CHAPTER II

REVIEW OF LITERATURE
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2.0 Introduction

The researcher carried out an extensive literature survey on different aspects of use of E-resource consortium in the digital era. Investigator has used Library and Information Science Abstracts (LISA) and Library, Information Science and Technology Abstracts (LISTA) database and literature on internet for this purpose. A selected bibliography of study done on INDEST consortium and digital/e-resource consortium and on related issues was prepared. These documents have studied in detail, a review has been prepared and presented here, under appropriate subheadings.

2.1 INDEST- Consortium

Choudhury (2015) express that because of crunching money related help and blast of data assets, it is impractical to serve all data in printed structure by scholarly libraries. Be that as it may, the primary objective of any library is to meet the necessity of clients at ideal time, in ideal spot, at right cost and in right organization. In this manner the e-assets assume a crucial part to full fill this objective. The primary target is to know how the e-assets are utilizing by the understudies and educators of designing school (Both Private and Government) of Assam, and to realize what are the issues they confronted by utilizing e-journals. It will help other people to take care of the issues and take advantages of e- journals. In contrast and private building has better base then the administration designing school, yet at the same time clients of e-assets from government building school are exceptionally reassuring. From this it will help the powers to discover the issues and ought to make fundamental move to fathom these to get more beneficial environment to utilize e- journals in designing universities of Assam

Srivastava and Verma (2015) narrated due to ever increasing prices of journals, publishers and vendor dominated market, change in demand of the users, lack of competition, and for various other reasons, no library is in the position to fulfill all the demands of the users. The establishment of many technical and specific subject related consortium approaches in pursuit of optimizing the libraries resource. While achieving substantial savings through combined and coordinated bargains with
publishers. Consortium based library subscriptions to e-journals and electronic full-text databases are picking up good momentum in India. INDEST-AICTE consortium, CSIR consortium, IIM consortium, INFLIBNET’s UGC-INFONET consortium, DRDO consortium etc. are successful ones to name a few.

At the same time Library Consortia are not free from problems. There are various issues relating to consortia like uninterrupted online access, perpetual access to back issues, pricing, licensing, copyright and archival solutions etc. These need to be strategically tackled and well addressed to get the best out of the consortia. They discuss the types, needs, models and advantages of consortia subscriptions in general. It also discusses the challenges and issues faced by library consortia with special reference to INDEST-AICTE consortium.

Khanand Tripathi (2015) portrays that client is the key component of a library. The achievement of a library relies upon the framework outline and additionally the fundamental comprehension of the clients. The clients are the vital viewpoint as well as a dynamic segment of the library. The endeavor has been made to show the utilization of electronic data assets by understudies and instructors of Chandidas Mahavidyalaya school library of Birbhum area in West Bengal. Recognize the impressions of clients towards the consciousness of INFLIBNET N-LIST administrations, ampleness of library resources and their perspectives on library administrations. Web fulfillment levels of clients about the library. It likewise highlights the issues of utilizing INFLIBNET N-LIST as a part of the school library.

Khaparde and Ambedkar (2014) depicts that Universities are exceptionally in charge of growing new hypotheses through unique exploration thinks about in all around the world. Understudies and researchers are putting their earnest attempts to create new truths and standards in these focuses of higher studies. In India we have around 350 colleges and consistently very nearly 12000 PhDs are being created by these colleges. Maintaining a strategic distance from reproduction of exploration work is a genuine matter of worry to all countries. Developments in ICTs turn into a help to keep away from duplication and additionally usage of these studies. An electronic accommodation of these papers and postulations are known as ETDs. They draw out the development and the advancement of ETDs in India. They examines about ETD, History of ETD exercises, it additionally talks about National Policy system in India.
for building ETD stores. UGC Regulations 2005 and 2009, INDEST Consortium, ICSSR – NASSDOC and National Knowledge Commission have given rules to enhance the nature of exploration furthermore to give overall access to examine under open access.

**Arora, Trivedi and Kembhavi (2013)** in the course of the most recent quite a while, the UGC-INFONET Digital Library Consortium has been giving Indian colleges electronic access to national and worldwide academic journals. These diaries compass wide ranges of regular and physical sciences, sociologies and humanities, and location a long-standing need of the college group for access to academic productions. They depict a few subtle elements of this system and look at the effect it has made on innovative work action in the colleges. The exploration yield information from three reference lists, to be specific Science Citation Index, Social Sciences Citation Index and Arts and Humanities Citation Index for the initial 50 colleges to be made some portion of the project have uncovered that the quantity of examination articles created by these 50 colleges has expanded by more than 75% in recent years, i.e. from 2005 to 2009 in examination to the past piece of 5 years, i.e. 2000 to2004. While increment in exploration yield is apparent in each of the three noteworthy subject controls, i.e. science, sociology and expressions and humanities, increment in exploration yield is essentially higher in science, contrasted with the other two orders. Also, an in number positive connection is found between the quantity of articles downloaded by these 50 colleges from e-resources available to them through the consortium and examination articles distributed by them. We likewise remark on the impact of different variables, for example, number of specialists and level of examination subsidizing on this connection.

**Yernagula and Kelkar (2012)** portray rise of the Internet, especially the World Wide Web, as another medium of data stockpiling and conveyance in the 21st century. The wonder of consortia or gathering of libraries purchasing e-resources together has turned out to be imperative in the most recent couple of years. They quickly talks about the idea, need, components, point of interest and burdens of library consortia. Additionally this paper covers different models and the advantages of e-journals consortia.
Sahoo and Agarwal (2012) they talks about different consortia working in India, the initiation of INDEST AICTE Consortium, targets, authoritative structure, enrolment, administrations and exercises of INDEST AICTE Consortium. The principle examination choice of e-journals, survey of e-journals, permit concurrence with distributors, reasonable use, use investigation of different e-resources, financial aspects of consumption, exploration yield of center individuals, archival access of e-resources for the center and additionally other individual from the consortium and future arrangement of the consortium.

Tyagi (2011) communicated the level of mindfulness and utilization of electronic journals, the qualities of the clients and their assessment of the journal accumulation. Interestingly, clients have learning about the accessibility of electronic journals, yet numerous utilize them as the supplementary approach to utilize data. Numerous clients should know about the complete capability of the electronic journals. Be that as it may, the inclination for the electronic arrangement is identified with the control and age of the respondents and is higher among scholarly status. The present review mirrors a developing enthusiasm for online databases among the client at IIT Roorkee. This study uncovers that generally clients know about the accessibility of online databases through the library, and they can make greatest utilization of it for different purposes.

Viable utilization of electronic data hotspots for recovering required data will profoundly affect the learning and nature of examination yield by the students. Comfort and full-message accessibility seem to assume parts in selecting online resources. The discoveries of this study propose that databases without connections to full content and online databases accumulations without connections from bibliographic databases will have lesser use.

Vasishta (2011) since its foundation, CL PEC is rendering library administrations to its clients ingeniously. The discoveries got from the study depend on a specimen of 93 clients. The fact that the finding can't be summed up however these give critical understanding into the most recent patterns being followed in circle of e-journals. The utilization of e-databases is an advancing wonder at this stage as e-journals are gradually supplanting the print forms of academic distributions. The study plainly demonstrates that utilization of e-journals in the CL PEC is still in the condition of
earliest stages or early development. It is additionally demonstrated in the overview this condition of early stages is a result of absence of promoting systems to make every one of the clients mindful of full scope of e-journals accessible. It is clear from the study that more youthful era has advantageously received the electronic perusing society, yet utilization of e- journals requires some kind of specialized mastery. Absence of preparing among clients is real de-propelling variables in the utilization of e- journals and some vital proposals for enhancing the usage of e- journals has been advanced. Additionally utilization of e- journals is constrained due to infrastructural issues.

Patterns appear that clients are continuously getting used to e- journals and libraries stand at an edge of advanced data skyline. The best way to keep pace with the blasting of data in all bearings is being proactive in type of e-resources, a broad wellspring of packaged learning. So if CL PEC is to go past the administrations of a customary library and to give a sound electronic database, it is left with little alternative however to suit more e-journals.

Arora and Kruti (2010) depicted real capacities, exercises and administrations of the INDEST-AICTE Consortium. They quickly touched upon resources subscribed, terms of licenses, strategies and practices for archival back-ups, enrollment projects including center individuals, AICTE-upheld foundations, and self-bolstered classification of participation. Their study layouts administering structures of the Consortium and their parts. Likewise explains on procedures utilized for powerful execution of Consortia amongst part organizations, the financial aspects of the Consortium and it spells out its future tries.

As indicated by Vasanth and Mudhol (2007) systems administration, consortia and resource sharing received by libraries need radical changes to develop responsive organizations with a specific end goal to accomplish best execution in administration. Collaboration amongst establishments for sharing their library resources is being honed for a considerable length of time. The expansion of electronic resources in the arranged society has brought about the improvement of "shared membership" or "consortia-based membership" to journals all over the place on the planet. Shared-membership to electronic resources through consortia of libraries is a plausible
procedure to meet the weights, for example, reducing spending plan, expanded client's interest and increasing expense of journals.

Partha (2004) concentrates on the advanced library activities in India covering, the activities of the administration of India and state governments towards computerized library exercises, and the arrangement of the Government of India towards advanced library improvement. The present activities, for example, the INDEST Consortia, are depicted in point of interest. The difficulties confronting computerized libraries, the issues being experienced while creating advanced libraries, the issues of the computerized partition confronting the nation are talked about.

Further Arora (2003) concentrates on the endeavors made by Indian libraries and establishments towards arrangement of consortia of libraries for purchasing access to electronic resources. The anticipated vital collaboration named as "Indian National Digital Library in Engineering Sciences and Technology" (INDEST) which depended on five task recommendations submitted to three noteworthy Ministries/Departments of the Government of India, in particular, the Ministry of Human Resource Development (MHRD), the Ministry of Information Technology (MIT), and the Department of Biotechnology. The INDEST is proposed to work as a consortium of building and automated libraries for sustaining center advanced accumulations in designing and innovation.

As a consortium of libraries, the INDEST would unite organizations getting budgetary backing from these three Ministries/Departments of the Government of India. While these Ministries/Departments would give money related resources to setting up the consortium and for getting center electronic resources, the taking an interest organization would contribute for consortia-based memberships. The INDEST would have an assortment of Web-based digital resources including those accessible through national and global offices with consortia and national licenses to give access to approved clients in India.

In an uncommon issue that incorporates chose papers from a universal challenge on advanced library or data science and innovation in creating nations. Arora (2001) talks about the INDEST proposition which was composed by the American Society for Information Science and Technology (ASISandT), were introduced at ASISandT's yearly gathering in Chicago in November 2000. Creator portrays a proposition for key
collaboration for consortia based access to electronic resources which is called Indian National Digital Library in Engineering Sciences and Technology (INDEST). The INDEST would work as a consortium of designing and digital libraries for building up a center advanced accumulation in building and innovation. Would host a variety of Web based digital resources.

2.2 Digital Library Consortia in India

As indicated by Uvaraj and Kumar (2015) UGC INFONET Digital Library Consortium is a creative venture dispatched by UGC to give access of full content electronic resources and bibliographic databases to their hunt and scholastic group in India. The present paper is an endeavor to concentrate on the use of e-resources accessible through UGC INFONET Digital Library Consortium by the Thiruvalluvar University Library clients. 105 surveys were dispersed to the clients and 84 polls were gotten back for an examination of the information. The study uncovers that most of the respondents assess UGC INFONET Digital Library consortium as great.

Bansal (2015) electronic information environment has transformed the way scientists and researchers access and use information. It aims at knowing the awareness and use of e-resources by agricultural scientists working in various ICAR research institutes in Himalayan region of India. The structured interview of 112 scientists revealed that Internet is highly used information resource by them. Most of the information sources are preferred in e-format. E-journals and online databases are frequently used e-resources by the agricultural scientists. Awareness and use of e-resources is more in young scientists than their senior colleagues.

Gakibayo., Ikoja-Odongo and Okello-Obura (2013) evaluated the use of electronic databases in Mbarara University Library by understudies by tending to four destinations to be specific; recognizing the accessibility e-resources in Mbarara University library, deciding the degree of utilization and the pertinence of e-resources in Mbarara University library and ultimately proposing systems to advance the usage of e-resources by users. Both quantitative and subjective systems were utilized to elicit data from library staff and college users from four resources of Mbarara University. Two hundred and sixty six respondents took an interest in the study. Information was gathered by use of Questionnaires, report investigation and meeting aide. The study found that usage of e-resources was not just influenced by absence of
PC abilities and data proficiency aptitudes but also absence of enough PCs and moderate web availability. The recurrence of utilization of these resources showed that a great deal should be done to build e-resources use.

As per Goria (2012) Consortia based access of e-resources has been given in the vast majority of the Indian libraries of advanced education and examination foundations amid a decade ago. In consortium mode, clients can get to satisfactory coveted academic e-journals in Indian libraries. This paper gives brief outline of well-known library consortiums of India. The present paper likewise portrays the systems to expand usage of the e-resources. Different rising innovations i.e. RSS channels, Google Reader, Delicious and so forth have been exhibited for all intents and purposes for viable usage of e-resources with least endeavors. Discoveries of this paper highlighted developing innovations and part of consortia for successful utilization of e-resources in Indian Libraries.

Chauhan, Chand, and Kaur (2011) access to insightful writing through UGC-Infonet Digital Library consortium is boosting status of Indian higher instructive framework. With the assistance of INFLIBNET, every one of the colleges must be equipped to meet the most recent and credible data needs of clients. INFLIBNET plans to give new shape to the libraries with condition of-workmanship innovation. Under the project different quality writings are being subscribed, in view of the prerequisite and as indicated by the capability of the college. This system is being assessed as far as use and research yield of the part colleges, exclusively. Himachal Pradesh University is a solitary expansive range college in the state, in these manner academicians and understudies have exclusive requirements from this college. In this way, college needs to make an instrument to guarantee most extreme utilize the accessible e-resources. Methodical and broad use of accessible e-resources is key to legitimize the activity taken by UGC for the advancement of higher instructive framework in the nation.

Sinha, Singhaand Sinha (2011) concentrates on the customary elements of libraries had experienced different changes in present century and E-Resources have extraordinary significance in libraries and amongst the library clients. The present study has been embraced with an endeavor to assess the utilization example of electronic resources made accessible in the Assam University Library under the UGC-
INFONET E-Journals/Digital Library Consortium of UGC/INFLIBNET amongst the exploration researchers and instructors of North Eastern Region of India with unique reference to Assam University, Silchar. The personnel, research scholars and students are for the most part drawn from distinctive parts of North Eastern States and few from different parts of the nation which speak to really cosmopolitan populace. For that purpose, survey system has been received by the specialists, which contains organization of questionnaire, perception of the members, and meeting of a portion of the members for knowing the assessment of the respondents in admiration of utilization of electronic resources (e-journals/ebooks/databases) for their scholastic and exploration exercises.

As indicated by Arora and Kruti (2010) advanced education framework in India is extensive and complex. India has the third biggest advanced education framework on the planet behind China and the United States, containing more than 471 colleges, 22,064 subsidiary schools, and 5.21 lakhs workforce. The UGC-INFONET Digital Library Consortium, propelled in 2004, gives differential access to 5,790 journals to 160 colleges secured under 128 Act of the UGC. They depict significant exercises, operations, and administrations of UGC-INFONET Digital Library Consortium. The creators depict resources subscribed, real things of arrangement and terms of permit, center part colleges and partner individuals, access administration innovations, and so forth. They sketched out overseeing structure, boards of trustees, partaking colleges/foundations and their parts. It explains on systems utilized for advancement of e-resources amongst part colleges. Further they touched upon the financial matters of the UGC-INFONET Digital Library Consortium and diagrams model for execution of school consortium. In conclusion, the creators expound on future attempts of the UGC-INFONET Digital Library Consortium.

Bhatt (2010) concentrates on the utilization of UGC-Infonet Digital Library Consortium Resources by examination researchers and employees of University of Delhi in History and Political Science. The primary point is to decide the needs of exploration researchers and employees of University of Delhi in the control of history and political science and to discover how far their data needs as satisfied by the database resources accessible through UGC-Infonet Digital Library Consortium. To ponder the data use example and needs of the separate clients a review was led among personnel and examination researchers. The populace incorporated into the study
included 105 Faculty from both divisions and of that, eight are personnel and 97 are exploration researchers. The creator substantially clarifies the genesis, e-resources offices and use of e-resources accessible through UGC-Infonet Digital Library Consortium (a University Grants Commission of India supported consortium) to give e-resources and current data in different orders.

Walmiki et al (2010) led poll based study found that 39.79 percent of the employees know about and utilize the UGC-Infonet Digital Library Consortium resources though 35.99 percent know yet don't utilize and 24.22 percent are not under any condition mindful of the accessibility of the consortium resources. Lion's share of the non-clients fit in with sociologies and humanities and the individuals who have not experienced formal PC preparing. Similarly the science personnel utilizes the consortium resources more every now and again than those having a place with sociologies and humanities. Absence of learning to utilize, deficient web hubs, moderate transfer speed and absence of applicable data sources are observed to be the real issues confronted. Just 5.22 percent of the employees have demonstrated that they have important skill to utilize the advanced resources. Around 37 percent of the employees knew about and took an interest in client instruction projects directed by their college libraries.

As per Varaprasad and Madhusudhan (2010) libraries have encountered numerous changes alongside time. Situation has further changed with the data blast and appearance of Internet and information transfers advances. Data looking for has turned out to be a great deal more unpredictable because of constantly expanding measure of information, in both printed and electronic structures, and no single library is independent to buy every one of the books/ebooks, journals/e-journals and other library records inside of their library spending plans. Library consortium is one of the answers for defeat this issue. Be that as it may, because of continually expanding costs of journals, publisher commanded business sector, absence of rivalry, and for different reasons, inquiry of whether consortium approach, a percentage of the encounters in getting to e-journals through this methodology, a feasible option at diary's cost trek or not? CSIR e-journal Consortium and examines requirement for consortia, sorts, favorable circumstances and drawbacks of a consortium, issues confronted by the consortiums and conceivable answers for some of these issues.
Joteen et al (2009) endeavored to discover the utilization of e-resources of different distributors accessible under UGC-INFONET by the scholastic group of Manipur University amid 2007 and 2008. They uncover that while there is an increment in the use of the resources of the vast majority of the distributors despite specific issues of availability, resources of a percentage of the distributors were underutilized. Despite the fact that they don't research the utilization of individual diary secured by every distributor, yet a normal of downloads of every distributor based upon the scope has been worked out and introduced. They recommend that there is a need to figure out use of individual result of the distributor in perspective of the discoveries that the bigger the scope minimum is the utilization.

Visakhi (2009) remarked on consortium for e-Resources in Agriculture is an e-Consortium of Agricultural Libraries under the Indian Council of Agricultural Research for National Agricultural Research System libraries. The National Agricultural Research System of India involves Indian Council of Agricultural Research and Central/State Agricultural Universities under Department of Agricultural Research and Education, Ministry of Agriculture, Govt. of India. The creator quickly examines about foundation, fundamental elements, and focal points of the consortium for e-resources in Agriculture.

Satija and Sarbrinder (2009) survey the condition of craft of helpful gathering improvement among a gathering of innovative foundation libraries in India. Asset sharing requires shared qualities and vision, and additionally subsidizing and responsibility by partners. Consortia memberships are a typical type of asset sharing. INDEST-AICTE and UGC-INFONET are open-finished consortia that have achieved an upheaval in asset sharing.

As indicated by Moorthy (2009) the restrictive expense of library material, particularly outside diaries, relating to science and innovation, has dependably been a most despicable aspect of data focuses, particularly in the creating nations, taking ceaselessly vast piece of their pitiful assets and in this manner dependably a prevention to give better administrations to the clients. Libraries attempted to connect this crevice by obtaining and bury loaning required archives among themselves. Progresses in data and correspondence innovation (ICT) have changed the distribution situation and in addition the method of asset sharing because of accessibility of e-
diaries and online assets. ICT likewise encouraged the foundation of library consortia for keeping up data assets together. In India, amid the most recent couple of years, numerous driving investigative and specialized associations have set up consortia to share their human and electronic assets. The creator quickly talks about the consortia activities taken at Defense Research and Development Organization (DRDO), a chief examination association of Ministry of Defense, occupied with the indigenous advancement of bleeding edge barrier advances.

**Golnessa Galyani and Talawar (2009)** survey the writing on library consortia in creating nations by and large and India specifically. They likewise sketched out the favorable circumstances and disservices of consortia. Libraries in creating nations have been taking a shot at consortia at national, provincial and worldwide level. Be that as it may, a few hindrances, for example, poor mechanical and correspondence foundation, insufficient funds, society and connection, states of mind toward consortia and numerous endeavors are accounted for to be restrictions of consortia exercises in creating nations. They give a valuable outline of consortia in creating nations, especially in India.

**Prakash and Nishy (2008)** analyzed the changing face of libraries especially as to the diary membership from print to electronic structure through arrangement of consortia. The advantages accumulated to the library and data arrangement of CSIR labs attributable to development of a consortium to get to e-resources has been talked about. They presumes that the CSIR research facilities library and data frameworks have been reinforced after the enlarging of the database after the arrangement of the consortium.

**Premchand and Arora (2008)** remark on the activities of the University Grants Commission of India in setting up the Infonet Digital Library Consortium (The Information and Library Network) with a specific end goal to give access to insightful correspondence to the scholarly group in India. The setting of advanced education in India and the development and foundation of colleges under the five-year arrangement is given alongside points of interest of e-resources that are being given. The use patterns of e-resources from different distributors amid 2004-2007 are itemized. They find that there has been a subjective increment in general use, however utilize is additionally reliant on a high-data transmission association. They give confirmation of
expanded utilization of consortia administrations for access to e-resources in Indian advanced education.

**Suresh (2007)** makes an endeavor to break down the UGC: Infonet: E-Journals Consortium of University Grants Commission (UGC), India for the free stream of insightful data between the Indian colleges. It is another stage for the higher instructive arrangement of the nation in which associate explored writing from the whole way across the world is being given to the scholarly and examination group. The project is completely subsidized by UGC and being checked and executed by Information and Library Network (INFLIBNET) Center. INFLIBNET has found a way to make thorough and far reaching utilization of gave e-resources, by the part colleges. The Center has likewise led different courses, gatherings, preparing and mindfulness projects to make the end client mindful about the advantages and utilization of e-resources as far as data inquiry, search and download. In the grouping of different projects, 5 national workshops were likewise led in distinctive areas of the country. In these courses a very much planned survey was circled, to know the mindfulness level of the clients about the UGC-Infonet activity.

### 2.3 Networking and Resource Sharing

**Abdelrahman (2015)** investigated and reviewed the medical information services and facilities in Sudan, including a survey of medical information users. The user survey revealed that there is a lack of access to sufficient and up to date information sources, especially textbooks and scientific journals. It also showed that there is a need for user education and information literacy programmes. The survey on medical libraries revealed that there is a short age of qualified library personnel, as well as a lack of information technology equipment. The investigation of existing cooperation between medical libraries revealed that it is restricted to the exchange of books, gifts, and photocopy services. All surveyed libraries expressed their interest and willingness to participate in an organized library network. Based on the findings and the results of the study, it is recommended that medical libraries in Sudan take advantage of the current advances in Information and Communication Technology (ICT) and indulge in cooperative information and resource sharing for the benefit of their end users.

**Punceva et al. (2015)** social mists give the ability to share resources among members inside of an interpersonal organization – lever aging on the trust connections
officially existing between such participants. In such a framework, clients can exchange resources between one another, as opposed to make utilization of capacity offer data (unified) server farm. Motivators for sharing remain an vital obstacle to make more powerful utilization of such an environment, which has a critical potential for improving resource usage and making accessible extra limit that remains torpid. We use the financial model proposed by Silvio Gesell to show how a "virtual money" could be used to incentivize sharing of assets inside of a "community". We along these lines exhibit the advantage gave to participants within such a group utilizing an assortment of monetary (such as general credits picked up) and specialized (number of successfully completed exchanges) measurements, through reproduction.

**Assante (2014)** in modern science calls for innovative practices to facilitate research collaborations that span institutions, disciplines, and countries. Scientists and practitioners are called to produce enhanced forms of scientific communication thus to make it possible for others to identify errors, to support, reject or refine theories and to reuse data for further understanding and knowledge. This scenario can benefit a lot from Internet-based services aiming at providing individual users having at their disposal scarce resources with interaction-oriented facilities, i.e., social computing, and elastic access to facilities on demand, i.e., cloud computing. In this paper, we present the D4Science approach that by leveraging social computing and cloud computing realizes an integrated web-based working environment where scientists have at their fingertips what is needed to accomplish a scientific investigation. In particular, we present the larger ray of collaboration-oriented facilities obtained by integrating social networking paradigms with virtual research environments.

**Dubois (2013)** ShAir is a middleware framework that permits portable applications to offer assets of their gadgets (e.g., information, stockpiling, connectivity, computation) transparently. The objectives of ShAir are: (i) abstracting the creation and upkeep of opportunistic delay-tolerant distributed systems; (ii) being decoupled from the actual equipment and system stage; (iii) extensibility in terms of bolstered equipment, conventions, and on the kind of assets that can be shared; (iv) being equipped for self-adjusting at run-time; (v) enabling the advancement of uses that are less demanding to design, test, and recreate. They talk about the configuration, extensibility, and viability of the ShAir middleware, and how to utilize it as a stage for
cooperative asset sharing applications. Finally we demonstrate our involvement in outlining and testing a document sharing application.

**Kumar and Kaushik (2013)** Cloud figuring innovation came up as a help for libraries and is putting forth various opportunities for libraries to associate their administrations with mists. The paper presents an outline of distributed computing and its conceivable applications that can be clubbed with library administrations on the electronic environment. This study may be useful in identifying and producing cloud based administrations for libraries.

**Vasanth and Mudhol (2009)** portray that in the advanced age, it gets to be both a testing issue and an open door for libraries to give electronic assets in arranged environment. With systems administration innovation of Internet it is conceivable to frame any number of intelligent systems utilizing the Net as the spine. Library and data framework organizing in India have appear over two decades prior. By using the backing of the provincial and national level systems administration, libraries in India ought to corporately set up library consortia for offering and shared electronic assets. Numerous libraries like specialized libraries have their own system existing inside of their own areas. These systems can be extended to improve the entrance to the data assets through communitarian organizations, in the structure consortia. They additionally examine about the library organizing and INDEST-AICTE consortium.

**Shinya (2009)** opines that libraries continue to purchase more e-resources, especially electronic journals, license agreements of electronic journals have become a burden for both libraries and publishers. The NISO's "Shared E-Resources Understanding (SERU)" is an alternative to license agreement mainly relied on the copyright law and purchase order based on mutual understanding of publishers and libraries. The author summarizes the background, history and current state of SERU.

**Sivaraj et al (2008)** describe how in developing countries most libraries, including academic libraries face financial and resource constraints in building up adequate collections of information sources and therefore are not able to fully satisfy the information needs of the various categories of users. In this context the main task of a librarian is to adjust the input resources to the desired output by adopting various alternatives for taking effective decisions and providing services to users. One strategy is resource sharing in a networking system. This has been practiced since the 1930s in
developed countries. In recent years libraries in India have focused on inter library loan, shared cataloguing, online references, shared circulation and online. Due to the high cost of serials, academic library networks in a consortia mode offer subscriptions to more journals to the participating libraries at a relatively lower cost. It shows three models of networking and network design for engineering college libraries in Tamil Nadu (TECLIBNET).

According to Krishnamurthy (2007) accelerating developments in information and communication technologies have enabled almost seamless access to vast amounts of varied information via networks and network of networks such as the Internet. Such developments also pose challenges to libraries to focus on developing more effective ways to meet the information needs of users. Recently, following the expansion of electronic publishing, libraries have shown renewed interest in cooperation with particular reference to obtaining licenses and sharing electronic resources. He examines the implementation of a consortium of the Indian Statistical Institute libraries. Problems faced by the libraries in handling e-journals are also discussed.

Isabel (2006) gives an account of the social affair of 44 eIFL nation organizers, alongside the eIFL group, at the 2005 General Assembly, which occurred at the National Library in Vilnius, Lithuania, on 27-28 October 2005. eIFL.net is a universal system of library consortia devoted to giving administrations to move and creating nations. In its five years of presence, eIFL.net has built up a lucky record of progress propelling the data needs of fifty nations on three landmasses. eIFL.net was conceived in October 1999 as an Open Society Institute Initiative inside of its Information Program. The reason for existing was to address innovative, financial or data mindfulness obstructions that instruction and examination foundations in the previous Soviet Union and East European nations were confronting in regards to access to online academic documentation. With its fundamental office in Rome, Italy, eIFL.net gives numerous projects to its individuals, including: electronic asset authorizing; backing and backing to give access to quality academic e-assets for library, training, exploration, and expert groups; and instructive administrations identified with library consortium administration and manageability.

Maitrayee et al (2006) remark the condition of libraries in India and outline the key agreeable activities embraced to enhance client access to electronic data
administrations. The system utilized incorporates individual meeting, email collaboration and writing hunts. It likewise records the critical accomplishments in this field to date. They find that there are still critical possibilities for further execution of helpful techniques to upgrade organized, electronic data administration conveyance in India.

As indicated by Bhatt (2006) library and data focuses with their decreasing static budgetary portions need to consider better approaches to solidify worldwide assets amongst them keeping in mind the end goal to boost their restricted monetary assets. Luckily, accessibility of intense PCs at reasonable expense, spread of telecom systems to remote regions, appearance of Internet, expanding enthusiasm for making computerized content and so forth are presently helping the library and data experts to offer response to the difficulties happening because of the blast of data and learning, expanding expense of library materials, changing organizations of perusing materials, contracting of library spending plans and the expanding requests of clients for data and information. Keeping in perspective these components, he talks about the idea of asset sharing and the part of library consortia as a successful community oriented way to deal with face the difficulties of the present day librarianship.

2.4 E-resources and Services

Cattaneo, Motta and Gurtner (2015) in Switzerland, 99% of teenagers own a mobile phone and use it as their primary spare-time activity. Exploiting the affordances that mobile devices have for fostering learning across contexts is therefore imperative for the educational community. This is especially true in the case of dual vocational education and training (VET) – a field under-investigated with respect to mobile learning – where apprentices alternate between a company and vocational school. After introducing the major issues characterizing mobile learning and their relevance to the VET context, the paper presents a project involving apprentice chefs and their teacher, with the aim of exemplifying and exploring VET learning between workplace and classroom, as a conversation between the learner, the teacher and the in-company trainer, and to evaluate the results of its implementation in terms of usability, effectiveness, and satisfaction.

As per Akeriwa., Penzhorn and Holmner (2015) libraries everywhere throughout the world are using the most recent Information and Communication Technologies to
help with their goal of giving customers successful and effective administrations, and additionally opportune access to required data. The execution of online networking and the utilization of versatile advances for administration conveyance are patterns that have, in any case, not yet been completely grasped by scholarly libraries in creating nations in sub-Saharan Africa. This article provides details regarding a study went for exploring the likelihood of utilizing versatile advances to execute online networking based administrations to graduate understudies at the University for Development Studies Library in Ghana. This gives a short diagram of the different innovations and administrations accessible, talks about the open doors and difficulties for executing such administrations at the University Library, and gives various suggestions to bolster this objective.

**Bhat and Mudhol (2014)** Electronic data sources are PC based data sources. There are a few structures and sorts of electronic assets which are accessible on the web. A portion of the mainstream ones that are making strides are the electronic diaries, principles, specialized particulars, reports, licenses, full-content articles, exchange reports, and has of other record sources. This paper introduces the discoveries of an overview about the mindfulness and utilization of electronic assets by therapeutic understudies accessible in the restorative organization libraries. The subjects decided for this study were employees and therapeutic understudies of Sher-E-Kashmir Institute of Medical Science (SKIMS), Jammu and Kashmir, India. For assessing study inquiries and information gathering, the survey was circulated to an irregular specimen of 300 employees, MD/MS (i.e., PG) and MBB last year (i.e., UG) understudies.

**Mohd and Esmail (2013)** made an endeavor to look at the ICT framework offices accessible in building school libraries subsidiary to North Maharastra University, Jalgaon. Six schools chose out of 18 building universities partnered to North Maharastra University. From this study it was found that lion's share of the libraries having vital foundation offices to get to the e-assets for their clients.

**Dhanavandan., Esmail and Nagarajan (2012)** students are driving clients of e-assets regarding respondents 77% of understudies and 23% of employees. Larger part of the clients (42%) showed that they favored print form of assets for their convenience. 36% of clients from the software engineering and Information
innovation. It is higher than others. In the part of recurrence of visit, 29% of clients visits library at week by week once and 7% of seldom visits to library. The aggregate 113 clients mindful of offices and administrations of advanced library and make utilization of it. 30% clients visits advanced library at week by week once and make utilization of it. Just 12% of the respondents use e-assets once in a while. A sum of just 24 respondents demonstrated they have no less than 2 years involvement in utilizing e-assets, a pointer that the idea of e-diaries is still genuinely new phenomenon. (45%) understudies utilize the e-assets for studying and 18.6% of clients for upgrading the learning. Half of the clients (55%) favored electronic diaries and ebooks. It is higher than alternate sorts of assets. What's more, 28% of respondents favored CDs/DVDs. Greater part (34%) of the clients get to the IEL on the web. Just 8 respondents felt that poor collection of assets accessible in computerized library. The issues experienced by the users are measured, 31% of the respondents evaluated that downloading is a noteworthy issue. Additionally 26% of the clients said that absence of learning is another significant issue. Greater part (66%) of the respondents fulfilled by the e-assets accessible in the library. They are giving more significance to electronic variant of documents. With the accessibility of more assets through the Internet with rapid network the interest for E-assets in their particular subject is increasing. Accordingly, the libraries need to advance more experimental routines to add to a standard gathering of E-assets alongside print reports surveying the prerequisites of the client group.

Mirza and Mahmood (2012) they endeavor to assess the viability of electronic assets and administrations in Pakistani college libraries on the premise of clients' fulfillment. An overview system was utilized to lead the examination. Utilizing comfort inspecting, eight college libraries; four each from Islamabad and Lahore including two from the general population division and two from the private segment having IT applications, were incorporated into the clients overview. The aggregate populace (i.e.,40,236) of library clients was huge; in this manner, a sensible, reasonable and advantageous specimen of 800 library clients, including 100 clients each from the eight libraries was selected. A semi organized survey was intended to gather information, while a five-point Likert Scale from 1 (Dissatisfied) to 5 (Extremely fulfilled) was utilized to quantify the fulfillment level of the respondent.
They presumed that Pakistani college libraries are putting forth successful electronic assets and administrations to their clients.

Tyler and Hastings (2011) describe undergrads are getting to virtual libraries whether they are on grounds or gaining from a separation. Scholarly foundations serving virtual benefactors must stay concentrated on addressing the needs of those library clients by ceaselessly looking at their inclinations, their seeking conduct, and the data they look for. The reason for this exploration was to figure out whether virtual supporters are fulfilled by the assets and administrations being given by a college's online library. Taking after an electronic review, demographic attributes of understudies were examined to figure out whether any affected understudies' fulfillment. Utilizing examination of difference, relationship, and expressive insights, a few demographic variables were found to impact understudy fulfillment with the library's online assets: age, sexual orientation, accomplished instructive level, understudy status, and PC experience. One component, PC experience, was found to impact understudy fulfillment with the library's online administrations.

Egberongbe (2011) concentrated on employments of e-assets are extremely regular among the Lecturers and exploration researchers of University of Lagos. It likewise demonstrated that larger part of educators and examination researchers are reliant on e-assets to get craved and significant data. It was nonetheless, uncovered that pragmatic employments of e-assets are not up to the value in examination to ventures made in procuring these assets. Besides, framework and preparing, projects are fundamental for better utilization of electronic assets grounds wide. It is clear from the examination that the accessibility of e-assets on the grounds is verging on adequate for all the current trains however that the base to use their sources is not sufficient and is really frustrating the capacity to meet the necessities of clients.

Margam (2010) reveals the utilization of e-assets by exploration researchers of Kurukshetra University, Kurukshetra (India). The fundamental point is to decide the utilization of e-assets, clients' abilities in taking care of e-assets, and the reason for their utilization. Further, the creator plans to highlight the issues confronted by examination researchers in getting to e-assets, their suppositions on highlight of e-assets, and their perspectives on handiness of e-assets contrasted with that of ordinary sources. The review was directed through an organized poll circled among 60 research
researchers (PhD and MPhil) taken from diverse divisions of Kurukshetra University and the reaction rate was 83 percent. Creator reasons that electronic assets have turned into a necessary piece of the data needs of examination researchers at Kurukshetra University.

Muzammil and Kanwal (2009) concentrated on enquiring the data needs and Information looking for conduct of Science and Technology (S and T) educators of the University of the Punjab. Their inclinations with respect to different arrangements of data sources (printed and electronic) and significance of formal and casual sources have been investigated through quantitative study. Self-culmination poll was utilized to achieve entire populace of foundations/universities/divisions of all Science and Technology resources. They find that both libraries and e-assets are assuming imperative part in meeting staff data needs; direct access to e-sources has somewhat diminished the quantity of their visits to departmental and focal libraries; and personnel invest nearly more energy in seeking web sources than print sources.

Holly and Katy (2009) introduced a diagram of electronic assets. Likewise counted the benefits of e-assets and discussed a percentage of the difficulties in overseeing access to e-assets. Utilizing a few situations, she represented access issues and conceivable arrangements. The arrangements included customary intermediary, rework intermediary, customer virtual private system (VPN), and Shibboleth. Creator then depicted Shibboleth, the Library/Shibboleth venture, and the US. Advanced education/Research alliance brought In Common.

Dillip and Panda (2009) endeavored to quantify the quantum of e-assets got to in the scholastic feeling of Business School libraries in Orissa (India). Also, they endeavor to look at to what degree Electronic Information Services (EIS) are offered to clients of Business School libraries in the State with a supposition pool of the custodians of the separate Business Schools. Besides, they intend to highlight issues and requirements confronted by the data experts in getting to e-assets and conveying electronic data administrations with some useful proposals and healing measures for the resulting container neck. Highlights the accessibility of e-assets and fundamentally looks at the quantum of their utilization in 25 Business School libraries of Orissa and the critical pretended by the data experts in giving electronic data administrations to clients through the discoveries in light of reactions from organized surveys. They shed
some light on the utilization of e-assets in Business School libraries of Orissa (India) with some helpful recommendations for the advancement of the stage of electronic assets and administrations.

Kate et al. (2009) watched that, amid monetary year 2006, the University of Connecticut Libraries spent right around 66% of its accumulation spending plan on electronic assets, making it crucial that understudies, personnel, and staff can discover and get to these assets without help from administrators. To address convenience issues, a cross-useful assignment group put in a year evaluating the libraries’ database locator and attempted to make a more practical framework. This iterative procedure of ease of use testing and outline included three arrangements of ease of use tests, a few configuration sessions, and correction of database portrayals. The new outline now empowers clients to effectively and rapidly discover databases without intercession.

Taryn et al. (2008) portray the development of a library electronic assets issue reporting help work area. A pilot venture was attempted by bookkeepers at the Texas AandM University Libraries to overhaul work processes and staffing to give a productive, successful offer work area some assistance with servicing for tackling electronic assets access issues. They find that custodians with involvement in authorizing and overseeing electronic assets in giving offer work area some assistance with servicing enhanced reaction time, issue determination, orderly data catch, and administration desires and approaches, furthermore prompted the advancement of an electronic assets Help Desk database with upgraded usefulness.

Nikam and Pramodini (2007) depict the utilization of e-diaries and databases (subscribed by UGC-InfoNet consortium) by the clients of University of Mysore. About 200 reactions to a study in view of survey have been examined and displayed. Other than concentrating on the utilization of e-diaries and databases, they additionally inspect the use and fulfillment levels of clients regarding the e-assets. The part of Information Communication Division (ICD) of the University of Mysore in educating the clients about the accessibility of these assets is likewise talked about. Utilization of web as a distinct option for UGC InfoNet consortium assets is introduced.

Amritpal (2007) gives a brief review of the history of scholarly journals followed by evolution of e-journals. Further focuses on scholarly communication and discusses
the role of e-journals therein. The academics such as scholars, universities, libraries and publishers have conflict in the field. Also discusses attempted resolution of the conflict through various journal publishing models emerging from library co-operative efforts and consortia approaches. The current approaches will lead to scholarly communication becoming less commercialized.

**Mulla and Chandrashekara (2006)** analyzes libraries by district inside of the State of Karnataka, India, including the level of exertion taken by the designing school libraries in Karnataka to assemble electronic assets. They infer that gathering and administration framework of the libraries in the example locales are not up to the imprint. Designing school libraries are battling in building advanced accumulation and dispersing computerized data, because of the accompanying variables: absence of ICT foundation; absence of IT prepared labor; absence of attention to the advanced assets; absence of client interest; absence of budgetary bolster; absence of access like PC offices; absence of information about the computerized protection strategies; and absence of preparing for the computerized access.

**Wu (2006)** presented the findings of an investigation which was carried out in 2006 at the Shaanxi university campus, and the investigative target involves teachers, scientific staff, grade, graduate students, scientific staff, undergraduate students, and some training students, from 15 institutes in the whole university.

The investigative result shows that: nearly half of the readers investigated are satisfied with e-resources of the university. The author also shows the use of reading on screen, non-familiarizing the structure and the retrieval method, showing the net condition and computer facilities are the main external factors. The consciousness of using e-resources and the ability of obtaining literature for university readers, by investigating some reader’s utility of e-resources at Shaanxi University of Science and Technology.

**Jonathan (2003)** analyzes the usage of electronic services can pose difficult problems for managers of digital resource collections. A major management issue is how to gather consistent, comparative statistical data in a timely and coherent format. Such a reporting process is itself problematic and challenging, especially if frequent and consistent e-resource usage inputs are needed to populate an organizational Performance Management system. In the model, deployed by the Electronic Library
Team at London Business School for its e-resources web pages, the target URL of the service is rewritten to function as an instruction passed to the logger program.

2.5 Use and Impact of E-resources

Sinha and Deb (2015) discuss on aware of the INDEST-Consortium and using e-resources, mainly the e-journals, frequently for seeking information. While analyzing data, it has been found that maximum users are using equally printed and electronic resources for their academic purposes. It is interesting to note that majority of users under study prefer e-resources while only a few of them prefer printed resources. Majority of respondents have suggested that the authority should provide adequate Internet Terminals with high speed of bandwidth for optimum utilization of e-resources available under INDEST-AICTE Consortia.

Kachaluba., Brady and Critten (2014) focused on quantitative and subjective exploration analyzing humanities researchers’ understandings of the focal points and disservices of print versus electronic data assets. It investigates how humanities’ employees at Florida State University (FSU) use print and electronic assets, and additionally how they see these diverse arrangements. It was completed with the objective of helping the creators and different administrators in picking in the middle of electronic and print positions when performing gathering improvement obligations.

As indicated by Chauhan and Mahajan (2014) UGC is giving access to insightful electronic assets (e-assets) to Indian colleges through the UGC-Infonet Digital Library Consortium. Access to subscribed e-assets is being without given of expense to member colleges. The entire project is supported by the UGC and executed by the INFLIBNET Center. Now, the UGC-Infonet Digital Library Consortium is in its eleventh year and it has been normal that favored academicians are using accessible e-assets widely and ideally. In this paper an exertion is being made to assess, how sociology personnel working in Indian colleges have been utilizing e-resources, what are the issues they are confronting in getting to them, and what are the endeavors made by INFLIBNET to spread mindfulness about such an ambitious activity of UGC among sociology employees. They highlight some imperative issues concerning use, acknowledgment and arranging of this consortium.

Elavazhagan and Udayakumar (2013) they make an endeavor to look at the presentation and measure the degree utilization of e-assets by the employees and
examination researchers of BITS, Pilani - Hyderabad Campus with poll based study. Different factual techniques have been utilized for information examination. They affirmed that there is an extraordinary measure of mindfulness among both personnel and exploration researchers on the e-assets and different sorts of e-Resources, e-Database, and e-Journals. They finishes up with couple of recommendations, for example, membership to more e-assets, useful preparing on chose e-Resources and so forth.

**Nikam and Kumar (2013)** the trend is to examine the use of e-libraries, e-journals and e-databases. Many studies have been carried out both in India and abroad in this area. They aim to examine the user behavior of 66out of 100 research scholars and faculty members of select departments at the University of Mysore like environmental science, sericulture science, zoology and genetics form the sample. Structured questionnaire with 5 point scale was used and the mean and SD values were calculated using SPSS. The major findings are: Users use both print and electronic sources of information. Most of the respondents have learnt to use e-journals effectively from ‘friends/colleagues’. The respondents ‘look for quality controlled scientific and scholarly journals’. Respondents identify relevant electronic articles by ‘browsing through recent issues’ (mean=3.39) followed by ‘searching full-text databases from publishers or aggregator’ (e.g. Elsevier, Springer).

**Sinha (2012)** embraced with a perspective to know the degree of Internet Literacy amongst the University Library Users. The examples of the present study are for the most part drawn from the educators, research researchers and understudies are not all that much happy with utilizing PCs. So as to evaluate the Internet education and access examples of e-assets, overview strategy has been received by the examiner, which contains organization of survey, perception of the members, and meeting of a percentage of the members for knowing the assessment of the respondents in appreciation of attention to ICT and Internet Literacy Skills and E-Resources access design for their everyday necessities relating to their scholarly and examination exercises.

The self planned survey including 18 inquiries has been dispersed amongst the haphazardly chosen 480 examples which involves employees, research researchers, UG/PG Students, Officers and Staff, out of which 324 respondents have reacted. For
information examination and understanding, rate strategy has been embraced. The highlights in admiration of ICT and Internet Literacy Skills, Internet use example, Training and a few issues confronted by the respondents alongside couple of proposals and suggestions.

**Habiba and Chowdhury (2012)** the status of electronic assets offices and administrations gave by the Dhaka University Library (DUL). It additionally examines the motivation behind utilizing e-assets, advantages, subject scope status, general client fulfillments, issues that are confronted by DUL clients while getting to e-assets and saw effect of e-assets on clients. At long last, it reports the outcomes from poll based study of e-assets use and its effect on DUL clients.

**Naushad Ali and Nisha (2011)** they uncover that more than 60 for each penny of clients in the Central Science Library are utilizing e-diaries week by week with the end goal of examination. Printed diaries are counselled by the lion's share of clients contrasted and e-diaries. Catchphrase is the most prevalent quest strategy for seeking e-diaries among examination researchers, while the date of distribution conveys minimal rate among every one of the alternatives. In any case, if is found that moderate downloading of PDF records is the significant issue that would dishearten clients while utilizing e-diaries.

**Sudharma and Majid (2009)** uncover the way that electronic assets are a critical piece of library accumulations. An expansive sum is put resources into the advancement and administration of e-assets in the libraries. The study means to distinguish the acknowledgment of e-assets in the National Social Science Documentation Center (NASSDOC) library in New Delhi, India and decide their utilization, execution, level of client fulfillment, and boundaries confronted in the entrance of e-assets. It additionally endeavors to figure out the clients’ perspectives about PC education among the social researchers. The study concentrates on the effect and utilization of e-assets by social researchers seeking after exploration in the NASSDOC library. The real discoveries of the study demonstrate that the employees know about the e-assets, (for example, ebooks, e-diaries, e-reference books, e-theories, CD-ROM databases, email, web and the OPAC). Huge quantities of exploration researchers and employees are utilizing these e-assets for their examination work. Numerous employees unequivocally concurred with the need for
PC and web proficiency to get to data. A dominant part of clients were fulfilled by the e-assets accessible at the NASSDOC library. This is one of the first reviews directed to distinguish the need and significance of e-assets in a particular Indian library (NASSDOC) and also the necessity for data proficiency to improve the utilization of accessible assets in the sociologies. It ought to prepare to demonstrate the estimation of such e-assets for academic examination in India.

Baljinder and Rama (2009) portrayed the utilization of electronic assets and administrations gave at the focal library of Indian Institute of Technology, Delhi. It centered to know the clients of electronic data administrations, how frequently they utilize the administrations and the spot where the data is gotten to. Additionally, the clients are requested that give their inclinations between an electronic and print diary position. The survey system is utilized for gathering the information from the clients (i.e. undergrad, postgraduate, research researcher and personnel), classes astute. It has been found that utilization of e-diaries is expanding; this is because of mindfulness among the clients about the library e-assets and administrations.

It offers other some assistance with instituting comprehends the requirement for library electronic assets, and propel them to redesign their assets in the bigger enthusiasm of the understudies, staff and research researchers. This additionally demonstrates how a suitably composed study can demonstrate the mindfulness and utilization of sorts of data administrations, for this situation e-diaries. There is a deficiency of such studies in India and the system and discoveries can be connected to different libraries to uncover comparative patterns and in addition examinations.

Kanniyappan et al (2008) portrays quickly a study led at Anna University Library, Chennai (Tamil Nadu) to figure out the utilization of distinctive sorts of electronic assets and administrations and the effect of these assets on the scholarly improvement of employees. Additionally depicted are the issues confronted in utilizing the electronic assets and achievement rate of fulfillment in getting the required data on electronic asset/administrations.

2.6 Management of E-resources

Suryawanshi and Mugade (2015) technology is the major driving force for change. ICTs and its tools have always been helpful in extending information services. They have changed the methods of teaching, learning, research and extension
activities in a higher education system. This paper highlights the impact of integrated ICTs on library and information science like Self Check System, Storage and, Security Systems, Integrated Library Management System using Cloud Computing Technology, Library Discovery Services, Knimbus – Discovery Tool, Research Data Management etc… on libraries.

Oak (2015) libraries of Management Institutions are using latest technology for rendering various IT based services to their esteem users. Now it has become necessary for these libraries to adopt the ICT tools and develop the collection of electronic resources by considering the sustainability issues and ultimately for retaining the interest of library users. Presently academic Libraries are facing various challenges due to the tremendous impact of ICT. The users today are getting there quired information from the internet as well as from intranet and are not fully dependent on the libraries. Users have become more technology savvy because of the increased e-environment. Users are expecting access to more number of e-resources from the library along with the conventional library services. Accessibility to the required information at a fast rate as well as quick response to the query is the expectations of users.

Waghmode (2014) library consortia are the sharing of assets among the member's libraries. Consortia may be formal or in have empowered library consortia to extend both in formal understanding between two or more libraries taking into account a number and capacities over their regarded region. Numerous consortia are accessible on web. INFLIBNET's N-LIST consortium for universities is exceptionally monetary and valuable to school users. All new and developed data is accessible on N-List e-Journals. In this study 3214 schools are enrolled out of these 946 school are unhelped. Most extreme schools are enlisted from Maharashtra State. Complete clients are 561638 from enrolled universities. 6257 e-diaries and ebooks are 71049 found in N-LIST consortia.

Kumar (2012) portrays that data and correspondence innovations (ICT) have turned out to be step by step more imperative in material school libraries. In the computerized age perseverance of libraries lacking ICT is in danger. They depict the present position of material libraries in ICT environment in Haryana state. It clarifies the sign of accessible ICT foundation and e-assets with these libraries. Both
organizations' libraries are making a try to do well in accumulation improvement, administrations, and framework. Both the establishment has the well ICT base in their library and giving more significance to diverse part of ICT, for example, web, email, online diaries and so forth. Keeping in the perspective of better web office both the libraries has the Wi-Fi network library grounds. Both the administrators communicated that their individual activities lead them for digitization.

Sohail and Ahmad (2011) they uncovers that there is expanded acknowledgment of electronic diaries by the college academicians and clients in the present environment in which the UGC-INFONET needs to assume a critical part to assist academic and research group. Real issues experienced by the users toward access to e-consortium are absence of mindfulness and continuous power failure. Legitimate input and additionally introduction projects ought to be conducted from time to time by the college so that the issues experienced must be resolved by prerequisites. The foundation offices ought to been chanced for the better usage of UGC-INFONET E-Journals.

Anna and Sarah (2009) introduced a contextual investigation of key getting ready for e-assets administration from improvement to execution. By utilizing a community oriented, errand based methodology, the key arranging procedure offered us some assistance with redefining parts and work process and incited us to contemplate how we can enhance e-assets administration in our library. Electronic assets, the devices we use to oversee them, and the needs and desires of our clients are continually developing; in the meantime, the parts, obligations, and work/low of the library staff who oversee e-assets are additionally in flux. Perceiving a should be more deliberate and proactive about how we oversee e-assets, the e-assets administrator and serials supervisor at an aesthetic sciences school library teamed up on a formal vital arranging procedure.

Jean (2008) Commercial electronic asset administration frameworks are unpredictable and costly. Elective answers for e-asset administration were talked about by Dalene Hawthorne and Jennifer Watson in their presentation entitled "ERM on a Shoestring," at the Seventh Annual E-asset Workshop held at Mississippi State University on July 20, 2007. College of Tennessee Health Science Center (UTHSC) utilizes a mix of Blackboard, Filemaker and MySQL databases to stay informed
concerning their licenses and receipts for electronic assets. Emporia State University (ESU) utilizes their ILS to oversee permit assertions. The presentation covers the advantages of every choice and down to earth data for setting up an electronic asset administration framework.

**Adam (2008)** outlines to help with the administration of e-assets, electronic asset administration (ERM) frameworks are time and reserve devouring to buy and keep up. Inquiries of framework similarity, information populace, and work process outline/upgrade can be hard to reply; at times those answers are not what we'd like to listen. The writer investigates shoddy (or free) different options for obtaining an ERM framework, investigating how Web 2.0 advancements, for example, wikis, web journals, and Google Docs and Spreadsheets can help with the administration of e-assets. Users may be astounded to learn exactly what amount can be expert utilizing home-developed strategies for e-asset administration.

**Ricardo (2008)** opined that the highlight Electronic Resources Management (ERM), the WebBridge Link Resolver, Research Pro (a federated search engine) and the innovative Encore, which has reformulated the traditional OPAC approach to information access. Innovative Interfaces has also launched the CASE service, which offers coverage data about e-journals and e-resources, with additional services like marc records for e-resources to facilitate their integration in the catalogue.

According to **Janet (2007)** now a day’s technology is moving rapidly to provide librarians with data needed to make informed decisions regarding the collection management of electronic resources (e-resources). Electronic resource management (ERM) systems provide the ability to store needed basic information about e-resources and associated licensing. The protocol provides standardized usage data for journal, database, reference works and books. The SUSHI protocol in turn provides a way to format the data for automated import into ERM systems. Intermediaries, such as ScholarlyStats from MPS Technologies, supply SUSHI-formatted data from an increasing number of platforms via an automated import system.

As per **Celeste (2007)** correspondences in the work process of electronic assets (e-assets) acquisitions and administration are mind boggling and various. The work of procuring and overseeing e-assets is hampered by the absence of best practices, principles, and satisfactory individual data administration programming. An e-asset
administration correspondences investigation at The Ohio State University Libraries uncovered the basic structure of the correspondence system and regions that could be enhanced as far as productivity and adequacy. E-assets administration must be receptive to the elevated requirements of clients and other library staff. Proficient administration of the related correspondences system improves the probability of a beneficial and effective operation.

2.7 Marketing of E-resources

Jotwani (2014) states that Indian Institute of Technology (IIT) libraries at Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras, and Roorkee have been subscribing to more than 15000 e-diaries, ebooks, databases and other e-assets either independently or in consortia mode and spending a significant piece of their securing spending plan for over 10 years now. This paper endeavors to concentrate on the promoting endeavors being made by these libraries to enhance the mindfulness and expand the utilization of these assets. Advertising related information were gathered through a poll, individual visits, and examinations with the bookkeepers, and the use information were gotten from distributors. Information examination uncovered that e-assets in all IITs are by and large intensely utilized as the quantity of downloads have expanded from 32,33,818 to 75,23,371 mirroring a development of 132% over a time of 9 years. The IIT libraries embrace multipronged approach and utilize 27 showcasing systems to advance their assets. The concentrate likewise demonstrated that there were descending changes in use in distinctive years. It is proposed that these libraries might consistently re-take a gander at the showcasing procedures and methods; ponder their effect on the mindfulness and use of the e-assets; recognize and uproot the bottlenecks; and endeavor extra endeavors incorporating communicating with the clients to guarantee ideal usage of these assets.

According to Sunil and Harinarayana (2013) in the past twenty years, libraries holding the academic collection have dealt with dramatic changes brought about by decrease in the purchase of conventional materials (hardcopy) and growing importance of electronic resources. The knowledge managers have rethought their efforts and revisited the entire information resource selection process. It is evident from the gamut of literature on the topic 'E-Resources', that accessibility to information resources in electronic form on a web-based application has greatly helped the researcher.
As per Emily (2009) advertising electronic assets are presently an important undertaking for administrators and libraries. With the end goal libraries should effectively advertise their e-resources, they should first comprehend what such an endeavor involves. This may incorporate directing client studies, working imaginatively and cooperatively, and utilizing numerous lines of correspondence to scatter the message.

As indicated by Chetan (2009) accessibility of e-assets in a college library is extremely regular. Be that as it may, their legitimate and greatest use is a matter for dialog. The creator inspects the presence of different e-asset databases in Guru Gobind Singh Indraprastha University Library. The concentrate likewise highlights the inclinations and significance of online assets among the instructors and examination researchers.

Yukikio (2007) presents how to promote e-resource services in academic libraries based on the case of Kyushu University Library. It is necessary for contents development to establish the financial base for e-collection and be conscious of a library's responsibility to the users. The knowledgebase management and the combination of electronic services, such as Open URL link resolver, A-to-Z list, and OPAC, are effective for enhancing visibility of e-journals. For the maximum use of e-resources, academic libraries should be reorganized with integration of management, service, and technical sections specialized in e-resources.

2.8 Role of librarian and E-resources

Satpathy and Rout (2010) they mean to survey and assess the utilization of e-assets by the employees of C.V. Raman College of Engineering (CVRCE), Bhubaneswar, with a perspective to look at the presentation of employees to e-assets. Plus, it expects to highlight the issues experienced by the clients and recommends some medicinal measures for its change. The creators research the utilization of e-assets by the employees of CVRCE through a study in view of an organized poll. Different measurable techniques have been utilized for information examination. The study affirmed that employees know about the e-assets and different sorts of e-assets, e-database, and e-diaries. It recommends for the change in the entrance offices with high Internet pace and membership to more e-assets by the Central Library of CVRCE.
Peter et al (2007) portrays the outline and usage of a Web-based device for assessing new electronic assets. A work process graph has been produced for the creation, execution and utilization of this new Web-based instrument which got to be known as the e-Resources Previews Project. This Web page has been accessible to the grounds group since February 2005 and empowers administrators, personnel, and understudies to ask for a trial of a specific exploration database and test drive the item with a specific end goal to decide its handiness. To date, this coordinated effort among administrators, personnel, and understudies has brought about the sneak peak and assessment of fifty-nine electronic assets and this info from the grounds group has been profitable for curators in settling on the most ideal acquiring choices.

Anna and Siobahn (2006) portray the parts of the e-assets administrators (ERLs) in Shropshire. Both ERLs chip away at distinctive tasks which have built up their abilities and made them known not staff inside of their Trusts. The exercises of the ERLs have likewise raised the profile of the libraries.

As indicated by Bergman (2005) the position of electronic assets custodian rose as a forte to manage the administration of computerized assets, yet little has been composed about the curators now working in this strength. Creator intends to audit the historical backdrop of sex disparity in libraries, layout pay issues in libraries, and endeavor to characterize what an electronic assets custodian is, with frameworks curators being utilized for examination. The greater part of respondents work in the USA, however 20 percent worked the world over. Results seem to show that guys are not being favored over females for work in this library forte. Experience and geographic area were observed to be the main noteworthy components influencing pay.

2.9 Evaluation of E-resources

Kumar., Naik and Naveen (2015) states that University libraries of the present decade bear the cost of a few Lakhs of rupees towards electronic assets, yet a significant number of them are underutilized and obscure to clients. It is exceptionally genuine with respect to administrators to know whether the advanced education group is utilizing the E-Resources ideally. Consortium has reformed the entrance of insightful data as E-Resources to all with no separation. The accessibility of E-Resources in college libraries and its successful usage add to all round improvement
of people. At advanced education level each one need progressed and insightful data to enhance the nature of study, showing and research. Web, E-sends, E-Journals, E-Books and CD/DVD ROMs are considered as a portion of the critical E-Resources.

Kalita (2015) describes that consortia and how it is providing a great effect on the medical libraries and its particular users. Scientific journals and other E-journals are though producing at high speed still for the insufficient budget a library cannot be able to procure their demanded resources. With the help of consortia it is able to disseminate the maximum information to the library users. The consortium has grown up due to budget insufficiency, demanding variety of information needs, better and effective utilization of resources.

Singh and Khan (2015) state that Information Communication Technologies (ICT) have tossed forward new difficulties before the library experts. The innovation greatly affects the administrations of the libraries. In the present study, an endeavor has been made to investigate value of electronic assets and clients abilities in utilizing different pursuit routines and strategies to get to and use e-assets in Indian Institutes of Technology Delhi, Kanpur and Roorkee, India. The concentrate likewise intends to recognize the level of fulfillment with the data got to by clients through the accessible e-assets. The study uncovers that the lion's share of clients are fulfilled by accessibility of electronic assets that encourages to bolster their scholastic, research and formative exercises. It has been watched that students in all the three establishments use sites, interpersonal interaction locales more than email, while the post graduates incline toward library sites and current e-diaries over online journals, social destinations and email. Likewise explore researchers incline toward back volumes and flow issued of e-diaries, e-theory. Lion's share of respondents use e-assets and access assets mostly through basic inquiry strategies and routines, for example, title, creator, subject order and catchphrases.

Surulinathi et al. (2011) opines that custodians were confronting expanding requests for administrations with declining levels of budgetary and/or HR. To get by in a domain of heightening desires, libraries were searching for new replies regarding how they can turn out to be more agile and create powerful systems and down to earth answers for meet the desires of its clients. The reasoning intrinsic in librarianship is the idea of sharing. The scattering of data through material trade and interlibrary correspondence has advanced social orders for a considerable length of time. Library
Consortia is a rising pattern, which bolsters the asset sharing, aggregate membership of diaries e, in a savvy way. 

Mutula (2011) describes the provision of e-resources does come with a lot of challenges. One way to identify these challenges and also identify ways to improve these services is through Monitoring and evaluation (M&E) (Rosenberg, 2008). M&E is an important tool for decision making and also for the purpose of evaluating the impact of these resources on user population. The advent of e-resources has also seen the need for libraries to re-strategize services such as training and marketing. Monitoring and evaluating the impact of such services on e-resources is therefore vital. Three Monitoring and Evaluation of E-Resources and Usage (MEERU) workshops provided through the collaboration of KLISC and INASP: PERii have since been conducted in Kenya, and attended by nominees from different institutions countrywide. Though a few libraries have made an attempt to evaluate the utilization of e-resources through in-house data from the reference desk and the publishers’ statistics data, there has not been a single national survey conducted to measure the use of electronic resources or assess factors hindering its usage. As a result very little if any, is known on usage, the users or factors influencing its usage author was agreed during the initial meeting of a KLISC and INASP: PERii collaborative M&E capacity enhancement project. In order to address an evident lack of hard evidence, the project aimed to evaluate the extent of usage of electronic resources and the impact of marketing and training activities on the usage. Also designed to give users the opportunity to give their perspectives on use of the resources and the challenges they are doing so.

Constant (2010) investigations the LIS postgraduate e-assets looking for conduct in Makerere University, Uganda. The creator is to display and talk about particularly the issues LIS postgraduate understudy's face in getting to e-assets. Overview research methods were utilized as a part of which the information gathered utilizing organized polls were deliberately taken care of and broke down utilizing the Excel PC system to produce the frequencies, rates and pie outlines. The creator finds that the resources have inspirational states of mind towards e-assets use and they showed changed issues confronted in e-assets use and proposed diverse systems to enhance e-assets in the University. Among the issues distinguished are: moderate Internet availability,
deficient arranged PCs, absence of access to ease printers in the library, utilizing propelled look procedures of most databases and absence of consciousness of the vast majority of the e-assets. Without knowing precisely what isn't right with a framework, it turns out to be extremely hard to arrange and execute significant key measures to relieve the issues. Further creator helps library organizers and LIS instructors to reevaluate on the most proficient method to enhance e-assets access and usage. It will incite new thinking to patch up the circumstance in the University library.

**Bleiler and Livingston (2010)** opines assessing E-assets was intended to reconsider the routes in which Association of Research Libraries (ARL) part libraries have (re)structured themselves to distinguish the accessibility of new e-assets in the business sector; assess them for procurement; choose to gain/buy them; assess them before reestablishment; and advertise or showcase them. About indistinguishable inquiries were postured with respect to obtaining/permitting by consortia and by individual libraries, empowering correlations in procedure to be made. They made this to know arranged data assets were characterized as "economically accessible electronic data assets (databases, e-writings, e-diaries, datasets, and data assets) supported or empowered by the library, which are made accessible to approved clients through a prior system."

The review was directed between 1 February and 8 March 2010. Seventy-three of the 124 ARL part establishments (63 US scholastic, 9 Canadian scholarly, and 1 nonacademic) finished the overview for a reaction rate of 59%. The reactions were all the more obvious with respect to utilization of an Electronic Resource Management framework (ERM); 68% of the respondents (49 of 72) utilize an ERM. A critical rate of these showed the ERM is utilized for all segments of the e-assets procedure, including authorizing, possessions administration, utilization following, cover examination, cost information, information nourishes, join resolvers, computerized updates, OPAC highlights, seller measurements, and contact data. Various remarks showed an inclination for Ex Libris' Verde ERM. One respondent showed that the ERM got negligible use in light of the fact that it is "tedious and work serious."

As indicated by **Kinman (2009)** advanced assets assume an undeniably essential part in scholarly libraries, which must show their quality to the establishment and their effect on understudy learning results in new and all the more convincing ways. The creator inspected five years of seller supplied e-asset use information in conjunction
with other library and organization measures. Results are contrasted with significant discoveries from different scientists, with illustrations of how e-measurements can be consolidated into a more extensive appraisal of how the library is addressing the needs of its clients.

Ramana (2006) examined the status in regards to the utilization of Electronic Resources by the post graduate understudies and Research researchers of Vellur Institute of Technology (VIT). The information uncovers the degree of value and the issues confronted by the clients in getting to the Electronic assets. The foundation is giving online databases, online diaries, separation instruction, CD and DVD ROM, Audio and Video tapes and so forth. The utilization of these offices is not acceptable. The study demonstrates that a greater part of understudies use online diaries for get ready venture reports and for posting references just. The utilization of electronic assets for exploration reason for existing is less. Creator opined that powerful measures ought to be taken to enhance the utilization of electronic administrations.

2.10 Research gap

The earlier studies had been based exclusively on the analysis of the access data supplied by the publishers, and many facts to give information on the characteristics, preferences and views of the users. Literature studies also show that in many studies researchers made a comparison between print and electronic journals usage. The user community is becoming more and more familiar with these tools and now they have started using them very regularly. But how much these resources are being used, and what is the impact of this electronic era on the non-electronic era, has to be examined. The main aim of this study is to supplement the results obtained in many earlier studies, which had provided interesting general information on the use of the e-journals packages.

The present study is to investigate the use of electronic resources (INDEST), which are available in IITs also to know the impact of use on usage, collection and on library environment. Being the premier and prestigious technical institutions they take main efforts to initiate the use of latest technologies. Hence my research work aims at the study of use of INDEST e resources by the faculty members of these institutions is need of the hour, the results of which will facilitate other academic institutions to follow.