15%, in the computer Lab with 49.10% and 45.58%, through Individual Laptops, Smart phones with 67.03 and 74.64, and Internet Café with 37.63% and 40.17 % respectively.

In short, the study clearly indicates that fulltime faculties still prefer central library as comfortable place for enjoying electronic based resources whereas students community is not interested in using electronic resources at library place with maximum number and they prefer latest technological tools as their own laptop and smart phone.

Ques. No.17: Do you know present available online and offline resources subscribed by Library?

It is most important to be familiar with electronic resources which are subscribed by their academic libraries. The library holds good number of resources for their user community but this information should be spread among academic community otherwise large number of amount which has been spent by institutions on e-resources will fail and become useless. Keeping this approach and purpose, the investigator has asked this question to academic community to get present situation about it.

Table No. B-17

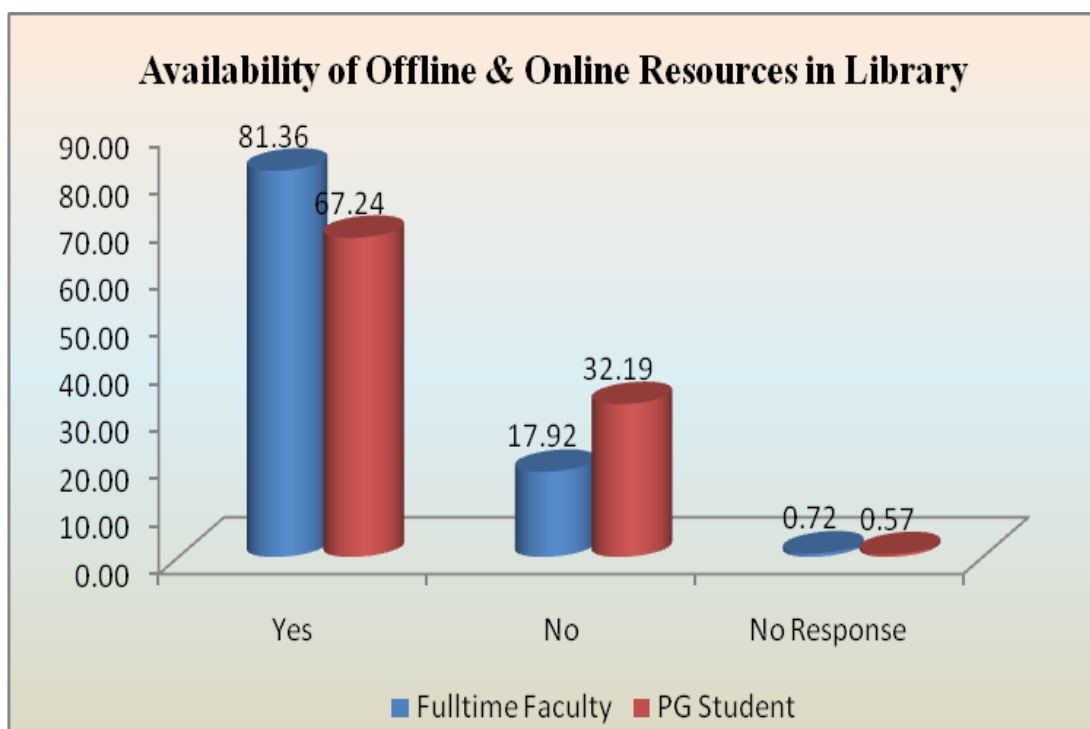
Known with availability of Online and Offline Resources in Library

Availability of e-resources	Fulltime Faculty	PG Student	Fulltime Faculty (%)	PG Student (%)
Yes	227	236	81.36	67.24
No	50	113	17.92	32.19
No Response	2	2	0.72	0.57
Total	279	351	100	100

(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-17 reflects the data about opinions of faculties as well as PG students regarding availability of Online and Offline resources in libraries of Arts, Commerce and Science Colleges in the jurisdiction of Satara district and affiliated to Shivaji University, Kolhapur. The present research study indicates that majority users opined that both types of resources are available in their libraries with opined rate of 81.36% F.F. and 67.24% P.G. students. The negative response is given by the least users with the rate of 17.92% FF and 32.19% PG. In this study clearly indicates that there is adequate availability of both type of electronic resources in the library as well as maximum respondents are familiar with availability of electronic resources whether it is in online or offline form which are subscribed by ACS libraries with rate of 81.36% and 67.24% by fulltime faculties and PG students respectively. But still away about availability of e-resources within libraries by 17.92% and 32.19% F.F. and P.G. respectively. The following graph shows the same.

Graph No. B-17

**Observation**

The present study observed that majority users that both types of resources are available in their libraries with opined rate of 81.36% FF and 67.24% PG students. The negative response is given by the least users with the rate of 17.92% FF and 32.19% PG. This study clearly indicates that there is adequate availability of both type of electronic resources in the library as well as maximum respondents are familiar with availability of electronic resources whether it is in online or offline form which are subscribed by ACS libraries with rate of 81.36% and 67.24% by fulltime faculties and PG students respectively.

Ques. No. 18. While accessing e-resources which search engine is used by you?

In this study search engine is playing vital role in finding information from treasure of knowledge which is stored on database platform or internet area. Today, there are different types of search engines available in internet area. In this situation, the researcher wants to know which type of search engine is used for searching their relevant information. Received opinions are presented in the following table and graph.

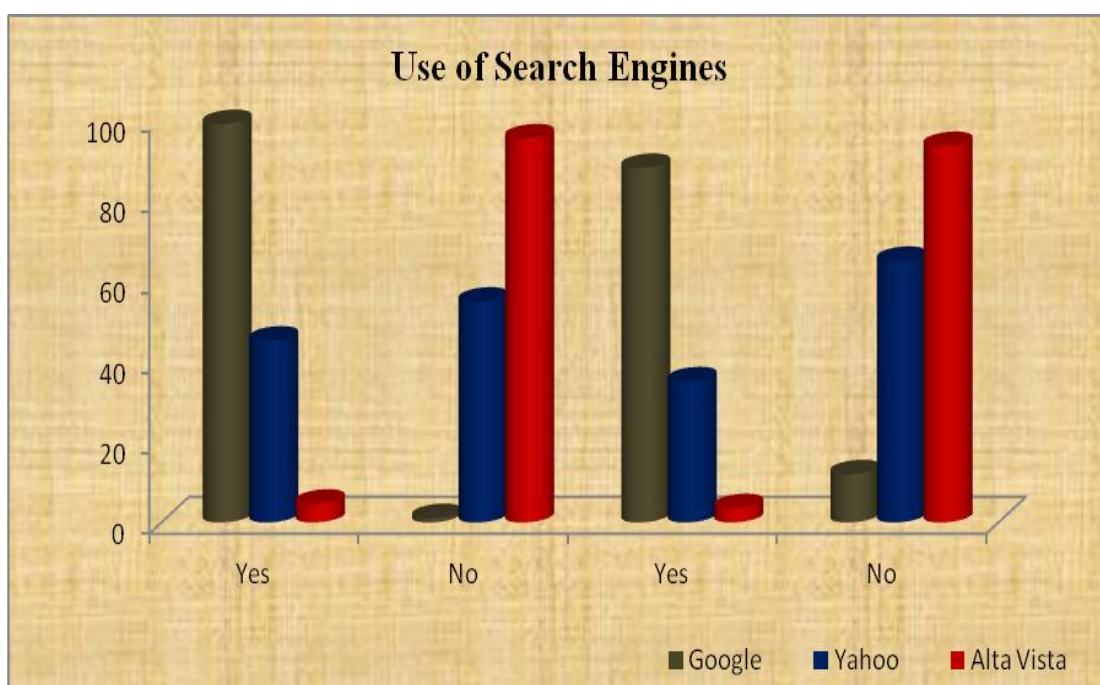
Table No. B-18
Use of Search Engines

Search Engine	User Category					
	Faculty			PG Student		
	Yes	No	Total	Yes	No	Total
Google	276 98.92%	03 1.08%	279 100%	309 88.03%	42 11.97%	351 100%
Yahoo!	126 45.16%	153 54.84%	279 100%	123 35.04%	228 64.96%	351 100%
AltaVista	13 4.65%	266 95.35%	279 100%	23 3.55%	328 93.45%	351 100%

(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-18 highlights on the use of search engines by library users. Proper application of search engine is important in this digital based resources era. The present research study shows that full-time faculty and PG students use Google as search engine with the number of 276 and 309, Yahoo! with 126 and 123, Alta Vista with 13 and 23 respectively. It means that Google search is mostly liked by maximum users and therefore Google search engine is playing important role among user community of ACS College libraries for finding or searching information from various sources. In short, the present research study identified that majority users mostly prefer Google as search engine than any other search engines. The following graph shows the data related to the use of search engines by the users.

Graph No. B-18



Observation

It is observed that majority F.F. and P.G. category with rate of 98.92%, 88.03% respectively prefer to Google search for searching e-resources information rather than Yahoo! and AltaVista. It means that Google Search engine has become popular among both type of user category.

Ques. No. 19: Which type of keyword is used while searching e-resources?

Keyword is also playing major role for finding proper information relevant to needs of academic community. Without proper utilization of keyword one cannot get exact information within time. Hence, researcher would like to know the application of keywords by user community from ACS libraries in the Satara District.

Table No. B-19**Key words used while search**

Access point	Fulltime Faculty			PG Student		
	Yes	No	Total	Yes	No	Total
Subject	251 (89.96)	28 (10.04)	279 (100)	265 (75.50)	86 (24.50)	351 (100)
Title	197 (70.61)	82 (29.39)	279 (100)	165 (47.01)	186 (52.92)	351 (100)
Author	105 (37.63)	174 (62.37)	279 (100)	70 (19.94)	281 (80.06)	351 (100)
Publisher	66 (23.66)	213 (76.34)	279 (100)	34 (9.69)	317 (90.31)	351 (100)

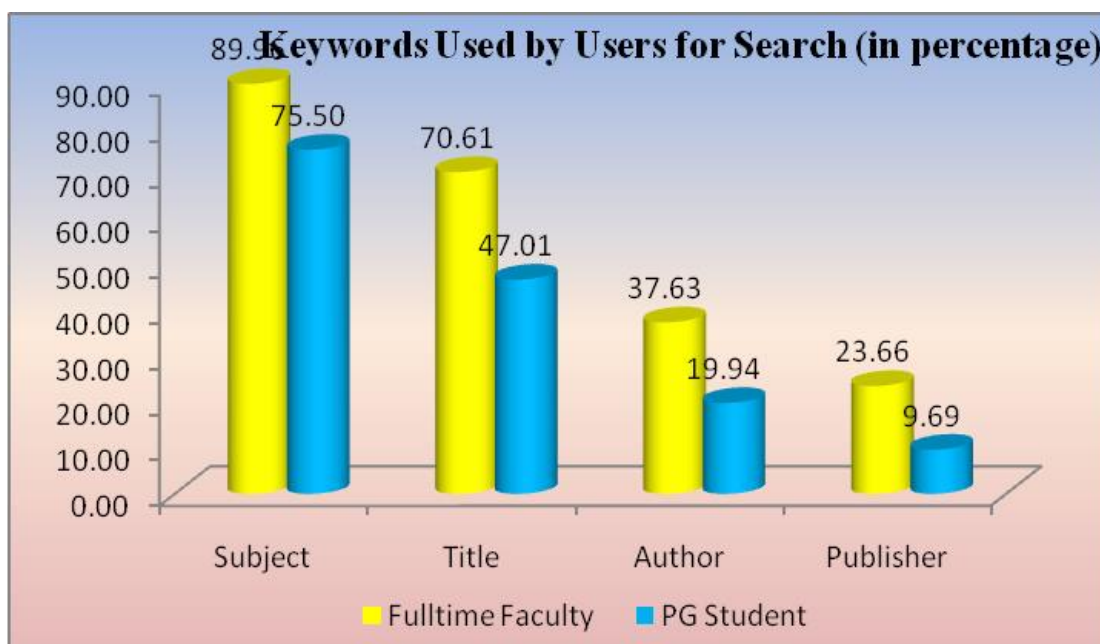
Note: Table in to the bracket indicates percentage.

(F.F.: Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Key words are important for searching the information properly and precisely. In this study, Researcher intends to investigate the search methods used by the users while searching the electronic resources from the database on the Internet. The present research study table No. B-19 indicates that majority users use subject as a keyword more than the other keywords such as Title, Author and publisher. The fulltime faculty and postgraduate students of ACS colleges in Satara district use subject as a keyword with the rate of 89.96% and 75.50% respectively. Title as the keyword is also popular among them with rate of 70.61% and 47.01%, whereas the keyword Author is used with rate of 37.63% and 19.94% and least used keyword as Publisher with rate of 23.66% and 9.69% respectively. Further it is found that as compared to Subject keyword other keywords are used in less number. So it is the need of the hour that there should be proper guidance and training provided to the

users about using the title, author and publisher as keywords for the effective use of the electronic resources. The following graph No. B-19 shows the proportionate use of keywords by users.

Graph No. B-19



Observation

It is observed that majority users use subject as a keyword more than the other keywords such as Title, Author and Publisher. The fulltime faculty and postgraduate students of ACS colleges in Satara district use subject as a keyword with the rate of 89.96% and 75.50% respectively. Title as the keyword is also popular among them with rate of 70.61% and 47.01%, whereas the keyword Author is used with rate of 37.63% and 19.94% and least used keyword as Publisher with rate of 23.66% and 9.69% respectively. In short, it is realized that as compared to Subject keyword other keywords are used in less number.

Ques. No. 20: Which problems are faced while using e-resources?

There was purpose of researcher to understand the problems or barriers while using these electronic based resources by user community of ACS College libraries. The investigator has assumed some general problems and put before academic community to realize the fact. The present research study identified wonderful problems before these communities while enjoying these e-resources. These problems have been presented as per following table and graph.

Table No. B-20
Problems related to use of e-resource

Problems	Fulltime Faculty			PG Student		
	Yes	No	Total	Yes	No	Total
Low speed of Internet	247 (88.53)	32 (11.47)	279 (100)	245 (69.80)	106 (30.20)	351 (100)
Frequent Power shortage	182 (65.23)	97 (34.77)	279 (100)	183 (52.13)	168 (47.87)	351 (100)
Lack of Proper knowledge	90 (32.25)	189 (67.75)	279 (100)	143 (40.74)	208 (59.26)	351 (100)
Lack of guidance and Training	44 (15.77)	235 (84.23)	279 (100)	127 (36.18)	224 (63.82)	351 (100)
Less Computers Connectivity	67 (24.01)	212 (75.99)	279 (100)	104 (29.62)	247 (70.38)	351 (100)
Lack of support of Library Staff	23 (8.24)	256 (91.76)	279 (100)	72 (20.51)	279 (79.49)	351 (100)
Any Other	2 (0.71)	277 (99.29)	279 (100)	1 (0.28)	350 (99.72)	351 (100)

Note: Tables in to the bracket indicate percentage.

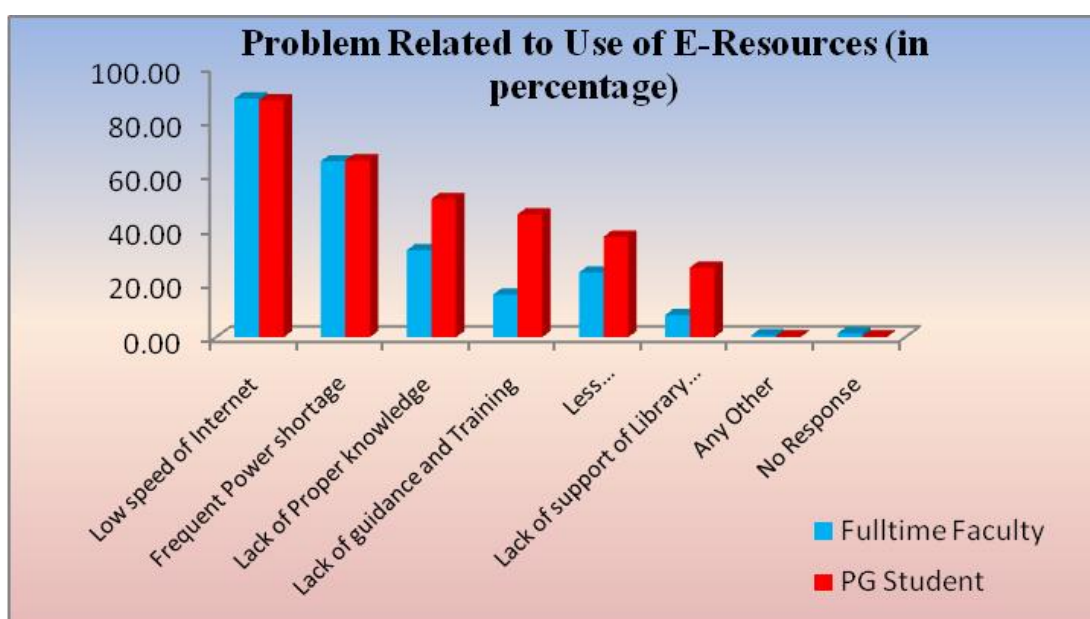
(F.F.: Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-20 and graph no B-20 indicate the problems faced by users while using the electronic resources. The present research study found that major problem is the low speed of Internet for both fulltime and PG students with the rate of 88.53% and 69.80% respectively. This problem has to be solved urgently by the library administration. The next problem is the frequently power shortage for both types of users with the rate of 65.23% and 52.13% respectively. Lack of proper knowledge, lack of guidance and training, less computer and internet connectivity, lack of support of library staff problems are the general problems faced by the faculty and PG students with rate of 32.25% and 40.74%, 15.77% and 36.18%, 24.01% and 29.62% and 8.24% and 20.51% respectively.

In short, although study reflects the major problem i.e. low speed of internet which is faced by both category of users who opined with high rate, besides this lack of proper knowledge and lack of guidance and training is expressed by student community with rate of 51.25% and 45.52% respectively which is serious problem and it should be immediately solved by library professionals. Without proper knowledge and correct guidance students cannot enhance their academic performance and that is why there is urgent need to conduct information literacy programme in this

digital based electronic era. Further, the study also identified that user community does not get support from library professionals and this problem is found in more number among student community as compared to fulltime faculty. This problem should be considered by management and higher authority which is a big barrier while enjoying or using electronic based resources. Inadequate computer terminals are also found through this present study. Besides this, any other problems are mentioned in least number with rate of 0.71% and 0.28 % by fulltime faculties and PG students respectively. Following graph No. B-20 indicates the entire picture of problems among user community of ACS libraries in Satara District.

Graph No. 20



Observation

The present research study investigated that major problem is the low speed of Internet for both fulltime and PG students with the rate of 88.53% and 69.80% respectively. This problem has to be solved urgently by the library administration. The next problem is the frequently power shortage for both types of users with the rate of 65.23% and 52.13% respectively. Lack of proper knowledge, lack of guidance and training, less computer and internet connectivity, lack of support of library staff problems are the general problems faced by the faculty and PG students with rate of 32.25% and 40.74%, 15.77% and 36.18%, 24.01% and 29.62% and 8.24% and 20.51% respectively.

In short, although study reflects the major problem i.e. low speed of internet which is faced by both category of users who opined with high rate, besides this lack of proper knowledge and lack of guidance and training is expressed by student community with rate of 51.25% and 45.52% respectively which is serious problem and it should be immediately solved by library professionals.

Ques. No. 21: Are you satisfied with Electronic resources and UGC Info net, Information services and facilities which are provided by your Library?

The aim of this question is to get overall satisfaction level of academic community about electronic resources facility and services, consortia, infrastructure etc. Whether user community from ACS College libraries is satisfied or dissatisfied has been attempted to know by the researcher. In the present situation about satisfaction level of ACS community is presented following tables and graph no B-21.

Table No. B-21

Satisfaction about Electronic resources and facilities

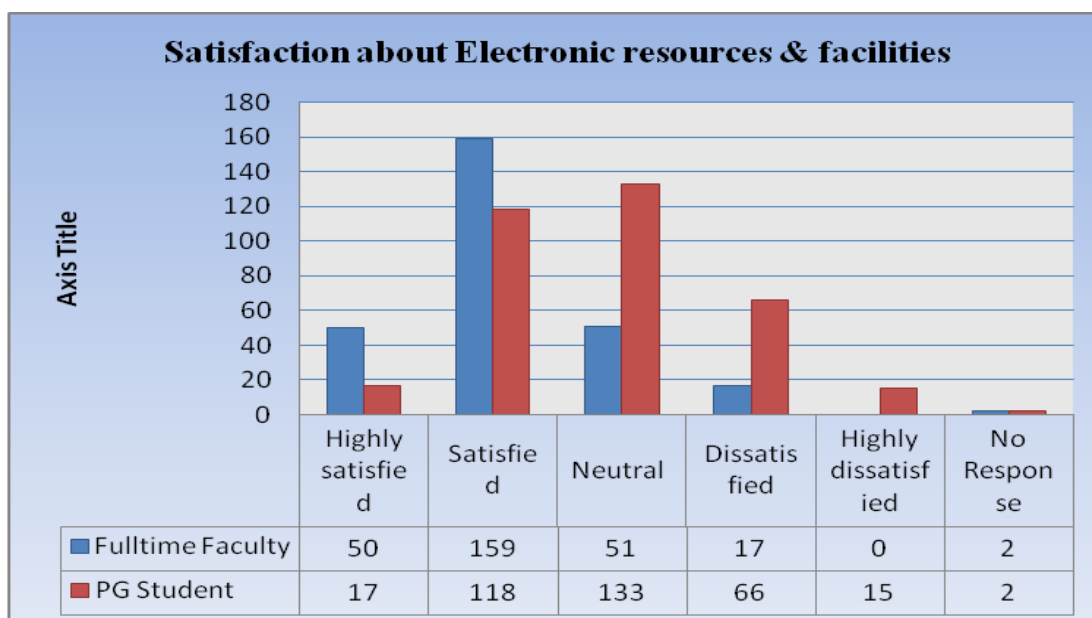
Satisfaction with sources and services	Fulltime Faculty	PG Student	Fulltime Faculty (%)	PG Student (%)
Highly satisfied	50	17	17.93	4.84
Satisfied	159	118	56.98	33.62
Neutral	51	133	18.28	37.89
Dissatisfied	17	66	6.09	18.80
Highly dissatisfied	0	15	0	4.27
No Response	2	2	0.72	0.57
Total	279	351	100	100

(**F.F.:** Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

Above table No. B-21 and the graph no B-21 state the satisfaction index of the user community about the electronic services and the access facilities such as UGC Info-net, Online and Offline Resources, Computer and Internet facility, and Library Information Services. In this study data shows that majority users are quite satisfied with the facilities available to access e-resources in their college libraries. The satisfaction rate of the faculty and PG students is 56.98 % and 33.62% respectively. As far opinions about satisfaction in terms of Neutrality, dissatisfaction,

and highly dissatisfied, the rate of PG students is higher than the faculty. Highly satisfaction rate is found as 37.89% and 18.28, 18.80% and 6.09%, 4.27 and 0.00 among P.G. and F.F. respectively. It means that faculty seems to be highly satisfied than the PG students with the rate of 17.93 and 4.84 respectively.

Graph No. B-21



Observation

The present study observed that majority users are quite satisfied with the facilities available to access e-resources in their college libraries. The satisfaction rate of the faculty and PG students is 56.98 % and 33.62% respectively. As far opinions about satisfaction in terms of Neutrality, dissatisfaction, and highly dissatisfied, the rate of PG students is higher than the faculty. Highly satisfaction rate is found as 37.89% and 18.28, 18.80% and 6.09%, 4.27 and 0.00 among P.G. and F.F. respectively. It means that faculty seems to be highly satisfied than the PG students with the rate of 17.93 and 4.84 respectively.

Ques. No. 22: Overall Opinion by respondent

This open ended question was included within questionnaire for getting opinion, views, suggestion from entire user community regarding this study. User community from both categories has expressed their suggestion and views with various manners. These opinions have been sorted out by investigator and classified into three parts. Which is mentioned as below in table No. B-22.

Table No. B-22
Opined by both type of user community

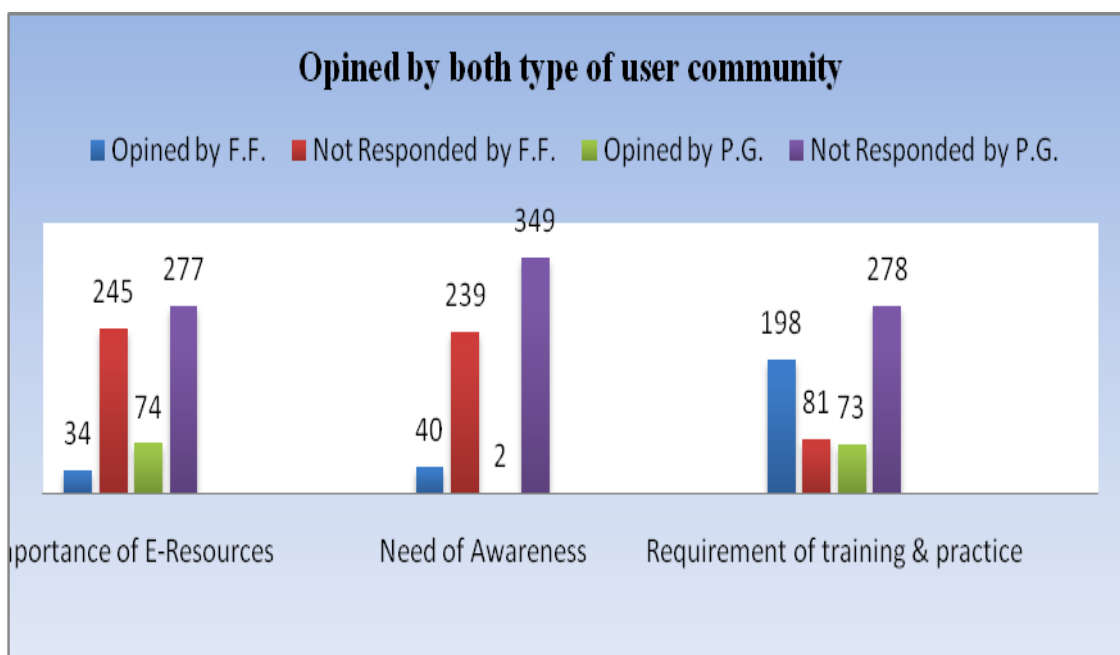
Opinion about	Opined by F.F.	Not Responded by F.F.	Total	Opined by P.G.	Not Responded by P.G.	Total
Importance of E-Resources	34 (12.18)	245 (87.82)	279 (100)	74 (21.08)	277 (78.92)	351 (100)
Need of Awareness	40 (14.33)	239 (85.67)	279 (100)	02 (0.56)	349 (99.44)	351 (100)
Requirement of training and practice	198 (70.96)	81 (29.04)	279 (100)	73 (20.79)	278 (79.21)	351 (100)

Note: Tables in to the brackets indicate percentage.

(F.F.: Fulltime faculty, **P.G.:** Post Graduate student, **ACS:** Arts, Commerce, Science)

In this study, Researcher has attempted to get various suggestions, views and experiences of patrons about overall study. Collected data has been analyzed and categorized in three parts which is mentioned as above table. These open minded opinions and views were different types and expressed what they want. Although this question has got less response as compared to not responded category but their views were valuable. By 34 and 74 respondents (F.F. and P.G.) from both categories suggested the importance of electronic based resources which are very useful to develop carrier. It is good sign that they realized the valuable importance in this electronic era. Further, they have expressed the need of awareness of e-resources by F.F. and PG community with number of 40 and 02 respectively. But this need is least desired by students community. Further study indentified that majority F.F. and P.G. with number of 198 and 278 respectively have desired their need about proper training and practice.

Graph No. B-22



Observation

These open minded opinions and views are of different types and expressed what they want. By 34 and 74 respondents (F.F. and P.G.) from both categories suggested the importance of electronic based resources which are very useful to develop carrier. Further, they have expressed the need of awareness of e-resources by F.F. and PG community with number of 40 and 02 respectively. But this need is least desired by students community. Further study indentified that majority F.F. and P.G. category with number of 198 and 278 respectively have desired their need about proper training and practice.



Chapter - 5**FINDINGS, SUGGESTION AND CONCLUSION****5.1 Introduction**

Knowledge and Information play a pivotal role in the progress and development of society. In the course of the time, knowledge and information providing centers have undergone a drastic change. The traditional library, providing hard bound volumes, has been changed into the digital library providing e-resources at one click, thus turning the whole atmosphere of information resource centers. The nature and scope of the libraries in Arts, Commerce and Science colleges also have shown a debut change in their functions and nature of works. As far as the present users of the library are concerned, e-Libraries only can quench their thirst of knowledge and information through digital mode in the form of e-resources.

This chapter is implicit with the review of the overall work and the detailed analysis done in the previous chapters. It includes summary, major findings of the study, conclusions drawn and tenability of hypothesis, suggestions for improvement and avenues open for further research. The researcher designed the structured questionnaire including qualitative and quantitative based questions for collecting required data from the restricted population of the present research study. The findings of the study are as follows:

5.2 Major findings from data analysis of librarian questionnaire (Ques. 'A' for librarian)

1. The Colleges located in Satara district are having either single stream or more than one Stream. There is 1 college with Arts Stream, 1 College with, 1 with Commerce, 1 College with Arts and Science Stream, 3 Colleges with Science stream, 14 Colleges with Arts and Commerce and 22 Colleges with three streams i.e. Arts, Commerce and Science. It means there is in Satara district majority Colleges are with three streams. (Table 3, P. 169)
2. Result indicates that the Arts, Commerce and Science Stream Institutions have been updated with e-mail and website in number of 31 out of 35 colleges in Satara district. (Table No. A-1, P. 170)

3. The present study identified that the number of male category of librarians is more than the female category librarians with number of 26 and 9 respectively. (Table No. A-2, P. 172)
4. It is observed that there are 35 colleges under 12(b) and 2(f) of UGC recognition and all are aided colleges in Satara district. (Table No. A-3 and A-4, P. 173-74)
5. Result indicates that the Maximum colleges with rate of 34.28% (in number 12) have been established during the period of 1991-2001 and only two colleges are opened after 2012. (Table No. A-5, P. 174)
6. Librarian staffs are fulfilled with highest rate of 97.14% which is a good sign found among ACS institutions in Satara district but supportive staff which is essential in this automation and digital environment that is Asst. Librarian, Clerk, Data Operator and Computer Technician posts are filled with rate of 8.57%, 62.85%, 14.28% and 8.57% respectively which is inadequate in this electronic resources environment. (Table No. A-6, P. 176)
7. The study identified that maximum 17 institutions run only 1-5 departments, 11 colleges run 6-10 departments and more than 10 departments are run in various discipline by only 7 institutions of Arts, Commerce and Science Streams in Satara district. It means that less number of colleges run more departments in various subjects and more number of colleges in number of 17 run only up to 5 departments in various subjects. (Table No. A-7, P. 178)
8. Majority enrollment of students is found during the period of 2017-18 that is 62070 as compared to other duration in the ACS institutions of Satara district. It means that from 2014 up to 2018 is found growth rate in enrollment of students slow in the institutions in Satara district. (Table No. A-8, P. 180)
9. Most of the academic staff is with Asst. Professor, Associate Professor and Professor grades in Art stream rather than Science and Commerce with number of 551, 177 and 258 respectively. It is also observed that majority faculties are as Asst. Professor in all streams with rate of 77.85%, 75.70% and 60.07% respectively and least rate is identified in Professor grade in number of 11, 7 and 9. (Table No. A-9, P. 181)
10. Reference service is provided by majority libraries with rate of 97.14%. Followed by Internet, Bibliographic, E-resource and CAS services are

provided with percentage of 88.57%, 85.71%, 80.00%, and 77.14% respectively. OPAC, SDI, Online Search, Consortia, Indexing and Abstracting services are provided with least percentage with rate of 71.43%, 71.43%, and 68.57%, 57.14% , 54.29 and 40.00% respectively. (Table No. A-10, P. 183)

11. ACS libraries have been automated with 86% and remaining libraries with the rate of 14% still have not been moved towards automation process in this digital culture. (Table No. A-11, P. 185)
12. Present research study identified that majority academic libraries have applied various type of softwares with rate of 85.17% and only one library has implemented D-Space named software for digitization process and no one has applied their institutional designed software in this area. (Table No. A-12, P. 186)
13. Result of the study shows that out of 35 ACS libraries 31 libraries have made available internet facility to their academic community for accessing the electronic based resources and 4 libraries are still unable to provide internet connectivity to their users. (Table No. A-13, P. 188)
14. Result indicates that 30 libraries have applied Broadband as Internet service system and a single library has used leased line for providing ICT based resource services to their library users. (Table No. A-14, P. 189)
15. The present study identified that maximum libraries with rate of 48.57% have made available internet speed in range 20-100 Mbps, followed by 9 libraries provide 0-20 Mbps, 4 libraries provide 120-258 Mbps speed and 5 libraries have made available 256-500 Mbps speed of internet. Study clearly indicates that majority libraries provide lowest internet speed in range of 20-100 and there is no one library which has made available more than 500 Mbps speed of internet for enjoying e-resources without hurdle to their patrons. (Table No. A-15, P. 190)
16. The poor power back up is one of the major hurdles in accessing the e-resources. The power back up facilities available in the select libraries such as UPS, Inverter, and Generator are with the rate of 65.71%, 42.86%, and 31.43% respectively. Further, it is observed that there is one library that provides other type of backup facility and one is not providing backup system. (Table No. A-16, P. 192)

17. Some of the libraries possess good number of print and non-print resources in the selected libraries of the study area. Print resources are more than non-print sources. Present study found that near about 50% that is e-books with 51.43%, e-journals with 48.57%, e-databases with 48.57% and offline based CD/DVD resources are 65.71% available among ACS libraries in Satara District. (Table No. A-17, P.194)
18. Majority libraries with the rate of 82.86% and 80.00% possess print based books and journals respectively. Besides, it is found that there is a poor situation among institutional repositories, DVD and microfilm based resources that maximum libraries do not possess such type of resources with the rate of 85.71%, 60.00% and 97.14% respectively. (Table No. A-17, P. 194)
19. Hardware and Software based facilities are found with inadequate condition as compared to enrollment of academic community among these institutions. Client computer, Server, Printer and scanner have been possessed by ACS libraries in number of 30, 14, 16 and 10 respectively. Further, it is found that LCD projector, windows s/w and other type of facilities have been made available by only 3 libraries. Only six libraries have purchased e-book reader. In short, they didn't spend adequate amount on hardware infrastructure and further study found that software based infrastructure do not with 100% available. (Table No. A-18, P. 196)
20. Result of the study indicates that books have been published by teachers with rate of 25.80%, 17.20%, 27.95% and 29.03% during the period of 2014-15, 2015-16, 2016-17 and 2017-18 respectively. The study clearly shows that maximum teachers didn't publish more books in the period from 2014-2018. As compared to all duration majority teachers in number 81 have published books in 2017-18 and less number teachers have published books in 2015-16. It is a serious matter that maximum teachers from all duration didn't publish a single book. (Table No. A-19, P. 198)
21. Result indicates that Maximum numbers of ACS libraries have got membership from UGC Info net/ N-List platform with rate of 74.29% and fewer have accepted from other platform. It means that mostly these libraries are dependent on N-List platform. It is also observed that there is no any library which has accepted membership from SGU (Amaravati) consortia and

- INDEST platforms. Further, it is identified that still 25.71% libraries didn't get membership from UGC Info net/ N-List. (Table No. A-20, P. 200)
22. It is also found that 37% libraries preserve their own publication at their own platform and 54% have not done this work and remaining have not responded to this question. It means that majority libraries with rate of 54.00% are not still moved towards preservation of research papers published by their patrons. (Table No. A-21, P. 201)
 23. Result indicates that Maximum research papers have been published at National level seminar rather than International and state level since 2014-18 and only single paper has been published at other level which means college level platform. Further, it is observed that as compared to total population of faculty and students the rate and figure of published work is very small. (Table No. A-22, P. 203)
 24. For supporting teaching and learning purpose, libraries are purchasing these electronic resources with rate of 94.29 %. To enhance the research and development, to increase the grade of college, to help in exam oriented and to help in research and book publication with rate of 88.57%, 68.57%, 65.72%, and 82.86% respectively. In short, the research study clearly indicates that ACS libraries have given more priority to teaching learning purpose as compared to other intention. It is also found that the purpose behind subscription of e-resources is to increase the grade of college which is mentioned by 68.57% libraries. Such type of narrow approach should not be kept while subscription of e-resources by higher education system. By 17.14% librarians kept apart from any other purpose which is not shown. (Table No. A-23, P. 204)
 25. Result indicates that the opinion of librarians about the availability of e-resources is satisfied with rate of 61.12% and not satisfied with 39.88%. (Table No. A-24, P. 206)
 26. Due to the lack of budgetary provision, these libraries could not enrich their e-collection. The next problems have to be faced are the lack of technically supporting staff, less support of authority with rate of 72.29 % and 25.71 % respectively. In short, lack of budget and supporting technical staffs are major problems found among these libraries. (Table No. A-25, P. 207)

27. It is concluded that most of the librarians are well aware of the open e-resource facility with the rate of 83% which is a very good sign of the changing scenario of the libraries. But still 17% libraries are unaware with this scholarly OERs platform. (Table No. A-26, P. 209)
28. Result found that 89% librarians opined positively for recommending the users to use open e-resources which will give immediate and effective access to the information and it will result into smooth functioning of the library services. But still 11.00% libraries are not moved towards it. (Table No. A-27, P. 211)
29. Result indicates that 75 % librarians declared that the library users use open e-resources. Very few librarians opined with the rate of 22.22% that their users do not access these resources. (Table No. A-28, P. 212)
30. It is concluded that out of all the activities and programmes conducted by the Arts, Commerce and Science College libraries in Satara district, user orientation programme is conducted with high rate of 97.14% in almost all libraries. Further, study also indicates that information literacy programme is conducted by 88.57%, followed by PPT of E-resources, Hand on practical, e-circular and any other programme is conducted by 88.57%, 60.00%, 71.43% and 5.71% respectively. It means that majority libraries conducted various programmes for increasing use of e-resources among their patrons. (Table No. A-29, P. 214)
31. Highest rate of 77.14% librarians expressed the compulsory and regularly teaching about information literacy to their users. It is also observed that budget problem for e-resources collection is opined by 45.71%. Result indicates that 88.57% librarian community has told that these resources are very essential in this electronic era to fulfill the academic needs of patrons in this changing world. Besides it, some respondents with rate of 20 % have expressed their experiences that they themselves are not fully familiar with this platform based resources. And lastly, by 11.42% community could not express their opinion about this question. (Table No. A-30, P. 216)

5.3 Major findings from data analysis of user questionnaires_(Ques. 'B' for user)

1. The sample of 287 (45.55%) female and 343 (54.44%) male respondents have responded to the questionnaire issued to them. Male category have responded more than female. (Table No. B-1, P. 218)
2. The stream wise number of respondents shows that majority respondents are belonging to Arts stream with rate of 25.40% and 35.56% F.F. and P.G. followed by respondents from science streams responded with rate of 31.55% and 29.63%. F.F. and P.G. respectively. Less number of respondents have responded from commerce stream with rate of 11.11% and 6.56% F.F. and P.G. respectively. (Table No. B-2, P. 219)
3. Study identified that majority users from F.F. are aware with and created their e-mail account with the rate of 81.36% and least number with the rate of 18.63 have not still created their e-mail account. Further, it is found that near about 50% PG students have designed e-mail account and remaining patrons are still away from this platform. (Table No. B-3, P. 221)
4. The present study observed that maximum users from both category (F.F. and P.G.) have mostly visited library for getting information and resources with rate of 98.21% and 92.03% respectively and few number do not visit. It is a good sign in the digital environment that majority users have been visiting library still today. (Table No. B-1, P. 222)
5. As far as awareness regarding library services is concerned, majority user community is aware of the services provided as compared to unaware and not sure. The percentage of the PG Students (51.90%) about awareness of the same is more than the full-time faculty (42.38%). (Table No. B-2, P. 223)
6. The important information ways by which library users get the information about library services are six in number. Notice board is the first position with response rate of 91.76%, followed by College Magazine 78.49%, E-mail 45.51%, and College website 41.57%, Whatsapp 39.78% among the fulltime faculty of ACS colleges in Satara. Among the PG students, it is identified that for 78.63% notice board is playing a major role for getting information about library service. Followed by 67% College Magazine, College website and Library website 30.20% similar and 20.22%, 10.82% and 9.11%, Whatsapp,

Telephone and E-mail respectively get information about the library service through these ways. The present study clearly indicates that traditional based notice board and college magazines are more popular among both user categories as compared to other ICT based information ways. Further, it is also observed that majority libraries have moved towards ICT based ways for providing library information to their patrons. (Table No. B-3, P. 225)

7. Library services are mostly used by the user community of ACS colleges in Satara district. The reference service is more popular than other services among the fulltime faculty and PG students of ACS with rate of 93.54% and 64.38% respectively. Internet is popular with rate of 80.28% and 69.51%. Electronic resources (e-books and e-journals) are mostly used by fulltime faculty with rate of 51.97% than PG students. The online search service is more popular among the fulltime faculties than PG students with percentage of 55.91% and 30.48% respectively. Bibliographic, OPAC, indexing with rate of 34.76% and 34.40%, 34.76% and 28.49%, 37.03% and 9.40% among the fulltime faculty and PG students respectively. Further, observed that E-mail, CAS and SDI based services are least used by both types of user category. (Table No. B-4, P. 227)
8. There are adequate computers, connectivity and infrastructural facilities in the Arts, Commerce and Science colleges under Satara district. Majority respondents opined with rate of 86.73% and 86.32% F.F. and P.G. respectively that they have mentioned sufficient facilities but less numbers of respondents are not positive about this facility therefore there is need to make these 100% facilities available in this digital environment. (Table No. B-5, P. 229)
9. Electronic resources are most important aids in the information and communication era. Majority respondents belong to fulltime faculties and Post graduate students who are familiar with e-resources with highest rate of 90.68% and 84.61% respectively. From both respondent groups, the very less number of users are unfamiliar with e-resources. (Table No. B-6, P. 231)
10. The present study observed that maximum users from fulltime faculty use e-resources on monthly basis and followed by they use weekly and daily with rate of 26.17%, 22.22% and 11.12% respectively. Most of PG students use e-

resources on monthly with rate of 14.52% and followed by weekly and daily with rate of 10.26% and 6.56% respectively. Further, study found interesting result that majority students with rate of 23.64% never used e-resources. (Table No. B-8, P. 235)

11. Result of the study identified that there are various reasons behind not using e-resources; they do not need library for e-resources, having their own books and using e-resources at home by fulltime faculties and PG students have opined with rate of 10.40%, 22.59% and 48.02% as well as 50.99%, 41.33% and 36.18% respectively. (Table No. B-7, P. 233)
12. Through this it is observed that only 4.30% and 6.64% opined that e-resources are available on payable basis with least fees in the Arts, Commerce, and Science libraries in Satara district. But majority users from both category opined non payable availability of e-resources. It is a good sign that majority ACS libraries have made available scholarly resources to their users with free of cost. (Table No. B-9, P. 236)
13. This study found the impact of using electronic resources in that majority fulltime faculties have published their research talent with highest rate of 82.79% whereas PG community still not shown any symptom of publication. (Table No. B-12, P. 242)
14. The present study identified variation about purpose behind use of e-resources among both type of user category. It is observed that majority fulltime faculties use e-resources in keeping purpose of updating knowledge with rate of 79.21% and followed by study purpose, gathering information, exam oriented, and research activity with rate of 74.19%, 73.47%, 39.78%, and 48.74% respectively. The purpose behind using e-resources found among PG category is contradictory as fulltime faculties that their main purpose is study and exam oriented with rate of 66.95% and 66.66% followed by gathering information, update knowledge and research oriented purpose with rate of 46.15%, 33.90% and 12.25% respectively. The result of the present study clearly indicates that fulltime faculties have used to e-resources in keeping view of broad approach by maximum numbers whereas PG students intention is narrow like study and preparation of exam, project oriented. But least

- number of students has moved towards research and update knowledge purpose. (Table No. B-11, P. 240)
15. The total 151 faculties with 54.12% rate are familiar with UGC Info net consortia whereas 127 faculties with 45.52 % rate are unfamiliar with this facility. Further, serious matter is observed that total 300 with 85.57% are unknown with this platform and only 50 students with rate of 14.25% are familiar with UGC info net/ N-List resources. Study clearly indicates that near about 50.00% faculties are still away from this valuable platform and unfamiliarity rate is high among PG than faculty. (Table No. B-13, P. 243)
 16. The percentage of full-time faculty awareness about other consortia is more with the rate of 54.48 % than the PG students with the rate of 13.96%. The proportion of unfamiliarity among the PG students is also more with the rate of 85.75% than the faculty with the rate of 44.80%. (Table No. B-14, P. 245)
 17. The full-time faculty and PG students access other consortia like INFLIBNET – UGC Info net/N-List with the number of 139 and 18, SGU Library Consortia with 17 and 1, INDESST with 11 and 9, any other with 3 and 277 respectively. (Table No. B-15, P. 246)
 18. In this present research study, it is observed that majority full-time faculty access electronic resources in the place of central library whereas PG students prefer individual Laptops and Smart phones for enjoying these resources. Full-time faculty and PG students utilize electronic resources at library point with the rate of 72.76% and 46.15%, in the computer Lab with 49.10% and 45.58%, through Individual Laptops, Smart phones with 67.03 and 74.64, and Internet Café with 37.63% and 40.17 % respectively. In short, the study clearly indicates that fulltime faculties still prefer central library as comfortable place for enjoying electronic based resources whereas students prefer technological tools like smart phone and laptop etc. (Table No. B-16, P. 248)
 19. About availability of Online and Offline resources in the libraries of Arts, Commerce and Science Colleges in the jurisdiction of Satara district, majority users opined that both types of resources are available in their libraries with the rate of 81.36% FF and 67.24% PG Students. (Table No. B-17, P. 250)

20. The Full-time Faculty and PG Students use Google as search engine with the number of 276 and 309, Yahoo! with 126 and 123, Alta Vista with 13 and 23 respectively. The majority users mostly prefer Google as search engine than any other search engines. (Table No. B-18, P. 252)
21. Result indicates that the Maximum users use subject as a keyword to access information at the most than the other keywords such as Title, Author and publisher with the lesser rate. Study clearly shows that subject keyword is used by F.F. and P.G. with high rate of 89.96% and 75.50% respectively. (Table No. B-19, P. 253)
22. The present research study found that major problem is the low speed of Internet for both fulltime and PG students with the rate of 88.53% and 69.80% respectively. The next problem is the frequently power shortage for both types of users with the rate of 65.23% and 52.13% respectively. Lack of proper knowledge, lack of guidance and training, less computer and internet connectivity, lack of support of library staff are the general problems faced by the faculty and PG students with rate of 32.25% and 40.74%, 15.77% and 36.18%, 24.01% and 29.62% and 8.24% and 20.51% respectively. (Table No. B-20, P. 255)
23. Result indicates that the maximum users are quite satisfied with the facilities available to access e-resources in their college libraries. The satisfaction rate of the faculty and PG Students is 56.98% and 33.62% respectively. Overall satisfaction ratio is not fully satisfied with 100%. (Table No. B-21, P. 257)
24. These open minded opinions and views were of different types and expressed what they want. By 34 and 74 respondents (F.F. and P.G.) from both categories suggested the importance of electronic based resources which are very useful to develop career. Further, they have expressed the need of awareness of e-resources by F.F. and PG community with number of 40 and 02 respectively. (Table No. B-22, P. 259)

5.4 Suggestions and recommendation as per findings of librarian questionnaire

1. Those colleges which have not still updated their e-mail and website platform should move towards this platform as early as possible in this digital age.
2. Institution's management, authority and government should consider the value of supportive staff and attempt to take steps towards fulfillment of posts in this digital environment.
3. There is urgent need of attention by authority in extending growth of departments with various disciplines in Science and Commerce streams which have demand in market as employment requirement.
4. Apart from reference service of ACS libraries, other services are not provided with 100% is indicated by this present study so library professionals should seriously think on this matter and try to increase value added services relevant to ICT and electronic resources based to their user community as per the need of time.
5. Library automation is a basic step for going towards the digital based libraries and hence those libraries which still have not moved towards this environment they should take step of adopting automation process.
6. There is need to forward ACS College libraries towards automation and digitization environment. Those libraries which are still away from automation and digitization, should rethink about this issue which is necessary in digital environment.
7. Those libraries which still have not availability of internet facility to their students they should implement this facility for enhancement in academic performance. Librarian, Institution authority and management should think positively in this matter.
8. Today, there is urgent need of leased line or Wi-Fi facilities for providing better services to their academic community hence library organization and college authority should be positive and implement such advanced Internet service system for fulfillment of academic needs of their academic community in digital culture.
9. Not only application of Internet facility is important but also Internet speed necessary. Therefore ACS College libraries should use advanced speed based

plan which will be beneficial to both components of education system that is teaching and learning counterpart for enjoying Internet based valuable literature which quick downloading, sharing and accessing.

10. Power backup system should be strengthened.
11. Today's age is considered as electronic age and present study explored less than 50% posses electronic based resources in their library. There is need to increase collection development of e-resources by ACS libraries to their patrons because of changing needs of academic community in virtual environment.
12. ACS institutions have to give priority for enhancement in purchasing hardware and software based infrastructure which is essential for implementation of electronic based services to academic community with large number.
13. ACS institutional authority should encourage their academic community for research work due to insufficient number of research papers have been published by their faculties as compared to large number of academic community.
14. Now there are numbers of consortia based or publisher, vendor platforms available for accessing electronic based resources. Therefore, these libraries should move towards area of subscribing or purchasing e-resources for getting excellent achievement from academic community.
15. ACS College libraries should become aware of and prepare preservation policy for their own published work which will be beneficial in future.
16. Institutional authority and library professionals should motivate and support their academic community for enhancement in publication area. In this regard, University and University Grants Commission should have more financial support for academic community for growth and development in academic performance.
17. It is a good sign of ACS College libraries in keeping main purpose for teaching and learning but they should consider other area such as research and development while subscribing and purchasing scholarly e-resources for their academic community.
18. Institutional management and authority should consider the reason of less satisfaction of librarian community about e-resources availability and support

them with increasing budget for collection development of electronic based resources which is need of time in this electronic resources era.

19. There is urgent need of increasing budgetary provision for especially e-based resources and there should have been adequate technical staff for providing better services to their academic community at global corner. It is also need of positive support of institutional authority for enrichment in electronic collection with various forms which are easily available in the market as per the need of academic community.
20. Today, there is more number of scholarly electronic based resources available with free of charges through various platforms. Library community should continuously encourage to their patrons who are still unaware about it.
21. Library professionals should regularly organize various programmes such as library orientation programme, information literacy course, hand on practice programme for proper usage of electronic based resources etc.
22. Today, there is lot of valuable electronic resources available in various multimedia forms but patrons are not fully aware about it and librarians are unable to make fully aware about these various platforms due to limited programme conducting in limited time in their institutions. Higher Education System and University should consider compulsory teaching programme in information literacy to entire students on timetable basis which will be beneficial in higher education systems with view of growth in excellent academic performance.

5.5 Suggestions and recommendations as per findings of user questionnaire

1. There is urgent need of librarian community to organize programmes and practical sessions about awareness and creation of e-mail account for each and every patron. If all patrons are aware with this platform then it will be beneficial to librarian community for sharing information to their academic community.
2. There is need to make awareness among unknown users of library services for attracting towards library and information centers for getting and knowing value added services which are provided by ACS College libraries.
3. Library and information centers should be added with more user friendly services by which user community will be attracted towards library.
4. Library professionals should use ICT based tools such as Whatsapp, e-mail, blog, twitter etc. for providing information and making awareness among user community about valuable library services.
5. Whatsapp, telephone and e-mail platforms are less used by both categories. Therefore, librarian community should make available and create awareness about such platforms for providing library information and services. Moreover, website should be continuously updated with valuable information as well as embedded with important ICT based tools for getting information as quick as possible to their user community.
6. Library professionals should concentrate on ICT based resources and Information services for optimum utilization. There is need of awareness and literate them about less used services by user community and attract them organizing valuable programmes.
7. The users category who are unfamiliar with electronic based resources, it is need of library authority to make an attempt to make them fully familiar with these resources by counseling or providing its importance in this digital age as well as fulfillment of adequate infrastructure facilities in keeping view of academic community proportion.
8. Academic libraries from Arts, Commerce and Science Colleges should plan for optimum utilization of electronic based resources and particularly organize special programmes for attracting towards valuable electronic resources platform.

9. As per finding of present study which do not need library for non using e-resources is serious issue, it should be considered by authority and enrich the library e-collection for fulfillment of their proper academic need.
10. For research oriented and examination preparation oriented, both community incline for purpose of e-resources using less as compared to other purpose. Hence, there is need to encourage for using scholarly electronic based resources for excellent academic purpose.
11. Efforts should be strengthen by librarians, faculties and authorities about encouragement to PG students regarding paper publication because study found that nobody have published a single paper from PG students.
12. Library should be strengthened with rich collection of e-resources in various forms as well as adequate infrastructure facility for enjoying electronic resources without hurdles by which user can utilize of library and academic performance will be increased.
13. UGC Info net and N-List platform host lot of rich, scholarly content relevant to Arts, Commerce and Science disciplines as well as there are good number of platforms available with rich content. Therefore, there is urgent need to make positive environment and proper guidelines regularly by library professionals for optimum utilization of these gateways in this digital age.
14. Institutional management, MHRD and UGC should provide adequate financial support for making availability of e-book reader facility to academic community for fulfillment of academic needs.
15. Proper guidance and training should be provided by library and information centers to their users about using the title, author and publisher as keywords for the effective use of the electronic resources.
16. Present study indentified various problems among user community which has become barrier while enjoying electronic based resources. ACS libraries should urgently apply advanced high speed plan of Internet and strengthen power back up facility. Besides it, librarian should prepare plan of programme organization for providing proper guidance and practical training to their user community about use of electronic based resources. It is urgent need in this digital culture.
17. Institutional authority and library administration should take forward steps for making fully satisfaction of entire community with providing necessary facilities as per the need of techno savvy user.

5.6 Fulfillment of Objectives and Hypotheses Testing

The researcher has chosen research topic entitled, "Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study" in keeping objectives to study availability of e-resources, use of e-resources, information services provided, availability of infrastructure facility, usage of UGC Info net consortia/ N-List programme, satisfaction level of user and difficulties while using e-resources etc. At the beginning of the study, researcher has established seven objectives and assumed two hypotheses for doing further study.

5.7 Objectives of the present study

1. To study the availability of e-resources in Arts, Commerce and Science College libraries in Satara district.

In chapter No. 3, researcher has described various types of e-resources regarding the Arts, Commerce and Science streams. This chapter will be useful to users and librarians for getting idea about availability of e-resources. In chapter No. 4, Table No. A-10, A-17, A-20, A-21, A-22 and A-24 (from questionnaire A for librarian) as well as Table No. 4, B-15 and B-17 clearly indicates that availability of e-resources among Arts, Commerce and Science College libraries in Satara District.

2. To know the usage of e-resources in Arts, Commerce and Science College libraries in Satara district.

The use of e-resources is reflected in chapter 3 in various colleges of Arts, Commerce and Science streams. In present study, Table No. A- 27, A-28 as well as Table No. B-4, B-8, B-16 shows that usage of electronic resources among Arts, Commerce and Science libraries in Satara District.

3. To analyze the information services provided by Arts, Commerce and Science College libraries using e-resources.

Information services provided by Arts, Commerce and Science College libraries using e-resources are clearly indicated in table No. A-10, A-29 and A-30 from questionnaire A for librarian). Further, table no. B-2, B-3, B-4 and B-22 showed that these libraries are providing valuable information services to their readers. In chapter 3 has description about information services which are provided by Arts, Commerce and Science libraries.

4. To study the availability of infrastructure facility in Arts, Commerce and Science College libraries for using e-resources.

Infrastructure availability is analyzed in the chapter No. 4 through table No. A-1, A-11, A-12, A-13, A-14, A-15, A-16, A-18 from questionnaire A as well as table No. B-5, B-21 from questionnaire B.

5. To study usage of UGC Info net Consortia resources by library users.

Table No. A-20 and B-13, B-14, B-15 clearly indicates that the UGC Info net consortia/ N-List programme based e-resources are used by Arts, Commerce and Science Stream College libraries in Satara district.

6. To assess the level of satisfaction of users after using e-resources.

Satisfaction level of users after using e-resources is reflected in table No. A-22 as well as table No. B-9, B-12, B-21 and B-22.

7. To evaluate the problems faced while using e-resources by patrons of Arts, Commerce and Science College libraries in Satara district.

While enjoying electronic resources users are facing various problems which is reflected in table No. A-6, A-14, A-15, A-16, A-17, A-18, A-25 and A-30 from questionnaire A as well as table No. B-10, B-20, B-21 and B-22 from questionnaire B in chapter No. 4 in detail.

In this way, objectives of present study are fulfilled which are indicated in above mentioned various tables and chapter.

5.8 Hypotheses Testing

1. Library users of Arts, Commerce and Science College libraries in Satara district are using Internet resources for data collection.

Table No. A-28 from questionnaire A (Librarian questionnaire) and table No. B-3, B-4, B-8 from questionnaire B (User questionnaire) clearly indicate that users are using various types of internet resources for data collection with academic purpose. Therefore, hypothesis No.1 is proved correct.

2. Few libraries have started acquiring e-books, e-journals and using UGC Info net resources.

Arts, Commerce and Science College libraries have acquired electronic resources as e-books, e-journals as well as UGC Info net consortia resources which are reflected in table No. A-17 and A-20 from questionnaire A (Librarian questionnaire). Hence, hypothesis No. 2 is proved correct.

5.9 Further scope of study

Present study entitled, “Use of Electronic Resources by Arts, Commerce and Science College Libraries: A Study” is done covering limited area and scope of above mentioned stream colleges in Satara district only. Besides research work on several topics can be done in future as following:

1. Use of multimedia resources by professional and non professional college community from Satara district: A Comparative Study.
2. Impact of N-List programme resources on academic performance of faculties by Arts, Commerce and Science stream Colleges in Satara District.
3. Growth and development of A Graded academic institutions by NAAC in Satara District: A Case Study.
4. Information Seeking Behavior in virtual environment by user community of professional and non professional higher education institutions affiliated to Shivaji University, Kolhapur: A Study.

In this way, there are many problems which can be generated for doing research in future in the area of Satara or anywhere.

5.10 Conclusions

Education system runs on two wheels those are teaching and learning. Learning part of education system is embedded in both the components i.e. teacher and learner. For providing excellent and rational knowledge there have to be need based learning resources. An excellent learner has to study from various resources as per the needs and goals. The hunger of knowledge is fulfilled by proper utilization of learning resources which are preserved in systematic manner at the place of library and today, these libraries are known as knowledge resource centers. Library is nothing but disseminator place of information and knowledge as well as a supporting center to education system for excellent academic performance. Today, in this digital age, library possesses various types of resources including print and non-print. But their use is most important part for getting academic achievement of their academic institution as well as higher education systems. In this approach, researcher was eager to know the present situation about utilization of electronic resources by Arts, Commerce and Science Stream College Libraries in Satara district.

Present research study is carried out by the researcher in keeping view of objectives, hypotheses and the entire objectives have been successfully obtained through various chapters as well as made realized through findings of this study. The investigator has applied appropriate research methodology, tools and techniques of data collection and obtained primary data through two types of questionnaires those are librarian questionnaire and user questionnaire. The received data is analyzed and interpreted in appropriate manner and present research study briefly concluded that libraries from Arts, Commerce and Science stream in Satara District have been updated with website and contact platform which is essential step for use of e-resources in this digital age. Although, it is realized through this study fulfillment of librarian post in maximum colleges but still there is poor situation among supportive staff category. It is good sign of these higher education institutions about fulfillment of higher post but there is still inadequate supportive staffs, particularly ICT oriented which is essential for providing better and effective services in this electronic resources era. Almost, these stream colleges are under 12(b) and 2(f) status by which institutions are able receive grants and facilities from UGC and other higher

educational agencies but there is need to enhancement in academic performance which is not realized though this study because maximum faculties are still surviving as asst. professor rather than associate and professor grade. This ratio is clearly indicates that attempts and progress towards higher education qualifications and so on which is not adequate in this competitive and information age era.

ACS College libraries have been automated applying software's such as Libreria, Virdhi, and SOUL etc. with highest number but majority libraries have used Libreria software for automation process rather than other. Still reference service is provided in more number rather than other valuable services such as Indexing, Abstracting, ICT based and electronic resources oriented etc but it is a good sign found that majority libraries have made available internet facility with broadband system which is basic need for providing electronic resource service as well as excellent platform for academic community for fulfillment of their academic needs in this digital era. But now there are various speed systems and plans available in the market like leased line, wireless Wi-Fi system with 4G/5G etc which should be implemented in this area by which academic community can enjoy downloading and accessing e-resources without hurdle. UPS system is used as backup system by large number of libraries than generator or inverter. Hardware based facilities are adequately found among these libraries but yet poor situation is identified in software based level area.

This study also observed that electronic resources based collection development policy is mostly dependent on UGC Info net consortium and N-List programme and maximum libraries have achieved membership for subscription of e-resources besides other platform. Electronic based resources are preserved by less than 50% ACS College libraries and there is found variation in usage pattern among online, offline and print based resources. Further it is identified that maximum literature is published during the period of 2017-18 and gives mostly preference to national level seminar rather than other platform. Majority ACS College libraries primarily concentrated on teaching learning purpose while subscribing to e-resources and next research development but still some libraries are keeping narrow purpose that is exam purpose and increasing grade of their institution. Librarian community

presently is having various problems while enrichment and prosperity of electronic resources area that is lack of budgetary provision, inadequate supporting staff and less support from higher authorities. Budgetary provision is opined by majority community with highest rate than other. Most of the library professionals are aware with open educational based resources and they recommend to their patrons for their academic career improvement. Almost these libraries conducted user orientation programme as well as information literacy, e-circular and so on but through open ended question majority community have expressed that for providing better library services in electronic resources era there should be mandatory provision of information literacy programme for effective use of electronic based resources in this digital era.

In the user community area, total 630 respondents have responded including fulltime faculties and Post Graduate students. Majority community responded from male category as well as Arts stream as compared to other. Most of F.F. (Fulltime Faculties) are aware with e-mail platform but still 50% PG students are unaware about this area. Present research study identified that good number of users from both categories still visit library and they are aware with library services which are provided by ACS College libraries. User community got information about library services through various ways like college magazine, e-mail, Whatsapp, websites and so on but yet traditional based college magazine is playing high role for dissemination of library information rather than ICT based platform as well as reference service is more popular among both community. Majority community opined about adequate infrastructural facilities and mostly they are aware with electronic based resources but they are not using them daily. Impact of e-resources use is found that 82.79% F.F. communities have published their academic research but still nobody has published single paper in PG community. The maximum number of fulltime faculties and PG community uses e-resources in keeping primary purpose of updating their knowledge rather than academic study, gathering information, research oriented and so on. F.F. communities are more than 50% familiar with UGC Info net consortium but familiarity situation is very poor among PG community. Still, they are not fully moved towards other scholarly platforms which are also playing important role in this information age.

Further, study also observed that faculties go to library for accessing, downloading and sharing electronic based resources but PG community prefer to their laptop and smart phones. Both communities opined in highest numbers that there is adequate availability of online and offline based resources in their academic libraries. Google search engine and Subject keyword is more popular among both community rather than other. At present, user community are facing various problems while enjoying e-resources such as low speed of Internet, power shortage, inadequate commuters, lack of proper guidance and training etc. Low speed of Internet is a major problem opined by majority community. In this way, researcher has studied problem of ACS community in keeping view of objectives in systematic manner and findings of study will be useful for growth and development in higher education system in various aspects.

The present study reflected some good indications that majority users from both faculties and students category are still visiting their library for getting required information and resources as per their needs and wants as well as these communities are moving towards electronic resources and applying various ICT based tools for getting essential information. They are not only dependent on library purchased database but also have moved towards open educational based resources with supporting and guidance of library professionals and faculties. Proper search engine, appropriate keyword using for search data and using various e-resources platform etc. is a good indication found through this present study. But it realized that they are not moved towards it with fully rate still there are various problems while providing services and resources to users by librarians and enjoying these resources among user category.

It can be concluded that there are some libraries which have developed and some are at developing stage. There are some institutions that have achieved excellent academic status such as Dhananjayrao Gadgil College of Commerce, Satara, Chhatrapati Shivaji College Satara, Yashwantrao Chavan Institute of Science, Satara, Sadguru Gadge Maharaj College, Karad and so on. These colleges have made available adequate facilities in terms of physical and academic level. Now these colleges and their libraries are as models among Arts, Science and Commerce streams and therefore they have achieved excellent academic performance and moved towards autonomous status as well as Cluster University. But as compared to other colleges are having poor infrastructure facilitates and survive with various problems.

Arts, Commerce and Science libraries still survive with various problems such as less budgetary provision for enrichment of collection of e-resources, low speed of internet, conduction of library orientation and information literacy programmes, inadequate technically staff, less number of library services and resources, away from ICT use in learning counterpart, unawareness regarding availability of resources including OERs, lack of knowledge about information ways, unfamiliarity and less use of UGC Info net, N-List and other scholarly databases, proper searching ways on internet and databases, less rate in publication of books and articles, etc.

Today's age is considered as age of information and technology, digital age and so on. Many problems might be solved in a positive manner towards opportunities that have arrived with modern technology. Financial problems in terms of purchase of books might be solved in some percentage by getting benefit from donor community such as Shri Shidhivinayak Ganpati Mandir Trust, Mumbai which provides books as per need of streams and users of college libraries with free of cost. Besides, Alumni of the colleges, now a days, show interest in contributing their financial support to their parent institutions as well as there is need to search local level donors for getting financial support which will be helpful and beneficial to overcome the barriers of budget in some percentage. Generally it is observed that students and faculties are having their own smart phone with internet pack. There is need to provide guidance and motivate regarding the use of e-resources according their academic needs by which internet and inadequate level problems might be solved in some proportion. Moreover, now many internet companies are providing internet services including packages with affordable rates. These opportunities should be captured by those libraries having internet and slow speed problem can be solved via establishing MoU (Memorandum of Understanding), Tie-up with the companies that provide internet.

ICT has both merits and demerits. For automation process of libraries, open source softwares in public domain like Koha are available. With the help of this platform libraries can complete their automation process with free of cost as well as by getting similar database from similar stream libraries and importing in their software will be beneficial to the desired libraries and data entry level problem might be solved in some proportion and automatically supporting staff level work load will be removed.

Today, MoU (Memorandum of Understanding), Tie up ways have become boon for developing libraries towards fulfillment of academic needs of their users. At present, Barr. Balasaheb Khardekar Library, Shivaji University, Kolhapur has launched offer to their affiliated colleges under college membership with University library. Under this scheme University library provides scholarly and valuable resource database via remote mode with ID and Password to Arts, Commerce and Science stream college libraries with free of cost. In this way, libraries in Satara district will overcome their problems by getting this opportunity. Apart from this, there are many scholarly resource databases available in public domain such as e-PG Pathashala, National Digital Library, NCERT database, SWAYAM, E-Gyankosh, E-Grid, National Repository of Open Educational Resources, IITs and IIMs platform and so on. There is need of positive attitude of library professionals for collecting, preserving and disseminating resources as per the need of users. This way will also be beneficial to solve the problem regarding lack of e-resources. By doing tie up with Electricity Board or establishing Pavan Chaki and Solar kits, the shortage of power problem can be solved. By creating and conducting Whatsapp group as well as webinar platform, expertise in particular disciplines can be made available and delivered lecture and guidance will be beneficial to their users and its positive impact will be realized through increasing rate of use of electronic based resources by their users. There are easy and free platforms available for creating awareness about library resources and services and this opportunity will be beneficial to overcome the barriers regarding conducting programme and awareness among both counterpart as librarians as well as users and ultimately academic performance of education system will be enhanced.

In short, developed libraries and developing libraries from Arts, Commerce and Science Streams in Satara district can increase use of electronic resources as well as academic performance with the help of ICT based resources and services. In this way, present study will be beneficial to libraries, institutions, universities, higher education systems and academic community with various angels.



APPENDIX-A

“Use of Electronic Resources by Arts, Commerce, Science Libraries: A Study”

Dr. Ajay M. Pandit

Mr. S.G. Annapure

Tilak Maharashtra Vidhyapeeth, Pune

Tilak Maharashtra Vidhyapeeth, Pune

Dear Sir/Madam,

I am doing Ph.D. research work under the guidance of **Dr. Ajay M. Pandit** on the topic **“Use of Electronic Resources by Arts, Commerce & Science Libraries: A Study”**. You are kindly requested to fill this questionnaire. Please indicate your response with a tick mark or write in space. This information will be kept confidential and will not be used for any other purpose.

Thank you.

Yours faithfully,

**Researcher,
S.G. Annapure**

Questionnaire for Librarian (ग्रंथपालांसाठी ची प्रश्नावली)

Note: Give **Tick mark** ✓ wherever necessary. कृपया योग्य ठिकाणी ✓ या चिन्हाचा वापर करावा.

Section-I General Information

1. Name of the College:-----

(महाविद्यालयाचे नाव)

Website www.----- Phone No.-----

(संकेतस्थळ)

2. Name of the Librarian-----

(ग्रंथपालांचे नाव)

Gender: Male [] Female []

(पुरुष) [] (स्त्री) []

3. College Status: **Tick mark** ✓

Under 12B/2F []

Not Under 12B/2F []

4. College type (महाविद्यालयाचा प्रकार)

Government []

Aided []

Private []

5. Year of College establishment ----- (स्थापना)

Section-II Study Oriented Information/ Questions

6. Library Staff (ग्रंथालयातीलकर्मचारी वर्ग)

Library Staff	In Number
Librarian	
Asst. Librarian	
Library Clark	
Data operator	
Computer technician	
Library attendant	
Any other Please specify	

7. Streams run by the College (महाविद्यालयातील शाखा)

Stream	Total Departments in Number (एकूण विभाग)
Arts Faculty (कला)	
Commerce Faculty (वाणिज्य)	
Science Faculty (विज्ञान)	

8. Total enrollment of students in last four years. (एकूण विद्यार्थी)

Students	Year wise Enrollment			
	2014-15	2015-16	2016-17	2017-18
UG Students (पदवीधर)				
PG Students (पदव्युत्तर)				
M.Phil. Students (एम. फील.)				
Any others				

9. Total Number of Academic Staff (एकूण प्राध्यापक वर्ग)

Faculty Staff (प्राध्यापक वर्ग)	Assistant Professors	Associate Professors	Professors	Total
Arts Stream (कला शाखा)				
Commerce Stream (वाणिज्य शाखा)				
Science Stream (विज्ञान शाखा)				
CHB (Clock Hour Basis) Faculty (सी.एच.बी.)				

10. Which Library services are provided by your Library? Tick mark ✓

(वाचकांना ग्रंथालायातर्फे कोणत्या सेवा दिल्या जातात?)

Services Provided by Library	Tick mark ✓
Reference Service	
Bibliographic Service	
Indexing Service	
Abstracting Service	
CAS Service	
SDI Service	
Electronic Resources Service (e-books, etc.)	
Electronic Resources through Consortia	
Online Search Service	
Internet	
OPAC	
Any others, please specify	

11. Is your Library automated? **Tick mark ✓**

(आपले ग्रंथालय स्वयंचलित आहे का?)

Yes [] No []

If yes, (असेल तर)

12. Which Software is used? (कोणते सॉफ्टवेअर वापरले?)

Library s/w -----

Digital s/w -----

Institutional s/w -----

13. Is Internet Connectivity Facility available in your Library? Tick mark ✓

(ग्रंथालयात इंटरनेट सुविधा आहे का?)

Yes [] No []

14. If yes, Tick mark ✓

a. Dial-Up []

b. Brodband []

c. Leased Line []

d. Any Other []

15. What is the speed? (गती किती आहे) -----MBPS

16. Does your Library has Power back-up Facility? Tick mark ✓

(ग्रंथालयात पॉवर ब्याकप आहे का?)

- a. Generator []
 b. Inverter []
 c. UPS []
 d. Any Other -----

17. Which type of online & offline e-resources are available in your Library? What is the annual expenditure for last four year? Tick mark ✓

(खालीलपैकी कोणती ऑन लाईन व ऑफलाईन संसाधने ग्रंथालयात उपलब्ध आहेत व त्यावर किती रक्कम खर्च झाली?)

E-Resources	Yes/No	Year wise Expenditure			
		2014-15	2015-16	2016-17	2017-18
E-Books					
E-Journals					
E- Database					
Institutional Repositories					
CDs, Cassettes					
DVDs					
Microfilm/Microfiche					
Printed Books					
Printed Journals					
Any other					

18. Is the Hardware & software infrastructures facility available? (हार्डवेअर सुविधा आहे का?)

Name of the Items	In Number	Specification	Cost
Server			
Clients-Computer			
Printers			
Scanners			
E-book Reader			
LCD Projector			
Any other			
Software- Windows			
Linux			
Unix			
Any other			
Database Software- MS.SQL			
CDS/ISIS			
Any other			

19. How many teachers published their books in last four year?

(गेल्या चार वर्षांत किती प्राध्यापकनी पुस्तके प्रकाशित केलेत)

2014-15-----

2015-16-----

2016-17-----

2017-18-----

20. From which consortia your Library has accepted a membership? Tick mark ✓

(खालीलपैकी कोणत्या कॉन्सोर्सियाचे सभासदत्व आपल्या ग्रंथालयाने स्वीकारले आहे?)

Kind of Consortia	Yes/No
UGC Info net Consortia/ N-List	
SantGadagebaba University Library Consortia for UG & PG Colleges	
INDEST	
Any other, please specify	

21. Do you maintain the information of Research Papers Published by your faculty and students in the Library?

(आपल्या ग्रंथालयात विद्यार्थी व प्राध्यापकांनी प्रकाशित केलेले पेपर जतन केलेत का?)

Yes [] No []

22. If yes, how many papers have been published on seminar platform during the following year?

(केले असतील तर गेल्या चार वर्षातील माहिती लिहा.)

Publication Type	Year wise Publications in Number			
	2014-15	2015-16	2016-17	2017-18
International Seminar/Conference				
National Seminar / Conference				
State Seminar / Conference				
Any other please specify				

23. What is the purpose of subscribing e-Resources? Tick mark ✓

(ई-संसाधने खरेदीमागील काय हेतू आहे?)

Purpose of E- Resources	Yes	No
To support teaching & learning activity		
To enhance the research & development		
To increase the grade of the college		
To help in exam oriented activity		
To help in research and book publications		
Any other		

24. Are you satisfied with availability of e-resources in your Library? Tick mark ✓

(ग्रंथालयातील उपलब्ध ई-संसाधनाबाबत आपण समाधानी आहात का?)

Yes [] No []

25. Is there any problem regarding collection development policy of e-Resources?

Tick mark ✓

(ई-संसाधने वृद्धिंगत करण्या संदर्भात काही अडचणी आहेत का?)

Problems Encountered	Tick mark ✓
Lack of Budget	
Lack of technically supporting staff	
Less support from authority	
Any others	

26. Do you know about open e-Sources? (ओपन ई-संसाधनाबाबत माहिती आहे का.)

Yes [] No []

If yes,

27. Do you use it and recommend to your readers?

(आपण हि संसाधने वापरता का तसेच वाचकांना याबाबत शिफारस करता का)

Yes [] No []

28. Do your readers use open sources in the library?

(हि संसाधने वाचक ग्रंथालयात वापरतात का?)

Yes [] No []

29. Mention the user supportive training programme which is conducted by your Library?

(ग्रंथालयातर्फे राबविण्यात आलेली वाचाकासाठीचे उपक्रम कोणती ?) Tick mark ✓

Courses/ Training Programme/s	Tick mark ✓
User Orientation Programme	
Information Literacy Programme	
Power Point Presentation of e-Resources	
Hand on Practical	
e-Circular	
Formal Circular	
Any other	

30. Your valuable opinion & suggestions. (आपल्या सूचना)

Date:

Place:

Signature & Stamp

(Name:.....)

APPENDIX-B

Use of Electronic Resources by Arts, Commerce, Science Libraries: A Study

Dr. Ajay M. Pandit

Mr. S.G. Annapure

Tilak Maharashtra Vidyapeeth, Pune

Tilak Maharashtra Vidyapeeth, Pune

Dear Sir/Madam

I am doing Ph.D. research work under the guidance of **Dr. Ajay M. Pandit** on the topic '**Use of Electronic Resources by Arts, Commerce, Science Libraries: A Study**'. You are kindly requested to fill this questionnaire. Please indicate your response with a tick mark or write in space. This information will be kept confidential and will not be used for any other purpose.

Thank you.

Yours faithfully,
Mr. S.G. Annapure

Questionnaire for Library user

Note: Give Tick mark wherever necessary ✓ कृपया योग्य ठिकाणी ✓ या चिन्हाचा वापर करावा

Fulltime Faculty []

PG Students []

प्राध्यापक [] पदव्युत्तर विद्यार्थी []

Section- I General Information

Tick mark ✓ **Stream:**Arts/Commerce/Science

1.Name of the College:-----

महाविद्यालयाचे नाव :

2.Name of the User:-----

प्राध्यापक/विद्यार्थी नाव :

3.Department (विभाग) :

4.Gender: Male-----Female-----

लिंग पुरुष स्त्री.

5.E-mail ID:-----

Section-II Study Oriented Information/ Questions

1. Do you visit your college library? Tick mark ✓ yes [] No []

आपण महाविद्यालयाच्या ग्रंथालयात जाता का?

2. Do you know the information services provided by library? Tick mark ✓

आपणास ग्रंथालयातील सेवा माहित आहेत का?

Yes [] होय, No [] नाही

If yes, (माहित असल्यास)

3. From which way do you get information?

माहित असल्यास खालीलपैकी कोणत्या माध्यमातून आपणस माहिती कळते?)

Means of Information Access	Tick Mark✓
Notice Board (सूचना वही/फलक)	
College Magazine (महाविद्यालय अंक)	
By E-Mail (इमेल)	
By Whatsapp	
By telephone etc. (फोन द्वारे)	
From college website	
From Library website	

4. Which services do you use or like? Tick mark ✓

(ग्रंथालयातील कोणत्या सेवा आपण वापरता?)

Information services	Yes	No
Reference service		
Bibliographic service		
Indexing service		
Abstracting Service		
CAS Service		
SDI services		
E-resources(e-books, e-journals)		
Online Search Service		
Internet		
OPAC		
Any other		

5. Does your Library has adequate computer, Internet & Infrastructure Facility? **Tick mark ✓**

(आपल्या ग्रंथालयात पुरेशा प्रमाणात संगणक, इंटरनेट व इतर सुविधा आहेत का ?)

Yes [] No []

6. Are you familiar with e-resources? **Tick mark ✓**

(ई-संसाधने आपणास परिचित आहेत का?) Yes [] No []

7. If no, What is the reason?

(जर परिचित नसाल तर कारण काय)

- i) I have my own books []
- ii) I do not need library for Electronic Resources []
- iii) I use E-resources at home []
- iv) The Internet Connectivity of college is not satisfactory []

8. Which of the following resources do you use? Tick mark ✓

(खालील पैकी कोणती ई-संसाधने आपण वापरता ? Online e-Resources:

E-resources		Daily	Twice a Day	Weekly	Monthly	Never
E-book						
E-Journal						
E-Databases etc.						
E-Thesis						
E-Newspaper						
Networked base Service						
Discussion Forum						
Conference/Seminar						
Web Directories						
Offline e-resources						
CD						
DVD						
Cassette						
Microfilms, Magnetic disk						
Tapes, Recordings, PPT						
Any other, please Specify						

9. Do you get these facilities free of cost?

(हि सुविधा आपणास मोफत मिळते का)

Yes [] No []

10. If no, what are the charges?

(जर नसेल तर, किती फी घेतली जाते)

Rs..... forhour/month/year

11. For what purpose, do you use the e-resources?

(खालीलपैकी कोणत्या हेतूने आपण ई-संसाधने वापरता?)

Purpose of Use	Tick mark ✓
For keeping up-to-date knowledge (अद्ययावत विषयासाठी)	
For gathering information (माहिती संकलनासाठी)	
For study purpose (अभ्यासासाठी)	
For exam, project & assignment work (परीक्षविषयक कामासाठी)	
For research activity (संशोधनासाठी)	

12. If you are using e-resources, how many research papers have you published?

In number-----

(जर आपण वापरत असाल तर, आपण किती संशोधन पेपर publish केलेत.)

संख्या -----

13. Do you know UGC Info net Consortia/ N-List Programme?

(आपणास UGC Info net Consortia/ N-List Programme बाबत कल्पना आहे का ?)

Yes [] No []

14. Ques. No. 14 Are you familiar with other Consortia except UGC Info net/ N-List Programme?

Tick mark ✓

(आपणास खालील कॉन्सोर्शिया माहित आहेत का)

Yes [] No []

If yes,जर माहित असल्यास

15. From which consortia do you find information? Tick mark ✓

(कोणत्या कॉन्सोर्शिया मधून आपण माहिती शोधता?)

Name of Consortia	Yes/No
UGC Info net Consortia/ N-List Programme	
Saint Gadgebaba University Library Consortia for UG & PG Colleges.	
INDEST	
Any others please specify	

16. From where do you access electronic resources from the consortia or other platform? Tick mark ✓

(खालीलपैकी कोणत्या ठिकाणी आपण ई-संसाधने आपण पाहता?)

Access Point	Tick mark ✓
At Library place (ग्रंथालयात)	
Through Computer Lab (संगणक कक्षात)	
Through Laptop, smart-phone at home (घरातील संगणक, मोबाईल वर)	
Through Internet Cafe (इंटरनेट कॅफे मध्ये)	

17. Do you know the present available online & offline resources subscribed by Library?

(ग्रंथालयातर्फे उपलब्ध करण्यात आलेली ऑनलाइन व ऑफलाईन संसाधने आपणास माहित आहेत का?) Tick mark ✓

Yes [] No []

18. While accessing e-resources which search engine used by you? Tick mark

ई-संसाधने शोधतांना खालीलपैकी कोणते शोध इंजिन वापरता?

Search Engine	Tick Mark
Google	
Yahoo!	
AltaVista	
Any others	

19. Which type of keyword is used while searching e-resources? **Tick mark ✓**

(ई-संसाधने शोधतांना खालीलपैकी कोणत्या keyword चा वापर करता?)

Keyword	Tick Mark
Subject	
Title	
Author	
Publisher	

20. Which problem is faced while using e-resources? **Tick mark ✓**

(ई-संसाधने वापरताना खालीलपैकी कोणत्या समस्या भेडसावतात ?)

Problems faced	Tick Mark
Low speed of Internet (इंटरनेटची गती कमी)	
Frequent Power shortage(विद्युत अभाव)	
Lack of Proper knowledge (वापरण्याची अचूक माहिती)	
Lack of guidance and Training (मार्गदर्शनचा अभाव)	
Less Number of Computers &Connectivity (सुविधांची कमतरता)	
Lack of support of Library Staff (ग्रंथालयातील सेवाकांचे असहकार्य)	
Any other please Specify (इतर)	

21. Are you satisfied with Electronic resources & UGC Info net/ N-List Programme Information services& facilities which are provided by your Library? Tick mark ✓

ग्रंथालयातर्फे पुरविण्यात आलेल्या ई-संसाधने, व इतर सुविधाबाबत आपण समाधानी आहात का ?

Library Services& Facilities	Highly satisfied	Satisfied	Neutral	Dissatisfied	Highly dissatisfied
UGC info net/ N-List Programme					
Online& Offline Resources					
Computer& Internet Facility					
Library Information Services					

22. Your opinion and suggestions for improvement, if any.

Date:

Place:

Signature

(Name:-----)

List of Non-Professional colleges (Arts, Commerce and Science Streams) that come under Satara district

Sr. No.	Name of the College	Aided/ Unaided
1	Chhatrapati Shivaji College, Satara	Aided
2	Yashwantrao Chavan Institute of Science, Satara.	Aided
3	Lal Bahaddur Shastri College of Arts, Science and Commerce, Satara.	Aided
4	Dhananjayrao Gadgil College of Commerce, Satara	Aided
5	Savitribai Phule Mahila Mahavidyalaya, Satara	Aided
6	Mahila Mahavidyalaya, Karad	Aided
7	Sadguru Gadge Maharaj College, Karad	Aided
8	Yashwantrao Chavan College of Science, Karad.	Aided
9	Venutai Chavan College, Vidyanagar, Karad	Aided
10	Krishna Mahavidyalaya, Rethere BK, Taluka Karad Dist. Satara	Aided
11	Raja Shripatrao Bhagawantro Mahavidyalay, Aundh. Taluka Khatav Dist. Satara	Aided
12	Arts, Commerce and Science College, Pusegaon Taluka Khatav Dist. Satara	Aided
13	Dahiwadi College, Dahiwadi Taluka Man Dist. Satara.	Aided
14	D.P. Bhosale College, Koregaon	Aided
15	Shrimant Bhaiyasaheb Rajmane College, Mhaswad Taluka Man Dist. Satara	Aided
16	S.M.S.M.P. Mahavidyalaya, Rahimatpur, Taluka Koregaon Dist. Satara.	Aided
17	Mudhoji College Phaltan Dist Satara	Aided
18	Kisanveer Mahavidyalaya, Wai Dist. Satara	Aided
19	Shripatrao Kadam Mhavidyalaya, Shival	Aided
20	Balasaheb Desai College Patan	Aided
21	Arts and Commerce College, Satara	Aided
22	Shikshan Maharshi Bapuji Salunke Mahavidyalaya, Karad	Aided
23	Sau. Mangaltai Ramchandra Jagtap Mahila Mahavidyalaya, Umbraj Tal. Karad Dist. Satara.	Aided

24	Arts and Commerce College, Nagthane	Aided
25	Shahajiraje Mahavidyalaya, Khatav Dist. Satara.	Aided
26	Sharadchandra Mahavidylaya, Lonand	Aided
27	Arts and Commerce College, Mayani Taluka Khatav Dist. Satara	Aided
28	Arts and Commerce College, Waduj Taluka Khatav Dist. Satara	Aided
29	Prof. Sambhajirao Kadam Mahavidyalaya, Deur Taluka Koregaon Dist. Satara.	Aided
30	Yashwantro Chavan Mahavidyalaya, Pachawad	Aided
31	Shankarrao Jagtap Arts and Commerce College Wagholi Taluka Koregaon Dist. Satara	Aided
32	Smt. Meenalben Mehata College of Arts and Commerce, Pachagani Dist. Satara	Aided
33	Smt. Vijayadevi Desai Senior College, Daultnagar, Taluka Patan Dist Satara.	Un-Aided
34	Kakasaheb Chavan Mahavidyalaya, Talmavale Tal. Patan Dist. Satara	Aided
35	JPSH Amadar Sahshikant Shinde Mahavidyalaya, Medha	Aided

Source: Shivaji University handbook-2010-11

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