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INDEX

Management of Academic Library Sources and Services During COVID-19 Pandemic Situation

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Abstract:

This article evaluates how academic librarians are able to carry out library services to users without both parties leaving their comfort zones in the era of Covid-19 pandemic. In this situation library professionals are trying to update themselves with the update tools and technologies that are currently emerging in the field of library science. Digital libraries are playing an important role in this pandemic situation. This article throws light on various digital libraries run by various institutes which are available in open access free of cost. It also identifies the role that library professionals have to take up. It traces the number of digital platforms available around the world.

Keywords : Covid-19, Academic Library, Sources, services, Pandemic, Digital Libraries.

Introduction:

The library is the most important body of an institution of learning and the warehouse for storage of information concerning all human activities. It is the place where people room all works of life, get valid information resources on issues concerning life, education, experiences, history, news, health and so on. Henceforth, an institution without a working library would be considered some what academically incomplete and inefficient. So, there is the need to ensure that library services are up to date and that users are not disappointed, no matter what so ever the circumstances. The outbreak of Covid-19 virus across the globe has forced educational institutes to shut down to control the spread of this virus. This happening made the teaching professionals think of alternative methods of teaching during lockdown. And thus it paves the way towards web-based learning or e-learning or online learning. In today's scenario learning has stepped into the digital world. Now the libraries are also moving their services from print to digital and virtual form as well.

The objective of this paper is to emphasise the library services of academic library preparing themselves to provide services during the pandemic sitution. In this current scenario technologies are playing important role in transforming library services in automated manner, where users can access library services anytime anywhere. It is also the need of current society to change the library services as per the changing environment quickly.

Objective:

During the pandemic situations new problems are faced by the library professional in providing services. This helps in finding the possible problems and their outcomes for providing effective library services. In these situations library professional try to update themselves with the updated tools and technologies that are currently emerging in the field of library services.

1) To help users know the global trend of using e-learning.
2) To suggest the various digital libraries available free of cost across the world.
3) To suggest the various virtual library services useful to bridge the gap between users and library services during Covid-19 pandemic.

Challenges:

1) Most of the libraries are facing difficulties in providing library services to the users during the Covid-19. Now it is mandatory for these libraries to update themselves in digital form to connect themselves to the users and maintain the belief of users in library services.
2) Academic libraries also are closed during Covid -19 pandemic situation. Maintenance of library services are also being affected.
3) There is lack of availability of library staff for performing library activities in the Covid-19 pandemic situation. Current library technologies are not fully automated. They are partially dependent on human for there operations. That is the big challenge for providing library services in user community.
4) There is a lack of budget for maintaining library services during Covid-19 crisis.

Suggested virtual library services during Covid-19 pandemic:

1) Virtual reference services like Chat/e-mail. Self check-in and check-out of books.
2) Scanning of chapters from books, articles from journals for remote users.
3) Making available Lib Guide-list of resources in the library.
4) Update dynamic content and useful tutorials in library website.
5) Institutional repository
6) Remote access to E-resources
7) Free and expanded access
8) Open access resources
9) Electronic bulletin board.

Digital Libraries :

Important digital library and E-resources for all those library users who have developed or developing online reading habits are several digital libraries offering reading material free of cost. Digital libraries are playing very crucial role during Covid-19 pandemic crisis to fullfil reading and academic demands of users. Library professionals can access these digital libraries through their institutional websites for better use to students.

National Digital Library of India (NDLI): (https://ndl.iitkgp.ac.in)

National Digital Library of India (NDLI) is a virtual repository of learning resources with search/browse facilities. It provides a common platform for various groups of user community. It is sponsored and mentored by Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT). NDIL has 73,356,939 resources available in various language, subject and various disciplines. NDLI is provides interface support for 10 most widely used Indian languages. NDL has collection of wide range of resources such as books, audio books, lectures, video lectures simulations along with ally types of subject areas like science, Humanities, Literature, law and Management. It provide support for all academic levels including researchers and life-long learners, all disciplines, all popular forms of access devices and differently-abled learners. With the huge data collection it has also various filter options available for searching and retrieving of information. The search option by document type, by subject, by source and learning resource that makes it more effective in user community.

Khan Academy – (https://www.khanacademy.org)

Khan Academy is one of the emerging e-learning platforms for schools and college students. It provide a free world-class education for anyone, anywhere. It has 1500+ schools incorporated from two years. Khan Academy offers practice exercises, instructional videos, and a personalized learning dashboard that empower learners to study at their own place in and outside of the classroom. It was initially supported by Tata trust of developing an ideal platform of digital learning for students. It is fully non profit organization which aims for quality education for remote area students. It is also designed to provide content in local language specially Hindi. It also provide special collection of material in form of library for teachers.

Project Gutenberg – (https://gutenberg.org)

Project Gutenberg is an online library of free e-Books. Project Gutenberg was the first provider of free electronic books, or e-Books. Michael Hart, founder of Project Gutenberg, invented e-Books in 1971 and his memory continues to inspire the creation of e-Books and related content today. Project Gutenberg is a library of over 60,000 free e-Books. It offers a vibrant and growing collection of the world's great literature. Everything from Project Gutenberg is gratis, libre, and completely without cost to readers. The search option is available by author, title, subject, language, type, popularity of books etc.

World Digital Library- (https://www.wdl.org/en/)

The World Digital Library (WDL) was a project of the U.S. Library of Congress launched in 2009, with the support of UNESCO, and contributions from libraries, archives, museums, educational institutions, and international organizations around the world. The WDL sought to preserve and share some of the world's most important discover, study, and enjoy cultural treasures and significant historical documents including books, manuscripts, maps, newspapers, journals, prints and photographs, sound recordings, and films. Books, manuscripts, maps, and other primary materials on the site are presented in their original languages. More than 100 languages are represented in the WDL collection, including many lesser known and endangered languages. WDL has 19147 items with 1057175 records on related subject.

Internet Archie- (https://archive.org/)

The Internet Archive is building a digital library of Internet sites and other cultural artefacts in digital form. Like a paper library, provide free access to researchers, historians, scholars, the print disabled, and the general public. Anyone with a free account can upload media to the Internet Archive. It pay special attention to books for access to a public or academic library with a good collection. Television is also an ephemeral medium. This service allows researchers and the public to use television as a citable and sharable reference.

Hathi Trust- (https://www.hathitrust.org)

HathiTrust is a not-for-profit collaborative of academic and research libraries preserving 17+ million digitized items. HathiTrust Digital Library is a digital preservation repository and highly functional access platform. HathiTrust provides long-term preservation and access services to digitized content from a variety of sources, including Google, the Internet Archive, Microsoft, and in-house member institution initiatives. Items in the public domain are in full-view for everyone and items held in copyright are searchable.

Open Library- (https://openlibrary.org)

Open library is an open source towards a web page for every book ever published. Open Library is a project of the non-profit Internet Archive, and has been funded in part by a grant from the California State Library and the Kahle/Austin Foundation. It has hundreds of millions

of book records, a wiki interface. It gathered over 20 million records from a variety of large catalogs as well as single contributions.

INFLIBNET- (https://inflibnet.ac.in/)

Information and Library Network (INFLIBNET) Centre, Gandhinagar is an Autonomous Inter-University Centre (IUC) of University Grants Commission, New Delhi (Ministry of Education, Govt. of India). It is a major National Programme initiated by the UGC in March 1991 as a project under the IUCAA, it became an independent Inter-University Centre in June 1996. INFLIBNET is involved in modernizing university libraries in India using the state-of-art technologies for the optimum utilisation of information. INFLIBNET is set out to be a major player in promoting scholarly communication among academicians and researchers in India. The Centre has taken-up a number of initiatives for the benefit of the academic community in India. These initiatives are categorized into various phenomenons as Library automation: INDCAT, SOUL 3.0

e-Consortium : E-Shodhdindu, N-LIST, INFED, InfiStats, ShodhShuddhi, INFED.

Open Access Initiative: Shodhganga, Shodhgangotri, INFOPORT, IR, Research Project Database..

E-Content Development and Services*: ILMS..*

Project & Services: e-PG Pathshala, Vidwan Database, Vidyamitra, IRINS..

Sayam Prabha- (https://swayamprabha.gov.in)

Swayam prabha is the imitative of Govt. of India & Ministry of Education. Which focused on providing high quality learning content in form of video lecture throw 34 educational channels in DTH on 24X7basis using the GST-15 satellite. It have collaborated with varies institute like NPTEL, IITs, UGC, CEC, IGNOU, NCERT and NIOS to telecast there lecture throw there platform. Lecture telecast by subject expert of there respective field. List of channels are given to the today on the website of swayam parabha. All programme are free accessible for students. All the registered participant yet advanced schedule alert before one week.

Swayam- (https://swayam.gov.in)

Swayam (Study Webs of Active-Learning for Young Aspiring minds) is an Indian massive open online course (MOOC) platform. Swayam is promoted and launched by Ministry of Education. It is basically designed to provid digital education to all those learners who wants to update themselves and in search of legal platform that also certify their learning. Swayam includes courses from high school to research level courses, technical skill courses that enables readers to update in their respective fields. Swayam have been jointly developed by Ministry of education and all India council of technical education. In pandemic situation Swayam is one of the emerging platform for digital education and certification in India. Currently Swayam has 203 partnering institutes, 4024 completed courses, 18470424 enrolled students, 1186772 exam registration, 118262 successful certification. In addition it also promotes faculties and institutes to create local courses available on Swayam are divided into four different sections:

1.Video lectures 2.
2. Specially prepared reading contents that can be easily downloaded or printed.
3. Self assessment, assignments, quizzes.
4. Online discussion forum for soling the doubts of earners.

Conclusion:

Technological advancements have revolutionized the library services in digital era. Libraries on the web have become more competent and confident in terms of resource management and digitalization. Various types of information is available on Google and other searching platforms. But only library professionals can help to users in providing right information so that they can get exact information in minimum time.

This article has brought out opportunity to learn recent technological advancements in order to maximize the usage of digital library resources and services in world wide lockdown and pandemic situation prevailing the country.

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Remote Learning with Google Classroom : An Overview

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Abstract :

The COVID-19 crisis suddenly and speedily entered our lives. It badly affected the learning of students. In March, 2020, all teachers and students present in the schools suddenly moved towards virtual academic platforms. That was the challenge for schools, colleges, institutions, teachers, students as well as parents. Teachers and students use a variety of Learning Management Software (LMS) tools to continue the learning process. There are many LMS tools like Zoom, Cisco Webex, Edmodo, WhatsApp, and Google Classroom etc. out of these LMS, Google Classroom has gained the popularity due to its awesome features and ease of use. In this paper, an overview is given of the Google Classroom during remote learning. Accessibility, perceived utility, measuring students' progress, and interaction and engagement between teachers and students, secure document storage are all important considerations of Google Classroom. Google Classroom was an effective remote learning tool during the COVID-19 pandemic and should be continued in the future by involving any form of virtual learning.

Introduction :

The COVID-19 crisis suddenly and speedily entered our lives. No one was expecting or prepared for this situation, which everyone has been facing since 2020. Every individual is disturbed. It affects all the sectors like business, the economy, health, education, etc. All the educational institutions, whether they were big or small, shut their doors to students and teachers for many days without any clear vision of reopening. It badly affected the learning of students. To overcome the damage, educational institutions moved to remote learning without any preparation. In March, 2020, all teachers and students present in the schools suddenly moved towards virtual academic platforms. However, the concept of distance learning was present, and therefore, distance learning and remote learning were the only options for the continuation of the teaching and learning process (Cornock, 2020). That was the challenge for schools, colleges, institutions, teachers, students as well as parents. The situation became worse in developing countries like India, where there was no online teaching and learning platforms were used on a regular day.

The education system has faced many difficulties due to the COVID-19 pandemic (Lee & Cha, 2021). The education world was not ready for the full use of information technology in such a sudden situation. There were three main reasons for that:

1. Digital devices
2. Teachers and students were not adequately trained in the use of technology
3. Lack of a well-organised distance learning environment in developing countries like India (Sharda and Bajpai, 2020).

Since at that time, technology has been used at all levels of education and for a diverse group of students: from pre-kindergarten to 12th grade students, special-needs learners, multilingual students, and adult learners (Karchmer, 2001). The COVID-19 pandemic has forced teachers and students from technology saviours, fresher, casual, and skilled masters to all, to teach, read, and communicate on a given technology platform. Teachers and students use a

variety of Learning Management Software (LMS) tools to continue the learning process. Some used via WhatsApp, some on Zoom, Cosico Webex, Google Hangout, Edmodo, and the most famous teaching and learning tool, Google Classroom (GC), to compensate for the learning loss. (Okmawati,2020). Google Classroom is such a LMS that is both free to download and use, as well as simple to use.

Google Classroom :

Google Classroom is a free internet tool for education created by Google that is accessible to both teachers and learners. This became extensively utilised and accepted by all kinds of academic institutions. Because it is affordable and readily available to people on a shoestring budget. (Robinson, 2021). Google Classroom is interoperable with virtually every accessible learning management system (LMS) (Sharda and Bajpai, 2020). According to Robinson (2021) Google has evolved and improved the app throughout the years since its debut, rendering it even more user-friendly also with addition of G-Suite. This has transformed it into an effective time management tool for teachers because it allows teachers to save data, upload instructional materials, questions, tasks and recording also generate tests and quizzes for their students.

Background of Google Classroom :

Google Classroom was first announced on May 6, 2014 and it was formally released on August 12, 2014 by Google (Siu, 2016). Google Classroom was founded on the idea that "teaching tools should be simple to understand and easy to use," with the slogan "to assist teachers in generating and collecting assignments." It was initially slow and had various problems. There was no provision to share and individually interact with students at the initial stage. It first appeared in 2015 and after that, the Calendar feature was linked with Google Classroom (Perez, 2015 & Hockenson, 2015). The Calendar is a useful interface since it allows students to be aware of forthcoming assignments and their due dates. Earlier, to use Google Classroom, users needed to have a G Suite for Educational subscription, but later, that limitation was eliminated by Google Classroom (Ressler, 2017). Google Classroom is now accessible to anybody with a Gmail account. On August 7, 2018, Google launched an improved version by adding a "Classroom" feature to Google Classroom. It has now become the centre of Google Classroom (Bukola, 2018). Google Classroom just introduced another awesome feature Rubrics in November 2019, where teachers can make, reuse, and evaluate assignments for students. They can also export and share them with others (Merhbi, 2019). In the COVID-19 pandemic, Google introduced a new platform called "Google Meet" with Classroom, which allows teachers and students to interact and communicate face-to-face (Sharda and Bajpai, 2020). Google Meet can be used for Synchronous teaching, while Google Classroom can be used for Asynchronous teaching and learning. In synchronous teaching, the teacher and students are present at the same time and in the same place. In asynchronous teaching and learning, students have access to learn at anytime and anywhere with no time constraints (Shaharanee et al., 2016).

Google Classroom started gaining popularity all over the world from 2014. Google owns 60% of the educational computers market (Futuresource, 2017). Prior to the pandemic of COVID-19, Google Classroom had about 30 million users around the world since 2014. Meet, Google Classroom's video conferencing service, has grown to nearly 120 million users since March,2020 (Futuresource,2020). Administrators, educators, students, and their parents all

around the globe have switched to G-Suite for the teaching and learning process. They easily utilise Google Docs, Gmail, Rubrics, Sheets, Doctopus, Drive, Slides, and more, all of which are tools in Google Classroom.

Features of Google Classroom :

According to M Pardo-Bunte (2021), Google Classroom (2020), and Sharda and Bajpai (2020), the following are the main features of Google Classroom:

Streamlined management :

- The management of classrooms can be more streamlined as it allows other tools by Google, like Forms, Docs, Meet, Drive, Slide, YouTube, and Calendar, to be integrated into the platform. For instance, a teacher can post an assignment and its due date can automatically be added into the students' Google Calendar, making it easier to track the upcoming tasks.
- Teachers can view, download, and save the students' grades into Google sheets or .csv files, which help to assess the performance and progress of the class.
- Substitute teachers or co-teachers can be added to the classroom and permissions can be given on what changes they can or cannot make.
- Restrictions can also be set on students, such as whether they can reply, post, comment, or edit something.

Secure :

- Unlike other services by Google, the platform is completely advertisement free and, thus, it does not collect any user data for this purpose.
- Google makes it certain that the teachers' content, students' data, or any such information is secure and encrypted.
- The platform enables safe and easy access to the entire content for all subjects anytime from any place through Google Drive, which is Google's storage system.

Learning activities :

- Efficient digital creation, organisation, distribution, and collection of class materials can be done by posting them to multiple classes at the same time. This content can be modified when needed and be reused in the future.
- Any assignments or announcements can be drafted beforehand and then these can be scheduled to be uploaded on a specific date.
- It is also possible to create quizzes that can be automatically graded and to create rubrics for assignments that facilitate the detailed and timely evaluation of the students' work.
- The platform has an option to generate originality reports as well, this can help detect any plagiarism present in the students' work.

Remote interactions :

- It ensures effective one-way and two-way communication through live classes, chats, discussions, announcements, and reminders using Google Meet and the 'Stream' feature to increase classroom engagement and participation. For example, teachers can post a question and let the students have a collaborative discussion to answer it.
- Along with live classes, teachers can also easily create pre-recorded videos that the students can watch anytime on various devices like mobile phones, tablets, and laptops.

- The teachers can provide individual support to students privately if they need additional help and can track which student has or hasn't completed the designated classwork.
- Multiple external educational tools or websites, such as Quizlet, BrainPOP, and Khan Academy, etc, can also be integrated with Google classroom.

Modifiable :

- The platform allows teachers and schools to personalise the theme of the classroom according to their preferences and requirements by using the school's logo, photos, or colors.
- Assignment questions can be customized, and teachers can make a different one for each student or specific students or groups in the class. This also ensures fewer chances of students using unfair practises to complete learning tasks.

The uses of Google Classroom :

Kate McGinnis (2021) and Google Classroom (2020) pointed out the following important uses of Google Classroom:

Teachers, lecturers :

- Communicating with other teachers and students through video meetings
- Sharing useful website links and study material
- Assigning quizzes, tests, or assignments to students
- Grading and providing real-time feedback on students' submissions
- Posting important announcements
- Carrying out debates and discussions
- Taking attendance
- Record keeping and monitoring of the class performance

Librarians :

- Organising the library resources and sharing them as e-content with school classes.
- Providing a range of e-library services when it is not possible to access one physically.

Parents :

Receiving email updates and summaries about the classwork to help track missing work, upcoming tasks, and other activities that are to be completed by students.

Students :

- Taking classes for all subjects
- Adding deadlines to their Google Calendar
- Turning in assignments
- Checking plagiarism and originality of their work before submitting
- Interacting with classmates
- Receiving graded work and feedback
- Asking questions and expressing doubts regarding coursework to teachers

Administrators :

- Setting up access and permissions for users
- Creating classes and fixing timetables
- Adding or removing teachers and students to a class
- Organising questionnaires for teachers to get feedback for better quality learning
- Analysing usage trends such as the number of classes that are active or the number of posts created by teachers and students using 'Classroom usage reports', assists with configuring classes in the future.

Conclusion :

The need of the hour is to use online tools and other technological resources in schools to make the teaching and learning process more effective and interesting. It is necessary to give training for the changed role of teachers and school administrators in this changing nature of education. Students will also be given the necessary tools they need to conduct productive and successful searches online. Google Classroom is an accomplished virtual teaching and learning platform. It provides a great way to share and exchange knowledge. Accessibility, perceived utility, measuring students' progress, and interaction and engagement between teachers and students, secure document storage are all important considerations of Google Classroom. Google Classroom may be used to strengthen the quality of education at all academic levels. Google Classroom was an effective remote learning tool during the COVID-19 pandemic and should be continued in the future by involving any form of virtual learning.

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Role of Artificial Intelligence in Various Managements Libraries

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Abstract :

Artificial intelligence (AI) was introduced to develop and create "thinking machines" that are capable of mimicking, learning, and replacing human intelligence. Since the late 1970s, AI has shown great promise in improving human decision-making processes and the subsequent productivity in various business endeavors due to its ability to recognize business patterns, learn business phenomena, seek information, and analyze data intelligently. Despite its widespread acceptance as a decision-aid tool, AI has seen limited application in management institute library. To fully exploit the potential benefits of AI for management institute library, this paper explores various sub-fields of AI that are most suitable for Library services problems relevant to management institute library. In so doing, this paper reviews the past record of success in AI applications to management institute library and identifies the most fruitful areas of management institute library in which to apply AI.

Introduction:

You can ask Google, Alexia, Crotona, Watson, or Sire—but will you be able to ask your local library? A century or so ago, electricity was a new, quasi-magical thing—a novelty with few applications. Back then, nobody could have predicted that it would give rise to telephones, production lines, and microchips. And yet, electricity transformed every industry, including agriculture, healthcare, transportation, and manufacturing. As a foundational springboard for so many new innovations, that novelty was the most important engineering achievement of the 20th century. Now, in the 21st century, a new quasi-magical thing has come into our lives: artificial intelligence (AI). And just as it was in the early days of the electronic revolution, we are only beginning to grasp how completely this new technology will transform our daily lives. Nearly all of today's emerging technologies are built on the foundation of increasingly sophisticated machine learning. Every major technology company is betting on machine learning, hoping to be a player in the coming revolution by developing proprietary machine intelligences to perform tasks that used to require human intelligence. Today, our interactions with AI are mostly novel ("Siri, why did the chicken cross the road?")—and the results crude—but so were the first light bulbs and photographs. The modern public library arose alongside the late 19th-century/early 20th-century electrical revolution and has steadily adapted systems and services to new technologies ever since. However, AI will test the institution of librarianship as no technology has before. We value libraries because they keep us informed and connected; we read to enrich our lives and inform our decisions. But what happens when that decision-making process is fundamentally changed? Machines are becoming skilled at learning, speaking, recognizing patterns, and making decisions. As a result, asking a machine for answers is quickly becoming a normal, everyday activity. As AI becomes better and better at understanding our information needs and delivering relevant answers, it seems likely we will come to rely on it more. Over time, these interactions will be less novel and more essential.

Definitional for Artificial Intelligence:

Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction. Particular applications of AI include expert systems, speech recognition and machine vision.

Knowledge representation Artificial Intelligence:

Ontology represents knowledge as a set of concepts within a domain and the relationships between those concepts. Knowledge representation and knowledge engineering are central to classical AI research. Some "expert systems" attempt to gather together explicit knowledge possessed by experts in some narrow domain. In addition, some projects attempt to gather the "commonsense knowledge" known to the average person into a database containing extensive knowledge about the world. Among the things a comprehensive commonsense knowledge base would contain are: objects, properties, categories and relations between objects; situations, events, states and time; causes and effects; knowledge about knowledge (what we know about what other people know); and many other, less well researched domains. A representation of "what exists" is ontology: the set of objects, relations, concepts, and properties formally described so that software agents can interpret them. The semantics of these are captured as description logic concepts, roles, and individuals, and typically implemented as classes, properties, and individuals in the Web Ontology Language. The most general ontologism are called upper ontology, which attempt to provide a foundation for all other knowledge[88] by acting as mediators between domain ontologism that cover specific knowledge about a particular knowledge domain (field of interest or area of concern). Such formal knowledge representations can be used in content-based indexing and retrieval scene interpretation, clinical decision support, knowledge discovery (mining "interesting" and actionable inferences from large databases), and other areas.

Applications of Artificial Intelligence :

Application of Artificial Intelligent Techniques in Power system stabilizers (PSSs) Design since the 1960s, PSSs have been used to add damping to electromechanical oscillations. The PSS is an additional control system, which is often applied as a part of an excitation control system. The basic function of the PSS is to apply a signal to the excitation system, producing electrical torques to the rotor in phase with speed differences that damp out power oscillations. They perform within the generator's excitation system to create a part of electrical torque, called damping torque, proportional to speed change. A CPSS can be modeled by a two stage (identical), lead-lag network which is represented by a gain K and two time constants T1 and T2. This network is connected with a washout circuit of a time constant to. The signal washout block acts as a high-pass filter with the time constant to that allows the signal associated with the oscillations in rotor speed to pass unchanged. Furthermore, it does not allow the steady state changes to modify the terminal voltages. The phase compensation blocks with time constants T1i – T4i supply the suitable phase-lead characteristics to compensate the phase lag between the input and the output signals. The commonly used structure of the PSS is shown in Fig

Application Is / Ai / Es in the Library System :

Consist of two main elements: knowledge base and inference engine. Knowledge base is involving all information needed which human/librarian experts are using them to make

decision. This information present in knowledge base as fact and rules. ESs can make much better decision than librarian decision makers because their knowledge base can involve experiences of team of best experts. To design rules of knowledge base, the manner of librarian experts to make decision is emulated. The rules are consisting two main phases: If phase and then phase. If phase is consisting conditions and then phase is consisting results. The only thing which distinguishes ESs from other computer systems is inference engine. The inference engine simulates human decision makings based on knowledge base and rule base. An obvious potential application of ES within libraries is for the selection of book sellers or other vendor of library materials carried to its logical conclusion, a system might be developed to select a vendor automate ethical based on past performance in the supply of publications of a particular type such a capability would be especially valuable in the acquisition of material that are less routine-conference proceeding.

Types of artificial intelligence

Arend Hintze, an assistant professor of integrative biology and computer science and engineering at Michigan State University, categorizes AI into four types, from the kind of AI systems that exist today to sentient systems, which do not yet exist. His categories are as follows:

- **Type 1: Reactive machines**. An example is Deep Blue, the IBM chess program that beat Garry Kasparov in the 1990s. Deep Blue can identify pieces on the chess board and make predictions, but it has no memory and cannot use past experiences to inform future ones. It analyzes possible moves -- its own and its opponent -- and chooses the most strategic move. Deep Blue and Google's Alpha GO were designed for narrow purposes and cannot easily be applied to another situation.
- **Type 2: Limited memory.** These AI systems can use past experiences to inform future decisions. Some of the decision-making functions in self-driving cars are designed this way. Observations inform actions happening in the not-so-distant future, such as a car changing lanes. These observations are not stored permanently.
- **Type 3: Theory of mind.** This psychology term refers to the understanding that others have their own beliefs, desires and intentions that impact the decisions they make. This kind of AI does not yet exist.
- **Type 4: Self-awareness.** In this category, AI systems have a sense of self, have consciousness. Machines with self-awareness understand their current state and can use the information to infer what others are feeling. This type of AI does not yet exist.

Examples of AI technology

AI is incorporated into a variety of different types of technology. Here are seven examples.

- **Automation**: What makes a system or process function automatically For example, robotic process automation (RPA) can be programmed to perform high-volume, repeatable tasks that humans normally performed. RPA is different from IT automation in that it can adapt to changing circumstances.
- **Machine learning:** The science of getting a computer to act without programming. Deep is a subset of machine learning that, in very simple terms, can be thought of as the automation of predictive analytics. There are three types of machine learning algorithms:
  - Supervised learning: Data sets are labeled so that patterns can be detected and used to label new data sets

- Unsupervised learning: Data sets aren't labeled and are sorted according to similarities or differences
- Reinforcement learning: Data sets aren't labeled but, after performing an action or several actions, the AI system is given feedback

Advantages of Artificial Intelligence for Library

He AI can determine if the individual has really learned.

Virtual Education :

As a smart and interactive machine, AI can make the learning of an individual much more vivid and creative through various materials including videos, graphs, photos and presentations of the lecture. AI can take the teaching strategy to a whole new level through bringing the experience to the student.

Intelligent Moderation :

Unlike a classroom setting in which students are obliged to follow a pre-determined syllabus, AI can create customized lecture plan and curriculum. AI will make sure that the student has really understood the lesson before proceeding to another.

Real-Time Assessment :

Teachers can take time to check the test papers of the students. On the other hand, AI can provide real time evaluation in which it can automatically determine if there are mistakes. It can also immediately assess the problem-solving skills of the individual.

Machine Translation :

Being an intelligent machine, AI is expected to know various languages. This can be perfect for everyone in the world as AI can manage to adjust to the culture and language of its student. This will address the learning gap between educators and learners with different cultures.

Empowerment :

AI can grant education experience to our brothers and sisters who have not experienced education due to cases like oppression, disability, and poverty. Through this, these communities will be empowered and can enjoy the benefits of an educated person.

Do you believe Artificial Intelligence will exist in the near future? Share your thoughts with us.

Working library :

As AI comes to outperform humans in a growing number of tasks, it will come to replace humans in a growing number of jobs. And as AI grows more sophisticated, it will become harder and harder to invent new jobs (jobs that humans can perform better than machines). Eventually, these same algorithms that took our jobs may come up with a solution for feeding and housing us, but in the short term, we will be left to deal with a growing number of unemployable people. Taxi drivers are watching wearily as fleets of self-driving cars descend on Singapore. Cashiers in Iowa watch as their workstations are ripped out and replaced with self-check machines. And insurance underwriters in Japan watch as their medical insurance claims reps are replaced with an AI system based on IBM's Watson Explore. Today, libraries offer opportunities for people to find new jobs and learn new skills. The unemployed and the homeless often rely on libraries to connect to services and to find work. Studies suggest that 38% of jobs are at high risk of being replaced by AI in the next 15 years. When this happens, libraries will need to drastically grow

services for the unemployed and underemployed. With low-wage jobs taking the brunt of the AI transition, the challenge will be to re-educate a workforce to compete for a small number of highly specialized jobs.

Conclusion :

From intellectual freedom to information literacy and more, libraries provide a set of principles that have helped guide intellectual growth for the past century. In the age of AI, those principles are more relevant than ever. But libraries are not the center of the information world anymore, and the new players don't always share our values. As machine learning proliferates, what steps can we take to ensure that the values of librarianship are incorporated into AI systems? Advocacy should be directed not at maintaining traditional librarianship, but in influencing the development of the emerging information systems that may come to replace us.

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Comparative Analysis of International Collaboration in Indian Agriculture Research

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Abstract :

The study aims to capture the collaborative studies of the four Deemed Universities of ICAR with international authors. In particular, the study examines the research productivity, quality and the correlation between international authors and quality of research works. The finding shows that the national collaboration is much higher than the international collaborative works in all deemed university's output. The quantity and quality of international collaborative papers increasing over the year. Comparatively USA is the leading country which cooperate with the ICAR scientists in research process. We also find that the Asian, European and North American scientists are more likely to support collaborative researches than the others. The Spearman's correlation between the foreign authors and citation resulted significant, positive and strong correlation coefficient. Detailed study based on institutional international collaboration will pave the way to get more funding resources and enhance the visibility of collaboration with foreign partners. The study suggests that the institutions should participate in research programs offered by international agencies there by increase the collaborative researches to produce more quality researches.

Keywords: International Research Collaboration, ICAR, Deemed University, Scientometrics, Research Productivity, Citation, Agriculture

Introduction and background :

The perspective of international collaboration derive from co-authorship relation between authors from various countries who work together to achieve certain research results. Periodical assessment of the trend in research focus and performance of any organization is necessary to evaluate the continued relevance to the present day requirements and the nature of scope in meeting the future needs both nationally and globally[4]. In general, research collaboration can be defined as a "system of research activities by several actors related in a functional way and coordinated to attain a research goal corresponding with these actors' research goals or interests" [11]. The number of publications and citation counts are more frequently used than other indicators such as the number of research grants, number of software tools for research evaluation because they are more visible and easily accessible [1,15].

The distribution of the number of partners in collaboration could be an indicator to the extent of internationalization process taken place between different set of countries. The more resources available in a country (both scientific and economic) the greater the likelihood of attracting foreign partners and mobilizing human capital [15]. In the context of scientific production, international collaborations bring mutual benefits to partner countries, and in a broader and wider sense, they promote the social and economic prosperity of the groups' involved[7]. As more international collaboration tends to mean higher publishing rates (and higher citation rates), internationalization plays an increasingly stratifying role within the academic

profession. Increasingly, those who do not collaborate internationally are likely to suffer internationalization accumulative disadvantage in terms of resources and prestige[10]. Lee and Bosman[12] opined that collaborative research works with more productive authors will increase the individual productivity and with low productive authors resulted opposite results. Language, cultural tradition, country size, country wealth, geographical distances, reputation, resources, cost, individual preferences and expertise are some of the factors of international collaboration[8, 13 & 10].

Several studies have focused on the collaborative researches with foreign companions and measured the outcome of such researches in many field of knowledge. Avdeev (2021) studied the international collaboration in higher education research using gravity model and found that the intensity of collaboration is negatively associated with geographical distance and positively associated with linguistic commonality. In a comparative study by Zaida and others (2018) investigated that there is relation between collaboration with foreign partners in the more productive countries and flow of mobile researches. Chang and others (2019) mapped international collaborative research works in the field of tuberculosis. The study resulted that the international collaboration increases over the period of 1998 to 2017 even though the national publications maintain substantial proportion with international publications. Co-authorship and citation were used as an instrument to examine the growth of international research collaboration by Kweik (2020). The study concluded that scientists collaborate internationally when they enhance their academic prestige, scientific recognition and access to research funding. In his another study (2020) he draws a principle between research internationalist and locals. Across all academic clusters, internationalists consistently produce more than 90% of internationally co-authored publications. McManus and others (2020) have studied international collaborative research works of Brazilian scientists to understand its effect on universities, financing agencies and different areas of knowledge and research topic clusters. They found that collaboration increases research impact. And also states that the collaborative researches of Brazilian scientists with foreign authors bring benefit to the country in terms of financial support from different funding agencies and vice versa. The unbalanced and asymmetric scientific cooperation that occurs between many countries with low scientific production but with a high impact due to the participation in the publication of article coming from international cooperation with developed countries (Christina and others, 2019). Cheng and others (2021) found in their study on international collaborative papers of Chinese scientists in Humanities and Social Science, the impact of international collaboration do not dependent on expanding the scale of collaboration but rather on selecting researchers with different international backgrounds and from high level institution for collaboration.

The present study utilizes the agriculture literature which published by the scientists from ICAR-Deemed University, India. Indian Council of Agricultural Research (ICAR) is a pioneering institute in the field of agriculture in India which promotes and manage research and education in the concerned field. Indian Agriculture Research Institute (IARI), Indian Veterinary Research Institute (IVRI), National Dairy Research Institute (NDRI) and Central Institute on Fisheries Education (CIFE) are the four deemed universities under ICAR (https://icar.org.in). Here the study focused on the internationally co-authored research publications of these deemed universities. The main concern was the quality of research papers with the help of international

partners. The major aim of the article was to draw the relationship between the international collaboration and the number of citation of agricultural scientists in the Web of Science database.

Research Questions :

The main goal of the study was to find out the relation between the citation and international collaboration of the ICAR-Deemed universities' publications indexed in the Web of Science database during 1989-2020. We were tried to analyze the research productivity of ICAR-Deemed University's scientists, the quality of their research in terms of citation and the collaboration research with international researchers. To attain this goal the following research questions were considered.

1. What is the research productivity of ICAR-Deemed Universities in international collaborative researches?
2. How the quality of international collaborative researches differ for each ICAR-Deemed University?
3. How the international collaboration differ in various continent and countries?
4. Is there any meaningful relationship between number of authors and citation in the international collaborative research works?

Methodology :

We have downloaded the research publications of four Deemed Universities of ICAR- Indian Agriculture Research Institute (IARI), Indian Veterinary Research Institute (IVRI), National Dairy Research Institute (NDRI) and Central Institute of Fisheries Education (CIFE)- from the Web of Science database. The search string used was Organization Enhanced= (ICAR - Central Institute of Fisheries Education OR ICAR - Indian Agricultural Research Institute OR ICAR - Indian Veterinary Research Institute OR ICAR - National Dairy Research Institute) Timespan= 1989-2020. Total 19990 data were collected as 42 Plain Text files for BibExcel analysis. Later these files were combined using Command Prompt.

The research included scientometric study and correlation study. The scientometric analysis part contains the year wise international publications and citations, collaborating countries, funding agencies, number of authors and continent wise contribution. BibExcel was used to analyze the data. The statistical analysis were done by using IBM SPSS software. The data were not normally distributed and were skewed so the correlation between citation and authors per year have been calculated using Spearman's correlation. The positive correlation shows the variables are associated with each other and are moving in the same direction.

We have conducted an author wise analysis that is we choose publications which are authored by foreign author and thus it is consider as an internationally co-authored papers. The country of author identified from the institutional affiliation. If a country comes twice for one publications it is counted as twice also. We considered only countries which have received at least one citation. The total number of publications for each country along with its citation were counted. Thereafter listed out the continent of each country and counted the continent wise production.

A number of indicators were used to measure the research performance. One of them is the productivity of international collaborative countries. The second one is citation per publications. Percentage of solo authored publications, percentage of national publications and percentage of international publications were considered to explain the collaboration pattern.

Results and discussions :

We have analyzed 32 years publications of ICAR-Deemed Universities indexed in Web of Science database. Among the total IARI have published 8764 papers, IVRI have published 6387 papers, NDRI have published 3700 papers and CIFE have published 1139 papers. It has been noted that the number of international publications of IARI, IVRI, NDRI and CIFE were 1810, 918, 358 and 212 respectively. Figure 1 shows the evolution of international publications of these four deemed universities by year. The number of international publications of IARI increased from 11 in 1989 to 188 in 2020 with an average annual growth 0.29. For IVRI publications, the number of international papers increased from 1 in 1989 to 218 in 2020 with average annual growth 1.05. The NDRI publications shows an average annual growth 0.33 for international papers which rose from 1 in 1989 to 42 in 2020. There were no international publications occurred for CIFE for the first decade of the study period later it increased from 1 in 1999 to 22 in 2020 with average annual growth 0.06.

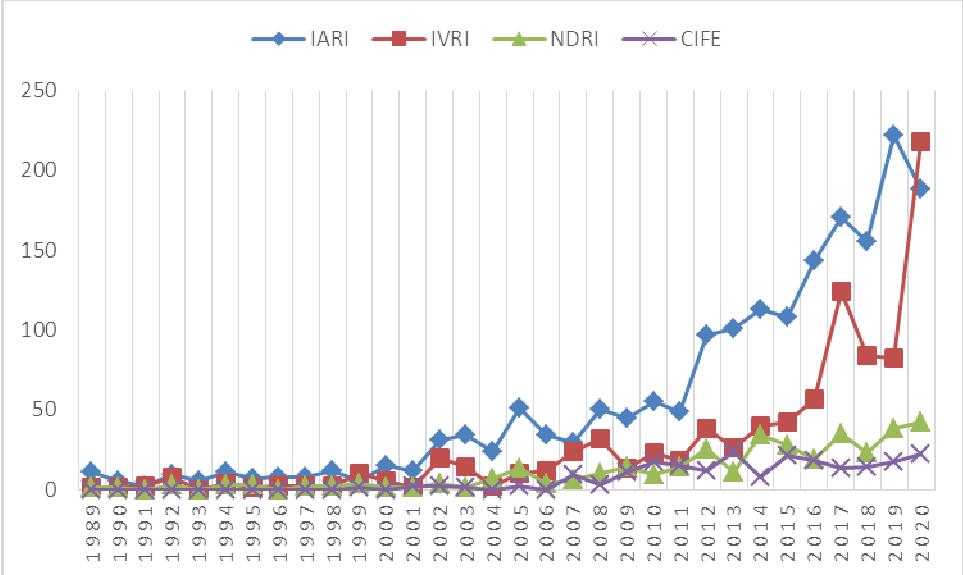

Figure 1: Evolution of international publications over the year

Our data shows that international collaborative research of IARI scientists have a steady increase over time and maintain the level. While for IVRI scientists it was rapidly increased after a certain period. Comparatively NDRI and CIFE have less number of international publications than other two deemed universities and followed a balanced growth.

Citation reflects the quality of a research publication which will give weightage to an article as well as authors (Bachalapur, 2021). The citation received by international collaborative works of IARI, IVRI, NDRI and CIFE during 1989-2020 are drawn in Figure2.

IARI have 148552 total citation received from 1810 international collaborative papers. The citation increased from 202 in 1989 to 916 in 1994. Then it shows a fluctuating nature up to 2004 and surged to 30217 in 2005. Thereafter fall down to 1988 in 2006. The second highest citation shown 2012, 25638 citations and thereafter fall down to 394 in 2020. Total 918 international collaborative papers of IVRI obtained 20241 citations. The citation rose from 0 in 1989 to 208 in 1994. Then it is decreased to 15 in 2001 and attained a leap 919 in 2002. After that a fluctuation in number of citation have witnessed in IVRI papers. NDRI have published 358 international collaborative papers and received 7155 total citations. In the beginning the citation

were 29 in 1989 which increased more than 500 in 1999 but the next year it was zero. After which it goes up and reached the peak value 1209 in 2014 but again fall down to 18 in 2020. The analysis shown that CIFE have published 212 international collaborative researches which received a total of 3624 citations. There was no publications in the first decade so no citation recorded. In 1999 the first international collaborative research paper published which received 101 citation in the study period. The citation then declined to 7 in 2006. It was surged to 342 in 2007 and then shows a declining trend up to 2011. The peak value of citation registered in the year 2013, 704 citations. Thereafter the citation drop down to 24 in 2020. Overall we observe that research quality increases with number of publications.

Scientometric positioning of each deemed university based on their total international papers and total citation can be represented as;

TP= IARI>IVRI>NDRI>CIFE

TC= IARI>IVRI>NDRI>CIFE

IARI obtain top position in both productivity and citation whereas CIFE is in the last position. The reason why can be said as the CIFE published internationally co-authored papers after a decade of study period.

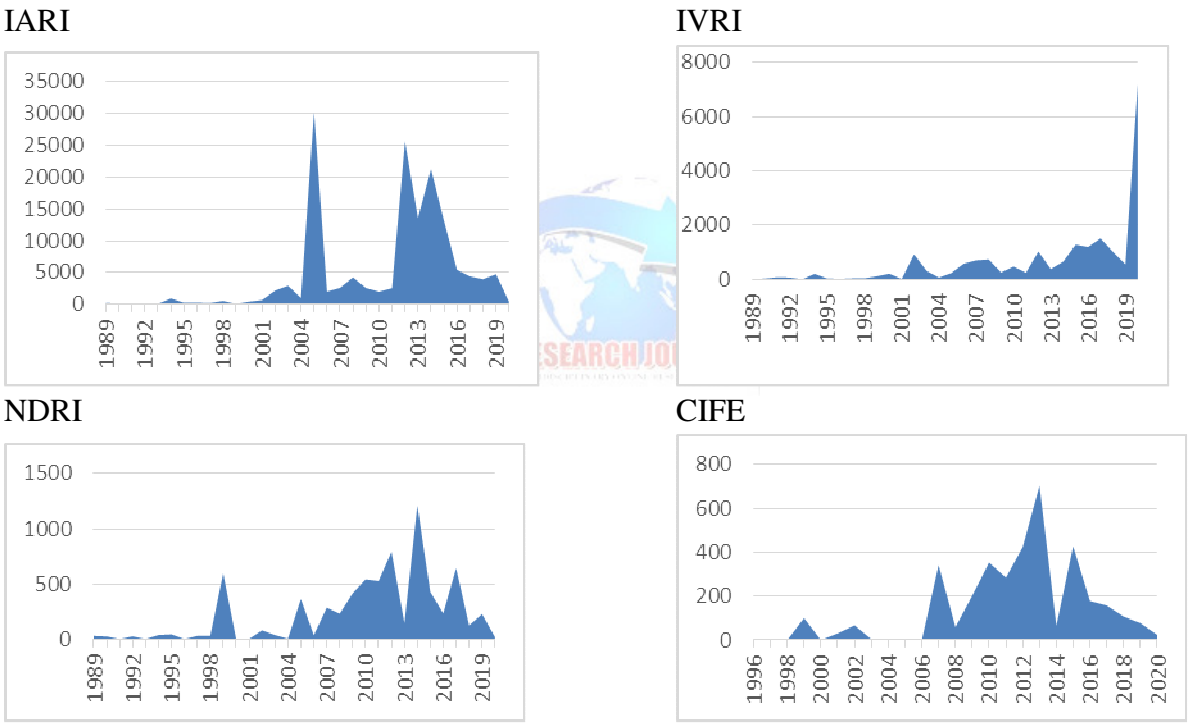

Figure 2: Citation received by international publications during 1989-2020

Moreover we classify the total publications into single authored papers, national collaborative pape citation of single authored papers were very less when compared to multi-authored papers. The share of single authored papers in paper and citation of IARI was considerably higher than that of the other three deemed universities.

In the collaborative papers of IARI, found that 76.10% of share came from national publications a national collaborative share of IVRI was 83. 62% was above the share of international publications (14.37%). Nevertheless the difference between the citation share of international collaborative papers and national collaborative papers were only near to 15%. For NDRI collaborative works, majority of the publication came from national collaborative papers

(89.41%) with citation share 75.34% and very few for international collaborative works (9.68%) with 24.09% of citation share. In CIFE publications, 80.42%of share from national collaborative works with 70.08% of citation share. Only 18.60% of papers published in the international collaborative category which received 29.67% of citation. In short we can see that except IARI publications, the citation share of national publications was very higher than that of the international publications.

Table 1: number of publications and citation with different authorship

		Single authored papers	National collaborative papers	International collaborative papers	Total
IARI	TP	285	6669	1810	8764
	Share	3.25	76.10	20.65	100.00
	TC	1947	108173	148552	258672
	Share	0.75	41.82	57.43	100.00
IVRI	TP	128	5341	918	6387
	Share	2.00	83.62	14.37	100.00
	TC	594	27304	20241	48139
	Share	1.23	56.72	42.05	100.00
NDRI	TP	34	3308	358	3700
	Share	0.92	89.41	9.68	100.00
	TC	168	22376	7155	29699
	Share	0.57	75.34	24.09	100.00
CIFE	TP	11	916	212	1139
	Share	0.97	80.42	18.61	100.00
	TC	30	8559	3624	12213
	Share	0.25	70.08	29.67	100.00

Top journals published more international publications

We have analyzed the journals in which the ICAR Deemed University scientists published their inter

IARI have published highest number of international collaborative papers in Global Change Biology with Impact Factor 10.863 followed by Field Crops Research (IF-5.224) and Archives of Virology (IF-2.574). It has published in two highest impact factor journals 38 papers in the journal Science (IF-41.84) and 44 papers in Nature Climate Change (IF-20.89). For IVRI, International Journal of Pharmacology (IF-0.751) 65 publications, Travel Medicine and Infectious Disease (31 publications, IF-6.211) and Veterinary Quarterly (30 publications, IF-2.341) were the top three international publication journals. The highest impact factor journal in this list is Travel Medicine and Infectious Disease. The top journals of NDRI researches are Frontiers in Microbiology (14 publications, IF-4.076), Journal of Dairy Science (12 publications, IF-4.034) and Reproduction in Domestic Animals (11 publications, IF-2.005). The highest number of international collaborative researches are published in Fish Physiology and Biochemistry (16 publications, IF-2.794), Molecular Ecology Resources (16 publications, IF-7.09) and Aquaculture (14 publications, IF-4.242).

The point here should be highlighted that IARI collaborative works are mostly published in high impact journal than other three deemed universities of ICAR.

Table 2: Top Journals of International Publications

IARI			IVRI		
Journal	**NP**	**IF**	**Journal**	**NP**	**IF**
Global Change Biology	102	10.863	International Journal of Pharmacology	65	0.751
Field Crops Research	82	5.224	Travel Medicine and Infectious Disease	31	6.211
Archives of Virology	56	2.574	Veterinary Quarterly	30	2.341
Euphytica	51	1.895	Infection Genetics and Evolution	29	3.342
Nature Climate Change	44	20.89	Veterinary Microbiology	21	3.293
Science	38	41.84	Transboundary and Emerging Diseases	19	5.005
Scientific Reports	38	4.371	Journal of Translational Medicine	17	4.124
Theoretical and Applied Genetics	35	5.699	Vaccine	17	3.641
Frontiers in Plant Science	33	4.407	Virus Research	17	3.303
PLOS ONE	25	3.24	Annals of Clinical Microbiology and Antimicrobials	15	3.994
NDRI			**CIFE**		
Journal	**NP**	**IF**	**Journal**	**NP**	**IF**
Frontiers in Microbiology	14	4.076	Fish Physiology and Biochemistry	16	2.794
Journal of Dairy Science	12	4.034	Molecular Ecology Resources	16	7.09
Reproduction in Domestic Animals	11	2.005	Aquaculture	14	4.242
Theriogenology	11	2.74	Aquaculture Research	12	2.082
Animal Reproduction Science	9	2.145	Journal of the World Aquaculture Society	11	2.512
Applied Microbiology and Biotechnology	8	4.813	Aquaculture Economics & Management	9	4.18
Small Ruminant Research	7	1.611	Indian Journal of Fisheries	8	0.5
Tropical Animal Health and Production	7	1.559	Journal of Fish Diseases	8	2.767
Cellular Reprogramming	6	1.987	Aquaculture Nutrition	7	3.497
Indian Journal of Animal Sciences	6	0.278	Fish & Shellfish Immunology	6	4.581

NP=Number of Papers: IF=Impact Factor

Collaborating Countries

The researchers of IARI have collaborated with 90 different countries. Table 3 displays the top 10 collaborative countries of IARI. It is clear that USA is the most collaborative country with highest citations and 17.38% of share of their international collaborative publications. Australia is the second most country 7.79% of publications and England is the third most country with 6.20% share of international publications. While considering the citation received by international collaborated papers, USA, England and France are the top cited countries with citation 19768 (CPP- 62.36), 10807 (CPP-94.64) and 9412 (CPP-209.16) respectively.

Table 3: The top 10 collaborative countries of IARI

Country	Documents	% of Documents	Citations	CPP
USA	317	17.38	19768	62.36
Australia	142	7.79	7468	52.59
England	113	6.20	10807	95.64
Peoples R China	89	4.88	9312	104.63

Germany	75	4.11	7396	98.61
Canada	71	3.89	7044	99.21
Mexico	59	3.23	2972	50.37
Philippines	54	2.96	5628	104.22
South Korea	48	2.63	5635	117.40
France	45	2.47	9412	209.16

A total of 76 countries collaborated in research with IVRI during the period 1989-2020 (Table 4). The most collaborated country is USA having 19.22% of international publication share followed by England with 6.48% of share and Japan with 5.72% of share. And these three top countries are highest in receiving citation also. The highest CPP occurred in Chinese collaborative papers (30.19).

Table 4: The top 10 collaborative countries of IVRI

Country	Documents	% of documents	Citations	CPP
USA	178	19.22	2686	15.09
England	60	6.48	1493	24.88
Japan	53	5.72	1135	21.42
Germany	42	4.54	671	15.98
Egypt	40	4.32	716	17.90
Pakistan	38	4.10	818	21.53
Iran	27	2.92	777	28.78
Peoples r china	27	2.92	815	30.19
Colombia	25	2.70	657	26.28
Italy	24	2.59	575	23.96

The NDRI scientists have collaborated with 47 countries for their research works (Table 5). USA found the most collaborative country with 25.98% of international collaborative share. Germany and UK are the second and third most collaborating countries with international collaborative share of 13.41% and 7.26% respectively. USA with 1551 citations, UK with 1292 citations and Japan with 689 citations are the most cited countries. The highest CPP comes from the collaborative works with Japan (68.90).

Table 5: The top 10 collaborative countries of NDRI

Country	Documents	% of documents	Citations	CPP
USA	93	25.98	1551	16.68
Germany	48	13.41	649	13.52
UK	26	7.26	1292	49.69
Canada	18	5.03	389	21.61
Sweden	17	4.75	135	7.94
Italy	15	4.19	522	34.80
Iran	12	3.35	80	6.67
Nigeria	11	3.07	117	10.64
Japan	10	2.79	689	68.90
New Zealand	10	2.79	275	27.50

Among the international collaborative countries of CIFE publications (Table 6) Belgium ranks first with 14.15% of international publication share. USA comes only in second position in the number of collaborative shares. Nigeria comes third position with 9.43 international collaborative share. Although in number of citation and CPP, USA is in the top position with 722 citation and 26.74 CPP.

Table 6: The top 10 collaborative countries of CIFE

Country	Documents	% of documents	Citations	CPP
Belgium	30	14.15	692	23.07
USA	27	12.74	722	26.74
Nigeria	20	9.43	147	7.35
Japan	14	6.60	406	29.00
South Korea	13	6.13	130	10.00
Australia	9	4.25	104	11.56
Norway	7	3.30	81	11.57
Austria	6	2.83	71	11.83
Germany	6	2.83	89	14.83
Ireland	6	2.83	63	10.50

Looking at the details of collaborative countries it is clear that USA have more number of collaborative researches with these four deemed universities. These papers secured highest citations also. Thus we can say that USA can be consider as an important collaborative country which helps the universities to conduct most collaborative works and also publish and maintain quality in research works.

Share of international publications by continent :

Collaboration in research varies between continents thus we have conducted continent wise analysis of the international collaborative publications of IARI, IVRI, NDRI and CIFE during the year 1989-2020. Table 7 depicts the number of publications, number of citation, number of countries and number of authors of each continent.

Analysis of the internationally collaborated papers of IARI reveals that the same number of countries counted for Asia and European continent, 28 countries but Asian countries (519 papers) produced more number of articles than European countries (509 papers). Whereas when compared with the citation and number of authors in collaborative works European countries received highest citation (56757 citations) and highest number of authors (929 authors). Africa (122 papers) published more than South America (50 papers) yet South America got 3.05% more citation.

In IVRI collaborated works, 23 countries were appeared for Asia and Europe. The highest share of collaborative works were done by 444 Asian authors (30.13%) followed by Europe with 29.35% of publication share and 3.19% of total citation share. Oceania was the least productive continent also the continent which have the least share of citation (0.22% of citation).

We observed that most of the international collaborative papers of NDRI were from 15 countries of European continent. The share of papers by 171 European authors were 37.43% with a share of 43.54% of citations received by international collaborative papers. It has to be noted that only three authors from North American continent were achieved the second position in

collaborative which published 115 papers with the share of 29.41% of citations. Only one papers was published with the collaboration of South African continent which received 13 citations.

Countries from European continent was highest in the number of collaborative works with CIFE. The publication share and citation share of 122 authors from 16 European countries were 36.79% and 34.02% respectively. Total 87 Asian authors collaborated for 57 papers and received 145 citations. South America was the least collaborated continent in terms of number of publications and citations.

It should be highlighted that Asian countries were produced high collaborative works IARI and IVRI whereas Europe and North American continent were highest in collaboration with NDRI and CIFE respectively. Except IARI collaborative works, highest citation came from European continent. For IARI, Asian was the highly cited continent.

Table 7: The citation and share of International Publications by continent

	Continent	Africa	Asia	Oceania	Europe	North America	South America
IARI	NP	122	519	158	509	452	50
	Share	6.74	28.67	8.73	28.12	24.97	2.76
	Citation	2451	44339	8143	56757	29886	6976
	Share	1.65	29.85	5.48	38.21	20.12	4.70
	Country	16	28	3	28	8	7
	Authors	162	800	266	929	859	53
IVRI	NP	78	270	28	263	210	47
	Share	8.71	30.13	3.13	29.35	23.44	5.25
	Citation	1497	6843	323	4734	4562	2161
	Share	7.44	4.61	0.22	3.19	3.07	1.45
	Country	13	23	3	23	7	6
	Authors	124	444	37	360	279	105
NDRI	NP	33	64	11	134	115	1
	Share	9.22	17.88	3.07	37.43	32.12	0.28
	Citation	290	1320	313	3115	2104	13
	Share	4.05	18.45	4.37	43.54	29.41	0.18
	Country	11	15	2	15	3	1
	Authors	41	82	19	171	148	1
CIFE	NP	28	57	11	78	32	6
	Share	13.21	26.89	5.19	36.79	15.09	2.83
	Citation	213	1110	145	1233	864	59
	Share	5.88	30.63	4.00	34.02	23.84	1.63
	Country	8	15	2	16	4	4
	Authors	34	87	12	122	40	7

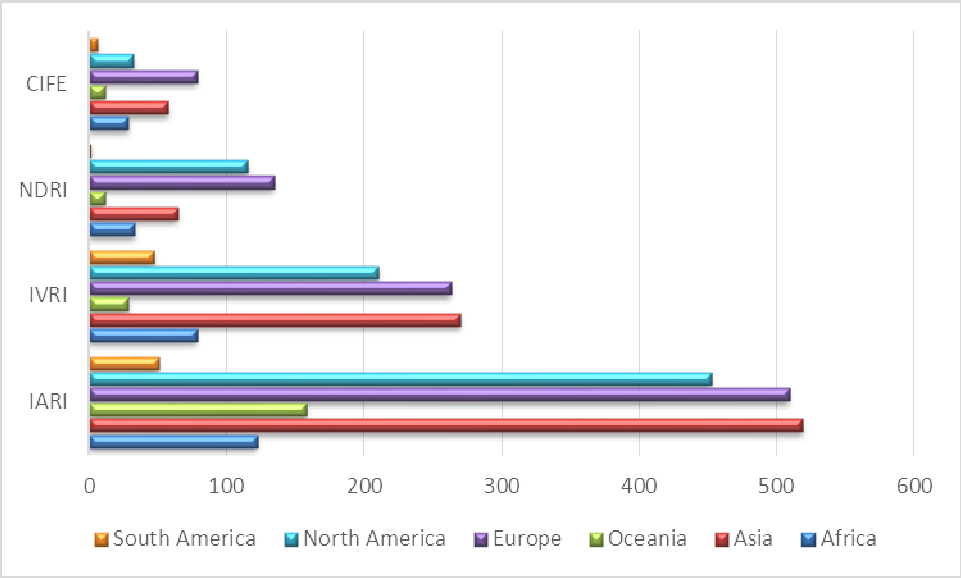

Figure 3: The share of international publications by continent

Correlation between citation and authors :

A total of 3069 foreign authors have collaborated for 1810 papers of IARI and secured 148552 total citations. For IVRI international collaborative works, 1375 foreign author have 918 papers which obtained 20241 total citations. The NDRI publications of internationally collaborated works, 462 foreign authors were participated and published 358 papers with 7155 total citation. The total citation citations received for CIFE publications from 212 papers by 302 foreign authors.

To examine the correlation between the numbers of citations belonged to internationally collaborated papers and the numbers of authors we used Spearman's correlation because the data we obtained were not normally distributed and were skewed. Spearman's correlation is appropriate to use when either or both the independent and dependent variable are measured at the ordinal level of measurement or at interval level that do not meet the assumption of normality. (Soleman Hassan Abu-Bader, 2006)

The Table 8 depicts the Spearman's correlation between the citation of international papers and the number of authors of IARI, IVRI, NDRI and CIFE at the level of 0.01 significance. The p value obtained for all data were 0.000 represents very highly significant results. The scatter plot are shown in Figure 4.

The Spearman's correlation coefficient between citation and authors of IARI international collaborated papers were calculated as 0.896 which is significant, positive and strong correlation between the variable. According to Table 7, the Spearman's correlation coefficient was 0.758, positive and strong correlation between the citation and authors of IVRI internationally collaborated works. The Spearman's coefficient of NDRI were 0.848, were positive and strong also. For CIFE internationally collaborated papers, the correlation coefficient were 0.745, indicate the strong and positive correlation between the considered variables.

All things considered, it should be pointed that the correlation between citation and authors of internationally collaborated papers were positive and strong relationship. This shows the high significant relationship between variables. Thus increase in number of collaborative international authors can lead to get more citation to the paper.

Table 8: Correlation between number of citation and number of authors of international collaborative papers

Correlation			IARI	IVRI	NDRI	CIFE
			Authors			
Spearman's rho	Citation	Correlation Coefficient	0.896	0.758	0.848	0.745
		Sig. (2-tailed)	0.000	0.000	0.000	0.000
		N	90	76	47	49

**. Correlation is significant at the 0.01 level (2-tailed).

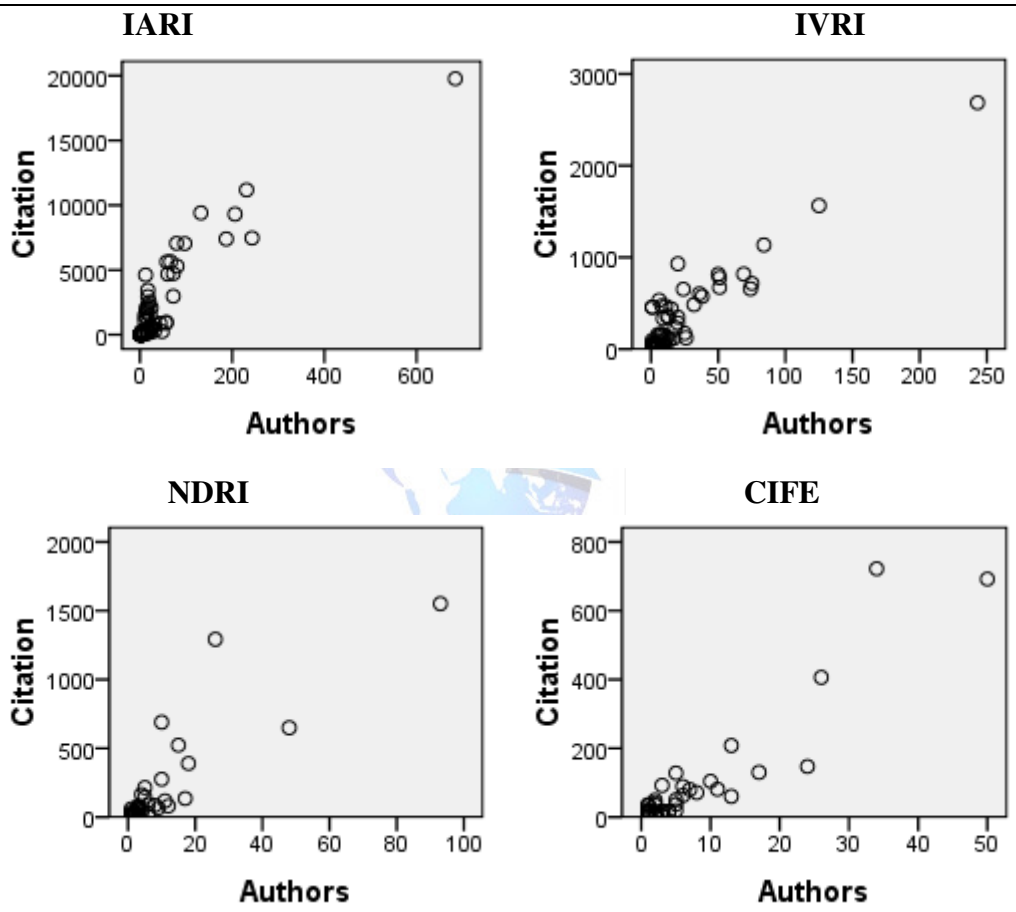

Figure 4: Plot of citation and authors

Implications of research :

The study portrays the international collaborative works in term of quality as well as quantity of research works. Here we mainly focused on the citation impact of international collaborative works. Indian Council of Agriculture is the country's top institution which support and manage research activities in the field of agriculture. University Grants Commission (UGC) has recognized four of its institution as deemed university based on its high performance and it should be continuously monitored by UGC. Detailed study based on institutional international collaboration will pave the way to get more funding resources and enhance the visibility of collaboration with foreign partners. Thus the result of the study is an effort to draw out the

research performance based on the quality of research publications and thus expand the chance of getting research projects from international funding agencies. It seems reasonable to evaluate the quality of research since it is benefit for the policy makers to identify the gap and promote collaborative works among researchers.

Conclusion :

In this study we investigated 32 years of internationally collaborated papers produced by the four ICAR-Deemed Universities to identify how research collaboration with foreign authors benefited to the research quality. From the findings we can see that the number of national collaboration research is higher than that of the international collaboration. It may takes place due to lack of large cost of manpower, material and financial resources[5]. A fluctuation rate is shown by the number of papers and citations of international collaborative papers even though it was increased over the period of study. Considering the quantity and quality of papers, IARI secured first position and CIFE got last position because IARI shows consistency in publishing research output whereas CIFE starts its international publication after a decade of the period of study. The results shows that IARI published international collaborative works in more impact journals than the other deemed universities indicates the quality in work.

Looking at the details of collaborating countries, the top rank was secured by USA for IARI, IVRI and NDRI publications and Belgium for CIFE publications. Comparatively USA is the leading country which help Indian authors in collaborative research works and also keeps the quality in research. Majority of the authors came from Asia, Europe and North American continents and this results in bulk production with maximum quality of research also. The citation received by these three continents were higher than that of the rest. The Spearman's correlation between the number of authors and citation resulted positive and strong correlation. The collaboration with foreign authors will increase the quality of the research since the citation increases with increase in number of collaborative international authors. Therefore the study suggests that the institutions should participate in research programs offered by international agencies there by increase the collaborative researches to produce more quality researches.

The limitation of the study is it concentrate only the international collaborative publications. There can be possibly compare the effect of national collaboration over international collaboration and the observation is ongoing by the researchers.

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Teacher : The Indispensable and Significant Part in the Process of Information Literacy Program

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Abstract :

Information Literacy also referred to as information competency is generally defined as the ability to access, evaluate, organize and use information from a variety of sources.

As globalization has put its step in all fields, also the teaching learning process depends on global network in order to create, store and disseminate knowledge. Thus today's scenario demands to create information literate students, which in turn sets the need of an information literate teacher, as teachers cannot prepare their students to the information literate unless they themselves understand how to find and use information. The information literate teacher will also be able to select and use resources most appropriate to multiple intelligence and learning styles. Though librarian plays a pivotal role in implementing information literacy programme and making it a success he acts as a catalyst in working jointly with teacher educators.

Thus, the collaborative work of librarians who takes the key positions, teacher education, administrators and managing committees can make the information literacy programs a success.

Keywords: Information Literacy Programme; Teacher's Education; Role of Teachers

0. Introduction:

"Libraries" which are considered to be the think tank of each and every organization comprises of various category. Educational or academic libraries comprises of college libraries. In today's information is the technological tour of the information is such as computer network, telecommunication systems and databases have putting an infinite volume or information at our fingertip. Which has resulted in information exposure in and around us. In such an atmosphere of information exposure the responsibility of college librarian has doubled, where he has to satisfy everyone entitled to academic librarian. Whether he is a student, teacher or researcher. The librarian play pivotal role in providing to its readers with the latest information pertaining to his / her subject. The librarian provides it users with service and information. On the other hand he also play a vital role in creating awareness about information, literacy amongst the huge mass of students. Who are away / unaware of the information explosion in and around us.

Thus, only a "Literate Librarian" can make it possible to provide its users with each and every bit of relevant information and satisfy the need of its users. Through librarian sincere effort a librarian can involve huge mass of students in information literacy programme. Who are not aware of the benefit of library. The success of information literacy programme depends mainly on the collaboration of teachers, academic administrators, librarian and other information professionals. To implement information literacy programme in our colleges and make it a success teachers and librarian out as the two sides of the same coin. Teachers on their part holds a key position in working jointly with the librarian in implementing information literacy programme on thus creating an information literatenation.

1. What is Information Literacy:

Information literacy may be a hot new term in the higher education lexicon as we talk about living in the information age. However it is not a new concept. The idea of resource base

in an old one and librarian have been in teaching the effective use of information resources for over a century. Under the labels library instruction, bibliographic instructions and library skills.

Various educationist and researcher have put forward certain definition of information literacy.

Doyle (1992) defined an information literate person has one who-

- "Recognize the need for information;
- recognizes that accurate and complete information is the basis for intelligent decision making;
- identifies potential sources of information;
- develops successful search strategies;
- access source of information including computer based and other technologies;
- evaluate information;
- organizes information for practical application;
- intergrades new information in to an existing body of knowledge and;
- uses information in critical thinking and problem solving."

2. Aims of Education:

The importance of aim in education has been emphasized by all scholars, philosopher, and educators – through all ages. It has, as a matter of fact been customary to define education in terms of its aim. The aim of education is relative to the aim of life. Without the knowledge of aim, the teacher is like a sailor who does not know his destination and the child is like a rudderless vessel which will be drifted along somewhere ashore. Thus education should possess some aims as the vocational aim, the knowledge aim, the complete living aims, the harmonious development aim, formation of character aim.

3. Teacher: A backbone in Information Literacy Programme:

a. To be recognized as information literate is an active process. It requires seeking of knowledge from multiple sources, rather than having a passive attitude, repeating the same routine method of teaching, citing same examples in the classroom for years together. The role of the teacher must evaluate from the giver of knowledge into being more of a coach or a guide. Educators, Librarian, Administrators and the community must come together and engage the student not only in using classroom materials, but also in using resources from the broader community and the mass media.

Teachers must be prepared to "teach student to become critical thinkers, intellectually curious observers, creators and users of information"(Lenox 1993). The goal is to prepare students early on to "learn how to learn" so as to enable them to carry these skills into other areas of their lives so that they can develop themselves as independent seekers and consumers of information throughout their lives. On the part of the teachers, they should allow students to frame questions, implement various methodologies to search for answer and draw conclusion.

b. The research have proposed the library-college concept. It is believed that lecturing to students in a larger hall hampers the education of the students. Rather it was suggested that student should be taught in the library by both the professor and the librarian. The librarian professor team should give the students problems and then ask them to find the answers on their own in the stacks of the library. This clearly indicates the active learning process incorporated jointly

teacher and librarian, where librarian not only teaches library skills but also makes library centrally available to educating students on campus.

c. School should integrate information literacy skills across the curriculum in all subjects' right from the earliest grades. Teachers of all subjects should combine together the traditional approach with due weightage given to active student participation and scientific enquiry process. This shifts some responsibilities on the student's shoulder allowing them to develop questions, strategies to search for answers and draw certain conclusions, thus introducing them with applied strategies for information literacy.

Thus, a teacher acts a backbone in developing students instinct, developing strategies so as to enable them to access the correct information at the correct time through various sources.

4. Conclusion:

Professional associations and higher education have recognized the importance of information literacy to the teaching. Information literacy have prime importance in changing the role of teaching-learning process. Information literacy courses should be framed in such a way as to create student centered learning environment, where thinking critically is a part of the process. Thus, it is concluded that information literacy programmers will not be a success without the collaborative work of librarians, teacher educators, administrators and the managing committees. Thus, to make a information literate nation, the first step is to take initiative and make oneself information literate thus to face the challenges of information explosion in and around us.

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A Study on Factors Associated with Student Indiscipline at Pre-University College Level

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Abstract :

This Research Paper attempts to study and to identify the important factors associated with student indiscipline at pre university college Level.. Stratified Random Sampling Technique was used to draw the sample. Mean and Standard Deviation techniques were used to analyze the data .The Major Findings show that, Strong influence of political organizations on students, Ineffective curriculum and Lack of rapport between teachers and students these factors are mainly responsible for the student indiscipline and also this study in general reveals that Lack of physical infrastructure in the college and Low moral standard at home factors are less connected with the problems of student indiscipline.

Key words;- Student Indiscipline and Pre-University college

Introduction :

In recent modern society student indiscipline is not only common to our nation but it is a Global Phenomenon. The problem of indiscipline is of utmost significance when a wave of unrest and indiscipline is enveloping the whole of the subcontinent, not only in schools, colleges and universities, but also in the very life of the society.

Indiscipline of college students have been reported every where through the mass media, News Papers, Radio and Television etc.,

The purpose of educational institutions is to provide those experiences that are worthwhile and meaningful for the all-round development of the student's personality. But the problem of student indiscipline as seen in the educational institutions in the form of strikes, group fighting, stabbing and other immoral activities shows that there is a serious lapse and missing link in the very college education system. This naturally compels us to investigate the contributing factors for student indiscipline. Therefore it has become necessary to find out the most probable factors of student indiscipline and to find out the alternative methods to channel the student's energy in the right direction.

The main purpose of the study under investigation is to find out the factors associated with student indiscipline and to suggest some remedial measures to the problem.

Need And Importance of the Study :

Advancements in science and technology have brought about tremendous changes in the social, political and economic structure of the society. These changes have also influenced the practices and functioning of the college system, for there is a close link between college and society. Many a time it is observed that the heavy work load, irrelevant curriculum, conflict between value systems prevalent in college and society and personal problems lead to student's indiscipline.

Majority of students studying at the P.U level are in the age group of sixteen to eighteen and thus come under the stage of pre-adulthood, known for 'stress' and 'strain'. The students of

this age undergo a lot of physical and emotional changes. As a result, one could see a change in their behavior also. Here comes the real role of teacher to channel their pent-up-energies in the right direction, otherwise the release of excess energy and emotional conflicts often end up in irrational, irrelevant and aggressive behavior.

Student indiscipline is a matter of great concern and urgent steps are needed to ensure that colleges enable young adults to learn and practice proper norms of behavior and commit themselves to social values of significance. As learning and inculcation of values takes place only in a clam and peaceful atmosphere, appropriate measures are to be taken in order to bring in such an environment by arresting growing indiscipline. This could be done only if the various factors which lead to indiscipline are identified remedial measures and strategies could be formulated and put into action on the basis of the factors identified. From this point of view, the study under investigation is most needed, appropriate and important.

Objectives Of The Study :

1. To determine the relative influence of various social, economical and personal factors on student indiscipline as viewed by students and teachers at Pre-University College level.
2. To suggest remedial measures to minimize the effect of significant factors contributing for student indiscipline at Pre- University College level.

Hypotheses Of The Study :

1. There would be no significant difference between factors identified by students and teachers with regard to student indiscipline.
2. There would be no significant difference between the views expressed by government and private college teachers regarding factors associated with student indiscipline.
3. There would be no significant difference between the views expressed by male and female teachers regarding factors associated with student indiscipline.
4. There would be no significant difference between the views expressed by Students Studying in government colleges and private colleges regarding factors associated with student indiscipline.
5. There would be no significant difference between the views expressed by male and female students regarding factors associated with student indiscipline.
6. There would be no significant difference between the views expressed by Arts students and Science students regarding factors associated with student indiscipline.
7. There would be no significant difference between the views expressed by Arts Students and Commerce students regarding the factors associated with student indiscipline.
8. There would be no significant difference between the views expressed by Science Students and Commerce students regarding the factors associated with student indiscipline.
9. There would be no significant difference between the views expressed by Arts teachers and Science teachers regarding the factors associated with student indiscipline.
10. There would be no significant difference between the views expressed by Arts teachers and Commerce teachers regarding the factors associated with student in discipline.

11. There would be no significant difference between the views expressed by Science teachers and Commerce teachers regarding the factors associated with student in discipline.

Design Of The Study :

Sampling Procedure

The sample selected for the study under investigation consists of **six hundred** individuals of which **two hundred** are teachers and **four hundred** are students.

The stratified random sampling technique was used to select the Sample.

Tools used for collection of Data

Student Indiscipline questionnaire was prepared keeping in view the various personal, social, home and school, political factors associated with student indiscipline. Two sets of questionnaires were framed to collect relevant data about student indiscipline from teachers and students from BHADRAVATHI TALUK PRE-UNIVERSITY COLLEGES.

Statistical techniques used

The following statistical techniques were used in analyzing the data and testing the hypotheses.

a) Mean b) Standard deviation.

Major Findings And Conclusions :

From the statistical analysis and interpretation of the collected data, the following conclusions can be drawn. In this study, it has been found that the testing of the Hypothesis No (1 to11)

The following factors are mainly responsible for the student indiscipline:

a) Strong influence of political organizations on students;
b) Ineffective curriculum;
c) Lack of rapport between teachers and students; and
d) Poor involvement of faculty on academic discussions.

This study in general (by testing all the hypotheses) reveals the following factors as less connected with the problems of student indiscipline.

a) Lack of physical infrastructure in the college;
b) Poor parent teacher rapport;
c) Low moral standard at home

Limitations Of The Study

a) The study is confined to Bhadravathi Taluk Karnataka State.
b) The investigation is restricted to only 10 selected colleges in the Bhadravathi Taluk.
c) The study is limited to only 600 respondents consisting of students and teachers.

Remedial Measures And Suggestions For Improving Disciplinary Practices Among College Students.

The present study has thrown much light on the problem of indiscipline among students at PU College level in the Bhadravathi Taluk The testing of various hypotheses also indicated that factors like organizational climate of the college, sex various disciplines like science, arts, commerce seem to have little impact on factors associated with student indiscipline.

Keeping in mind the findings of this study the investigator would like to offer the following suggestions for improving discipline among college students.

Many serious disciplinary problems undoubtedly result from lack of attention to the factors that cause them. A positive growth in desirable behavior could be attained by proper attention to the removal of these causes and choice of desirable environmental influences. Hence disciplinary committees should be established in schools and colleges involving students and teachers, to check the possible occurrence of indiscipline.

Disciplinary problems that are rooted in personality small adjustments must be treated as personal problems Teachers should be given proper orientation in guidance and counseling techniques and they should carefully tackle the above problems at the initial stage itself.

Students should be encouraged to participate in co-curricular as well as in college union activities. Each of the college should organize exhibitions, community programmes, assembly programmes, etc. Which in turn will certainly promoted self discipline, self regulation and self determination. among the college goers.

Providing adequate facilities for games, providing courses and activities suitable to the needs and aspirations of students and examination reforms are essential to improve the college education system thereby student indiscipline automatically gets solved.

Compulsory National Service and Social Service Activities in colleges are to be instituted for channeling the exuberant energies of students in worthy pursuits. This attempt will certainly discipline students and refine their behavior.

Assemblies and community prayers are to be conducted for inculcating proper attitudes and moral values which will result in social cohesiveness.

Educational administrators should take effective steps to see that the classes are not overcrowded and the pupil teacher ratio is maintained at a reasonable rate.

The college should try to secure better parental co-operation by organizing parent-teacher associations which can have frequent, free and frank discussions on matters relating to the college. In order to bring about a healthy co-operating and mutual understanding between college and home, teachers may pay frequent visits to the parents of their pupils.

The creation of truly democratic atmosphere both at the administrative functioning of the college and the instructional practices in the classrooms is another basic pre-requisite for improving the total discipline of the college. College classrooms should breathe greater air of friendliness, rationality, intellectual challenge, pursuit of excellence and should accept values like those of social justice and equality. These are the factors which will boost the image of the college.

The curriculum should provide enough opportunity for pupils to acquire a considerable amount of knowledge that is essential for morally responsible living in our democratic society.

The investigator is not over optimistic to assume that the discipline problems could be solved overnight if the above mentioned measures are put into practice. But, if a sincere attempt made by the college, teachers, students and parents, in the above direction at least over a period of time will definitely improve the existing state of disciplinary problems in colleges.

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Cyber-Crimes : A Growing Threat to Indian Banking Sector

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Abstract :

The technological revolution 4.0 brings great opportunities, but also cybercrimes to economic sectors, especially to banks. Using secondary data and survey results of 305 bank clients, the main findings of this paper are: (i) there are several types of cybercrimes in the banking sector; (ii) Vietnam is one of the top countries worldwide having hackers and being attacked by hackers, especially the banking sector. Three most common attacks are skimming, hacking and phishing. Number of cybercrime attacks in Vietnam are increasing rapidly over years; (iii) Vietnamese customers are very vulnerable to cybercrime in banking, as more than 58% seem to hear about cybercrimes, and how banks provide services to let them know about their transactions. However, more than 50% do not have any deep knowledge or any measures for preventing cybercrime; (iii) Customers believe in banks, but do not think that banks can deal with cybercrime issues well. They still feel traditional transactions are more secure than e-transactions; (iv) the reasons for high cybercrimes come from commercial banks (low management and human capacity), supporting environment (inadequate), legal framework (not yet strong and strict enough on cybercrimes), and clients (low level of financial literacy). Therefore, several solutions should be carried out, from all stakeholders, for improving the cybersecurity in Vietnamese banks.With the advancements in technology, the Indian Banking Sector has been at par with the emerging trends and significant changes required in its operations. The call for growth has given this unit immense opportunities and as aresult, banks are now among the biggest beneficiaries of the IT Revolution. The proliferation in online transactions mounting on technologies like NEFT (National Electronic Fund Transfer) , RTGS (Real-Time Gross Settlement) , ECS (Electronic Clearing Service) and mobile transactions is a glimpse of the deep rooted technology in banking and financial matters. But like two sides to a coin, opportunities come with threats and success comes with its equivalent challenges.

Thus, with the swift expansion of computers and internet technology, new forms of worldwide crimes known as 'Cyber Crimes' has evolved in the scene. Over a period of time, the nature and pattern of Cyber Crime incidents have become more sophisticated and complex. Banks and Financial Institutions remain the unabated targets of cyber criminals in the last decade. Notably financial gain is still the major motivation behind most cybercriminal activities and there is little chance of this changing in the near future. This paper focuses on the technical aspects of various types of cybercrimes concerning the banking units and their related impacts. Additionally, it identifies the threat vectors supporting these

crimes and develops measures to aid in combating the resulting cyber-attacks so that such attacks can be better prevented in the future for enhanced security.

Keywords: Cyber-Crime, Financial Fraud, Fraud Detection, Identity Theft

Introduction :

The world is fast moving online with 46.1% of total world population now connected to the web according to internetlivestats.com (as on July 1, 2016). A remarkable instance of this phenomena has been experienced in India with a notable increase in the past three years i.e. 18% of the Indian population online in 2014, 27% in 2015 and 34.8% in 2016 (as on July 1, 2016).

Today activities performed over the internet are not just limited to technology freaks for technical uses; rather every second individual is enjoying the easy internet availability and accessibility for day-to-day purposes like banking, ecommerce, education, entertainment and many more. Markedly, the wave of smartphones has definitely acted as a catalyst to this tremendous internet growth. As an increasing number of users are demanding online services, the background mission of providing balanced security and convenience seems to be a tough challenge due to numerous obtrusive actors collectively referred to as "Cyber-Crime". Simply stated, "Cyber-Crime" is crime that involves a computer and a network. Cyber-Crime is being considered a serious threat to all the aspects of a nation's economic growth as maximum instances of the same are being observed in financial institutions. Cyber-Crime incidents include but are not limited to credit card fraud, spamming, spoofing, e-money laundering, ATM fraud, phishing, identity theft and denial of service

Problem Statement :

Today, web technology has emerged as an integral and indispensable part of the Indian Banking sector. The enlargement of non-cash based transactions around the globe has resulted in the steady development of robust online payment systems. While paper-based transactions cleared through cheques amounting to Rs 85 lakh crore in FY15, paperless transactions, including retail electronic transactions such as ECS (electronic clearing system) debits and credits, electronic fund transfer, card transactions, mobile transactions and prepaid instruments were to the tune of Rs. 92 lakh crore in the same. India has seen an upsurge in the volume of debit/credit cards due to increased online acceptance through alternative channels, including internet, ATM and mobile banking. The last few years have seen a significant increase in cybercrime across all sectors and geographies. Given the proliferation of these technological crimes, organizations face a significant challenge to be resistant against cyber-attacks. As per Motive-wise Cases Reported under Cyber Crimes during 2015 statistics by National Crime Records Bureau, Greed / Financial Gain is the prime motivation for committing Cyber Crimes. This research attempts to analyze the concerns of cyber threats to the banking sector by highlighting the underlying modus operandi. It focuses on the preparedness of the financial organizations to deal with incidentsrelated to Cyber Crime.

Need For Study:

There is a need to identifystudy and analyze the loopholes existing in the Indian Banking Sector in order to curb the fraudulent activities and to be able to take corrective actions, therebyenhancing the security measures of this sector.

Objectives of The Study

1. To understand how cybercrime operations work and why they make money
2. To study cybercrimes and itsimplications on the Banking Sector
3. To understand fraud\ fraud detection in the sector under study
4. To identify the complaints received, solved and pending
5. To analyze and use the preventive measures available to control frauds

Limitations :

The scope of the study is limited to the banking sector only, all aspects, points and measures covered under the study are relevant and restricted to the banking sector and does not exceed beyond that.

Research Methodology :

The data used is completely secondary in nature i.e., from sources published, printed media, magazines and journals .

How Cybercrime Operations Work – And Why They Make Money :

The rise of cybercrime is inextricably linked to the ubiquity of credit card transactions and online bank accounts. Get hold of this financial data and not only can you steal silently, but also – through a process of virus-driven automation – with ruthlessly efficient and hypothetically infinite frequency. The question of how to obtain credit card/bank account data can be answered by a selection of methods each involving their own relative combinations ofrisk, expense and skill. The most straightforward is to buy the 'finished product'. In this case we'll use the example of an online bank account. The product takes the form of information necessary to gain authorized control over a bank account with a six-figure balance. The cost to obtain this information is $400 (cybercriminals always deal in dollars). It seems like a small figure, but for the work involved and the risk incurred it's very easy money for the criminal who can provide it. Also remember that this is an international trade; many cyber-criminals of this ilk are from poor countries in Eastern Europe, South America or South-East Asia. The probable marketplace for this transaction will be a hidden IRC (Internet Relay Chat) chatroom. The $400 fee will most likely be exchanged in some form of virtual currency such as e-gold.Not all cyber-criminals operate at the coalface, and certainly don't work exclusively of one another; different protagonists in the crime community perform a range of important, specialized functions. These broadly encompass: Coders – comparative veterans of the hacking community. With a few years' experience at the art and a list of established contacts, 'coders' produce ready-to- use tools (i.e. Trojans, mailers, custom bots) or services (such as making a binary code undetectable to AV engines) to the cybercrime labor force – the 'kids'. Coders can make a few hundred dollars for every criminal activity they engage in. Drops – the individuals who convert the 'virtual money' obtained in cybercrime into real cash. Usually located in countries with lax e-crime laws (Bolivia, Indonesia and Malaysia are currently very popular), they represent 'safe' addresses for goods purchased with stolen financial details to be sent, or else 'safe' legitimate bank accounts for money to be transferred into illegally, and paid out of legitimately. Mobs – professionally operating criminal organizations' combining or utilizing all of the functions covered by the above. So why are banks such a lucrative target for cybercrime? The answer is simple, cyber criminals go where the money is, and banks have more money than most other organizations.While there are numerous threats aimed at bank systems and their customers, one of the biggest threats, and often one of the hardest to detect, is that of malicious, careless and compromised users. These employees, contractors and partners are already inside the banks secure perimeter and have legitimate access to its sensitive data and IT systems. Besides, gaining control of a bank account is increasingly accomplished through phishing. There are other cybercrime techniques, but space does not allow their full explanation.

Cyber Crimes In The Banking Sector :

Cyber Crime can be simply stated as crimes that involve the use of computer and a network as a medium, source, instrument, target, or place of a crime. With the growing aspect of e-commerce and e-transactions, the economic crime has drifted towards the digital world. Cybercrimes are increasing globally and India too has been witnessing a sharp increase in

cybercrime related cases in the recent years. As financial institutions shift to digital channels like online banking and mobile transactions, the attack surface grows, and there is more to protect. Combine this with the fact that successful attacks on banks and financial services firms provide a quick way to monetize the data, and you can see why banks and financial institutions are such popular targets.

Fraud/Fraud Detection :

Nowadays, the banking industry is facing an acute problem of fraud. The problem is global, and no country is fully protected. Fraudsters have become experts in hijacking online sessions: they steal client credentials and use malware to swindle funds from unaware account holders. In his book "Future Crimes" Marc Goodman explains that "criminals are often the first to exploit emergent technologies and turn their complexity against their users". One of these options is the use of data analysis software which, in most cases, guarantees impeccable fraud detection. Modern systems allow fraud examiners to analyze business data and check how well the internal control system is operating. As the result, they can designate transactions that denote fraudulent activity or the elevated risk of fraud. There is a spectrum of analysis measures that can be applied to tackle fraud. It ranges from contextual situations for a singular fraud investigation to a repeatable analysis of financial processes susceptible to criminal activity in the first place. If the risk of fraud is really high, financial and banking institutions can employ a constant or continual approach to fraud detection. It works particularly well in situations where preventive controls are not practicable or efficient. The majority of modern financial service companies have increased management requirements for information as the audit adjustment is moving from the conventional cyclical approach to a risk-based and longstanding model. To disclose fraudulent activity, a lot of banks use special transaction monitoring systems. By and large, they represent domestically produced software which demands an operator intervention. However, traditional security systems can function well for detecting individual point-of-sale, real-time fraud. But that is only the tip of an iceberg. There is a list of analytical techniques used to detect fraud. The most effective among them are –

1) Classification: - to find patterns among various data elements
2) Statistical parameters calculation (standard deviation, averages, etc.): - to detect outliers that could reveal fraud.
3) Numbers stratification: - to disclose unordinary (redundantly high or low) entries.
4) Joining random diverse sources: - to denote matching values (such as names addresses and account numbers) where they shouldn't exist.
5) Duplicate testing: - to note duplicate transactions such as claims, payments or financial report items
6) Gap testing: - to find out any missing items in a serial data where there should be none
7) Entry dates validation: - to estimate inappropriate or suspicious items or postings or information entry
8) Numeric values summation: - to identify control sums which may have been falsified

The Complaints Received, Solved And Pending

As per the data made available by the Reserve Bank of India, 13,083 and 11,997 cases related to ATM/credit/debit cards and net banking frauds were reported by the banks during 2014-15 and 2015-16 (up to December 2015), respectively. Besides, 44,679 and 49,455 cyber

security incidents including phishing, scanning, malicious code, website intrusion, denial of service etc. were reported during the year 2014 and 2015, respectively, as per the information reported to and tracked by Indian Computer Emergency Response Team (CERT-In). The above cases were registered with banks. The following cases were registered with cyber-crime department of police the cases of banking frauds — phishing, cyber stalking, impersonation on social media sites, and job and lottery frauds registered with the city's cyber police department in the year 2016 have decreased significantly. However, the number of cases solved by the cyber cell has remained consistently low for the last four years, with only 20 per cent success rate. Eighty per cent of the crimes registered in the year 2016 remain undetected, according to the report shared by the cyber cell. It also reveals that the total number of cases registered in the year 2016 has gone down by 50 per cent Vis-a- Vis the last year. Two eighty two cases were registered in 2015, which dipped to 145 in 2016

Preventive Measures To Control Frauds

Financial organizations in today's date require well laid cyber security teams with distinguished digital leaders. According to PWC‟s year's global economic crime survey, 2016, too many organizations are leaving first response to their IT teams without adequate intervention or support from senior management and other key players. Specialized security teams with an upbeat mix of competent professionals should be employed to take a proactive stance when it comes to cyber security and privacy organizations in the BFSI sector need to undergo rigorous and continuous cybercrime risk assessments to precisely assess, identify and improve their present security posture by viewing the organization's policies from an attacker's perspective and thus facilitate enhanced security, operations, organizationalmanagement.Additionally, as long-term planning, cyber awareness need to introduced at a fundamental level ineducationalinstitutions with specialized security courses at graduate level to provide hands-on training on the latest attack methodologies and mitigation techniques using concepts like virtual cyber labs. A comprehensive threat intelligence technology is essential to foster organized and analyzed threat information about potential or current attacks from the organization's perspective. Alongside, threat intelligence helps organizations in understanding the common threat actors including latest vulnerabilities, exploits and advanced persistent threats (APTs) campaigns. On a national level, there is an urgent necessity of building capability of inspecting critical infrastructure in critical industry sectors before these are deployed in production to avoid any malicious intruders by leveraging the trusted hardware/software. Finally cooperation amongst Indian government sector and industrial groups is bound to strengthen the legal framework for cyber security with each blending in a different array of cyber risks and preventive mechanisms.

Ai Technology And Fraud Prevention

It's fair to say that AI has become quite a buzzword in various fields of business. The financial services industry is no exception. Originally introduced in the 1950s, AI has gained a new wave of popularity just recently due to the variety of reasons. One of them is, obviously, the adoption of new standards in security. The industry in whole moves to embrace promising technologies, and many bank institutions are already heading in that direction. As Narrative Science report says, 32% of respondents among banks confirmed using AI technologies such as predictive analytics, recommendation engines, voice recognition and response. Again, one of the

most important uses of artificial intelligence in banking sphere concerns fraud detection. Banks are beginning to utilize AI to fight against cybercrime and address complex issues in real time. Over the last ten years, AI has significantly improved the monitoring process: now it's is capable of learning in a fast-paced environment and respond to fraudsters' techniques as they appear. Let's take bank accounts. When an account activity is being monitored, some user patterns can be distinguished. This way, if there's a sign of any abnormal activity, it's being flagged for review. So, when a customer is trying to make a purchase using a debit or credit card, the detection mechanism can analyze transactions within 0.3 seconds, detecting fraud or approving non-fraudulent transactions without interruption to purchases. Such systems are trained to recognize potential fraud through supervised training, when the variety of random samples is manually classified as genuine or fraudulent. Subsequently, the algorithm learns from these manual classifications to determine the legitimacy of future activities on its own. Within several years, the strategic use of AI and machine learning will become an integral part of banking organizations' security principles. AI can save banks considerable money by eliminating complex fraud cases and protecting their brand. Within several years, the strategic use of AI and machine learning will become an integral part of banking organizations' security principles. AI can save banks considerable money by eliminating complex fraud cases and protecting their brand.

Case Under The Study : Examples)

OFFICIAL WEBSITE OF MAHARASTRA GOVERNMENT HACKEDMUMBAI, 20 September 2007 — IT experts were trying yesterday to restore the official website of the government of Maharashtra, which was hacked in the early hours of Tuesday. Rakesh Maria, joint commissioner of police, said that the state's IT officials lodged a formal complaint with the Cyber Crime Branch police on Tuesday. He added that the hackers would be tracked down. Yesterday the website, http://www.maharashtragovernment.in, remained blocked. Deputy Chief Minister and Home Minister R.R.Patil confirmed that the Maharashtra government website had been hacked. He added that the state government would seek the help of IT and the Cyber Crime Branch to investigate the hacking. "We have taken a serious view of this hacking, and if need be the government would even go further and seek the help of private IT experts. Discussions are in progress between the officials of the IT Department and experts," Patil added. The state government website contains detailed information about government departments, circulars, reports, and several other topics. IT experts working on restoring the website told Arab News that they fear that the hackers may have destroyed all of the website's contents. According to sources, the hackers may be from Washington. IT experts said that the hackers had identified themselves as "Hackers Cool Al-Jazeera" and claimed they were based in Saudi Arabia. They added that this might be a red herring to throw investigators off their trail. According to a senior official from the state government's IT department, the official website has been affected by viruses on several occasions in the past, but was never hacked. The official added that the website had no firewall. Three people held guilty in on line credit card scam Customers credit card details were misused through online means for booking air-tickets. These culprits were caught by the city Cyber Crime Investigation Cell in Pune. It is found that details misused were belonging to 100 people. Mr. Parvesh Chauhan, ICICI Prudential Life Insurance officer had complained on behalf of one of his customer. In this regard Mr. Sanjeet Mahavir Singh Lukkad, Dharmendra Bhika Kale and Ahmead Sikandar Shaikh were arrested. Lukkad being employed at

a private institution, Kale was his friend. Shaiklh was employed in one of the branches of State Bank of India. According to the information provided by the police, one of the customers received a SMSbased alert for purchasing of the ticket even when the credit card was being held by him.Customer was alert and came to know something was fishy; he enquired and came to knowabout themisuse. He contacted the Bank in this regard. Police observed involvement of many

Banks in this reference -The tickets were book through online means. Police requested for the log details and got the information of the Private Institution. Investigation revealed that the details were obtained from State Bank of India. Shaikh was working in the credit card department; due to this he had access to credit card details of some customers. He gave that information to Kale. Kale in return passed this information to his friend Lukkad. Using the information obtained from Kale Lukkad booked tickets. He used to sell these tickets to customers and get money for the same. He had given few tickets to various other institutions. Cyber Cell head DCP Sunil Pulhari and PI Mohan Mohadikar A.P.I Kate were involved in eight days of investigation and finally caught the culprits. In this regards various Banks have been contacted; also, four air-line industries were contacted. DCP Sunil Pulhari has requested customers who have fallen in to this trap to inform police authorities on 2612-4452 or 2612-3346 if they have any problems.

UTI Bank hooked in a phishing attack (14 February 2007)

Fraudsters of cyberspace have reared its ugly head, the first of its kind in the year 2007, by launching a phishing attack on the website of Ahmedabad-based UTI Bank, a leading private bank promoted by India's largest financial institution, Unit Trust of India (UTI).A URL on GeoCities that is almost a facsimile version of the UTI Bank; s home page is reported to be circulating amongst email users. The web page not only asks for the account holder's information such as user and transaction login and passwords, it has also beguilingly put up disclaimer and security hazard statements. In case you have received any e-mail from an address appearing to be sent by UTIBANK, advising you of any changes made in your personal information, account details orinformation on your user id and password of your net banking facility, please do not respond. It is UTI Bankpolicy not to seek or send such information through email. If you have already disclosed your password please change it immediately, the warning says. The tricky link is available on http://br.geocities/ If any unsuspecting account holder enters his login id, password, transaction id and password in order to chang his details as advised by the bank, the same info is sent vide mailform.cz (the phishes database). After investigation, we found that Mail form is a service of PC Svet, which is a part of the Czech company PES Consulting. The Webmaster of the site is a person named PetrStastnywhose e-mail can be found on the web page. Top officials at UTI Bank said that they have reported the case to the Economic Office Wing, Delhi Police. The bank has also engaged the services of Melbourne-based Fraud Watch International, a leading anti- phishing company that offers phishing monitoring and take-down solutions. We are now in the process of closing the site. Some of these initiatives take time, but customers have been kept in the loop about these initiatives, said V K Ramani, President - IT, UTI Bank As per the findings of UTI Bank's security department, the phishers have sent more than 1,00,000 emails to account holders of UTI Bank as well as other banks. Though the company has kicked off damage control initiatives, none of the initiatives are cent percent fool proof. Now there is no way for banks to know if the person logging-in with accurate

user information is a fraud, said Ramani. However, reliable sources within the bank and security agencies confirmed that the losses due to this particular attack were zilch. The bank has sent alerts to all its customers informing about such malicious websites, besides beefing up their alert and fraud response system; Engaging professional companies like Fraud Watch help in reducing time to respond to attacks; said Sanjay Haswar, Assistant Vice President, Network and Security, UTI Bank.

Findings Of The Study :

 Majority of the cybercrimes in this sector have resulted out of hacking and identity theft.

 Banks are being targeted over and over again because all the reserves in the form of cash are held with thebanks.

 The security of the customers is at a huge risk since it has become very easy to hack their personal details.

 The software used for detecting frauds in most cases is either outdated or very time consuming.

 The number of cases solved by the cyber cell has remained consistently low for the last four years, with only 20 per cent success rate.

 There is no specific enactment that deals with these crimes, in particular with the Banking Sectors.

Suggestions :

 As there is no specific enforcement related to the law, the major impact of these crimes is left unsolved many a times, an act has to be enforced to curb this kind of menace.

 The law enforcement should be very rigid, and updated from time to time to keep a track of such crimes.

 There should be fast track mobile courts to solve these cases, to meet the grievances and build confidence among the public.

 The government should also keep a track on the operating network activities with the help of Big Data
Banks.

 Punishments and penalties need to be exercised thoroughly in order to minimize the impact of these issues and penalize the attackers.

 Awareness Programmes should be initiated in order to inform the public about the ongoing scenario and upcoming threats.

 The public should report these cases to the Cyber Crime Branch in the matters related rather than just referring it to the banks, so as to ensure fast and strict actions.

Conclusion :

In the selected subject of work, we made a thorough study on the new forms of crimes. The criminals of this advanced age endeavor to commit these new crimes with the help of computers through Internet by exploiting cyber space. An estimated 95% of transactions in India are paid for in cash but with the growing penetration of computers and smartphones, and increasing access to the internet, Indians are taking to digital channels for their banking needs. Cybercrime is becoming a greater threat as a result. The RBI classifies bank fraud as transactions involving any cheating, negligence, misappropriation of funds, or forged documents. “Not only simple attacks using phishing, vishing and social engineering, but also increasingly audacious

attacks by organized gangs with or without backing by state players have come to light," the RBI said. The RBI recommended that banks invest in preventive software and frequently assess the risks at hand, not just for in-house operations but also for the external vendors that the lenders employ. This can be understood as a great plan if implemented rightly, since hackers always invade into the private details of the customer's and\or of banks, as the case maybe. They tend to formulate innovative ways to commit these crimes and before one can figure out what went wrong, the damage has already been caused, that is the intensity and speed of such fraudulent transactions which take place in fraction of seconds. The time has come to consider the impact of such type of crimes on the society with due perspective, so that the cyber criminals don't go escort free. The cybercrime is a primarily example of cross-border crime. Since the jurisdiction in this area is a tricky and is still unclear, it is important that we recognize the need of the hour and stand for a serious cause, against cybercrimes and more so pertaining to the banking sector as the financial security of this sector defines the financial security and safety of the assets of our nation as a whole. India, being at its stage of development, we cannot risk the safety of such an essential unit. If we are able to curb these attacks, one by one, soon in the time to come, this move will help us accelerate the rate of overall growth and development and take further steps towards betterment.

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Debates and Experiments on Panchayat Raj Institutions in India

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Introduction:

Decentralization and local governance are central issues in India today. In the past six decades, India has travelled a long road towards decentralization, especially through institutions of local government. This chapter briefly discusses the debates on the question of decentralization and the role of PRIs in India since independence. It also examines briefly the 50 years of history of the decentralization process, which has been more democratic than administrative. The factors that have accelerated this process and the problems faced in bringing about a full-fledged decentralization, especially with regard to local governance, are dealt with in some detail. Since time immemorial, every village in India had a Panchayat which was responsible for finding solutions to local problems within the village itself. The 'Panchayat' or the institution of 'Village Council' is as old as India's history itself and therefore a part of its tradition. The ancient Panchayats serving as units of local government, discharged most of the functions that affected the life of the village community. In ancient India, the Village Panchayats or Elected Councils had a wide range of powers, both executive and judicial and its members were treated with great respect by the King's officers. Land was distributed by the Panchayats, which also collected taxes out of the produce and paid the government's share on behalf of the village.

The Panchayats are one of the oldest local governance institutions in India. It is a process of the peoples' involvement in their internal affairs at the grassroot level. In fact, it has been the backbone of Indian villages since the beginning of recorded history. 'Panchayat' literally means an assembly (yat) of five (panch) wise and respected elders, chosen and accepted by the village community. They were considered as the incarnations of God (Panch Parmeshwar). Panchayats had a wide spectrum of activities covering executive, administrative, developmental, and judicial in ancient India. The existence of local bodies in ancient India is positive proof of the inherent genius of our people in managing local affairs efficiently and on a decentralized basis. The decentralization of power in the kingdoms of the Maurya and Gupta period was unique. Such devolution of power was unknown to the western world until recently. The local governments at different levels, performing many functions, though not very democratic, were sufficiently autonomous. With the coming of the Muslim rule in India, local institutions received a setback, as they did not enjoy the same autonomy and prestige, as under the Hindu kings. The 'Mughal government' was highly centralized autocracy. The crown was the main power of the entire administrative machinery. Where the government is absolute, the supreme authority was concentrated in one man's hand, the territory larger, and the means of communications between the districts slow and difficult, the transfer of local officers frequent, no political life or local initiative is left to the people.

The Muslim rulers recognized local chiefs and zamindars as the repositories of local authority, to the exclusion of the people. "The villages and towns of the Mughal Empire enjoyed parochial selfgovernment rather than local autonomy. A people who do not possess political freedom and powers of self taxation for national purposes, cannot be said to enjoy local

autonomy." The office of Kotwal was developed as the keystone of the municipal administration and "his functions in connection with the town. In his charge were, at least in theory, the most comprehensive conceivable being in certain respects even wider than those of the municipal bodies of the present day." While the Mughals did not initiate any positive measures of encouragement to local institutions, wherever such institutions existed, they worked in co-operation with the official machinery of the rulers and in certain respects became a part of it. Between the breakdown of the Mughal Empire and the coming of the British, there was complete anarchy and military despotism in most parts of the country. During this period, "the ties of social framework were loosened, and in many places, local institutions had been perverted or sapped, before the British officials had an opportunity to assess their value..

Panchayat Raj in Pre-Independence Period :

The decentralization debate during colonial rule can be traced to the famous Ripon Resolution of 1882. To train the Indians in the art of governance, to enable them to learn from experience and to open up avenues for political participation of the educated class, Ripon strongly advocated the cause of decentralization of administration through the establishment of local self-governing institutions. The British administrators were not prepared to accept the Ripon thesis as they questioned the competence of the Indians to manage local administration and feared a general weakening of the field administration. Prior to the famous Ripon Resolution, the Bengal Chowkidar Act of 1870 had marked the beginning of the revival of the traditional Village Panchayat System in Bengal. The Chowkidar Act empowered district magistrates to set up Panchayats of nominated members in the villages to collect taxes to pay the Chowkidars or watchmen engaged by them.68 In 1909, the British parliament passed the Indian Councils Act. It increased the membership of legislative councils in both the central and provincial governments to make elected members the majority in the provincial legislatures. Importantly, educated men who paid a certain sum of taxes were allowed to vote for the first time in Indian history. Some seats were reserved for Muslim candidates, and only Muslims could vote for them. Moreover, the elected members were also empowered to question officials; to debate legislations, including the budget; and to introduce laws. The Act is important because it established a representative responsible government as the goal for India and introduced the elective principle to a non-white possession of Great Britain. A highly centralized imperial rule was gradually decentralized at the level of the provinces with the Government of India Act, 1919 and the Government of India Act, 1935. Under the Act of 1919, as a sequel to the Montague-Chelmsford Reforms, 'Dyarchy' was introduced in the provinces. This meant that certain departments were for the first time put in charge of elected ministers responsible to the legislature, and the remaining departments were kept in the charge of Government officials, who were Members of the Governor's Executive Council. For the first time, the Act of 1935 introduced a federal form of Government and conferred 'Provincial Autonomy' to the provinces, subject to certain safeguards. This process of decentralization of power from the central government to the provincial governments was deliberately pursued during the British rule for a variety of reasons such as administrative convenience, political pressure generated by the national freedom struggle, and the need for political accommodation of the elite and the intelligentsia. There was another kind of decentralization effort noticeable during the colonial rule. It was the policy of setting up local self-governing bodies in urban and rural areas. It is this form of decentralization at the grassroot level that continues to raise doubts and debates even

today, and this 'decentralization debate' has assumed considerable significance in recent times for two important reasons: first, since poverty alleviation and social justice have become a major political agenda; institutional decentralization, in this context, is being debated. Second, the PRIs have been languishing in most states; absence of a constitutional guarantee has been diagnosed as the cause of PR decay. It was significantly observed that the mode of constitutional protection of PR became a debatable proposition during the Constituent Assembly Deliberations.

Constituent Assembly Debates on Panchayat Raj and Decentralization :

There were contradictory opinions among the makers of the Constitution with regard to the institutional set up of PR and its significance in the Constituent Assembly. The makers have expressed different views and interpretations on the village and its self-sufficiency. T. Prakasam, who spoke at length when Article 31-A was being discussed in the Constituent Assembly, echoed the views of most of the other members who intervened in the debate on the article on PR, when he stated: "Sir, a very serious situation was created by not making the village republic or the village unit as the real basis of the Constitution. It must be acknowledged on all hands that this is a construction which is begun at the top and which is going down to the bottom. What is suggested in this direction by Dr. Rajendra Prasad himself was that the structure must begin from the foundations and it must go up. That, Sir, is the Constitution which the departed Mahatma Gandhi indicated and tried to work up for nearly thirty years. Under the circumstances, it is very fortunate that this should come in at this stage, that this should be introduced and worked in a proper way." 86 However, Surendra Mohan Ghose went so far as to say that "the meaning of the Constitution would have been nothing so far as crores and crores of Indian people are concerned unless there was some provision like this in our Constitution." Gandhi speaks on 'Constitutional Morality' through his concepts of satya and ahimsa. However, this is an idea put forward by Grote, the historian of classical Greece, and quoted by Ambedkar in his Motion on the Draft Constitution, "The diffusion of Constitutional morality, not merely among the majority of any community but throughout the whole, is the indispensable condition of government at once free and peaceable." If the idea of a 'Gandhian Constitution' is then seen more as a symbolic gesture, to present and develop a 'Constitutional Morality' based on the Gandhian philosophy of satya and ahimsa, as an attempt to define the moral high ground, instead of a call to construct a legal document based on Gandhian principles, then the attempt of talking about a 'Gandhian Constitution' is valid. This perhaps explains why the Article on PR is in the chapter on Directive Principles. It seems to have less to do with the issue of justifiability than to do with the ideals that are to govern free India. Article 31-A, moved by K. Santhanam, stated that: "The State shall take steps to organize Village Panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government."89 In keeping with this spirit of Gandhian 'Constitutional Morality' there was an interesting discussion on the words 'self-government'. K. Santhanam had stated when moving his amendment that he had dropped the condition of 'self-sufficiency' from his amendment, which some members had suggested, because he, along with other members, did not "consider it desirable to be put into the directives." L. Krishnaswami Bharathi countered it by saying that it should not "fight shy of selfsufficiency." For him "political independence apart from economic independence has no meaning." K. Santhanam felt that since "the data behind the Directive Principles is to emphasize the way in which we want the country to function, and for that we must make it quite clear to the whole world that economic democracy is important and for that decentralization of economic

power is important. It is that aspect of the matter which Gandhi emphasized."90 In reply K. Santhanam just spun the ball when he said that "self government is not merely political it may be economic and spiritual as well?" Curiously, throughout this debate on the article relating to PR, Ambedkar spoke only twice and that too very briefly. In the beginning after K. Santhanam had introduced his amendment, Ambedkar merely said, "Sir, I accept the amendment." At the end of the discussion he again said, "Sir, I accept the amendment, I have nothing more to add." That was the sum total of his interventions.

The general feeling was that Ambedkar would not accept the amendment. T. Prakasam confirmed, the general feeling, when he said that, "I did not accept Ambedkar as Chairman of the Drafting Committee to be good enough to accept this." Their anxiety was caused by a statement Ambedkar had made earlier when moving his motion regarding the Draft Constitution. It was here where the conflict between the two visions, the Ambedkarite and the Gandhian, took place.94 Village Swaraj was the centerpiece of Gandhi's vision of an Independent India. This followed from his fundamental opposition to the parliamentary order which he saw as producing only domination. For him the village was the locus of genuine freedom. The order that emerged with the village at the centre should, for Gandhi, be based on a philosophy of limited wants. Its economy must be designed in such a way that the structure of production, consumption, and distribution is locality centered. It must use technologies that were simple and not alienating. Relationships must essentially be face to face. Some of these ideas Gandhi developed at several places in different contexts.

During the Constituent Assembly debates Ambedkar, being quite contrary to the Gandhian perception of the Village in India argued thus, "it is said that the new Constitution should have been drafted on the ancient Hindu model of a state and that instead of incorporating Western theories the new Constitution should have been built upon Village Panchayats and District Panchayats…. They just want India to contain so many village governments. The love of the intellectual Indian for the village community is of course infinite if not pathetic…. I hold that the village republics have been the ruination of India. I am therefore surprised that those who condemn provincialism and communalism should come forward as champions of the village. What is the village but a sink of localism, a den of ignorance, narrow-mindedness and communalism? I am glad that the draft Constitution has discarded the village and adopted the individual as the unit." It is these words which stung the members of the Constituent Assembly. They read it as being not just hostile to the Gandhian vision but disrespectful of the Mahatma himself. Seth Govind Das recorded his anguish when he said that Ambedkar's remarks on the village had "caused me and, I believe, a great majority of the members of this house great pain." It was the words "sink of localism, den of ignorance, narrow-mindedness and communalism" that was the source of their dismay. In the Gandhian spirit they felt that the village republic would end 'food famines', 'cloth famines', black-marketing'. It would bring 'peace'. For them, Ambedkar was going against the current and against the Mahatma. One may not agree with Ambedkar in his depiction of the village republic but what is important here is to guard equally against a romantic view of the ancient village system, especially in relation to the values of equality and democracy. The late Jayaprakash Narayan had perceptively commented, "the old village communities have survived in nothing else than their physical existence. They are no longer living communities acting jointly for the solution of individual or communal problems and for the development of their moral and material life." The two visions of free India outlined

above seem to have incompatible differences. For Gandhi, the 'good society' was constituted around the principle of 'harmony', a harmony that would emerge when satya and ahimsa were practiced. Love was the cement of such a polity and society. External constraints were not necessary where people followed the path of satya and ahimsa. For Gandhi, therefore, it was necessary to create conditions where people could live their lives based on these values. His discussions on bread, labour, education and machinery, Satyagraha, Swaraj, and Sarvodaya seek to set out these conditions. In contrast, for Ambedkar, the good society was not based upon love but on law. It was constituted upon a body of rights that had both protective and developmental features. The Gandhian promise was just so much wishful thinking for the particular oppressions that the Dalits experienced every day of their lives could not be accommodated by the Gandhian goodness. It was this abuse that had to be contained not by love but by law.

Therefore, Ambedkar strongly believed that the Constitutional order must be based on 'western theories' of separation of powers, federalism, and citizenship, fundamental rights, etc. For Gandhi, Constitutional order was the 'structure composed of innumerable villages'…. producing an 'oceanic circle' based on truth and ahimsa. The basic unit of politics, for Ambedkar was the individual, the repository of rights. For Gandhi too it was the individual but one who was 'always ready to perish for the village', and therefore one who was the repository of duties. The needs of the village overrode the rights of the individual.

It was well known fact that, Gandhi and Ambedkar had differences on the potential of the village. Gandhi opined that independence must begin at the bottom, i.e., from the village which has therefore to be "self contained and capable of managing its affairs even to the extent of defending itself against the whole world." However, for Ambedkar there was no hope or scope in the village. It was the site of unspeakable repression. A different site for the reconstruction of a free India was therefore necessary. Paradoxically, both Gandhi and Ambedkar seemed to base their understanding of the village on an implicit acceptance of the orientalist picture of the self-sufficient, unchanging village.

Conclusion:

In light of the above interpretations and contradictory views with regard to the village based democracy, it was clear that the idea of PR was discussed thoroughly on the floor of the Constituent Assembly but perceptively kept as DPSP instead of being the legally enforceable part of the Constitution.

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Role of Operation Research in IoT's

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Abstract:

The Internet of Things (IoT) is an extension of the Internet in which large numbers of "things", including sensors, actuators and processors, in addition to human users, are networked and able to provide high resolution data on their environment and exercise a degree of control over it. It is still at an early stage of development, and many problems/research challenges must be solved before it is widely adopted. Many of these are technical, including interoperability and scalability, as billions of heterogeneous devices will be connected, but deciding on how to invest in the IoT is a challenge for business, and there are also major social, legal and ethical challenges, including security and privacy of data collection, which must be resolved. As the future IoT will be a multi-national, multi-industry, multi-technology infrastructure, the paper reviews the global standardization efforts that are underway to facilitate its worldwide creation and adoption. The main purpose of the paper is to give a broad survey, based on published literature, of the methods of Operations Research (OR), both the mathematical tools and techniques of "hard" OR, and the various approaches of Systems Thinking, including "soft" OR, which may assist in dealing with these problems. A subset of these is described in greater depth to better convey what might be involved in applying OR and Systems Thinking to the IoT. It is suggested that OR has a role to play in balancing the technical and non-technical research challenges which confront the IoT.

Keywords: Internet of Things; Operations Research; hard OR; soft OR; Data Analytics; Soft Systems Methodology; Systems Thinking; General Systems Theory; Complexity Theory

1. Introduction:

The field of Operations Research (OR) is an applied discipline which aims to help solve real world problems. It includes many mathematical tools and techniques, plus the sub-discipline of Systems Thinking, which itself has many varieties, both quantitative and qualitative. Both forms of OR can support the design, management and use of the Internet of Things (IoT) which, as discussed in the next section, is a type of new technology which promises to change the world. Conversely, the "big data" obtained from the IoT can support some of the quantitative tools and techniques of OR, e.g., the OR sub-discipline of Data Analytics [1]. OR and the IoT have many application areas, to which they may both be applied jointly or separately, e.g., the "smart city", where the OR techniques of routing, scheduling, discrete-event simulation, etc., may enable more efficient traffic management, energy usage, etc. Many OR techniques require much real-world data, and so OR techniques combined with "big data" from the IoT can be a powerful combination. The "things" making up the IoT include processors which can carry out some of the computational tools and techniques of OR, so this part of OR can be considered part of the IoT.

Hundreds of papers have been written on the IoT, mostly dealing with the supporting technologies and technical research challenges, but increasingly also dealing with the IoT business ecosystem, and the social, legal and ethical problems that will arise with its adoption. Few single papers discuss both the technical and non-technical research

challenges of the IoT on an equal footing. We believe that the holistic view provided by OR and Systems Thinking presented here [2] is going to be needed to solve the many problems which must be overcome for the IoT to realize its full potential. Studying the IoT as a whole requires knowledge from many technical disciplines, including distributed systems, mobile computing, human-computer interaction, cloud computing, artificial intelligence and data semantics, as well as many non-technical disciplines, and the many business, domestic and personal fields to which the IoT is or will be applied. Thus writing about the IoT from a holistic perspective requires a breadth of knowledge and experience rarely found in one individual and is best done by a multidisciplinary team. The authors of this paper have long experience in some branches of OR and Systems Thinking and some fields of Information and Communications Technology (ICT), but are naturally not experts in all the fields which it covers.

IoT systems enhance data collection and automation, and remotely control capability and flexibility through smart devices and enabling technology. IoT has potential in many applications that affect personal lives, workplace productivity, and consumption, which include wearables, cars, homes, cities, and industrials. Applications include broad areas such as government and safety, home and office, health and medicine, just to name a few. IoT provides a common platform for web-enabled devices to communicate for different uses. By connecting the devices like everyday consumer objects and industrial equipment onto the network, the ***IoT*** connects things to communicate with each other. Recent advances in the Internet of Things (IoT) have posed great challenges to computer science and engineering. Inter- net of Things systems manage huge numbers of heteroge- neous sensors and/or mobile devices which continuously mobile of the states of real-world objects, and most data are generated automatically through mobile networking environ- ments. Internet of Things frameworks might help support the interaction between "things" and allow for more complex structures like Distributed/Grid/Cloud computing and the development of Distributed/Grid/Cloud applications. Cur- rently, some Internet of Things frameworks seem to focus on real-time data logging solutions, which are offering some basis to work with many "things." Future developments might lead to specific software development environments to create the software to work with the hardware used in the Internet of Things . IoT is also a novel paradigm that is rapidly gaining in the scenario of wireless sensor networks and wireless telecommunications.

General Concept of the IoT

The IoT is regarded as the next phase in the evolution of the internet. It will enable commonplace devices to be connected to the internet to achieve many disparate goals. With potentially billions of devices to be connected, it is clear that standardization will be required in order to avoid chaos. One estimate is that only 0.6% of objects that could be part of the IoT are currently connected. By 2020, there could be up to 50 billion devices connected to the internet, far greater than the number of human users as shown in Figure 1 below. The growth in the IoT follows an exponential curve while the growth in the number of human users follows a logarithmic curve.

Electronics miniaturization, cost of electronic components, and the trend towards wireless communications are the three main drivers for IoT. These features are enabling physical objects to contain tiny embedded sensors and actuators that can connect to the internet. The core components of the IoT will be sensors and actuators, embedded processing,

and connectivity and the cloud. Smart objects such as modern phones use sensors and actuators to interact with the real world. Embedded processing gives smart objects intelligence while connectivity and the cloud provide the means to communicate and store data. The IoT will ultimately evolve into a network of people, processes, data, and physical objects that intercommunicate using wireless protocols.

OR Support the Future IoT

The Mathematical Tools and Techniques of OR Which May Support the IoT

Below we give a brief synopsis of the main OR tools and techniques which may support the IoT, and our reasons for thinking so. These are drawn from OR textbooks, such as Daellenbach and Flood [44] and the many journal articles and conference papers we have reviewed for this survey.

I. Data Analytics/Databases

Data Analytics is the science of studying data to draw conclusions. With billions or even trillions of devices connected to the IoT, there will be vast amounts of data including identification, positional, environmental, historical, and descriptive data [45]. This IoT data will create data management and analysis issues. According to Ma et al. [46], IoT data will have characteristics of heterogeneity, inaccuracy, massive real time, and implicit semantics leading to significant data management issues.

Cooper and James [45] and Ma et al. [46] addressed challenges for database management in IoT that will bring vast amounts of data. Data is categorized into RFID, address/identifiers, description, positional and environmental, sensor, historical, physics and command. eXtensible Markup Language (XML) offers a means of representing unstructured data; while Structured Query Language (SQL) is unlikely to be useful since IoT data will not be uniform and structured. Service Oriented Architecture may be used to support interoperability among IoT systems. Data indexing, archival and protection must also be considered with respect to national data protection laws. Methods for querying semi-structured data, data streaming, sampling continuous data and data mining will need to be developed to manage the size of IoT databases.

II. Decision Analysis/Support Systems Including Analytic Hierarchy Process (AHP), Multi-Criteria Decision Making (MCDM) and Data Envelopment Analysis (DEA)

Dijkman et al. [1] developed a business model framework for the IoT using a literature survey and interviews. Their model has nine building blocks: customer streams, value proposition, channels, customer relations, revenue streams, key resources, key activities, key partners and cost structure. The model showed that the value proposition is the most important item while customer relationships and key partnerships are also considered important. Data were sourced mainly from Netherlands and US as the authors acknowledge.

Westerlund et al. [2] explored the challenges relating to the development IoT business models. These include the diversity of the objects, the general immaturity of IoT and the unstructured nature of the IoT ecosystems. They suggest a potential solution with a conceptual model that includes value drivers, value nodes, value exchanges, and value extracts as pillars.

Kim and Kim [3] adapted an Analytic Hierarchy Process model to three IoT applications: healthcare, logistics, and energy management using criteria of technology, market potential, and regulatory environment. Survey data that were analyzed using the

model showed that market potential was the most important criterion in the first layer of the model and concluded that IoT logistics is the most promising application from the perspective of ICT experts. Healthcare needs to overcome user barriers and technical reliability to be accepted whereas energy management requires government support (Korean Smart Grid initiative [4]).

Petkov et al. [5] combined multiple criteria decision making with a soft systems approach for what they term 'messy problems', ill-structured situations with multiple independent problems. This approach is applied to several test cases including a rural telecommunication system in South Africa. This approach may also be applicable to complex ICT systems that will make up the IoT.

Decision support has been widely used for IoT applications, generally for assessment of potential IoT solutions. It is likely to continue to be an important tool as the range of IoT applications develops.

- **Game Theory**

Game theory is a method of understanding interactions among groups in conflict with each other. Each side can choose between several actions with the outcome dependent on the actions taken by all players.

Haghighi et al. [6] used a game theory approach to optimize task distribution and energy consumption in IoT networks. An auction-based approach to determine prices was adopted to solve conflicts among network peers.

Wang et al. [7] applied a game theory approach with a Pervasive Multipath Architecture approach to investigate multi-tasking and data distribution in the IoT using the OPNET simulation tool. The scenario studied featured multiple selfish overlays delivering traffic in a shared multipath network. The optimal criterion used is to maximize each overlay's utility function.

- **Simulation**

Discrete-event simulation simulates the operation of a system as a discrete sequence of events with each event marking a change of state of the system. Between events, no change in the system state is assumed. Discrete-event simulation can be applied to the study of issues in IoT networks. Dyk et al. [8] applied discrete-event simulation to model a heterogeneous sensor network with smart devices connected. The model can incorporate the effects of phenomena such as weather and crisis situations on the network state. This could be readily extended to examining similar effects for heterogenous IoT networks.

Discrete-event simulation would appear to be an ideal approach to studying many of the design and engineering challenges for IoT such as scalability and energy efficiency by constructing a synthetic environment where new concepts can be safely tested. Fuzzy Systems Theory/Artificial Neural Networks Fuzzy systems use fuzzy logic where input variables can take on continuous values, in contrast to digital systems that operate on discrete values. Ribiero et al. [9] developed a fuzzy information algorithm using multi-criteria decision analysis and applied it to spacecraft landing safety. This technique could also be applied to IoT research areas.

Artificial Neural Networks represent an approach to Artificial Intelligence that uses a network of many interconnected units generally organized into layers. These units operate on inputs from units in lower layers using an approach that mimics the human brain.

Fuzzy logic and artificial neural networks are important techniques in data fusion, in which the data from many sensors is combined in various ways [10]. This is an important function in the IoT.

Chen et al. [11] developed an artificial neural network trust and reputation model and applied it to predict vulnerability of the IoT against malicious attacks.

- **Routing/Scheduling**

Routing describes techniques to select best paths for a set of processes. Scheduling is an OR technique for allocating time to tasks for machines, jobs, and projects.

- **Both these techniques have application for the IoT.**

For example, routing could be applied to network design while scheduling could be applied to traffic management within the IoT. Dhumane et al. [12] conducted a survey of current routing protocol issues used for IoT and identified challenges for research including context awareness, heterogeneity, node death, topology changes, scalability, latency, incentive based routing, congestion control, data security, data redundancies, and multipath routing. Reliability Theory Reliability theory can describe the probability of a system achieving its expected performance.

The reliability of a system is determined by considering the reliability function of each component.

Yong-Fei et al. [13] used reliability theory to evaluate the reliability of the IoT. Five reliability functions were included for perception layer, Internet, mobile network, satellite communications, and application layer. A value of 0.87 was determined for the overall IoT reliability based on their assumptions. However, this must be considered as an estimate only since the IoT is still rapidly developing and the authors may not have considered all factors.

- **Queuing Theory**

Queuing theory is the mathematical study of queues. It is used in OR for developing more efficient queuing systems such as customer service in a bank. Queuing Theory is an ideal tool for studying behavior of computer networks where the messages (packets) are the customers and the service is the assignment of the messages to communication links . Queuing Theory can help determine network response and throughput by making assumptions about message distribution and node response.

Mahamure et al. applied queuing theory to a hypothetical IoT email system that uses the IMAP protocol (Inter Mail Access Protocol). They propose to use email for human users to communicate with IoT devices such as found in the future home (appliances, security devices etc.) using SMS messages.

- **Other OR Techniques**

Other OR techniques that can be applied include evolutionary algorithms such as genetic algorithms (GA). These are a class of search heuristics modelled on nature that were developed in 1975 by Holland [14]. Esmaeili and Jamali applied GA to optimize

energy consumption, a key issue for IoT networks [15]. These authors developed and tested several new algorithms to optimize energy consumption in WSNs.

Singh et al. [16] surveyed optimization techniques for RFID used in the IoT, finding that approaches including Ant Colony Optimization, Differential Evolution, Particle Swarm Optimization, GA Optimization, and Artificial Bees Colony Optimization have been proposed. Comparison of these approaches showed that no single method was ideal; each had its strengths and limitations.

Fortino et al. [17] applied an agent-based paradigm to simulate agent-oriented IoT systems in various scenarios assuming that the IoT is mostly composed of smart objects (as well as RFIDs). They found this to be an effective approach to study IoT features such as traffic load and protocol reliability. Houston et al. [18] recently applied this technique to study return on investment for IoT.

Conclusions:

This paper gives a brief overview of the Internet of Things (IoT), research challenges to its design, use and widespread adoption, and the important contemporary worldwide efforts to develop interoperability standards. The aim of the paper is to survey the application of Operations Research (OR) methods, including the OR sub-discipline of Systems Thinking, to the IoT. The methods were subdivided into "hard" OR tools and techniques, which mainly address the technical and business challenges of the IoT, and Systems Thinking approaches, which can address both technical, business and non-technical challenges, including social, legal and ethical challenges. The research for the paper included review of a very large number of journal articles, conference papers and industry reports on the IoT, the numbers of which are rapidly increasing as the IoT has become a popular area for academic research and business investment. Most of this work is theoretical and few case studies have been reported. Reports on the application of OR and Systems Thinking to the IoT have so far been relatively scarce, although their numbers can be expected to increase in future years. Nevertheless, we were surprised at the amount of work on OR applied to the IoT that is out there, so far mainly in conference papers. The OR journals have been slower to report this application area, although many papers on the adoption of new technology in general have appeared in recent years.

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Servqual Analysis of Indian Stock Broking Companies – A Survey

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Abstract :

The performance of Indian Stock Market is highly influenced by the stock broking companies. Expectation of Stock market Traders / Investors triggers the stock broking companies to escalate their service. Indian Stock Broking Industry endures a continuous structural change in their Business Model for the past two decades. Every Stock Broking company mainly aims to attract prospective customers by adapting different strategies. This study focuses on the Investor / Traders perception and Expectations towards the service quality provided by the stock broking companies. SERVQUAL analysis model is used in this study. The objectives of this study is to analyse the Perception, satisfaction and retention of investors towards stock broking companies, to study the Service Quality provided by the Stock Broking Companies by using both the descriptive and inferential analysis.

Keywords: Investor, Stock Broking Companies, SERVQUAL, Stock Market, Service

Introduction :

Stock Market contributes reasonably in a country economy. There are chief regulators (SEBI & RBI) who moderates the functions of a stock market. Any individual or a company want to invest or trade in stock market need to approach a stock broker / stock broking companies. The stock broking companies works for the sustainable wealth progress of their customer. In Simple, Stock broking companies acts as an intermediary between the stock market and the investors. To capture the investors, stock broking companies are adapting innovative approaches including technology to improve their service quality, which may ensure the customer retention with their business.

Objectives :

To know Investor's perception towards the service provided by the Stock Broking Companies
To understand the Investor's satisfaction level towards the Stock Broking Companies
To examine the application of SERVQUAL analysis in the context of Stock Broking services

Research Methodology :

The size of the sample population is 100.
The sample respondents are selected using convenient sampling method.
The Study area is confined to Tamilnadu state.

Data Collection :

The primary data has been collected through structured questionnaire.
The secondary data has been collected from various sources like journals, websites, etc.

Statistical Tools For Analysis :

Percentage analysis is used to do descriptive analysis of primary data.
Inferential analysis of primary data has been done by factor analysis.

Data Analysis And Interpretation :

Table 1: Descriptive Analysis of Respondents - Demographic Variables

S. No	Variables		No of Respondents
1	Age	20-30	27
		31-40	35
		41-50	21
		51 & Above	17
2	Gender	Male	72
		Female	28
3	Education	Diploma / UG	36
		Post Graduate & Above	64
4	Occupation	Student	06
		Employed	28
		Professional	12
		Professional Trader	25
		Business	29

Source: Primary Data

Interpretation: Table 1 shows that majority (35per cent) of respondents are between the age group of 31-50. 72per cent respondents are male. 64per cent respondents holds post graduation and above. 29per cent of the respondents are doing Business (Occupation).

Table 2: Investor's Expectation towards the services of Stock Broking Companies

Factors	Level of Investor's Expectation				
	Very Low	Low	Moderate	High	Very High
Broking firms needs to put extra effort to improve your trading prospect	8	6	16	24	46
Mobile Application of trading platform need an enhancement	0	7	15	20	58
Workshop has to be organised for the investor's	0	0	11	52	37
Customer Care Support needs to improve	0	0	13	42	44
Online trading platform should be user friendly	0	3	17	34	47
Technology up gradation required in the online trading platform	1	2	38	29	30
Location of the Branches need to be convenient	35	22	23	9	11
Fund Transaction facility have to be enhanced	2	8	26	49	15
Brokerage charges plan should be flexible	0	0	17	64	18
Notifications of online access to the account should be notified	0	3	12	30	55
Market Updates should be reliable	0	1	13	57	29

Source: Primary Data

Interpretation: Table 2 implies that 64per cent of the respondents are highly expecting a flexible brokerage charges, 58per cent of respondents are very highly expecting the enhancement of mobile app of online trading. 57per cent of respondents are expecting reliable market updates.

Table 3: Investor's Level of Satisfaction towards stock broking companies services

Factors	Level of Investor's Satisfaction				
	Very Low	Low	Moderate	High	Very High
Rank your Brokerage firm performance	15	17	14	41	13
Rank your overall satisfaction towards Stock Broking Companies	10	15	10	40	15
Will you suggest your brokerage firm to others	22	23	9	38	8

Source: Primary Data

Interpretation: Table 3 points, 41 per cent of respondents ranked "High" of their Brokerage firm performance. 40 per cent of respondents ranked "High" on their overall satisfaction towards Stock Broking Companies. 38 per cent of respondents ranked "High" to suggest their brokerage firm to others.

Table 4: Factor Analysis – Rotated Component Matrix [a]
Investor's Expectation towards the services of Stock Broking Companies

FACTOR LOADING	1	2	3	4	5
Market Updates should be reliable	0.791				
Notifications of online access to the account should be notified	0.513				
Fund Transaction facility have to be enhanced	0.501				
Customer Care Support needs to improve		0.611			
Online trading platform should be user friendly		0.600			
Broking firms needs to put extra effort to improve your trading prospect			0.628		
Mobile Application of trading platform need an enhancement				0.698	
Technology up gradation required in the online trading platform				0.725	
Brokerage charges plan should be flexible				0.762	
Workshop has to be organised for the investor's					0.627
Location of the Branches need to be convenient					0.520

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 11 Iterations

Source: Primary Data

Table 5: Factor Analysis of Investors Expectation towards the services quality of Stock Broking Companies

Factor	Name of Extracted Factor	Selected Variable	Factor Loading
1	Factor X_1	Reliability	0.791
2	Factor X_2	Empathy	0.611
3	Factor X_3	Assurance	0.628
4	Factor X_4	Responsiveness	0.762
5	Factor X_5	Tangibility	0.627

Source: Primary Data

Interpretation: Factor 1 (Reliability), is highly (FX_1=0.791) loaded comparing to other factors. Factor 2 (Empathy), Customer Care Support needs to improve loaded as FX_2=0.611. Factor 3 (Assurance), Broking firms needs to put extra effort to improve your trading prospect loaded as FX_3=0.628. Factor 4 (Responsiveness), Brokerage charges plan should be flexible loaded as FX_4=0.762. Factor 5 (Tangibility), Workshop has to be organised for the investor's loaded as FX_{25}=0.627. Hence the SERVQUAL analysis in the context of Stock Broking services is applicable.

Findings :

- 35per cent of respondents are between the age group of 31-50. 72per cent respondents are male. 64per cent respondents holds post graduation and above. 29per cent of the respondents are doing Business (Occupation).
- 64per cent of the respondents are highly expecting a flexible brokerage charges, 58per cent of respondents are very highly expecting the enhancement of mobile app of online trading. 57per cent of respondents are expecting reliable market updates.
- 41 per cent of respondents ranked "High" of their Brokerage firm performance. 40 per cent of respondents ranked "High" on their overall satisfaction towards Stock Broking Companies. 38 per cent of respondents ranked "High" to suggest their brokerage firm to others.
- Factor 1 (Reliability), is highly (FX_1=0.791) loaded comparing to other factors. The SERVQUAL analysis in the context of Stock Broking services is applicable.

Conclusion :

To meet the competition, the stock broking companies are adapting different strategies to meet the customers' expectation. This puts forth some suggestions based on the primary data analysis. Brokerage and service rates can be planned out according to the types of customers they have. To hold their prospective customers, the brokerage charges need to be considerable, so the broking firms can fix the brokerage charges according to the longevity of trade activity or number of trades. Investors / Traders are expecting reliable market updates and workshops for technical analysis from their broking firms. Hence, it is the due responsibility of any stock broking firms irrespective of their market size they need to concentrate on the customers' expectation to retain them and also to meet progress on their business.

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Total Quality Management in Libraries

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Abstract :

Total Quality Management like meaning, definition; preparation to achieve quality, how quality improves, quality improvement, customer satisfaction, implementation in the library and information sectors, the experiences of libraries adopting this method are also reviewed. TQM is an approach for continuously improving the quality of library facilities and services delivered through all, kinds of libraries. Library is a growing organism. Collection development, circulation etc. are the important parts of the library. This paper discusses the effective library services with quality management.

Keywors : Total Quality Management (TQM), Library and Information Service, Library services.

Introduction :

Total Quality Management (TQM) is a concept created by W. Edwards Deming. It was originally introduced in Japan after World War II to assist the Japanese in re-building their economy. The main focus of TQM was and is continuous quality improvement in the areas of product or service, employer-employee relations and consumer-business relations. Total Quality Management is a management approach that originated in the 1950s and has steadily become more popular since the early 1980s. Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with processes being done right for the first time to eradicate defects waste from operations.Total Quality Management is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing the business and reducing losses due to wasteful practices. The quality of a library is defined and assessed from a perspective of different groups of people. Moreover, the quality of library services decides on the perception of the library within its parent organization

Total Quality Management :

ISO defined TQM as "A management approach of an organization centered on quality, based on participation of all its members and aiming at long term benefits to all members of the organization and society."

TQM is "a system of continuous improvement employing participative management and centered on the needs of customers" (Jurow and Barnard, 1993).

There are a broad range of definitions of TQM, some examples are as follows:

• TQM is an integrated, corporately led programme of organizational change designed to engender and sustain a culture of continuous improvement based on customer oriented definitions of quality (Kanaji, 1990).

• TQM is defined as fitness for use or purpose. TQM is a way of managing the effectiveness, flexibility and competitiveness of business as a whole TQM represents the management of quality as a strategic issue rather than an operational issue for lower levels of the hierarchy (Engelkemeyer, 1993).

• TQM is a systematic approach to the practice of management, requiring changes in organizational processes, strategic priorities, individual beliefs, individual attitudes and individual behaviors (Oakland, 1990).

• Brockman, J. R. (1992) has defined that "TQM is a management philosophy, embracing all activities through which the need of customer, the community and the objectives of the organization are satisfied in the most effective and potential of all employees in continuing drive for improvement."

Model in TQM

In his study of total quality management in managing quality, Dale et al., (1990), outline a four-level model of the evolution of quality management. In addition to the framework it proposes, clear definitions of quality terms are also provided.

Inspection: measure the characteristics of a product and compare them with its specifications; the goal here is the fitness of standards. This is the passive "Inspecting" attitude.

Quality Control*:* inspection performed by the workers themselves with a feedback loop to the production line; here we avoid the "inspector" effect and allow some learning to take place.

Quality Assurance: set of (implemented) predefined and systematic activities necessary to give confidence in the process quality; one step further. Quality procedures are designed and planned as a whole to ensure that no bad products be delivered. We do not just rely on everybody's work and control. This introduces the notion of a coherent set of quality procedures/tests. The given confidence (in the definition of QA) is important both for the producer and for the customer.

Total Quality Management: centered on quality and based on the participation of everybody which aims at the customer satisfaction and at the improvement of the company's personnel, of the company and of the society.

Benefits of TQM in Libraries:

If implemented carefully, quality management principles yield positive benefits for libraries such as (Miller and Stearns, 1994):

1. Incremental changes lead to continuous improvement — quick solutions may yield only partial results.
2. Forces library managers to develop leadership skills interested of replaying on power within position to obtain results.
3. Increase staff participation in decision-making, thus increasing the feeling of "ownership of decisions and directions once charted.
4. Improves the level of training given to staff, thus increasing skills.
5. Helps break down barriers between library departments and improves communication within the organization.
6. Provides a method of improving services to users in a period to similar resources.

Total quality management in LIS sector :

The growing needs of information make the librarians to think in a logical way so as to satisfy the users at large. Library is the centre of any academic institution. While class room

teaching provides for learning, the libraries disseminate a wide range of knowledge required to excellent and intellectual heights. Libraries supplement the instructional work of class rooms and carry forward the ideals of education. Thus, the libraries provide the informal education, guiding the learners to search vast range of material available. The libraries are gradually being recognized for their academic services and they are occupying prominent position in education, throughout the world Since, the libraries are information providers, import knowledge by means of meticulous reference, sometimes they are termed as information centers or knowledge center. Quality based organizations should strive to achieve perfection by continuously improving the business and production process. Of course, perfection is impossible because the race is never over; however, we must continually strive for its attainment. TQM is a method by which management and employees can become involved in the continuous improvement of the production of goods and services.

Components of TQM

Leadership:

According to Deming's 14 points, 7th point says "Adopt and institute leadership". On this basis, first component is considered as Leadership. The presence of leadership quality in the librarian would go long way to drive out the fear of change that the employers may perceive in Total Quality Management effort. The challenge is to build a management team that possesses such characteristics. The two intellectual capabilities that is essential to the leader is ability to perform abstract thinking; to move from concrete experience to a set of generalized ideas; and back to concrete experience again in ways that change the way the people think about the problem or an opportunity.

Policy and Strategy:

The policy and strategy designed by the library should be made aware to the library users about the library objectives and services. The customer services and satisfaction lie at the heart of the service quality and therefore the library managers should focus upon the problem definitions. Policy and strategy of the management college library reflects the libraries vision statement, mission, goals and objectives and also services. Total quality management as a tool that can help in achieving the objectives of educational institutes in such a competitive modern global economy

Training and Development :

The training programme will enable the staff to become familiar with the techniques such as latest development in their field. Thus, the training and development will eliminate waste and effecting continuous improvement. The training, development and education of employees at all levels within organizations is now considered a vital component in maintaining competitiveness in the international arena. It is also of some significance within the human resource management (HRM) and development (HRD) literature

Staff Management :

Deming's model of profound knowledge emphasizes need to understand the human psychology, which is not an easy task. The library staff are the primary resource of the library, whatever the quality of collection, databases, services and building may be, but the effective organization, maintenance, motivation and empowerment of the library staff are the most crucial factors that can make the name of the institution. It is certainly true that, as long as there is an

understandable human desire for development exists between the library managers and its staff achieving total quality management in library is not an impediment rather it is a simple task. The managers needs to develop an attitude of awarding their staff for better performance, which will boost the morale of staff in achieving Total Quality Management in Libraries

Team Work :

Working in teams is one of the current popular management techniques and it is becoming increasingly common for academic librarians to work with others on campus to solve problems, deliver services, develop information resources, create facilities and formulate policies. Collaborative teams of librarians and computing professionals have created campus websites, offered workshops for staff and users, planned labs and instructional technology centers and developed joint service desks. Teams of faculty, librarians, instructional technologists and others have created network-based learning experiences incorporating electronic information resources as an integral aspect of the curriculum. Faculty, student, librarian, and technologist teams have developed publishing projects such as electronic journals, electronic dissertations and databases. Teams of librarians, technologists and assessment experts are working to establish measures of the use and value of technology and electronic information resources on campuses. Graham (2003) says "it was tough he says the teams are very good about giving new workers safety guidelines and saying, look, if you are ever in doubt, make sure that you come and ask.

Resources :

The pursuit of quality must become the primary motivation in the organizational process. The wide range of library activities and services aimed at collecting, organizing, maintaining and delivering information services and products. As a leader of the library, the library manager must identify the key processes of the library activities by breaking the processes in small activities. Each key processes of the library are assigned with library staff based upon type of work involved and competencies and skill required for the work. If however, the work process by which service was delivered is examined, there is an opportunity to say confidently that services was delivered is examined, there is an opportunity to say confidently that services were improved. With the emergence of computers and communication technology on one hand and complex needs of user community, there is a need to improve the work processes of the library on the basis of principle that nothing is constant and change for betterment is the ultimate. The library manager should authorize their library staff to identify the key processes of the library and assist for improvement in the execution of the work processes Cords

Conclusion :

Library and Information sector should focus on providing the best services possible and be willing to change to serve its users. The main aim of libraries and information sector is to satisfy the users; today's libraries are pushed to a position where they have to provide quality services to its users, to justify their e existence. So, now libraries are also started adopting TQM practices following other kinds of service industries. As TQM has become increasingly important, the philosophy has shifted from a pure statistical view of process control towards a systematic view. If TQM is to be successful it requires a culture that actively promotes users requirements, continuous improvement, creating problem-solving and a team ethos. Quality is the need of hour, and good quality service mean customer/user satisfaction. Thus library and

Information Center should be involved in TQM to improve the library users' satisfaction The process of implementing TQM in libraries involves a conceptual change in library professionals and a cultural transformation in the organizational operations. Without a long- term thinking and\ commitment, it is not applicable. Teamwork is important for successful implementation of TQM. Every step of the process depends upon the constant support of the top management. Their role determines how far and how long the implementation can go. Therefore, once a decision is made to apply TQM, a strong leadership is required

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The Status and Trends of Virology Research : A Global Visualization and Scientometrics Analysis

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Abstract :

The study maps the intellectual communication and scientific structure of the global Virology research, where data is restricted to 2011-2020. The total 80220 articles were extracted from web of science database by searching SU= ("Virology") AND PY=2011-2020. The primary goal is to assess the research institutions' performance on a regular basis in order to understand the pattern and development of research activity, research cooperation, citation pattern, and the resulting societal consequences. The majority of researches are multi-authored in comparison of single one. USA is currently taking the leading role with 33160 articles and the china is a new comer with the potential contributions with 11481 articles followed by Germany with 7307 and UK with 7174 but on basis of Activity index China owned first place 10.10 followed by Brazil (10.06), Taiwan (10.06) and Australia (10.02). The Journal of Virology is most prolific journal and National Institute of Allergy and Infectious Diseases (NIAID) most productive organization. Co-authorship and Co-citation networks also presented in the paper with help of VOSviewer. This paper will tend to understand the existing and future of the virology research throughout the world. Furthermore, the results of the study will support in health policymakers and academics in improving virology research over the next decade.

Keywords: Scientometrics, Virology, VOSviewer, Bibexcel, Co-citation, authorship pattern.

1. Introduction :

Virology is a branch of microbiology that focuses on viruses. Scientific study of viruses and viral illnesses includes biochemistry, physiology, molecular biology and ecology as well as clinical aspects of virus evolution and evolution as a scientific subject. It focuses on the structure, taxonomy, and evolution of viruses, as well as how they infect and exploit host cells for reproduction, and how they interact with the physiology and immunology of host organisms. Martinus Willem Beijerinck is regarded as the founder of virology, having discovered viruses and laid the groundwork for the new field. His discovery that viruses reproduce as distinct from other creatures was ground breaking [1]. Viral evolution studies the evolution of viruses, which often happens in conjunction with the evolution of their hosts. The primary reason for studying viruses is because they are responsible for illnesses including the common cold, influenza, rabies, measles, and many other types of diarrhoea, as well as Hepatitis, AIDS, Polio, and other contagious diseases.

Scholarly communication is one mode of disseminating academic output, which includes journal articles, artefacts, books, review articles, and patents, among others. In the modern age, bibliographic studies aid in identifying research gaps and directions in a specific field of study. As described by Sengupta (1985), bibliometrics is the organization, classification, and quantitative evaluation of publication trends. It encompasses all macro and micro interactions with identified authors. According to Reitz (2004), mathematical and

statistical techniques are used to investigate and discover trends in the use of library resources and services, as well as to analyse the historical evolution of a body of literature, particularly its authorship, publishing, and usage. Scientometrics is a relatively recent technique for assessing the quality of research and its distributions using quantitative and qualitative criteria. The primary goal of scientometrics analysis is to assist academics in detecting historical changes in the characteristics of publications via studies of a large volume of bibliographic data (Yu-Wei Chang and et.al, 2015). Scientists often use articles to keep track of specific study topics within their respective fields. Subject analysis of journal articles in certain fields allows scholars to ascertain the breadth of available study subjects and to discover new ones. Trend analysis in research topics helps researchers in determining the direction of their study and forecasting research trends. As a result, academics have been very concerned about trends in research topics.

2. Related Literature :

There are numerous studies have already performed bibliometric assessments of the research production of various areas of the globe in related fields. King, J (1988) described bibliometric analysis in the field of veterinary research, avian virology, using quantitative indicators to aid in the assessment of research for the UK Agriculture and Food Research Council (AFRC). Ruiz-Saenz (2015) analysed Colombian articles in indexed journals on viruses and viral illnesses (virology) from 2000 to 2013. 711 papers were retrieved in total, with 40.4 percent published in domestic publications and 59.6 percent in international journals. Additionally, they found that 34.2 percent of researchers worked with foreign researchers, with the United States being the most collaborative country. Zyoud, 2016 conducted a bibliometric study of Dengue research published between 1872 and 2015 in the globe and Arab nations. The Scopus database has a total of 19581 papers relating to dengue. The United States of America, India, Brazil, Thailand, and the United Kingdom were the top nations in dengue research. They discovered that the Arab area produced just 226 articles. From 2003 through 2020, Mao et al. 2020 examined the worldwide state and trends of coronavirus research. We analysed a total of 9294 articles. The United States provided the most articles, the greatest overall citation frequency, and the highest H-index. The University of Hong Kong was the most prolific organization, while the United States Department of Health and Human Services was the most productive funding agency. Tian, D. 2020 conducted a bibliometric study of pathogenic organisms by analysing the distributions of yearly, national, institutional, and journal publications for 100 pathogens of public health significance. He discovered that the United States of America scored top in terms of the quantity of relevant research published.

3. Methods and Tools :

The data were retrieved from Web of Science core collection managed by Clarivate Analytics on 9 June 2021. Publications related to the studies of Virology research from 2011 to 2020 were retrieved from the Science Citation Index-Expanded (SCI-E) of the Web of Science database. The scientific research productivity in the year 2021 was excluded because this year was still open for new journal issues therefore, inclusion of the year 2021 would create error and bias. The searching strategy was adopted as advanced search i.e. SU= ("virology") PY= (2011-2020). The present study was designed to assess the past 10 years of publications related to global virology. The search into the web of science retrieved total 80220 articles which

matched our criteria. These data were downloaded using the export function of the web interface as full record in plain text format. A Bibexcel software used the text files and calculated the information into a relational data for further analysis. VOS viewer is a software tool for visualising and analysing publications discovered by Van Eck and Waltman from Netherlands. It is freely available software for text mining and generating bibliometric maps and analysing trends in the scientific literature. (Van) It was used to examine bibliographic coupling, co-authorship, and co-citation.

The objectives of this study were to analyse global research output in Virology area and to examine the authorship pattern and the citations retrieved form the web of science database. There are following research questions illustrated below;

- How many publications have been published in virology over 10 years?
- What are the authorship & collaboration patterns and Co-authorship index among researchers & scientists in the virology research?
- What are the most productive and cited authors with Activity index in virology research?
- What are the most productive type of document and productive journals?
- What type of co-authorship & co-citation network has formed?

4. Data Collection and Analysis :

4.1 Year-wise distribution :

There are total 80220 articles collected in the field of virology during 2011 to 2020 to evaluate the present scenario.

Table: 1 year-wise analysis of virology from 2011 to 2020.

Years	Record	%	Cumulative record	%	AGR	ARoG	India's%
2011	8373	10.44	8373	1.84	-		1.96
2012	8258	10.29	16631	3.65	0.99	0.99	2.59
2013	9335	11.64	25966	5.70	0.56	1.13	2.56
2014	8425	10.5	34391	7.55	0.32	0.90	2.52
2015	8236	10.27	42627	9.36	0.24	0.98	2.4
2016	8181	10.2	50808	11.15	0.19	0.99	2.59
2017	6904	8.61	57712	12.67	0.14	0.84	2.68
2018	8237	10.27	65949	14.48	0.14	1.19	2.62
2019	6893	8.59	72842	15.99	0.1	0.84	2.28
2020	7378	9.2	80220	17.61	0.1	1.07	2.45
Total	**80220**	**100**	**455519**	**100**	**0.278**	**0.893**	**24.65**

In the above, table 1 illustrates the year-wise distribution of virology research, the annual growth rate, and India's contribution over the last 10 years. It was found that the total number of publications was 80220. In 2011, the total record was 8373 papers, which is 10.44%, and India shared 1.96% of the total record. In 2020, the total number of papers was 7378, which is 9.20% of the total decreased, but India's share was 2.45%, which increased. It was found that the highest number of publications generated in 2013 was 9335 (11.64%) records. On the other hand, the lowest published year was 2017, which was 6904 (8.61).

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4.2 Authorship Pattern :

The authorship pattern of virology research from 2011 to 2020 is presented through a graph. It is demonstrated that the majority of the papers are collaborative in nature.

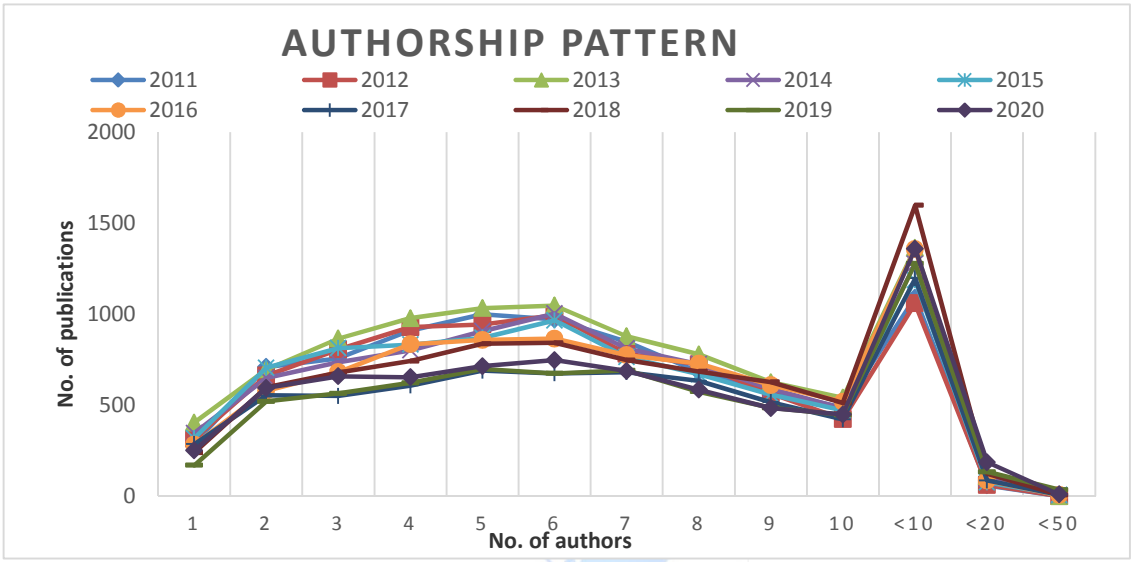

Figure: 1 Authorship pattern along with collaborative co-efficient of virology from 2011 to 2020.

In figure 1 depicts the authorship pattern from 2011 to 2020. It is evident in figure 1 that the single-authored papers are fewer than the multi-authored ones. The multi-authored publications showed that 89.56% of the total records and 10.44% of the records belong to single-authored papers. It is evident that in figure 1, single-authored papers have shown a declining trend from 2011 to 2020. Thus, the multi-authored paper increased constantly.

4.3 Co-authorship Index (CAI)

Based on the suggestions made by Garg and Padhi, the Co-Authorship pattern and Co-Authorship Index (CAI) has been calculated by using the following formula.

CAI= {(Nij/Nio)/ (Noj/Noo)} ×100

Where,

Nij= Number of publications for the particular authorship pattern for a particular country.

Nio= Total output for the particular authorship pattern.

Noj= Total output of all the countries.

Noo= Total output of all the countries

Table: 2 Co-authorship Index (CAI) of Virology literature from 2011-2020

Authorship Pattern	Co-authorship Index (total publications)									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1	95.79 (290)	105.51 (315)	119.92 (404)	113.6 (346)	106.82 (318)	95.72 (283)	114.22 (285)	80.27 (239)	67.84 (169)	93.79 (250)
2	108.39 (709)	102.63 (662)	95.47 (695)	98.62 (649)	109.6 (705)	90.48 (578)	102.76 (554)	92.95 (598)	96.61 (520)	103.14 (594)
3	101.85 (756)	110.11 (806)	104.84 (866)	98.42 (735)	111.38 (813)	93.95 (681)	89.9 (550)	93.01 (679)	92.34 (564)	100.68 (658)
4	110.22 (910)	113.98 (928)	106.34 (977)	96.43 (801)	102.48 (832)	103.44 (834)	89.21 (607)	91.38 (742)	91.56 (622)	89.83 (653)
5	111.93 (999)	107.14 (943)	104 (1033)	100.89 (906)	99.01 (869)	98.44 (858)	93.66 (689)	95.35 (837)	95.17 (699)	90.86 (714)
6	105.8 (970)	109.83 (993)	102.61 (1047)	108.73 (1003)	107.03 (965)	96.6 (865)	89.19 (674)	93.37 (842)	89.33 (674)	92.54 (747)
7	105.97 (848)	99.1 (782)	98.59 (878)	100.73 (811)	97.09 (764)	99.04 (774)	103.25 (681)	94.91 (747)	104.94 (691)	97.51 (687)
8	96.28 (682)	103.51 (723)	98.82 (779)	101.73 (725)	96.19 (670)	105.24 (728)	108.43 (633)	98.33 (685)	98.48 (574)	93.64 (584)
9	97.77 (575)	96.9 (562)	95.64 (626)	99.71 (590)	96.48 (558)	106.2 (610)	106.45 (516)	108.4 (627)	100.21 (485)	93.28 (483)
10	97.86 (485)	86.55 (423)	97.91 (540)	96.67 (482)	96.64 (471)	107.02 (518)	103.31 (422)	104.83 (511)	109.36 (446)	102.67 (448)
<10	81.78 (1090)	80.57 (1059)	91.96 (1364)	95.16 (1276)	90.56 (1187)	104.26 (1357)	108.88 (1196)	121.83 (1597)	116.53 (1278)	115.81 (1359)
<20	55.77 (59)	58.47 (61)	92.59 (109)	89.26 (95)	72.1 (75)	82.28 (85)	98.64 (86)	119.18 (124)	152.79 (133)	199.71 (186)
<50	0	0	0	61.81 (5)	88.53 (7)	76.41 (6)	120.71 (8)	88.51 (7)	528.97 (35)	127.13 (9)
Total	**1169.42 (8373)**	**1174.3 (8257)**	**1208.7 (9318)**	**1261.77 (8424)**	**1273.88 (8234)**	**1259.08 (8177)**	**1328.62 (6901)**	**1282.34 (8235)**	**1744.13 (6890)**	**1400.59 (7372)**

In table 2, we examined the co-authorship index for publications having one author, two authors, three authors, four authors and so on, was calculated based on the above formula. In the above table 2, we discovered that the highest value of CAI for single authors is 119.92 in the year 2013 and the lowest is 67.84 in the year 2019. The highest CAI for two authored papers is 108.39 in the year 2011 and the lowest CAI is 90.48 in the year 2016. In the same way, the highest CAI in triple authored papers is 111.38 and the lowest is 92.34 in the year 2019, followed by the highest in the case of four-authored papers is 113.98, observed in the year 2012, and the lowest is 89.21 in the year 2017.

4.4 Country productivity and Activity index

The country wise productivity of virology research over the 10 years along with the Activity index of most productive countries. Activity index accounted as relative research effort of a particular country in a virology field and it is calculated as;

Activity index= {(Virology research field's share in the country's publication output)/ (Virology research field's share in the world's publication output)}*100.

The formula shows that the AI is a relative performance indicator, which takes into consideration the effect of the publication size of each country in the given research field. The scores on the activity index of the top 20 countries 2011 to 2020 are presented in table below. The scores can be compared with a value of 1: AI= 1 indicates that the country's efforts meet the world average; AI> 1 means that the efforts exceed the world average; and AI<1 indicates that the efforts are below the world average.

Table: 3 Country-wise analysis and Activity Index of virology from 2011-2020

Ranking	Countries	Record	%	Activity Index
1	USA	33160	28.12	**9.97**
2	China	11481	9.723	**10.10**
3	Germany	7307	6.20	**9.98**
4	UK	7174	6.08	**9.98**
5	France	5348	4.53	**9.98**
6	Japan	3862	3.27	**10.01**
7	Canada	3800	3.22	**9.97**
8	Italy	3171	2.69	**10.00**
9	Australia	3036	2.57	**10.02**
10	Spain	2817	2.39	**9.97**
11	Netherlands	2554	2.17	**10.00**
12	South Africa	2369	2.01	**9.94**
13	Brazil	2171	1.84	**10.06**
14	India	1978	1.68	**9.98**
15	Switzerland	1948	1.65	**9.97**
16	South Korea	1606	1.36	**9.99**
17	Belgium	1569	1.33	**10.03**
18	Sweden	1298	1.10	**9.97**
19	Thailand	1044	0.89	**10.00**
20	Taiwan	859	0.73	**10.06**

In above table 3 describes the country-wise analysis and activity index (AI) in the area of virology research. It was evident that the USA had contributed the highest number of publications, with 33160 papers and 28.12% of the total records. China owned second place with 11481 (9.723%), followed by Germany with 7307 (6.20), the UK with 7174 (6.08), France with 5348 (4.53) and Japan with 3862 (3.27). India owned 14th place with 1978 (1.68) publications. In the case of the activity index (AI), it was found that the highest AI was owned by China with 10.10, followed by Brazil with 10.6, Taiwan with 10.06, Australia with 10.02, Japan with 10.01 and India's activity index calculated at 9.98.

4.5 Author wise research analysis

The graphical representation of Author-wise analysis of Virology research from 2011- 2020.

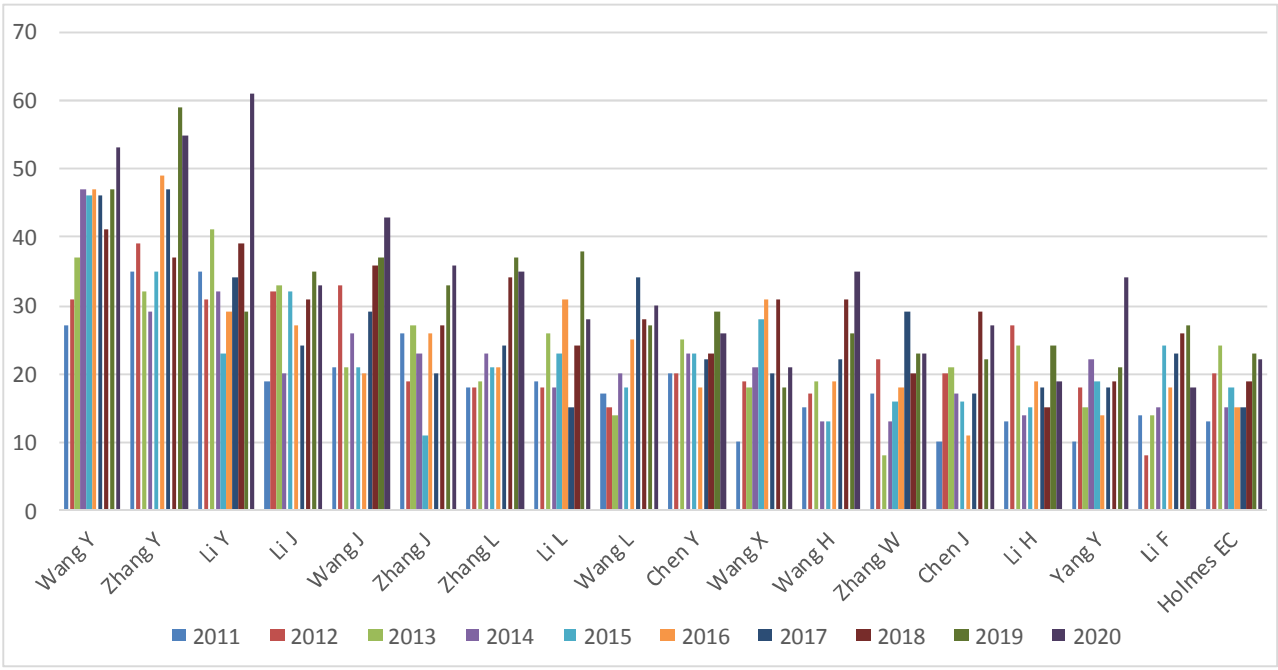

Figure: 2 Description of Author wise Virology research growth from 2011 to 2020

In above figure demonstrates the most productive authors and their year-wise productivity through graphical representation. Wang Y owns first place by producing 429 articles, followed by Zhang Y with 423, Li Y (358), Li J with 293 and Wang J with 293 respectively, as nicely and clearly depicted above.

4.6 Journal-wise analysis

There are top 20 Journals are presented in the table.

Table: 4 Description of prolific journal and their total publications.

S.no.	Titles of Journals	Total	%
1	Journal of Virology	10984	**13.53**
2	PLOS Pathogens	6562	**8.09**
3	Viruses-Basel	5224	**6.44**
4	AIDS Research and Human Retroviruses	5040	**6.21**
5	Archives of Virology	4014	**4.95**
6	Journal of Medical Virology	3728	**4.60**
7	AIDS	3692	**4.55**
8	Virology	3417	**4.21**
9	Journal of Clinical Virology	3046	**3.75**
10	Journal of General Virology	2755	**3.40**
11	Virus Research	2733	**3.37**
12	Virology Journal	2689	**3.31**
13	Journal of Viral Hepatitis	2551	**3.14**
14	Journal of Virological Methods	2504	**3.09**
15	Antiviral Research	2257	**2.78**
16	Journal of Neuro virology	2245	**2.77**
17	International Journal of Medical Microbiology	2231	**2.75**
18	Cell Host & Microbe	1882	**2.32**
19	Antiviral Therapy	1776	**2.19**
20	Retro virology	1718	**2.12**

In above table illustrated the top 20 prolific journals of virology research. The 'Journal of Virology' has published the highest number of publications with 10,984 which is 13.53% of the total followed by PLOS Pathogens with 6562 (8.09%), Viruses-Basel with 5224 (6.44%), AIDS research and human retroviruses with 5040 (6.21%) and Archives of virology with 4014 (4.95%) respectively

4.7 Document type analysis

The diagrammatic (pie-chart) presentation of document type analysis which showed most productive types of document.

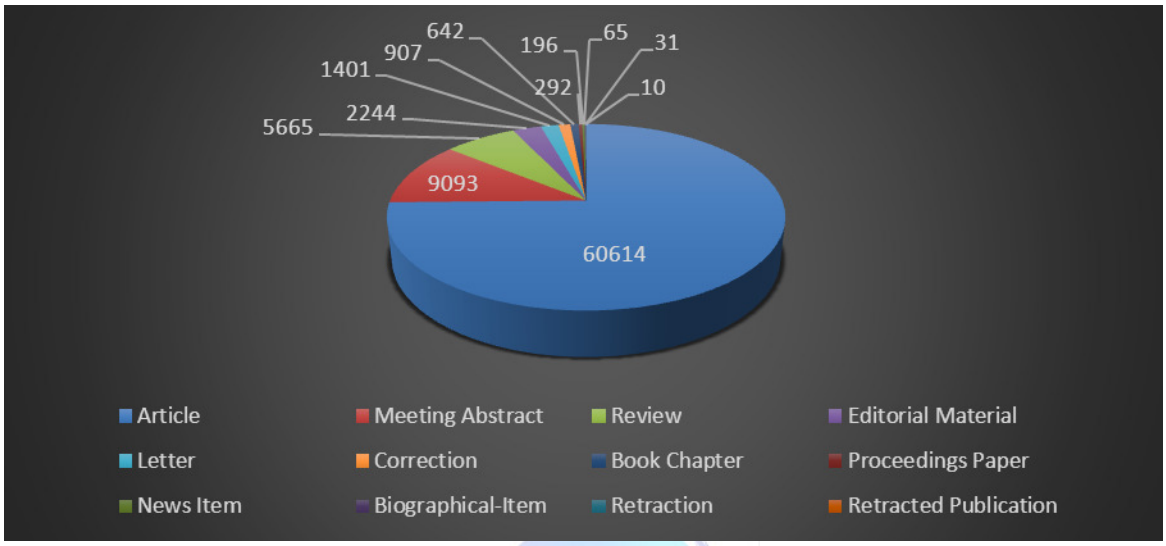

Figure: 3 Document type analysis of virology from 2011-2020

The above figure showed the different types of source of document through pie chart. The Article is the most productive source of document in virology research. The 74.81% research record found in the form of Article. The total 60614 records are form of articles followed by meeting abstract (9093), review (5665), Editorial Material (1401) and Letter (907) so on.

4.8 Top 20 Organization

Table: 5 Description of top 30 prolific organization who contributed research virology.

S.no.	Organizations	Total	%
1	NIAID	1816	2.26
2	Chinese Academy Science	1298	1.62
3	University Washington	1292	1.61
4	Harvard University	1216	1.52
5	University California San Francisco	1131	1.41
6	Centre of Disease Control & Prevent	1119	1.39
7	Chinese Academy Agricultural Science	1103	1.37
8	Emory University	1075	1.34
9	Johns Hopkins University	1018	1.27
10	Institute Pasteur	977	1.22
11	Penn University	951	1.19
12	North Carolina University	932	1.16
13	Oxford University	920	1.15
14	Pittsburgh University	877	1.09
15	Duke University	854	1.06
16	University of California San Diego	768	0.96

17	University Cape Town	750	0.93
18	INSERM	729	0.91
19	UCL	696	0.87
20	University Texas Med Branch	675	0.84

In above table 5 demonstrated that top 20 organizations who contributed and funded the majority of the research related to virology during 2011 to 2020. NIAID contributed highest publications with 1816 followed by Chinese Academy of science with 1298, University of Washington with 1292, Harvard University with 1216 and University California San Francisco with 1131 records respectively.

4.9 Co-authorship network

Co-authorship network was carried out in order to have a better understanding of scientific collaboration. (Li H). The network was visualized by VOS viewer, is a robust tool that uses clustering algorithms and functionalities based on the strength of the connections among items to facilitate the analyses of the network. In that, the size of the circles represents the number of times an author's work has been published. Authors who are frequently grouped together are indicated by circles of the same colour. Authors publishing together are represented by lines linking circles, and a thicker line indicates that they publish together more frequently. We manually inserted overlay text to represent the names of contributors who were not rendered in the source image as VOSviewer does not display names if they would result in overlapping text. There are 2899 articles without collaboration and 77290 articles are with collaboration. There are 6264 articles with two authors, 7108 articles with three authors, 7906 articles with four authors, 8547 articles with five authors, 8780 articles with six authors, 7663 articles with seven authors, 6783 articles with eight authors, 5632 articles with nine authors, 4746 articles with ten authors and 12763 articles with more than ten authors.

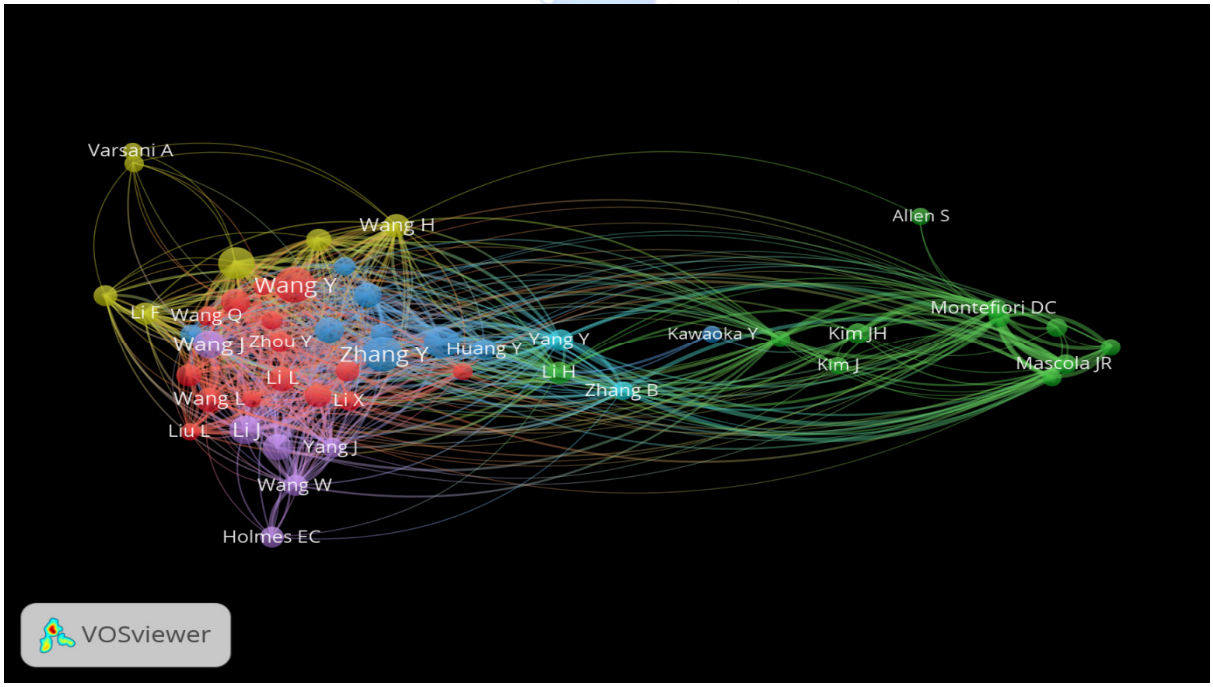

Figure: 4 co-authorship network of top 50 authors in virology research area.

Figure 4 displays the co-authorship network of 50 authors who collaborated maximum articles during 2011 to 2020. VOSviewer analyses clusters based on two attributes which are links and total link strength (TLS). The Links describes the total strength of the co-authorship

links of a given author with other authors. The higher value of TLS denotes the higher number of co-authorship links with other authors. In the above figure clusters and authors are grouped across clusters based on weight of link and total link strength [10].

4.10 Co-citation Network

The most attention received in publications is potential references for scientific communities.

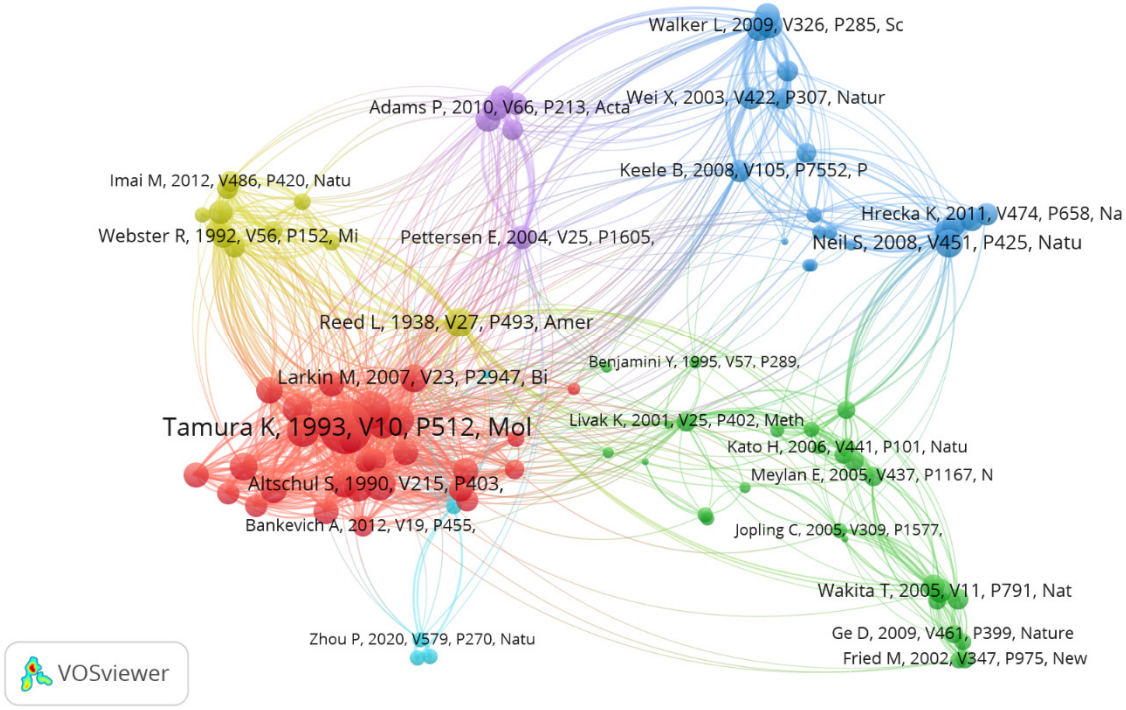

Figure: 5 top 50 reference network of Global virology research.

Figure 5 displays the network of mostly cited papers in area of virology. There are 4 major clusters and 6 others small clusters which shows the connection between each other. Tamura K, 1993, V10, P512, Mol is highest cited paper. The red cluster is denser comparatively which means these citation are most cited.

5. Conclusion :

Researchers can track historical changes in publishing features using bibliometric analysis since it uses a large amount of bibliographic data. This study found a promising increase and a promising start in the Virology research area across the world in this article. Our study's primary objective was to draw attention to virology research and promote debate about it among scientists and academics. It's determined that the findings of this kind of research have a lot of promise for journal collection management. As a result of this research, a pattern of co-authorship was discovered as well as a pattern of cooperation and the most prolific author as well as the most productive language, journal, original document source, organization, and funding agency.

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An Analytical Study of Environmental Awareness of Undergraduate Students of Kurukshetra District in Haryana

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Abstract:

The deteriorating situation of environment is not only all pervasive but is still unabated and is of great concern all over the globe. Environment means, the surroundings, which includes both biotic and abiotic components. Protection of environment is of utmost importance for better living on the earth and therefore, environmental issues are sensitive and hold global importance. Human values have their impact in defining man's moral and ethical obligations toward the environment. The present study was carried out to compare the environmental awareness on the basis of gender (male and female) and stream (arts, commerce, and science). A sample of 274 undergraduate students of Kurukshetra district in Haryana has been chosen for the present study with the help of random sampling. This study found significant difference for environmental awareness on the basis of gender. It has also been observed that the science students possess higher level of awareness regarding environment than students of other stream. The result of present study suggests that the students being the important tool to enlighten the masses on environmental issues need to be made aware with all out efforts to protect the environment.

Keywords: Environment, Awareness, Students, Undergraduate, Gender, Stream.

Introduction :

The very existence of living beings is under threat by the indiscriminate exploitation of natural resources. The number of species of plants and animals has become extinct or are on the verge of extinction. This deteriorating situation is not only all pervasive but is still unabated and accelerating day by day and, therefore, it is of great concern all over the world. Industrial and allied activities designed and planned without ecological consideration are leading to gradual degradation of environment and impact of such activities has spread all over the world. To achieve ecological sustainable development, everyone in the world needs to continuously refresh ones knowledge and skills which can be applied to find solutions of environmental challenges which are being faced by the world. Hence, minds of human beings have to be acquainted and sensitized for the solution of environmental problems and concerns and for inculcating healthy attitude and behavior towards environment in them. This can only be brought about by environmental awareness which not only means being well informed but also being acquainted with set of values, attitude and skills to address environmental concerns. It is also to motivate human beings to act individually and collectively in an environment conscious manner for the judicious use of natural resources for sustainable development in social, economic and ecological areas in present scenario. Therefore, relevance of environmental awareness has to be taken as a prime factor for conservation and protection of environment and for that, steps should be taken at all levels so that environmental awareness permeates in all sections of society. Environmental awareness is just a concern towards environment or environmental problems; hence, it becomes

very essential to awaken the general masses about environment through imparting environmental education or organizing environmental awareness programs.

Review of literature :

The various research studies related to environmental awareness are depicted as: Environmental concern has been treated as an evaluation of, or an attitude towards facts, one's own behavior, or others behavior with consequences for the environment (Weigel, 1983). Hines, Hungerford & Tomera (1987) have argued that environmental concern has direct relationship with pro-environmental behavior. Filegenschnee (1998) said that females usually have a less extensive environmental knowledge than man but as they are more emotionally engaged, therefore, show more interest, concern and willingness to change the environment. However, Owens (2000) stated that knowledge and awareness of the environment did not lead to pro-environmental behavior. Dhillon and Sindhu (2005) found that the level of environmental awareness among the school teachers belonging to rural and urban areas is significantly different, but they did not found any significant difference among male and female teachers. Choudhary (2005) explained that the girls have obtained higher level of awareness than the boys. Ernesto (2010) found that the relationship of environmental awareness between secondary school male and female students was not found significant, but in case of rural area and urban area it was found significant. Abdo (2010) exhibited that the male have more knowledge about environmental issues than the females. Thakur (2012) has examined a study on environmental awareness among senior secondary school students of Chandigarh. The result showed that the science students possessed high degree of environmental awareness than the students of humanities. Aminrad (2013) observed that the level of education and increase in age also increases the level of environmental awareness among the students. The study also revealed that there was no significant difference for it on the basis of gender

Importance of the study :

Environmental concern means that how much people are aware about problems regarding environment and they are willing to support and contribute to their solutions. Hence, environmental awareness is the key area of study among as it holds prime importance in present scenario of sustainability. This study presumes that if the undergraduate students have pragmatic values and awareness towards environmental protection they would preserve the environmental resources for the future generation. Therefore, the main objective of present work is to study the awareness of undergraduates in both the genders towards the environment studying different streams i.e. science, arts or commerce. For this, the following research questions are to be addressed in the study:

1) To find out the gender based difference in environmental awareness among undergraduate students.
2) To analyze difference in awareness of arts, commerce, and science undergraduate students with respect to environmental issues.

Objective of study :

The objective of research is to study awareness level of undergraduate students and to compare that level with respect to gender and various streams i.e. science, arts and commerce and then to select the thrust area to work on.

Research Methodology :

The undergraduate students of arts, science and commerce streams of aided and self-finance degree colleges of district Kurukshetra of Haryana have been taken for the present study. There are 11 aided and self-finance degree colleges in Kurukshetra District. With the help of random sampling, a sample of 274 students was taken from undergraduate students in the third year for the academic year (2019-2020) to address the issues regarding environment.

Tools Used:

An environment awareness ability measures were developed by Dr. Parveen Jha (1998) which are being used in the study. To assess environmental awareness of students in present study, the scale consisted of 51 items and five variables. 46 statements have been taken after careful examination and discussed with the experts. The five variables are: "1) Health and Hygiene 2) Wild Life 3) Forests 4) Polluters 5) Environmental Concerns". The reliability and validity tests were also applied for the development of a good measure of the study. Reliability coefficient called Cronbach's Alpha is used to measure the internal consistency and in present study reliability of measurements was found by using Cronbach's coefficient alpha. An alpha value of 0.60 to 0.70 or above is represented as good and generally accepted. The value of Cronbach's alpha equal to 0.897 shows that the scale applied for measuring all five variables is quite reliable in the current investigation.

Population and Sample :

The study was undertaken by considering a sample of 274 undergraduate respondents from various colleges of Kurukshetra district in state of Haryana, India. All the respondents both male and female were pursuing graduation in different streams. The table (1) represents the total sample size of 274 respondents comprising 80 (29.2%) male undergraduate students and 194 (70.8%) female undergraduate students. The data in the table (1) shows that majority of respondents are females reason being the presence of more number of girls aided and self finance colleges in Kurukshetra district.

Table 1: Sample Profile of Respondents

Variables	Frequency	Percentage
1.Gender		
a)Male	80	29.2
b)Female	194	70.8
Total	**274**	**100.0**
2.Stream		
a)Arts	93	33.9
b)Science	82	29.9
c)Commerce	99	36.1
Total	**274**	**100.0**

Source: Primary Data

Out of 274 respondents, 93 (33.9%) are from arts stream, 82 (29.9%) from science stream and 99 (36.1%) from commerce stream. The table (1) showed that there is not much differences among percentages of arts, science, and commerce stream.

Analysis and interpretation :

Gender Wise Comparisons of Components of Environmental Awareness

Since, society is directly linked to environment and significantly affects the environment; therefore, environmental awareness in society holds prime importance so as to protect the

environment. In this respect, environmental awareness and practice should have social dimension in educational institutions. For this, there is a requirement to create knowledge and awareness about the environment among students. In present investigation, the comparison of components of environmental awareness for five variables was analyzed on the basis of gender.

Table 2: Gender Wise Comparisons of Components of Environmental Awareness

Dimensions	Male Mean Score	Female Mean Score	T-value	p-value
1.Causes of Pollution	0.9098 (0.6699)	0.7894 (0.1675)	6.223*	0.000
2. Conservation of Soil, Forests	0.7625 (0.2512)	0.8093 (0.2874)	-1.269	0.205
3.Energy Conservation	0.9875 (0.0515)	0.6632 (0.1978)	14.469*	0.000
4.Conservation of Human Health	0.7625 (0.2512)	0.8093 (0.2874)	-1.269	0.205
5.Conservation of Wildlife and Animal Husbandry	0.8589 (0.0196)	0.7467 (0.1532)	6.523*	0.000

Source: Primary Data

Figures in parentheses indicate the Standard Deviation.
* Significant at 1% level of significance.

The observations from table (2) show that the variable 'Causes of Pollution' has accorded highest mean score (0.9098) in case of male undergraduate students and on the variable 'Conservation of Human Health' the highest mean score (0.8093) has been obtained in case of female undergraduate students. T-test has been applied to test the significant difference between male undergraduate students and female undergraduate students of Haryana. The result shows that the difference in the mean score is significant for the variables i.e. causes of pollution, energy conservation, and conservation of wildlife and animal husbandry with the t-value (6.233, 14.469, and 6.523). The mean scores accorded by male undergraduate students are higher than the female undergraduate students. It shows that the level of environmental awareness is higher in case of male undergraduate students than the female undergraduate students. The same level of agreement has been found on the two variables i.e. Conservation of Soil, Forests and Conservation of Human Health in case of male and female undergraduate students.

Stream Wise Comparisons of Components of Environmental Awareness

Further, the study was also carried out by analyzing the collected data for stream wise comparison to observe the impact of stream and results have been shown in table 3(a) and 3(b).

Table 3(a): Stream Wise Comparison of Components of Environmental Awareness

Dimensions	Arts Mean Score (Standard Deviation)	Science Mean Score (Standard Deviation)	Commerce Mean Score (Standard Deviation)
1.Causes of Pollution	0.8003 (0.1667)	0.9085 (0.0892)	0.7778 (0.1609)
2. Conservation of Soil, Forests	0.7370 (0.1582)	0.7905 (0.0791)	0.7190 (0.1492)
3.Energy Conservation	0.7885 (0.2803)	0.7602 (0.1483)	0.7273 (0.2148)
4.Conservation of Human Health	0.7673 (0.1614)	0.8232 (0.0795)	0.7547 (0.1475)
5.Conservation of Wildlife and Animal Husbandry	0.6935 (0.2951)	0.9390 (0.1646)	0.7727 (0.2881)

Source: Primary Data

Figures in parentheses indicate the Standard Deviation.

It is clear from the table 3(a) that the highest mean score of 0.8003 and 0.7778 have obtained in the variable 'Causes of Pollution' by the arts and commerce stream undergraduate students. Whereas, the students of science stream has exhibited the highest mean score of (0.9390) on the variable 'Conservation of Wildlife and Animal Husbandry'. ANOVA table 3(b) represents that there is significant difference in the mean scores of the variables i.e. causes of pollution, conservation of soil & forests, conservation of human health and conservation of wildlife & animal husbandry at 5 □ levels with corresponding F-value of 20.050, 6.554, 6.211 and 19.993.

Table 3(b): Stream Wise Comparison of Components of Environmental Awareness

* Significant at 1% level of significance.

Dimensions		Sum of Squares	DF	Mean Square	F-Value	Significant
1.Causes of Pollution	Between Groups	0.8550	2	0.425	20.050*	0.000
	Within Groups	5.742	271	0.021		
2. Conservation of Soil, Forests	Between Groups	0.242	2	0.121	6.554*	0.002
	Within Groups	0.4996	271	0.018		
3.Energy Conservation	Between Groups	0.181	2	0.090	1.807	0.166
	Within Groups	13.538	271	0.050		
4.Conservation of Human Health	Between Groups	0.231	2	0.116	6.211*	0.002
	Within Groups	5.044	271	0.019		
5.Conservation of Wildlife and Animal Husbandry	Between Groups	2.707	2	1.354	19.993*	0.000
	Within Groups	18.348	271	0.068		

However, it observed from the table 3(b) that the highest mean scores have accorded by the science stream undergraduate students and lowest mean scores have exhibited by the commerce

undergraduate students in case of three variables i.e. causes of pollution, conservation of soil & forests and conservation of human health. As a result, the Science stream undergraduate students have higher level of awareness regarding the environmental protection. But, the students of all streams have same level of awareness regarding the variable 'Energy Conservation' with the mean scores of (0.7885), (0.7602) and (0.7273).

Discussion and Conclusion :

Present study has been carried out to assess the environmental awareness of undergraduate students. The result showed that the significant difference has been obtained between male and female students regarding environmental awareness. The result of the study found contradicted to earlier studies (Aminard, 2013; Gupta, 2017). But, this result is supported by various researchers (Kotach, 2017; Yousuf and Bhutta, 2012; Sharma, 1999). The result has also exhibited that the science undergraduate students have more level of awareness regarding environment than the arts and commerce stream undergraduate students. The results are found similar to the research study done by Choudhary (2005). In present scenario, for a good quality of life for all living beings, it is necessary to create awareness in human beings with respect to environment and students are effective tool for this purpose. They can sensitize the society for improving the conditions of environment. Hence there is need to educate and extensively aware the students regarding environment for spreading environmental awareness in masses using ICT tools and campaigns. Further, to enhance the environmental knowledge level of students conferences, seminars, courses, extension lectures and competitions can be arranged. The finding of this study gives an insight that the females and students with art and commerce stream possess less environmental awareness among the undergraduate students. The findings call for more efforts to create awareness among undergraduate students with special focus on females and students with arts and commerce stream.

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Performance Analysis of MGNREGA in the Northeastern States of India Amidst Covid-19

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Abstract:

The development of rural areas and the rural people has been the primary concern in the economic planning and development process of the country for its immense economic potentials. The Covid-19 pandemic has also severely hit the rural areas. The halt of the economic activities and informal industries in the urban areas has resulted in loss of rural income. The lack of alternative relief measures also forced the migrant workers to return back to their native villages which led to the severe problem of unemployment in the country. MGNERA has become a lifeline of millions of workers during this economic distress caused by the pandemic particularly in N.E states and the country as a whole. . The North-Eastern states which comprises of eight states and home to 45.58 million people (2011 census) has also severely affected by the pandemic because of the limited employment opportunities due to the low industrial development of the region. This study makes an attempt to analyze the performance of MGNREGA in the North Eastern States of India and amidst the Covid-19 pandemic based on secondary sources of data. during the pandemic (i.e. FY 2019-20 to 2020-21) the employment demanded has increased almost double by 14.6 % in the north eastern states and a sharp increase of all India average by 38.7%. It reflects that the programme plays an important role in augmenting job opportunities. Inspite of the various challenges and leakages associated with the programme, it is utmost important for the industrially backward states of the Northeast India that the respective state government should implement the programme in the true spirit of the Act with transparency and accountability.

Keywords: MGNREGA, Employment,Covid-19,Migrant Workers, Rural Development

Introduction:

Rural India which continued to remain neglected for centuries together has now come to be recognized for its immense economic potential. Nearly 90% of the geographical area of India are rural areas and about 70% of the population lives in rural areas. It is a major source of income and foodgrains for the economy as a whole which also provides the major source of employment to the increasing population of the country. Development of the country needs the development of the rural economy. Thus the development of rural areas and the rural people has been the primary concern in the economic planning and development process of the country. However, the rural people has been neglected for a long time. They have a peculiar problem of their own. Its most agricultural land remains undeveloped and provides only a low living base. There is also heavy population pressure on land due to the lack of alternative avenues of employment. Thus, unemployment,under-employment and disguise unemployment are the common features in the rural India. Abject poverty, subsistence level of wage rate, illiteracy and ignorance makes the rural people more miserable. Some of the mislaid economic policies in the recent past have also excluded a majority of rural society from part taking in India's journey of development resulting in the sense of deprivation and dissatisfaction among a large percentage of people in the Indian villages.

The Covid-19 pandemic has also severely hit the rural areas. The risk of spread in rural areas is also increased due to a number of factors such as lack of awareness, nutrition and insufficient public health centers and sanitation facilities. The halt of the economic activities and informal industries in the urban areas has resulted in loss of rural income. The lack of alternative relief measures also forced the migrant workers to return back to their native villages. This has further increase the risk of spreading the virus in the rural areas (Mitra 2020).It has also led to the severe problem of unemployment problem in the country. Thus, it is of great challenge to the government to provide alternative employment opportunities to the rural people. In this backdrop, the two major saviors of the crisis is agriculture and MGNREGA. MGNREGA which was launched 15 years ago as a lifeline of the rural poor has once again proved during this Covid- 19 induced nationwide lockdown (Singh,S 2021).According to Nobel laureate Abhijit Banerjee, the government must ensure employment under MGNREGA. Increasing the number of workdays from 100 to 150 days under the government's flagship jobs scheme would be one of the most effective ways to help the poor recover from the Covid-19 pandemic's negative impact on the economy. The North-Eastern states which comprises of eight states and home to 45.58 million people (2011 census) has also severely affected by the pandemic because of the limited employment opportunities due to the low industrial development of the region. This study makes an attempt to analyze the performance of MGNREGA in the North Eastern States of India and amidst the Covid-19 pandemic. This study is based on various sources of secondary data such as research articles, journal and websites to address the objectives of the study.

MGNREGA and its Key Features:

Mahatma Gandhi National Rural Employment Guarantee Act(MGNREGA) is a demand driven wage employment which provides for the enhancement of livelihood security of the households in rural areas of the country by providing atleast 100 days of guaranteed wage employment in every financial year to every household whose adult members volunteer to do unskilled manual work. It was launched in 2005 as a landmark legislation in the history of India. It is the first right based programme in India and the largest in the world in terms of its potential demand. It was a historic legislation based on two interlinked goals: ensuring livelihood security to rural residents by providing wage employment and using the programme to mobilize existing labour surplus in the countryside, to unleash productive forces and generate more economic growth in rural areas(Ghosh 2015).

The Act was notified in 200 most backward districts in its first phase of implementation with effect from 2nd Feb 2006. In 2007-08, it was extended to an additional 130 rural districts. Since 2008, MGNREGA has covered the entire country with the exception of district that has 100 percent urban population.

Objectives of MGNREGA:

The mandate of MGNREGA is to enhance livelihood security in of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. The objectives of the programme includes:

1. Ensuring a strong social safety net for the most vulnerable groups living in rural India by providing employment opportunities.
2. Livelihood security of the poor through creation of durable assets improved water scarcity, social conservation and higher land productivity.

3. Drought proofing and flood management.
4. Empowerment of the marginalized communities, especially women, scheduled castes and scheduled tribes, through the process of a rights – based legislation.
5. Deepening democracy at the grass roots by strengthening Panchayati Raj Institution and promotion decentralized and participatory planning.
6. Effecting greater transparency and accountability and in governance.

Thus, MGNREGA can be a powerful instrument for inclusive growth in rural India through its impact on social protection, livelihood security and democratic governance.

Role of MGNREGA during Covid-19 Pandemic:

According to the Union Ministry of Labour and Employment, more than 1.14 crore inter-state migrant workers returned to their home states in India during the nationwide lockdown amidst Covid-19 pandemic in 2020. As per the break-up of the data in returnees, Uttar Pradesh has the highest number of returnees among the Indian States and among the North-Eastern states,Assam has the highest number of returnees. There has been a steep rise in the unemployment rate from 6.5 % in November 2020 to 9.1% percent in December 2020 (CMIE). So, in order to provide more purchasing power in the hands of the poor and the marginalized, the budgetary allocation of MGNREGA needs to be increased. Besides, an urban employment programme to address the problems of the urban poor should be launched. (Ghatak & Sengupta,2021)

Majority of the MGNREGA workers are landless and marginal farmers looking for livelihood opportunity in order to meet the basic needs of their families. Moreover,the large number of migrant workers which returned back to their native village has also worsened the scenario.In this condition MGNREGA serves as a means to tackle the problems by providing employment and income. (Gautam & Mohanty 2020) MGNREGA spendings can also be reoriented to create micro-entrepreneurs out of the reverse migrating masons, electricians and others who can directly contribute to augmenting health and sanitization infrastructure in likely new normal in the rural areas.(Vasudeva,Singh & Gupta 2020)

A study conducted by Lokhande and Gundimeda(2021) to observe the effectiveness of MGNREGA in providing job opportunities and augment the income for rural workers and the returning seasonal migrants found that MGNREGA could provide relief to one-third ie 7.5 million seasonal migrant workers. It also provides works for around 23 days and augment income upto 28 % of income which they earn daily in the pre Covid-19 period.But,it could not address the issues of the remaining two-third of the seasonal migrants.This may be due to the over dependence on MGNREGA of the backward districts which are not able to generate adequate employment opportunities for its rural population.

Performance of MGNREGA in the North-Eastern States of India:

The North-eastern states of India has its own peculiar physical, economic and socio-cultural characteristics. This region consists of eight states viz. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. These regions are predominantly agrarian states and characterized with low industrial development, poor infrastructure and minimal gainful employment opportunities. It accounts 4% of the country's area but contributes less than 2% of the country's GDP. Apart from low level of economic development, these regions has the economic hurdles in the form of ethnic clash, insurgency and marginalization.

Hence, these regions are heavily depend on the Central Government's assistance and grants. Hence, rural development initiatives such as MGNREGA becomes very important as a source of fund flow in the region. (Bose & Bhowmik, 2019) The importance of the programme is reflected on the tables (1-5) as shown below which highlights the performance of the region in terms of number of Job cards issued, employment demanded and provided, person days generated and number of days availed employment for the period of 2018-19 to 2020-21.

Employment Status of the N.E States (2018-19)

Table 1

States	Cumulative No. of HHs issued Job cards	Employment Demanded		Employment Provided		Person days	100% HHs	Average days of employment provided per HHs
		HHs	Persons	HHs	Persons			
Arunachal Pradesh	2.29	1.69	1.81	1.59	1.69	68.65	292	42.95
Assam	46.5	19.2	28.2	17.4	24.6	532.5	18359	30.58
Manipur	5.67	5.28	5.98	5.13	5.7	117.3	16	22.88
Meghalaya	5.64	4.83	6.94	4.75	6.79	342.1	160908	71.97
Mizoram	1.92	1.94	2.06	1.94	2.005	179.1	79933	92.45
Nagaland	4.33	3.99	4.38	3.86	4.16	132.6	0	34.4
Sikkim	0.82	0.65	0.78	0.61	0.72	33.56	4668	54.29
Tripura	6.25	5.64	7.72	5.49	7.39	253.08	14982	46.07
Northeast	9.18	5.41	7.23	5.09	6.63	207.36	34894.75	49.45
India	1334.6	587.6	911.8	562.6	777.2	26792.5	5257662	50.88

Source: www.nrega.nic.in

Employment Status of the N.E States (2019-20)

Table 2

States	Cumulative No. of HHs issued Job cards	Employment Demanded		Employment Provided		Person days	100% HHs	Average days of employment provided per HHs
		HHs	Persons	HHs	Persons			
Arunachal Pradesh	2.44	1.84	1.91	1.77	1.83	85.99	412	48.63
Assam	50.04	21.58	32.19	19.28	27.71	623.08	29979	32.31
Manipur	5.72	5.47	6.08	5.41	5.90	234.07	856	43.23
Meghalaya	5.91	5.13	7.29	5.06	7.16	370.2	180536	73.23
Mizoram	2.01	2.04	2.09	2.04	2.09	192.5	157353	94.63
Nagaland	4.36	3.94	4.30	3.90	4.26	138.4	1	35.47
Sikkim	0.84	0.62	0.74	0.58	0.68	29.47	3550	50.97
Tripura	6.32	5.78	8.14	5.66	7.84	344.02	55381	60.78
Northeast	9.705	5.8	7.84	5.46	7.18	252.21	53508.5	54.9
India	1407.2	616.5	933.9	5.48	788.4	26533.05	4060128	48.4

Source: www.nrega.nic.in

Expenditure of MGNREGA in N.E States(2019-20 to 2020-21)

Table 4

States	Total Expenditure (in Crores)	
	2019-20	2020-21
Arunachal Pradesh	85746.88	106405.55
Assam	9106.27	10762.21
Manipur	39.367.58	44287.09
Meghalaya	51525.12	54921.95
Mizoram	109839.94	136713.24
Nagaland	45547.62	105256.07
Sikkim	15875.74	48544.06
Tripura	147629.32	252526.98
Northeast	630.79.76	94927.12
India	68265.97	111443.44

Source: www.nrega.nic.in

Percentage increase in employment demanded

Table 5

Years	2018-19	2019-20	% increased	2019-20	2020-21	% increased
Northeast	5.4	5.8	7.2	5.8	6.65	14.6
India	587.6	616.5	4.92	616.5	855.2	38.7

Source: www.nrega.nic.in and own calculation

The employment demanded has increased by 7.2 % in the normal years ie (FY 2018-19 to 2019-20) for the north eastern states and 4.92 % for the country as whole. But during the pandemic (i.e. FY 2019-20 to 2020-21) the employment demanded has increased almost double by 14.6 % in the north eastern states and a sharp increase of all India average by 38.7%. It reflects that the programme plays an important role in augmenting job opportunities. The cumulative number of households which issued job cards has reached 10.4 lakhs in the FY 2020-21. Around 9.07 lakhs(persons) and 6.7 lakhs (HHs) have demanded work out of which 8.4 lakhs(persons) and 6.4 lakhs(HHs) have provided job under the programme. Besides it, about 437.2 lakhs(N.E) and 389.2 crores(All India) persondays have been generated till 2020-21. A total of 71,99,743(All India) and 69,452.13(N.E) households availed 100 days of employment in the year 2020-21.Among the eight states, Mizoram ranks first followed by Meghalaya and Tripura and Nagaland occupies the last with only 48 HHs which avails 100 days of employment.

The average days of employment provided in a year has also witnessed an increase from 54.9 days in the year 2019-20 to 62.02 days in the year 2020-21 which is higher than the all India average of 48.5 to 51.52 days. Among the eight states, Mizoram is the best performing state which provides 92.94 average days of employment in a financial year followed by followed by Tripura and Meghalaya. For the year 2020-21, all the states of Northeast except Assam has crossed over the all India average of 51.52 average days of employment.

As per the information of MORD, Government allocates Rs. 73,000 in the current financial year 2021-21 which is 18.69 more in comparison to the 2020-21. The Govt. has also realeased Rs 46,750. 24 crore during the current financial year to State/UTs for the

implementation of the Scheme. The State-wise total expenditure of MGNREGA and percentage of utilization is shown in Table 3 for the Py 2019-20 and 2020-21. Which indicates significant increase in the total expenditure which comprises of wage and material components in the tow consecutive financial year. Thus the Governemnt gives the main thrust to MGNREGA to solve the problem of unemployment due to pandemic.

Conclusion and Suggestions:

MGNERA has become a lifeline of millions of workers during this economic distress caused by the pandemic particularly in N.E states and the country as a whole. It has proved to be an important tool to combat the crises of unemployment and reverse migrants in the rural India.Though not design as a programme of women empowerment, MGNREGA has brought social and economic empowerment of rural women and the economically and socially weaker sections of the society. (Paliwal & N.N, 2021) Inspite of the various challenges and leakages associated with the programme, it is utmost important for the industrially backward states of the Northeast India that the respective state government should implement the programme in the true spirit of the Act with transparency and accountability.

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Political Empowerment of Dalit Women : Issues and Challenges

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Introduction:

In India, Dalits are the people who are socially, economically oppressed, culturally subjugated and politically marginalized sections of the society. They are denied the chance to live as humans. They are compelled to lead a life of misery as they are considered to be at the bottom rung of society. They are outside the caste system and constitute the fifth group called Panchamas. They are socially cut off and became unhealthy and condemned organ of the society. They were always exploited by the high caste people. They suffered from all sorts of discrimination including untouchability. They were not given equal status with other caste groups. Being illiterate, ignorant and also backward, they were unable to improve their status and also unable to fight against exploitation.

Dalit women in India:

In Dravidian society, Dalit women had a good position. The love poems of the ancient Tamil Sangam literature shows that women were comparatively free, could choose their husband, work together with their menfolk and move freely (Subrahmanian, 1966). When these women compared with women in general, their condition was comparatively better because traditionally, child marriage, forced widowhood and Sati system were advocated in Hinduism which made it difficult for them to attain a good social status.

But a Dalit woman who fortunately had not fallen prey into the net cunningly woven by Hinduism was freer and less dependent. Anti-women feeling were not to be found in their social life. Child marriage, strict monogamy, widowhood, dowry practices and practices of Sati were all unknown to them. But, this status of Dalit women was slowly eroded upon by Hinduism. As the Dalit, in their vain attempt to be identified with and approved by the caste Hindus, tried to follow their practices, forced their women into subjugation, widowhood was thrust on them. They were forbidden to remarry. The freedom that Dalit women were enjoying was mercilessly taken away (Sivaprakasam M.N, 2002).

Gradually, Dalit women began to be considered as unequal to her man. They work under the most exploitative, dehumanising and unhealthy conditions. They are compelled to go for hard labour with discrimination of wages and also sexually abused by the rich higher caste landlords. They are forced to earn their living this way. In area of politics also they did not enjoy full freedom, due to their illiteracy, ignorance and low-income group, they took sufficient interest in politics.

Thus, Dalit women has most horrible position in India, though the rigidity of untouchability has been relaxed to many extents but status remained almost same. Being illiterate, ignorant and also backward, they were unable to improve their status and also unable to fight against exploitation.

Dalit Movement and Women's Movement:

The Dalit movement was started in India for the upliftment of Dalits. Although this movement started to articulate their identity, Dalit women failed to forge their own identity from

this movement, specific issues concerning were neglected and also emergence of their leadership has not been encouraged. Their problem is "being a part of overall Dalit movement it has not given them a space" (Ranjith Biswas, 2007). The reason behind their problems is that Dalit identity politics articulates caste identity sharply but resists the gender dimensions of caste itself. It completely shuts out patriarchal attitude of Dalit men vis-à-vis their women. (Thorat Vimal, 2001)

In the first phase, the women's movement laid great stress on women's rights and in the second phase it emphasized more on women's liberation and autonomy. But women activists never tried to merge Dalit women in their movement. They advocate for women in general, in their manifestoes and constitutions. In this movement, women activist have taken the issues of women in general but not taken any issues which are related to Dalit women.

Thus, voiceless Dalit women were deprived of their rightful place in governance process because, Dalit activist raise the issues of Dalit women and largely overlook the case of Dalit women. On the other hand, women activist take up the issues of women in general and ignored the issues of Dalit women.

State and Dalit Women:

In order to solve the problem of Dalit women, the State played an important role. To improve their socio-economic and political condition, the state has implemented various Constitutional Provisions. The reservation policy helped Dalit women to make an entry into the political system. They become voters, electors and contestants but research points out, they have not gain much from the political system. The gains given to them are incidental and not programmed. So, there is a need to provide a political equality to Dalit women by Constitution and also follow the process of empowerment first by understanding the situation in which they are trapped and also to make them to move towards self assertion and self decision making process and effective participation.

The best Provision implemented for the benefit of Dalit women by the Constitution of India is 73rd Constitutional Amendment. The main objective of this reservation is to empower the oppressed to send their representatives who in turn would act as their spokesmen in several bodies. In 1993, the government of India passed a series of Constitutional reform, which were intended to empower and democratize Indian rural representative bodies-the Panchayats. The Panchayat Raj Act was introduced in April 1993 through 73rd Constitutional Amendment. The Constitutional Amendment has made Panchayati Raj system a strong institutional mechanism and effective channel for participatory development. PRI a democratic structure of local self-government, which makes people self-reliant and to devolve them in decision-making process has given as special concern for Dalit women. It has given special provision 1/3 seats are reserved for Scheduled Caste and Scheduled Tribe (including the number of seats reserved for women belonging to Scheduled Caste and Scheduled Tribe). A large number of Dalit women entered into political field it is through 73rd Constitutional Amendment.

A Study on Dakshina Kannada District:

The present study is conducted in the Dakshina Kannnda District of Karnataka state. There are total 203 Gram Panchayats and 5 Taluk Panchayats has selected for the Study namely Mangalore, Puttur, Bantwal, Belthangady and Sullia. There are total 3237 Panchayat members from all the three levels of Panchayat Raj Institutions in Dakshina Kannada district. But for the

study only 213 Dalit women representatives are taken who are members, Vice-Presidents and Presidents of all the three levels of Panchayati Raj Institutions. In this study, Dalit women representatives means especially women who are belonging to Scheduled caste (SC).

Objectives of the Study:

1. To find out the socio-economic background of the elected Dalit women representatives in Panchayati Raj Institutions
2. To understand the obstacles and hurdles faced by Dalit women while performing their duties.
3. To analyse whether reservation for women in Panchayati Raj Institutions has empowered these Dalit women.

The data was collected both from Primary and Secondary sources. Primary data has been collected through the personal interview method with the tool of interview schedule and also observation method. The secondary data has been taken from the government records, census reports, official records of the Gram Panchayat, Taluk Panchayat and Zilla Panchayats, annual report, books, journals, published articles, magazines etc.

Analysis:

Dakshina Kannada districts are more progressive district of Karnataka state and are often hailed as the epicenter of Women's empowerment. In this district, women have played a key role in the economic process of development. As per 2011 census, Sex Ratio of Dakshina Kannada district is 1018. Even, Literacy rate is also high in this district (88.57%,, Census 2011).

The socio-economic background of the Dalit women representatives:

While studying the socio-economic background of the respondents, education, occupation, family occupation and income are taken as important factors. Hence, in order to study the Dalit women representatives' participation in Panchayati raj, it is important to analyze the socio economic profile of Dalit women representatives which has an impact on their role performance, and the problem of role conflict.

In general, it is observed that Dalit women representatives have education till primary level. The data shows 22.54 percent of them are illiterates and 53.94 percent of them are educated upto SSLC and not a single representative is qualified upto Post- graduation. Most of them are from Adi Dravida (29.82%) and Mogera Castes (25.82%). The study reports that most of their occupation is Beedi Rolling(49.30%). Majority of the Respondents family heads are coolie workers that is 76.06%. 86.38% have annual income that is less than Rs.10,000 and a few respondents (2.82%) have an annual income between Rs. 15,001 to 20,000. This shows that the economic condition of the Dalit women representatives is very poor.

2. Obstacles and Hurdles faced by Dalit women Representatives in Panchayati Raj:

Political Participation means exercise of power in Politics. Through reservation, women have entered into politics. But political representation and participation in Panchayati Raj Institution become more difficult for them. Their situation in Panchayati Raj Institution is more precarious and worse because they have to face two way simultaneous oppression. One from their male counterparts in their family as well as from the upper caste males and second due to their low status in the caste hierarchy. They have to face more difficulties and problems while discharging their duties.

The most crucial obstacle in the way of real political empowerment of Dalit women through Panchayati Raj occurs at the stage of the filing of the nomination for candidature itself. Most women file their candidature for elections to PRIs not out of their own will, but due to the pressure of husbands, or other male member of the family or due to the pressure of some political party. The present study tries to understand that majority of the respondents (31.92%) are motivated by Political Parties and 17.13% of them motivated by their family members. In order to fulfill the reserved quota most Dalit women Reprentatives are filing the nomination.

The study reveals that their participation in the Panchayati Raj Institution activities, in terms of attendance is satisfactory. Majority of them (99.6 %)of them attended Panchayat meeting regularly. But most of them are Silent spectators during meetings, because they are less qualified and don't have enough awareness about Panchayat activities. 89.67percentage reports that they have not taken any independent decisions, majority of them consulted their colleagues while 8.92 percent consulted their family members.

A good majority opines that they do not face any difficulty in Panchayat work, while 34 percent feels that finishing household work and looking after children is biggest challenge. They have to perform different family responsibilities like, housewife, mother and wife. Panchayathi raj responsibility is an added responsibility for them. But inspite of all such obstacles, some of them are trying their best to adjust with the prevailing situation and try to carry out the duties of a representative in an effective manner.

3.**Reservation facility:**

Reservation is one of the provisions provided to encourage participation of Dalit women in Panchayati activities. It is necessary conditions because their actual participation depends upon variety of personal and social conditions. A vast majority of them (93.43%) feel that reservation is not sufficient for the empowerment of Dalit women It can only empower women too certain extent but for the elected representatives to play an active role in decision making, there are other factors that need to be addressed. Along with reservation, there should be other facilities like education, training programme, legal awareness and government facilities; without which reservation is meaningless.

Recommendations:

In the light of the findings, the study puts forward some recommendations which would help in empowering the Dalit women by helping them in good decision making and hence their better participation in politics and governance.

Education: The present study shows that Dalit women representatives have less education, due to this, they cannot play their role effectively. Therefore, they are to be provided with functional literacy which suits their age and responsibility. It would widen their awareness on issues related to panchayats.

Training Programme: Training Programme will help them in building their capacity so that they can play a meaningful role in the Panchayats. Training will help them in enhancing their knowledge, develop their skills and change their attitude.

Attitudinal change: Sometimes, Dalit women representatives discriminated on the basis of caste and gender while performing their duties, In India, there is a need to bring changes in the mindset of people against untouchability and patriarchal norms.

Encouragement from the family, public and Government: The positive attitude of the family is a great motivator for them to participate well. Acknowledgment by the public and the respect shown by them also act as motivators of women's participation.

Role of Mass Media: It plays a constructive role in enhancing women's leadership by giving wider coverage to various activities and measures taken by Dalit women representatives and by highlighting their problems and prospect through audio-visual means. These would help in motivating and encouraging these women to shoulder leadership and responsibilities.

Conclusion:

Thus, Re-introduction of Panchayat Institution through specific constitutional package, by the government, by introducing 73rd constitutional amendment is an effort to ensure participation of Dalit women in decision making process at the grassroots level. Since, they are suffered from unimaginable oppression through caste and gender. Indian constitution has made amendment to bring changes, but Indian social set up does not change, because even today, we see severe oppression and exploitation of Dalit women. Thus, there is need to bring changes in the mind set of people against untouchability and also against patriarchal norms. Reservation facility is not sufficient, because it opens door only for the limited people and that too a limited extent. Besides Reservation, they must have various types of resources like education, training programmes, more legal rights etc.

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Impact of Motivation on The Goals of Success of College Students Engaged in Sports

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Abstract:

Motivation refers to be one of the largest building blocks that energizes the athletes as well as their performances. However, many things, both negative as well as positive can play the roles of factors in providing motivation to the athletes as well as their performances. The present article strives to comment on the relation shared between sports performance as well as motivation of the players of college level. It also seeks to find out if the player's performance is influenced by motivation, or if motivation impacts the player's performance negatively. The researcher has made use of both, the primary well as secondary data. The collection of primary data was made by applying The Student Motivation Scale, an instrument that measures students' motivation. It assesses these two dimensions through five boosters and four guzzlers. In this study we have assessed one dimension by five boosters. The researcher administered the scale on 100 Collage students (50 boys and 50 girls). Data were analyzed Descriptive statistics and Cronbach's Alphas along with't' test.

Keywords:- Motivation, player's performance, boosters, athletes, relation.

Introduction:

One of the most important and fascinating areas turns out to be motivation in human psychology. Learning has immensely been affected by motivation. Without motivation, there will either be very little learning or no learning at all. Motivation thus serves as the key to training and learning. It can work wonderfully if once released. People are helped to perform by motivation, much higher than the normal mental as well as physical capacities, and thus help them to be satisfied. An inspirational process, motivation, compels the team members to effectively pull their weight, to be loyal to the group, carry out the accepted tasks properly, and overall play effectively and carry out the specific tasks undertaken by the group.

The process in which the needs or internal energies of the learners are directed towards certain goals in his environment is called motivation. Motivation, in other words, refers to the desire or the urge to perform better. Each and every child or adult tries to satisfy certain basic needs or motives. As long as his/her present knowledge as well as behavior are sufficient for satisfying all his needs, he will abstain from acquiring new knowledge or bring about a change in behavior. We obtain new knowledge as well as bring about modifications in our personalities, interests and attitudes only when our present knowledge as well as behavior fails to satisfy our motives. In order to learn something new, there must firstly be an objective that seems to be attractive to us, also secondly it is necessary that there must lie some barrier that will keep on resisting us from reaching our goal. This is so because if there is an absence of barrier in our way, our already acquired knowledge as well as our present behavior would directly take us to our goals, as well as in such circumstances there would not be any need to learn. We bring about

modifications in our behavior only when we feel it necessary, helping us to attain our goals and objectives created by our unsatisfied motives.

Review of Literature:

Erdem (2008). Almagro et al. (2010) made a comparative study of the tendencies of the basketball and football players. It shows that the basketball players are much more self-determined in the environment of sports rather than the football players. The basketball players have higher averages in the intrinsic regulation in order to accomplish and know sub-dimension. Factors like exploring new methods in the process of improving performance, learning and exploring certain new training techniques that have not been tried before, knowing more, research, curiosity, personal competency perception and being much more enthusiastic regarding the sport can lead to experience more motivation.

Lonsdale et al., 2008. The results of the studies have presented the fact that intrinsic motives like competition as well as entertainment have a strong impact on the continuity and commitment to sports. While on the other side, extrinsic motives like rewards and body related motives have not proven to be much effective in continuity as well as commitment to sports. The extrinsic factors have often proven to be the athletes' starting factors while participating in sports.

According to Kowal and Fortier (2000) the relationship between flow state and extrinsic motivation is negative in nature. Neither the individual either's extrinsic nor is the intrinsic motivation correlated negatively with sports performance and flow state. The people whole take part in sports unwillingly will naturally not enjoy the activity and as a result will fail to provide cognitive competence as well as task control. It is due to this reason that it can be stated that the athletes' flow states who have motivation that is extrinsic in nature and who are unable to be motivated, might be low. While the results of our study were similar in nature, a statistically important negative correlation has been found in the motivation subscales as well as flow state sub scales. However, the relationship between the motivation subscales and flow state subscales was significant statistically in some parameters.

Objectives: The aforementioned study is aimed to throw light on the following:

- ✓ To interpret the relationship between performance of sports and motivation of the players of school level.
- ✓ To find out if motivation has an influence over the players' performance.
- ✓ To study if motivation negatively impacts the players' performance.

Methodology:

The researcher has made use of both, the primary well as secondary data. The collection of primary data was made by applying The Student Motivation Scale, an instrument that measures students' motivation. It assesses these two dimensions through five boosters and four guzzlers. In this study we have assessed one dimension by five boosters. The researcher administered the scale on 100 College students (50 boys and 50 girls) in the district of Sambalpur, Odisha. Data were analyzed Descriptive statistics and Cronbach's Alphas along with 't' test.

Analysis: In any sports whether it is individual or team sports success or failure depends upon different psychological factors or personality traits like emotion, motivation, self control, self efficacy, abilities and skills of life. When we focus on sports there comes some other factors like

training, behavior of coach etc. The motivational approach can be thought of as a midpoint between the intra psychic domain and dispositional domain. However, there are many perspectives on the mere nature of motivation. According to one view, the hypothetical construct that we call motivation can be viewed as one of the regulators of direction and intensity of behavior.

Descriptive statistics and Cronbach's Alphas

Booster	Mean	SD	Skew	Kurtosis	Cronbach's alpha
Self-belief	77	14	-.54	.31	.81
Value of schooling	76	13	-.94	1.50	.79
Learning focus	79	13	-.91	1.60	.79
Planning and monitoring	66	15	-.51	.07	.80
Persistence	68	16	-.62	.32	.88

From the above table it is evident that first three boosters has a little difference in the mean score and the last two boosters have a little lower mean score than the first three. SD value for each booster remains between 13-16. On the other hand the Kurtosis value for planning and monitoring is lowest i.e .07 and highest for learning focus i.e 1.60. On the basis of the above data analysis we can say that sports might make the students fresh minded and relaxed which make them to focus on the learning.

Gender differences on each booster

Booster	Girls		Boys		't' value
	Mean	SD	Mean	SD	
Self-belief	77	13	77	14	.04
Value of schooling	76	13	76	13	.22
Learning focus	82	12	78	13	3.55
Planning and monitoring	69	14	63	16	4.00
Persistence	69	16	68	16	.28

From the above table we can say that there is difference on each booster between male and female students. For girls the SD value for Learning and monitoring is 14 where for boys it is 16 leading to the fact that the boys are more prone to be pre planned and monitoring the facts. But Value of schooling for both boys and girls are same where as the SD of self belief for boys is higher than that of the girls. 't' value for persistency is .28, and for self belief it is .04.

Further Scope:

This research paves the way for further research in different fields – like influence of motivation specific sports players, How the motivation helps in changing career of sports person throughout life. It may be studied on the influence the academic achievement of the college students. Study can be conducted on other fields like how psychological or emotional factors influence our day to day life.

Conclusion:

Most commonly factor is the most of the athletes are the students. The main factor is that they are capable of playing along with keeping up their GPA. Different external factors known as the extrinsic reward like scholarships are some of the sources of motivation. The same thing that prevails in all is that they must be motivated for achieving their goals. There are so many students who are struggling in every moment to leave impression in the field of sports and games. This continuous struggle is giving birth of so many athletes not only in championship seasons. In this regard motivation is not only the thing, but also will power; self control over behavior is essential things that can make the students capable of achieving goals in every sphere of life.

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Empowerment of Women in India : An Overview

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Abstract :

The concept of "empowerment" traces its history in the mid-17th century with the legalistic meaning "to invest with authority". Thereafter, this concept was modernized to mean "to enable or permit". After 1980"s, the novel concept of measuring economic development through "human development" focusing on "political empowerment" linkage with feminist discourse went a long way in shaping the idea of "women's empowerment" . During 1990"s economists argued that "development if not engendered, is endangered" and the major component of the global society i.e. women are left outside the purview of the fruits of development and planning, we cannot achieve the desired goal of a "developed status" of an economy, whether it is developed or developing. The United Nations has shown concern for women empowerment evident in "Millennium Development Goals" to trace the progress of women empowerment across the world. The present paper primarily deals with "empowerment of women" in India and throws light on particularly" agency approach "to measure women empowerment. this paper presents the illustration of modern approach to empowerment ; an overview of the efforts put in India for empowering women and analyses the degree of achievement of empowerment by adopting some of the modern indicators

Key words: Access to Resources, Control over Resources, Economic participation and opportunity. Empowerment, Agency, Gender Gap.

The concept of "empowerment" traces its history in the mid-17th century with the legalistic meaning "to invest with authority". Thereafter, this concept was modernized to mean "to enable or permit". After 1980"s, the novel concept of measuring economic development through "human development" focusing on "political empowerment" linkage with feminist discourse went a long way in shaping the idea of "women's empowerment" . During 1990"s economists argued that "development if not engendered, is endangered" and the major component of the global society i.e. women are left outside the purview of the fruits of development and planning, we cannot achieve the desired goal of a "developed status" of an economy, whether it is developed or developing.

The standard of a society rises and falls in correlation with the rises and falls in the status of women. In order to all round development of a society several social movements have been occurred and from which the term 'women empowerment' emerged with the motto to raise the status of women. Social scientists have been opined that the all round development and harmonious growth of a society, state or country would be possible only when the position of women are enhanced and they are considered equal partners with men. The scholars define empowerment as comprising increased power in the social, economical, political and psychological realms and consider. The term empowerment has come to mean many different aspects to actors in the field of development. The term empowerment appears in the language of among other, neomarxists, feminists and their world grass root, groups indicating its broad utility as a concept.

In general empowerment refers to increasing social, political, educational gender or economic strength of individual or communities. Empowerment can be considered a change in the context of woman or man's life. That enables her/him increased capacity to lead a fulfilling human life characterized by external qualities such as health, mobility, education and awareness status in the family participation in decision making and level of material security as well as external qualities such as self awareness and self confidence.

Women empowerment is a holistic concept and can be called as gender empowerment. Gender equality and social participation are the key constituents in ensuring the empowerment of women. The development or progress of a group, community, race and nation depends on the policies and its implementations that adopt the notion of women empowerment.

The approach of women empowerment commonly covers social, cultural, economic, political, educational, psychological and personal aspects. In many countries of world women are burdened with gender inequalities as a result of the many social, cultural and economic discriminatory practices. This proved the necessity of women empowerment to eradicate the vast difference between the idealized concept of women and the practical life situation in which women find them.

The status of women Indian society has consequently always changed from time to time. The status of women in ancient India was based on liberty, equality, equality and cooperation, but in the medieval India, the position of women was very much lowered and in modern India the status of women is almost the same as it was in the medieval period. Today in Indian society women have been suffering gender bias and also facing much cruelty and exploitation due to prevalence of several social factors such as illiteracy, dowry, female feticide, rape, widowhood, sexual harassment, child marriage, domestic violence and prostitution etc. as a result of which women empowerment now-a-days a major issue in entire India.

In Indian contemporary society it can be observed that Indian women do not take a major place in much of the literature on social inclusion or empowerment. Women in India both in urban life and rural life have been facing gender discrimination in family life as well as in socioeconomic national affairs. Social scientist have arrived that equal status and equal participation of women in decision making at all levels is highly essential in Indian society. In India gender inequality is still a port of our male dominated society. The traditional mentalities of Indian assume that the place of women in a family is mainly concentrated to the household activities like household work and rearing of children for which women in general are simply being disregarded in our society. Unfortunately women have been treated by men as second rate citizen in our country. The need for women's empowerment arises from the subordinate position they have been accorded for a long time.

The process of women empowerment requires equal and active share for women has to deal with the burden of ideas and values which are passed on to women as part of their socialization process from their very childhood. Women's empowerment indicates power and relationship in society intertwined with gender, race, culture, race and history. The process of empowerment includes mobilizing women to reduce the gender gap in family as well as in community. One of the major aspects of women empowerment is to change the attitude of entire society in every field towards women. Unless the members of a society change the basic social attitude which cultivate gender inequality and gender discrimination, the women empowerment cannot be achieved in reality.

Empowerment has been used to represent a wide range of concepts. By empowerment of women in contemporary society is generally meant that the conferment of equal status in all issues related to family well-being and socio-economic as well as cultural affairs, providing for participation in decision making in all such matters. Commonly in Indian society women have never been allowed to think for their status or position or to make their own choices except in unusual circumstances when a male decision maker has been absent.

The motto of women empowerment is to inspire women with the courage to break free from the barriers of limiting belief patterns and societal or religious conditioning that have traditionally kept women suppressed and unable to see their true beauty and power. Empowerment related with the condition and position of women in a family, community or society. So, one of the major aspects of women empowerment in India is to change the age old conservative attitude of society towards women in contemporary life. The continuity of several changes in socio-economic and psycho-cultural aspects of human living has influenced the status or position of women in a society but numerous issues still exist in all areas of life, ranging from the cultural, political to the economic.

Taking women's empowerment seriously means putting gender equality at the center of the human development equation. The position of women in a society is the index of the standard of its social organization. In India there were distinct stages of rise and fall in the position of women. During ancient period the women were given an equal status along with men in almost every field of life. In early Vedic period the women received higher education and participated in the discussion of political and philosophical nature with male scholars. The Vedas, the Upanishads, the Epics and the Puranas mentioned several names of the lady scholars, philosophers, poets in ancient India. Gargi and Maitreyi were leading philosophers of early Vedic age. In Rig Veda the wife has been blessed to live as a queen in the house of her husband.

The word "Dampati" so often used in the Vedic texts, the term meant "two joint owners of the household". No man was allowed to perform religious duties without a wife. Thus the position of women in ancient Vedic age was based on liberty, equality and cooperation.

The position of women gradually declined in Post-Vedic period as well as in medieval India. In course of time, the girls were denied of formal education. The marriageable age of girls came down to 8 or 10 years, which increased the number of widows. The ancient Indian ideal of the equality of male and female was finished and women were considered to be slaves of men. In Buddhist and Muslim periods, the status of women was deteriorated even further. The 'Sati' and 'Purdah' system were practiced during the Muslim period.

The position women further declined during the British rule in India. Even about a century back the position of India was almost the same as it was in the medieval period. The principles of Hindu social organization were formulated by mostly males who kept the women without equal rights in her social life. For centuries, the Hindu women tolerated all types of cruelties at the hands of males. The male made her a way of entertainment and put the entire domestic responsibility over her head. Ordinarily, the celebrations of the birth of a son are definitely more joyful than those of the birth of a daughter. The daughters were usually not given equal rights with the son in the matter of food, cloth, education etc. Generally, they often married without their consent. In the house of the husband all members of the family consider the daughter-in-law as a servant of the family, whose main duties includes to obey everybody, to get up earliest and to sleep late, to eat whatever remains after others have eaten and not to complain

anything about anyone.

With the advent of women's education in India and the influence of the western countries, together with the efforts of social reformers of contemporary India after independence, the low status of women in Indian society started change slowly. After Indian independence, the constitution, makers and the national leaders not only recognized the unequal social position of women but saw to it that women would get equal rights with men. The concept of equality has been enshrined in the constitution of independent India.

The constitution of India guarantees for equality between men and women in article 15. It also prohibited any discrimination on the basis of sex. But still women remain bound by cultural, political and economic constraints that prevent them from attaining absolute equality with men. The past three decades have witnessed a steadily increasing awareness of the need to empower women through measures to increase social, economic and political equality, and broader access to fundamental human rights, improvement in nutrition, basic health and education. Along with awareness of the subordinate status of women has come to the concept of gender as an overarching socio-cultural variable, seen in relation to other factors, such as race, class, age and ethnicity.

Gender is not synonymous with women, nor it is a zero-sum game implying loss for men; rather, it refers to both women and men, and to their status, relative to each other.

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Standard Products and Consumer Protection : A Study of Awareness Levels of Undergraduates

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1. Introduction:

Consumer in India is taken for granted as one who has to anyhow buy in order to live. Under globalization due to the heavy competition among the manufacturers and traders, wide variety of goods is dumped into the market. The manufacturers and traders cleverly manipulate the quality of the goods and release substandard and fake goods into the market. Consumers are exploited to the greatest extent possible through easy means like selling substandard and low quality products, false labeling use of deceptive or fraudulent weights etc. these are not only the uneducated poor but even the learned and powerful consumers are lured into buying the spurious and substandard goods and receive deficient services. Consumer has the right to get protected against damage to his property and person, product should not cause any physical danger, health hazard or put the consumer in any difficulty due to failure. Government, trader, Manufacturer and consumer have to ensure the safety of the product in the Market.

2. Consumer Protection :

The Consumer Protection Act, 1986 has legalized the right to safety as one of the consumer right. The consumer's protection consists of laws and organizations established to promote the rights of consumers and a set up for a fair trade competition and the free flow of the truthful information in the market. The consumer protection Act and other laws related to consumers are enacted with an intension to prevent businesses that engage in fraud or unfair practices from gaining unlawful advantages over competition. Consumers are protected by the state with three types of organs of the state, i.e. legislature for enactment of laws to protect the interest of the consumers, Executive to strict enforcement of laws and judiciary to aggressive punishment of erring party and valuable suggestions for modification of existing consumer protection laws. These consumer protection laws are form of government regulation which aims to protect the rights of the consumers in the country. Consumers interests can also be protected by promoting fair competition in the markets which directly and indirectly serve consumers, fair market promote economic efficiency, consumer protection is a coordinative activity by both government, Consumer voluntary organizations and connected line departments. Consumer must be alert and aware of consumer rights and responsibilities. He should be able to recognize the standards of goods and services through the certification marks given by bureau of Indian Standards (BIS).

2. Significance of the Study:

Owing to technological advancement in the economy due to globalization, a wide variety of products and services is available in the global market. Nowadays using some products requires technical knowledge. Consumer may not be aware of the safe use of the products in the global competition; there is a need for consumer education and protection. Consumer needs the

knowledge of safety aspects of the products and services. There is a need for utmost care on the safety of the products from the consumer's point of view.

3. Objectives of the Study:

The study is intended to focus on the following objectives

To focus on the legislative measures of consumer protection in India.

To know the awareness among the consumers about the Consumer protection Act.

To know the awareness level among the Standards of weights and measures Act, 1976

To identify knowledge levels of consumers about the certification marks

4. Methodology of the Study:

This study attempts to know the status of consumer protection and knowledge level of undergraduates about the Certification Marks for standards availing right to safety.

The study undertaken in Mahabubnagar district by collecting the primary data. Thirty samples were selected randomly from undergraduate colleges in the Mahabubnagar district to conduct the study by using a structured questionnaire. Appropriate statistical methods are adopted to make analysis and interpretation under the study. The present study falls under the category of exploratory research study, the data collected is primary in nature related to awareness level of standards of products and services, the awareness of protection measures and for conceptual frame work secondary data collected from various journals, reference books related to consumer education, protection and empowerment.

The present study analyzes the consumer awareness on protection and standardization for safety of goods and services.

5. Discussion of Related Issues

5.1 Legislative Measures For Consumer Protection In India:

In India our parliament passed the consumer protection Act in 1986. This Act is to promote and protect the rights of consumers. The Act provides a three-tier quasi judicial system for effective disposal of consumer disputes District forum of each District, State Commission for every state and the National Commission at the Apex level. Consumer protection Act provides for the establishment of the consumer protection councils at the National, State and district Levels. The consumer protection councils are to help the respective governments to adopt, review policies for promoting and protecting the rights of the consumers. Consumer protection councils are to promote and protect rights and interests of consumers in the society. The following are some of the important consumer protection laws. They are Indian penal code, Indian contract act, The sale of goods act, The agricultural produce act, Drugs and cosmetics act, Drugs and magic remedies act, Prevention of food adulteration act, Essential commodities act, Monopolies and Restrictive trade practice act, Hire purchase act, Standards of weights and measures act, Prevention of black marketing and maintenance of supplies of essential commodities act, Bureau of Indian standards act, Environment protection act, The railways claims tribunal act, Consumer protection act, Electrical appliances (quality control) order, Cable television network act,

5.2 Standards for Protecting the Safety Right of the Consumers:

The right to safety means the right to be protected against product, production process and services which re hazardous to health or life. To protect consumer's interests, to assist the consumers in product selection and to assure the quality of product, organizations for standardization in various countries are playing a vital role in preparing the product standards.

In India, Bureau of Indian standards is engaged in formulation of standards. These standards indicate the standard and the quality of the products. BIS issue the certification Mark on the product as an indication of guarantee of safety in use. Those certification marks indicate that the product is tested and proven safe for use. As rightly said the prevention is better than cure, consumers must aware about the standards of the product before they buy the goods and services.

5.3 Results of Empirical Study:

The present study an attempt is made to know the knowledge level of the consumers' awareness on various issues related to certification marks, the selected sample representative are chosen for evaluate their awareness based on their opinion with yes or No response on awareness.

5.3.1 Age

The age of the consumers ranged from 17 to 22 years. Majority of the sample (75%) was in the age group of 17-19 years and the age of nearly one fourth samples (13.33%) ranged between 19-22 years. The sample respondents are studying the under graduation courses like B.A., B.com & B.Sc in Mahabubnagar town. The mean number of years of education was 12.233 years with a standard deviation of 1.278.

5.3.2 Source of Information

Usually the consumers get information on various issues related to their rights from newspapers, T.V, Radio, Cinema, books etc. Most of the students acquired the information about consumer awareness on certificate Marks through newspapers (33%), journals (10%) and from their course syllabus (57%).

5.3.3 the responses of the sample are shown in the following table.

Table –1 Awareness on the Consumer protection Act

S,No		awareness		Not aware		Mean	S.D
		No. of respondents	Percentage	No of respondents	percentage		
1.	Consumer protection Act, 1986	16	53.3	14	46.6	1.53	0.50

(Source: Primary Data)

The table depicts that majority of sample respondents 53.3 %(16) was aware of consumer protection Act, 1986, whereas 46.6 %(14) of the sample respondents was not aware of the consumer protection act. The mean size of the sample was 1.53 with a standard deviation of 0.5.

Table-2 Awareness of the consumer on various issues related to certification Marks

S,No		awareness		Not aware		Mean	S.D
		No. of respondents	Percentage	No of respondents	percentage		
	Bureau of Indian standards Act, 1986	23	76.6	7	23.3	1.76	0.43
	Standards of weights and measures Act, 1976	21	70	9	30	1.7	0.46

1	ISI Mark	29	96.6	1	3.3	1.96	0.18
2	FPO	24	80	6	20	1.8	0.40
3	AG Mark	25	83.3	5	16.6	1.83	0.37
4	Eco-Mark	24	80	6	20	1.8	0.40
5	MPO	23	76.6	7	23.3	1.76	0.43
6	Wool Mark	16	53.3	14	46.6	1.53	0.5.7
7	Hall Mark	20	66.6	10	33.3	1.66	0.47
8	HACCP	11	36.66	19	63.33	1.63	0.49
9	ISO	20	66.6	10	33.3	1.66	0.47
10	Silk Mark	2	6.6	28	93.3	1.1	0.30

(Source: primary Data)

Table 2 depicts that the following observations in regards to the awareness on certification Marks of standards of the products and services.

1) BIS: In response to the awareness on Bureau of Indian standards Act. The majority of the sample respondents nearly 76.6% were aware about BIS, whereas 23.3% of the sample respondents were not aware of the BIS. The mean size of the sample was 1.76 and the standard deviation is .46.
2) Weights and standards measures Act, around 70 % of the sample respondents are aware about the weights and standards measurement Act.
3) ISI Mark: In response to the awareness on the certification Mark of ISI: the majority of the sample respondents nearly 96.6% were aware of ISI Mark.
4) FPO Mark: In response to the FPO Mark, Nearly 80% of the sample respondents are aware of the Fruit product order, only 20% was not aware of this mark.
5) AG Mark: In response to this, nearly 83.3% sample respondents was aware of the AG Mark and only 16.6% respondents are not aware about the AG Mark.
6) Eco-Mark (Eco-labeling scheme) around 80% of the respondents aware of Eco-mark and whereas 20 % do not know about the eco mark.
7) MPO (Meat products order), nearly 76.6% sample respondents are aware about the meat products order, and 23.3% of respondents are not aware about it.
8) Wool Mark, The majority of the sample (53.3%) was aware of wool Mark, whereas (46.6%) of the sample was not aware of.
9) Hall Mark, around 66.6% sample respondents were aware about the Hall Mark and rests are not aware about the Hall Mark.
10) HACCP (Hazard Analysis and Critical Control point), nearly 63.3% of the sample respondents are not aware about the HACCP and rest 36.66% only aware about the HACCP.
11) ISO (International Organization for Standardization) around 66.6 % samples are aware of ISO of their services, whereas 33.33 % are not aware of the certification.
12) Silk Mark: Around 6.6% of the sample respondents only aware of silk mark and 93 % are unaware about the silk Mark.

6. Conclusion:

The above study concludes that majority of the under graduate consumers are aware of the certification Marks in identifying the standards of products and services in the market, that they aware about these through newspapers, journals and through their syllabus in their studies.

It is the responsibility of the government to formulate policies to ensure that manufacturers compensate for defective or hazardous products, ensure that consumers are properly informed of any hazards by manufacturers.

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3. Consumer Protection in India,
4. Newspapers
5. Consumer Education, Teacher guides Manual, Govt. of AP

Content Analysis of Annals of Library and Information Studies (2018-2021)

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Abstract:

The present study investigated the trends of LIS Journal "Annals of Library and Information Studies"by analysing articles, authors and LIS subjects covered in the articles. Quantitative content analysis was carried out for which the data was analysed in order to project literature growth, authorship pattern and related bibliometric phenomena.

Key Words: Content Analysis, Research in library science, Annals of Library & information studies, Bibliometric study, Scientometrics and Informetrics

Introduction

The field of library and information science (LIS) has experienced significant growth in recent years. Analysis of scholarly production through bibliometrics facilitates interpretation of the structures of and trends in particular disciplines. Such bibliometric analysis affords identification of the characteristics of a research field, and can contribute to revealing future research topics. This analysis can be implemented at different levels to suit the nature of the actors under investigation; for instance, at the national (countries), individual (authors), or institutional (universities and research centers) level. Further, bibliometrics can serve to identify collaboration patterns among authors and, through keyword analysis, thematic overviews of a scientific discipline. Along with allowing researchers to investigate authorship and collaboration, bibliometric analyses can be implemented at a conceptual or intellectual level. As a consequence, studies have found that geographical distance, specialization patterns, and cultural proximity are significant factors that positively affect scientific collaboration between regions. Further, it has also shown that, in regard to international collaboration, advanced knowledge and technologies are of primary interest.

Annals of Library and Information Studies

Annals of Library and Information Studies is a quarterly journal in library and information studies publishing original papers, survey reports, reviews, short communications, and letters pertaining to library science, information science and computer applications in these fields. It is an open access academic journal, published since 1954 by the CSIR-National Institute of Science Communication and Information Resources (CSIR-NISCAIR), formerly the Indian National Scientific Documentation Centre. It covers library and information science, scientometrics, and documentation and is listed in Library and Information Science: A Guide to Key Literature and Sources. At its founding, the journal was titled Annals of Library Science. In 1964, the name was changed to Annals of Library Science and Documentation. The current title was assigned in 2001. The founding editor was S R Ranganathan, who contributed to about 50% of the articles during 1954 to 1963.

Content Analysis

Content Analysis is a Research tool used to determine the presence of certain words or concepts within texts or sets of texts. As its name implies Content Analysis is the analysis of

contents for a particular purpose of the records of human experience and of knowledge. Researcher quantify and analyze the presence, meaning and Relationships of such words and concepts, then write, audience and even the culture and time of which these are a part. Text can be defined broadly as books Books, Chapters, Essays, Interviews, Discussions Newspaper headline and Articles, Documents. Speeches. Conversations. Advertising, Theatre, Historical Informal Conversations or really any occurrence of communicative language. Contents self occupies a central position in the communication process and is the body of meanings through symbols, that make up communication.

Content Analysis is a practice of Reading, Viewing or Listening. Whenever a person reads a written communication or listens to a Speech or observes a phenomena and then summaries or interprets, content analysis takes place. acquire meaning through their conceptions to other symbols. The Method of content Analysis has been used to so large and diverse a group of Materials with respect to so large and diverse as set of problems that is not easy to order the use in a single classification. However this set in a single classification. However, this set of uses is presented here as a list, not as a classification system. That is there is no claim that the use from a logically coherent organization or that they are classified on a single dimensional base. This classification has been inducted form the major purpose of the studies and as such it presumably reflects the central problem to which the method has been applied. content analysis plays an integral role in the development of artificial intelligence.

Scope

The study is confined to volume 65 to 68 during the period of 2018-2021.

Methodology

Since this study has been designed to analyse the content of the articles published in "Annals of Library and Information Studies" the use of survey method has been found suitable. The survey method is an acceptable device for collecting data or factual information on certain decided characteristics or items of a universe of population. For the analysis of the study, volumes (65 to 68) containing 16 issues of "Annals of Library and Information Studies" published during the year 2018 to 2021 have been taken up for evaluation. The details with regard to each published article such as number of articles in each issue of the journal, number of authors, name of authors, place of authors, number of references and their forms,number of pages, etc., were recorded and analyzed for making observations. The data were collected; organised and analysed.

Objectives of the Study

1. To find out average number of articles in each volume.
2. To know the authorship pattern of Articles
3. To know subject wise representation of Articles.
4. To know the geographical distribution of Articles
5. To know the overall publication trend of the journal.

Data Analysis:

Table 1 : Distribution of Articles by Volume

Year	Vol. No.	No. of Issues	No. of Articles
2018	65	4	28
2019	66	4	20

2020	67	4	27
2021	68	4	32
Total			107

Table 1 shows that total of 107 Articles have been published since 2018 to 2021. which consists of full articles. Maximum number of articles i.e., 32 (29.9 %) has been published in 2021 and minimum number of articles i.e. 20 (21.4 %) in 2019.

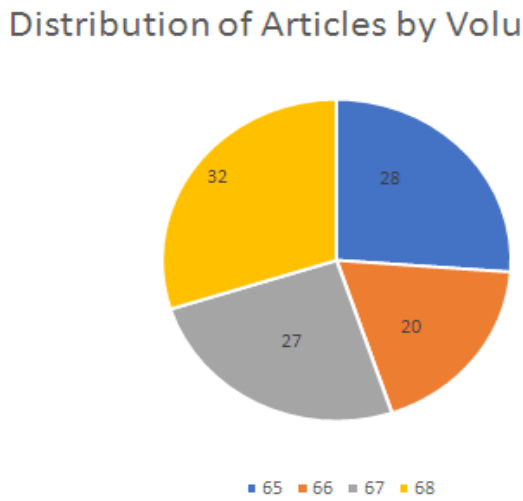


Table 2 : Volume wise distribution of Contributors

Year	Vol. No.	No. of Issues	No. of Contributors
2018	65	4	54
2019	66	4	39
2020	67	4	51
2021	68	4	59
Total			203

Table 2 shows no of contributors have contributed for each volume. Maximum number of contributors i.e., 59 (63.13 %) have contributed in 2021 and minimum number of contributors i.e. 39 (41.73 %) have contributed in 2019.

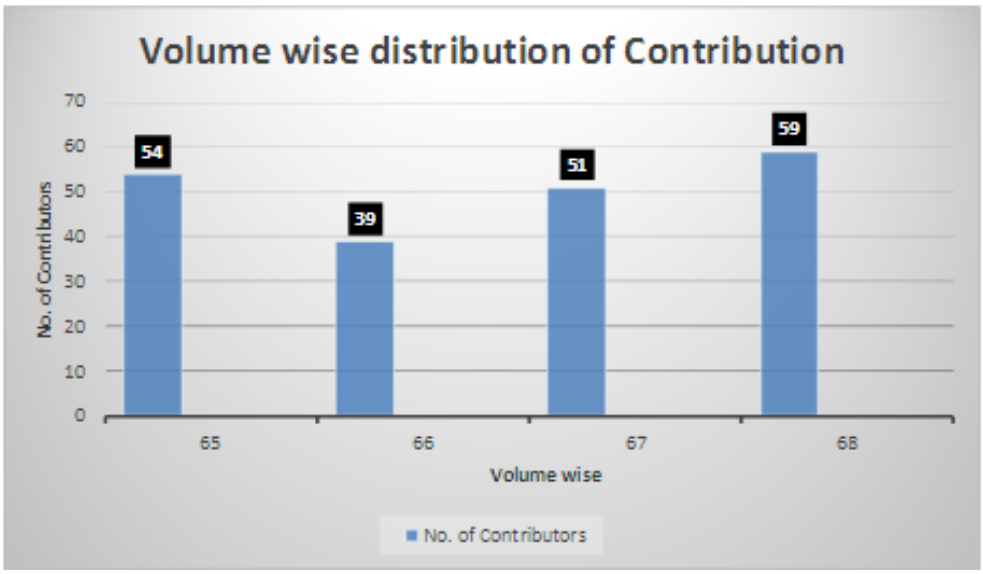


Table 3 : Authorship Pattern of Contributors

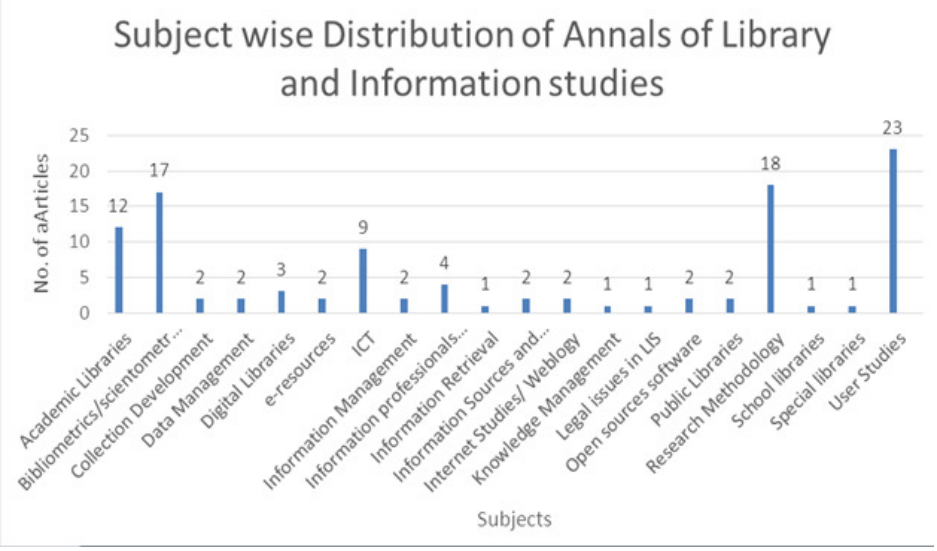
No. of Authors	No. of Articles
One	31
Two	59
Three	14
More than Three	3
Total	107

Table 3 shows Authorship Pattern of Contributors. Combination of Two authors lead the table with 59 contributions i.e.(63.13%). More than three authors cane be seen in less numbers with 3 i.e. (3.21%).

Table 4 : Subject wise Distribution of Annals of Library and Information studies

Sr. No.	Subject	No. of Articles
1	Academic Libraries	12
2	Bibliometrics/scientometrics	17
3	Collection Development	2
4	Data Management	2
5	Digital Libraries	3
6	e-resources	2
7	ICT	9
8	Information Management	2
9	Information professionals and librarians	4
10	Information Retrieval	1
11	Information Sources and Services	2
12	Internet Studies/ Weblogy	2
13	Knowledge Management	1
14	Legal issues in LIS	1
15	Open sources software	2
16	Public Libraries	2
17	Research Methodology	18
18	School libraries	1
19	Special libraries	1
20	User Studies	23
Total		107

Table shows that total of 107 Articles have been published related to 20 major subject areas. Maximum number of articles., i.e.18 (19.26%) are based on Research Methodology followed by Bibliometrics or scientometrics i.e 17 (18.19 %)

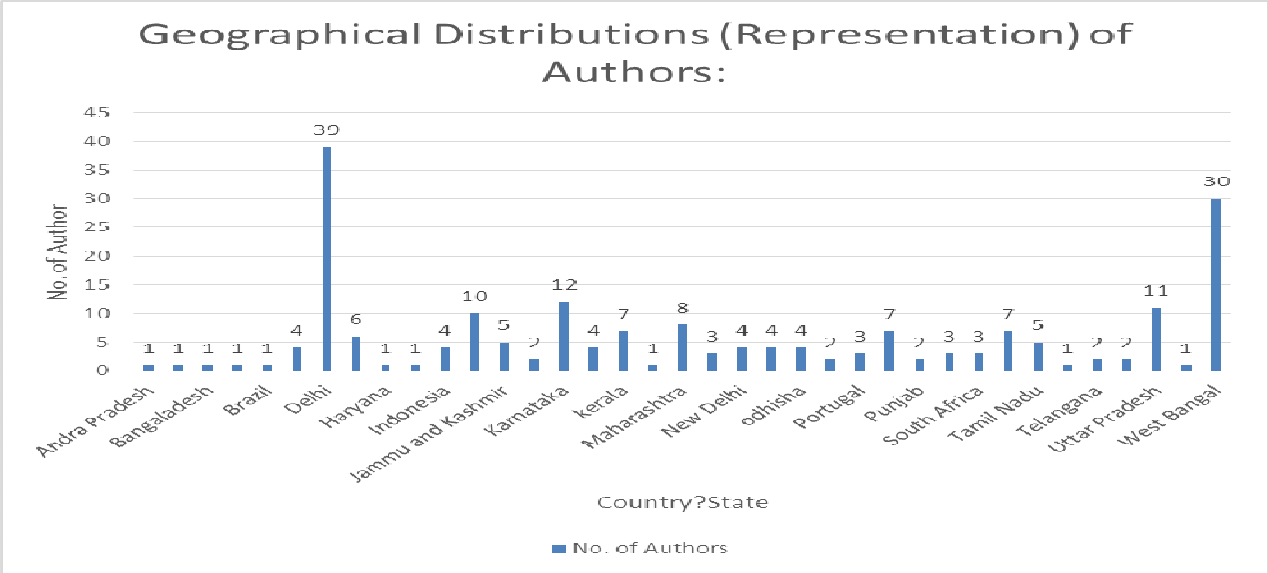


. **Table 5 : Geographical Distributions (Representation) of Authors:**

Sr. No.	Country/State	No. of Authors
1	Andra Pradesh	1
2	Assam	1
3	Bangaladesh	1
4	Bihar	1
5	Brazil	1
6	China	4
7	Delhi	39
8	Gujarat	6
9	Haryana	1
10	himachal pradesh	1
11	Indonesia	4
12	Iran	10
13	Jammu and Kashmir	5
14	Japan	2
15	Karnataka	12
16	Kazakhstan	4
17	kerala	7
18	Madhya Pradesh	1
19	Maharashtra	8
20	Mizoram	3
21	New Delhi	4
22	Nigeria	4
23	odhisha	4
24	Poland	2
25	Portugal	3
26	Puducherry	7
27	Punjab	2
28	Rajasthan	3
29	South Africa	3
30	Sri lanka	7
31	Tamil Nadu	5
32	tamilnadu	1
33	Telangana	2
34	Turkey	2
35	Uttar Pradesh	11
36	Uttarakhand	1
37	West Bangal	30
Total		203

Table shows information about Geographical i.e., Country or state wise distribution of Articles. It can be observed from the table Contributors from Delhi state have contributed in maximum

numbers i.e (41.73%). Contrarywise from other than India Iran shares 10 contributions i.e (10.7%).



Findings & conclusion:

1. The analysis indicates that there were 207 articles published during 2018 to 2021.
2. The authorship pattern indicates that the majority of articles published with Two authors pattern.
3. The subject coverage of this journal is mostly towards bibliometric and scientometric study along with covering other LIS subjects in the articles.
4. With respect to Geographical Contribution Country wise India topped the list & with respect to states, Delhi stood first. With respect to International Contributions Iran shares its major part.
5. The analysis of data clearly indicates that Annals of Library and Information Studies have established themselves as a most viable media for scholarly communication in Library & Information Science.

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Women Empowerment and Sensitization in India

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Abstract :

From old occasions, India has taken a provoking errand to decreasing the neediness rate, and sharpens the second sexual orientation of society. It was a progressive interaction since cultural standards and decides were produced that ladies are enslaved by the men and they didn't reserve the option to do anything they desire. This exploration paper investigates the current situation, what constitution gives the right to ladies and what are the real factors among them. In country India canal of the ladies are uninformed and they don't think about her right that is the reason these ladies are overwhelmed by the men. So ladies strengthening is significant in country regions. This examination paper is begun with presentation of ladies strengthening and in center part are manages the laws and guidelines passes by the public authority for ladies upliftment. The third part is finishing up for certain ideas.

Keywords: women empowerment, gender sensitization, Indian society, gender inequality, constitution

I. Introduction :

India has taken a provoking errand to modernize the Indian culture by lessening destitution rate and working on the way of life of the greater part of the number of inhabitants in country. Ladies have assuming an essential part to work on the financial state of any subcontinent. A developing country needs the great monetary and government managed retirement, all types of people need to assume equivalent part in the general public. Also, in these interaction ladies strengthening is the main factor in the public arena. Indian constitution conceded the equivalent privileges for male and female both yet on the off chance that we saw the genuine circumstance ladies are wellspring of oppression in the general public. They are beaten by their better half; they don't need to right to training and so forth Indeed, even in the cutting edge world a large portion of the young ladies are not heading outside and they don't have even essential level training and wedded in the early age. Young men are carrying on with a superior life in contrast with the young ladies and these distinctions made by their folks as a result of their old practices. India is a non-industrial nation and any nation ought not be created until ladies don't have equivalent cooperation in the monetary development.

Sex disparities are still profound issue in each general public; they endure absence of admittance to fair work. By and large, ladies are denied to admittance to essential training and surprisingly in medical services and the survivors of infringement in the Indian culture. All the piece of India even in contemporary time ladies not has right to essential instruction. They are not piece of the political and dynamic cycle being developed.

Ladies strengthening alludes ladies are turning out to be incredible and competent to take their fundamental products and choice own self. At the point when ladies have equivalent force in the public eye, it should be grow up exceptionally high. Yet, not just Indian situation even a large portion of the piece of world ladies have experienced thousand years and treated as practically non-existent.

Practically the entire world, regardless of how moderate they are, has a long history of the compromising of ladies. In India ladies strengthening and sexual orientation refinement is required more than different nations since they are uneducated than the men and other piece of society from some time in the past. Ladies are undependable in this country. They are annoyed by their family, work environment and others in view of the sexual orientation hole. There is different reasons:

- Danger of honor killing
- Unsupportive family conduct
- Early relationships of young girl's

Renewal in Indian culture with exceptional reference to sexual orientation contrasts is just conceivable through sex sharpening. It alludes to the disposition, jobs, exercises and conduct of people in the general public. It is dynamic impacts by society while the term 'sex' alludes to organic and physiological qualities of guys and females. Refinement means to change their biases and discriminative conduct towards the oppressed part of society like ladies.

'Sexual orientation refinement' alludes to alterations of conduct by bringing issues to light with regards to sex balance concerns. In any case, strengthening implies moving from a frail situation to a solid situation to travel the force. This is doubtlessly a negative mentality against the regular attributes of people. A new overview featured that the reality in the event that we requested to school understudy who should forfeit supper, in case it is short on the dinning table the greater part of replied, the mother as the best option followed by the sister or other female individuals living in family. Presently the inquiry comes that why male part are not penances the supper and why they eat first on the dinning table. This is a sharp separation among people as far as the strength and blue collar limit and so on This sort of sex separation happens ladies in their families consistently yet they overlook. Overall faith in the public arena that female need security and more fragile area in the public eye. These convictions make a significant hole among male and female in Indian culture.

II. **Status Of Women In India:**

There has been weighty change in the situation with the ladies in contrast with old to present day time frame. In contemporary period ladies have a piece of totally in regions like legislative issues, military areas, financial, administration, and innovation areas? Hence, ladies have involved a noble situation in her own family and Indian culture. Nonetheless, finishing violations against ladies is as yet a test in n society. We can do it less by guaranteeing ladies independence, expanding support and dynamic cycle in the family and public life. India have half of the populace identified with females. In Indian constitution laws and plans are made with practically no segregation. Therefore numerous ladies have delighted in elevated place in our general public. Ladies strengthening and sex imbalance is fundamental for any general public to accomplish the objective of reasonable improvement in our country. Subsequently ladies have taken an interest in different exercises with men. They serve diverse sort of job, for example,

MLA, MP, IAS, IPS, Governor and so forth In current India numerous model written in history like Indira Gandhi, pratibha Devisingh Patil, lata mangeshkar, sushma swaraj and so on The vast majority of the female are additionally going in the field of workmanship, science and innovation.

Overall the genuine status of ladies in India is far beneath, they are consuming, tormenting for disappointment of installment of endowment as individuals are requested to young lady side in all over piece of the India. Indian constitution gives the many freedoms to save the greatness of ladies and rules against settlement yet in real it's unrealistic at ground level. The proficiency pace of ladies is additionally lower in contrast with men. There status shows that the genuine status of ladies in India isn't acceptable.

Constitutional and Legal Provisions for women empowerment in India

Indian constitution constitutes the equal rights for women in all the way such as fundamental rights, directive principles. The constitutions of India not only granted equal rights but it will also talks about empower the state to adopt measures of positive discrimination in the favour of women. The constitution speaks the developmental policies, plans and programmes have are the women empowerment in different forms.

Constitutional provisions :

Fundamental rights granted a free environment among others to ensure the gender equality before the law and protection of women. Discrimination against any citizen of India on the grounds of religion, race, caste, sex or place of birth and equal opportunity to all. Article 14, 15, 15(3), 16, 39(a), 39(b), 42 etc. Of Indian constitution are specific importances on the regard to women empowerment.

3) Equality before law for women (14)
4) The state should not discriminate to any citizen on the basis of their religion, race, caste, sex and placeof birth. Article 15 (1)
5) Some special provisions for women and children. Article 15 (3)
6) Equal opportunity for all citizen. Article 16
7) To promote justice, on the basis of equal opportunity and Legal aid. Article 39 (a)
8) To save the dignity of women. (Article 51 (a) e)
9) One third seats reserved for women in panchayats. Article 243 (3)

Legal Provisions:

Women may be victims of any of the crimes like murder, robbery, cheating, etc. The crimes directed againstwen are characterized as ' Crime against women's. These crimes are two types.

The crime under Indian Penal Code

10) Rape (sec 376IPC)
11) Kidnapping and abduction for different purpose (sec 363-373)
12) Homicide for Dowry, Dowry deaths or their attempts (sec 302/304-b IPC)
13) Molestation (sec 354 IPC)
14) Torture (mental and physical) (sec 498-A IPC)
15) Sexual harassment (sec 509 IPC)
16) Importation of Girls (up to 21 years)

The crime under special law

17) The employees State insurance act, 1948
18) The family courts act, 1954
19) The special marriage act
20) The Hindu marriage act , 1955
21) The Hindu succession act, 1956 with amendment in 2005.
22) The maternity benefit act, 1961
23) Dowry prohibition act, 1961
24) The medical termination of pregnancy act, 1971
25) The prohibition of child marriage act, 2006
26) Indecent representation of women (prohibition) act, 1986
27) Commission of Sati prevention act, 1987
28) The protection of women from domestic violence act, 2005

Special initiatives for women

- ✓ National commission for women - Jan1992
- ✓ Reservation for women in local self government, 1992
- ✓ The national plan of action for the girl child (1991-2000)
- ✓ National policy for the empowerment of women 2001

The arrangements started by the public authority of India is working in the neighborhoods what is the Realities among this load of approaches and changes. In case we are going in towns regions there are quantities of endowment cases occurred however specialists can do nothing on the grounds that the vast majority of ladies not scrutinizing their folks regarding this matter that for what reason should they share to kid side. A portion of the homicide, young ladies consuming and so on Occurred yet there is no any instances of this in light of their pride and social practices.

III. Stages For Women Empowerment And Gender Sensitization :

1. Empowering ladies :

Initially individuals living around ladies have adjusted their outlook for ladies. The public authority and other establishment started many plans, for example, equity for ladies in all areas like open positions, confirmations and so forth In the current society the strengthening of ladies can be finished through just given the uniformity and enable themselves. It is major ideal for any resident of India to decision anything what they need with practically no viciousness and opportunity to take part increasingly more in party. Sexual orientation refinement is assuming key part endeavor to engage the ladies.

2. Importance of Gender Equality :

Sexual orientation Equality guarantees the equivalent chances, freedoms for ladies in each circle of life. This additionally talks fairness as they would like to think, monetary autonomy, business, equivalent access in all offices.

3. Shifting of Roles :

The jobs played by ladies in the public eye are presently evolving. In present situation ladies are appears to be equivalent in all friendly exercises. The pretended by men's in past occasions now it play by the ladies moreover.

4. Identification of their necessities :

The jobs played by female in the public eye need to decide. This is represented by the age factor, metropolitan/provincial direction economic wellbeing and instructive fulfillment too. Ladies have normal interests, the decisions that have change by locale by district.

5. Compulsory training for each young lady youngster :

In the Indian constitution the essential instruction is compulsory for all and it's exceptionally important in the advancement for society. All around the world have now putting away the loads of cash for the instruction and improvement of young ladies and it's assuming a major part in the decrease of destitution. Taught young ladies wed later and bring in cash for the endurance of their families. They are more mindful with regards to her medical care and preferable overseers over the uninformed ladies**.**

IV. Needs Of Gender Sensitization :

Ladies are playing multi job in the public eye however they separated not just the belly of their mom and youth yet additionally every phases of their life. They assumed an amazing part in the advancement of society just as for their country. Disregarding this load of quantities of issues looked by them in their everyday life. In race of many difficulties they can possibly self-improvement and carry on with a superior life for the endurance in the public eye.

In Indian setting ladies confronted many difficulties like abusive behavior at home, proficiency rate and so on The Indian culture is male centric culture and female have confronting hard principles to get by in the general public. They have constrained marriage in early ages , endowment rehearses is one of the most exceedingly terrible practice coming from old to introduce. Which have a major reason for female self destruction, consuming by their relatives and so forth? Every one of the difficulties looked by them identified with sex assessment and balance are the consequence of 'sex belief system'. There is a few different reasons for the sex issues in the Indian culture:

- Individual-absence of mindfulness, corruption of qualities and morals.
- Education-proficiency rate among female are extremely low.
- Employment-ladies confronted time usage issue and this is the reason for they don't go for work place.
- Political-absence of cooperation of ladies in political exercises and dynamic.

In light of the previously mentioned different causes ladies' should be liberal, sane and delicate to defeat in sex balance. The need of the sharpen the ladies in the all piece of globe.

Strategies to promote Gender Sensitization in India

Providing the equal opportunities to women in educational, business sector etc. In general it granted by the constitution but when we come in realities it not same as written in papers. UGC and others bodies also promote the women studies and established women center in many pioneering educational bodies.

29) The teacher must be give equality in their teaching I'm classroom, decision making and choices.
30) By encouraging educational activities in basic and elementary level.
31) Feeling of safety measure in environment.
32) Style of treatment by the family and elders.
33) Seminar, conferences, workshop organized by the educational bodies to debate on womenempowerment and gender sensitization.

34) Equality in human rights and justice.
35) To stop gender based violence's in society.
36) In the remote areas training centers organized by the governing bodies.

In right now the state of ladies is totally improve than past time yet there are a lot of requirements to advancement in additional spaces. India have man centric framework and it's hard to change the outlook of individuals and set an equivalent attitude utilizing for male and female both. The general public where female consumed for the a few bits of paper (cash) by their relatives, where they living in dread of misuses, it extremely simple to develop and change the attitude of this family yet many arrangements allowed by the public authority it's evolving now. They have make due from the merciless circumstances and living a tranquil climate in regular day to day existence.

V. Conclusion :

Our overwhelming male centric framework doesn't give equivalent freedoms to ladies to come in advanced education ever on the off chance that they have wish. Young ladies ought to be propelled through advanced education by the sex sharpening. Mahatma Gandhi expressed, "On the off chance that we instruct a man you teach an individual yet on the off chance that you teach a ladies you instruct whole family". The assertion is valid on the grounds that a man just living in his family yet a young lady taught her dad families just as her significant other families as well.

It is inferred that the constitution dispatched many guidelines, laws for the strengthening of ladies to working on their fortune and greatness by formative plans however the issue looking by ladies in India is still need to wanted. The first concerns of government to further developing female proficiency rate, making abilities and capacity to stand their own feet. The grass root issue of Indian culture is to offered the equivalent chance in instructive area. As Swami Vivekananda said-"that country which doesn't regard ladies will never became extraordinary now and not will even in future". During the time spent making India in the rundown of incredible country let us run after giving ladies their merited status.

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Soft Skills for Library Professionals

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Abstract:

Soft skills are necessary techniques in every profession, like that in library profession also need to learn soft skills. Though soft skills are techniques which are part of your personality, they can learn from your teachers and books. Soft skills help library professional to provide better library services to their users. Library professional need to learn these skills for betterment of their personal as well as professional life.

Introduction :

Library professionals need various skills to perform activities regarding library and information centres. There are mainly two skills i.e. hard skills and soft skills need for librarian to perform professional activities. Hard skills are regarding physical and technological competencies. These skills are needful to perform in any occupation. But along with these hard skills, some other skills also need to acquire for performing best in profession. These skills are called soft skills. Soft skills are skills regarding personality. These soft skills are influence how we interact with each other. It includes abilities as effective communication, creativity, team building, problem solves, leadership, speaking and listening skills.

Library professionals needs soft skills because, library profession is not related only activities regarding non-living things. Along with physical resources library professionals deals regularuly with human beings. To treat human beings softly library professionals need to learn soft skills. In past period these skills are not taking into consideration in library and information schools. But now days soft skills are largely introduced in every discipline along with library and Information Sciences.

Key words : Soft skills ,Library professionals, Hard Skills

Soft Skills Needful for Library Professionals:

1.Reading Skills : Vocabulary ,pronunciation and Fluency
2.Listening Skill
3.Speaking Skill
4.Writing Skill
5.Note Making Skill
6.Telephone Skill
7.Group Discussion Skill

1. Reading Skill:

Reading Skill necessary for librarian because if he/she not properly known to read how can he/she tell to reader how to read properly? Reading means not only to see the words by eyes .Reading understands of meaning of words. Understanding is core part of reading.

We can divide reading skill in to following sub-skills

a) Cognitive Skill – When we see word ,we understand its meaning thoroughly is called cognitive skill

b) Assessment Skill – Assessment skill is second step in reading skill, when we get understand meaning of word, we try to understand meaning of chain of words that is sentence.
c) Literally Skill – Literally Skill is the skill to understand meaning adhered to word in sentences.
d) Connotation Skill – Understanding meaning of sentences beyond meaning of word is called as connotation skill.

2. Listening Skill:

For interpersonal relationship between reader and library staff, communication between is very necessary. Human communicate words, symbols, gestures to understand each other. Speaking –Listening and Writing-Reading are the two major ways use by human for communication purpose. Principle of communication is to understand each other. Communication process can not be completed without understand to each other. Listener could not understand to each other because of listening without concentration. Listening skill is very much importance for working in library.

No any single organization run properly, if listening skill is not adopted properly by its human resources. When librarian and other library staff working in library, need to listen properly from seniors, colleagues, vendors. Working as chief of library, due to poor listening skill does not give proper order to junior staff. Bad listening skill may badly affect work of library. Good listening is an art. Research regarding good listening is shows that 25 to 35% we properly listen. Very large amount of information we lost due to our bad listening skill.

Principles of good listening:

- Listener should prepare before going to listen from speaker
- Make positive and constructive approach while listening from anyone
- Respect approach of speaker ,though we disagree to speaker
- Make eye contact with speaker and avoid internal and external distraction while listening
- Concentrate on content
- Make notes while listening
- Do not distrust speaker in mid.
- Evaluate owns listening in between
- Give positive response through eye contact and gestures.

3. Speaking Skill:

Speaking skill is important skill in any profession. Research shows that approximately 60 % time in any profession need to spend for speaking and listening. Confident people can speak properly. It is need to fix our purpose while speaking, and make control on our speech. Good speaking skill enriches the confidence of speaker. Speaker should take in to mind, how he/she make easy his speech to listener. Speaker should examine his/her speech, that his/her speech is fulfilling the purpose.

Principles of good speech –

- Physical behaviour of speaker
- Verbal behaviour of speaker
- Control over dias

4. Writing Skill:

When library grows in size and its function, it is not possible to one person to perform all duties in library. It needs to create various departments in library like Purchase department, Account department, Administration department, Stack department, Issue-return department, Periodical department. All these departments are interdependent. Library can do its function by its interdepartmental communication. Interdepartmental communication is less formal than external communication.Interdepartmetnal communication mainly done with the help of office order, circulars, Notice, Memorandum etc. While External communication is external communication of library.

5. Note Making Skill:

Notes making skill useful for library professionals in seminar, conference and workshops. Notes are taken mainly for two reasons

- To write down writer's or speakers main ideas
- Help to retain for preparing report of any work

There are some ideas while writing notes in seminar ,conference and seminars. Need not spend full time in writing notes because it divert to you from speakers speech. Use some techniques for taking notes. Like use symbols like lines, arrows, underline important sentences. Use various mathematical symbols like = ,#,≤ ,≥ etc. Use acronym as sec, min, hr., mth, kg etc. Use words that shorten the words like etc, cf , i.e. etc.

6. Telephone Skill:

Telephone skill is communication skill which happens without seeing to each other. Professional telephone communication is to the point. Telephone communication having its benefits like it saves time of both, and in recent there is facility of video conferencing and group discussion. Telephonic conversation help in reducing travelling means it helps in reducing the pollution.

Component of Telephone Conversation –

- Greeting
- Warm up
- Purpose
- Closing

Beginning of Conversation –

- Pick up phone as soon as it start ringing
- Greet the Caller
- State your organization
- Introduce yourself
- Other help

Benefits of Telephone conversation-

- Easy and quick to use
- Less expensive
- Distance is no matter
- No barrier
- Internet facility
- Audio,Vido and Image

There are needs to follow some etiquettes while starting telephonic conversation and during conversation.

- Speak in soft voice
- If not necessary, don't call at wrong time
- If not necessary, don't call through office phone for personal reason
- Speak shortly
- Don't disconnect conversation in mid.

7. Group Discussion Skill:

Group discussion technique is used for short listing candidate after written examination. This technique is useful for selection of right candidate for library. Candidates are observed by experts during their discussion and select right candidate for library. Following are some things observed during group discussion

- Leadership qualities
- Qualitative participation
- Analytical skill
- Problem solving skill
- Team spirit
- Non-Verbal behaviour
- Oral communication skill
- Handling skill of individuals
- Body Language
- Behaviour in group
- Decision-making capacity

Conclusion:

Soft skill is very necessary techniques for library field .It is necessary in daily routine. Soft skills are interlise not external. They help people for behave and properly communication. Soft skills are beyond the formal education .They are not learn from books but you can learn from your own experience. Soft skills not only help you in professional life but in your private and personal life they help you for better survive. Soft skills help to done expected works from peoples.

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Study the Use of Information Sources of Social Networking Applications by the Librarians

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Abstract :

The basic components of information literacy includes demonstrating how, when, and why to use various reference sources in an integrated way that will capture the user's attention at the teachable moment. Librarians should use different social networking applications to attract the readers. Social networking applications are useful to reach out the client. It means designing for socializing with friends and family and to network with professional colleagues. Ex. Facebook, Linkedin. Most of the students and teachers are using these social networking tools in education. It is also useful to share the new trends and approaches in library science. It is very useful tool to spread the knowledge in all over world. So the social networking tools are very useful to share innovations and to get update information in the world. Common Web 2.0 applications that have become sources of information include: Facebook, Blogs, Twitter, MySpace, You tube etc. In the present paper, researcher pointed out some of the key objectives about the use of social networking applications. In the present paper, researcher also discussed objectives of research, delimitations of the study, research methodology, research sample, research tools, research procedure, statistical procedure, analysis of data etc. At the end, researcher pointed out the research findings also.

Key words - Social networking applications, information literacy

Introduction :

The basic components of information literacy includes demonstrating how, when, and why to use various reference sources in an integrated way that will capture the user's attention at the teachable moment. Librarians should use different social networking applications to attract the readers.Social networking applications are useful to reach out the client. It means designing for socializing with friends and family and to network with professional colleagues. Ex. Facebook, Linkedin. Most of the students and teachers are using these social networking tools in education. It is also useful to share the new trends and approaches in library science. It is very useful tool to spread the knowledge in all over world. So the social networking tools are very useful to share innovations and to get update information in the world.

Common Web 2.0 applications that have become sources of information include:

- Facebook
- Blogs
- Twitter
- MySpace
- You tube

In the present paper, researcher pointed out some of the key objectives about the use of social networking applications. In this research paper, researcher focused on to know the present condition of the information literacy among the librarians, to understand the problems of librarians while using social networking applications, know the different sources of information using by the librarians to study the advantages of the social networking applications, to study the

disadvantages of the social networking applications and to suggest remedies to minimize the problems of social networking applications for information literacy. According to the above mentioned points researcher conducted the research.

Objectives of Research

1] To know the present condition of the information literacy among the librarians.

2] To understand the problems of librarians while using social networking applications.

3] To know the different sources of information using by the librarians.

4] To study the advantages of the social networking applications.

5] To study the disadvantages of the social networking applications.

6] To suggest remedies to minimize the problems of social networking applications for information literacy.

Delimitations of The Study :

1] The study has been delimited to the Beed District only

2] The study was delimited to the views of librarians about the use of social networking applications for information literacy.

3] The present study is limited only for the social networking applications in rural area.

Research Methodology:

According to the title of the research and objectives of the research, Researcher has used Survey method for study. It helps to achieve the objectives of the present research.

Research Sample:

The purposive sampling method has been used and Researcher has selected 20 Librarians from the rural area for the questionnaire.

Research Tools:

Researcher has used self made questionnaire, standardized by 5 experts of same field. Questionnaire is prepared according to the objectives of the research. The questionnaire was given to the librarians in the form of Google form to fill up.

Research Procedure:

1. Researcher has prepared questionnaire. This questionnaire is used to collect the data from the librarians to study the use of social networking application for information literacy.
2. Researcher collected the information through Google form questionnaire.
3. Researcher prepared some conclusions according to the collected data.

Statistical Procedure:

Researcher collected the data and with the help of Mean and percentage, researcher analyzed and interpreted the data.

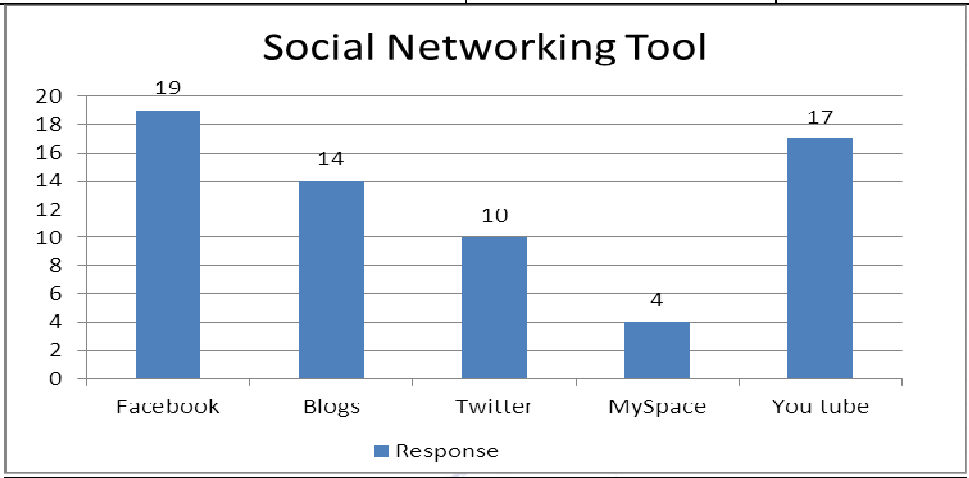
Analysis of Data:

After the collection of the data, researcher analyzed it and made some conclusions which are mentioned here as research findings.

Researcher collected the data about the use of social networking applications by the librarians. It is given here.

Table No. 01 : Use of social networking tools by the librarians

Sr. No.	Social Networking Tool	Response	Percentage
01	Face book	19	95
02	Blogs	14	70
03	Twitter	10	50
04	MySpace	04	20
05	You tube	17	85

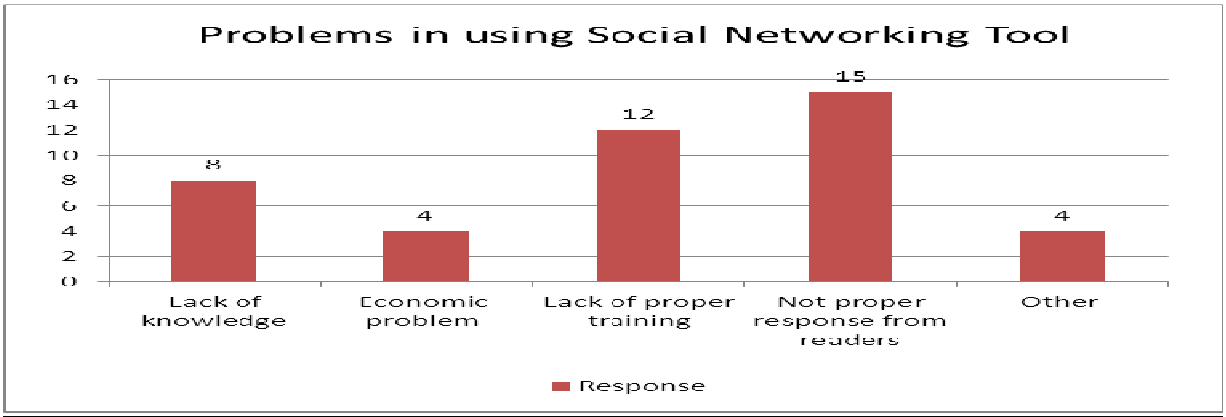


Graph No. 01 Use of social networking tools by the librarians

Researcher collected the data about the problems in using of social networking applications by the librarians. It is given here.

Table No. 02 : Problems in using social networking tools by the librarians

Sr. No.	Social Networking Tool	Response	Percentage
01	Lack of knowledge	08	40
02	Economic problem	04	20
03	Lack of proper training	12	60
04	Not proper response from readers	15	60
05	Other	04	20



Graph No. 02 Problems in using social networking tools by the librarians

Research Findings :

1. Most of the respondents said that **t**he main advantage of this media to reach out to their clients or readers.
2. According to the survey it is observed that most of the librarians used face book, blogs, twitter etc. applications to make aware to their readers about library facilities..
3. The survey said that the most promising advantage of social networking application is a part of information literacy.
4. Most of the respondents said that social networking applications attract the attention of readers. It is interesting also because of flexibility.
5. Social networking application tools are mostly related to technology and for implementation it needs the money for every institute and readers.
6. It is observed that librarians should get proper training about using social networking applications.
7. Some of the librarians stated that Lack of knowledge is the problem about using the social networking tools.
8. Most of the librarians stated that there is no proper response from readers about using social networking tools in library.
9. Some of the librarians pointed out that there is Economic problem about social networking tools. It needs proper fund and support of the institution.
10. Most of the librarians stated that Lack of proper training is one of the major problem in neglecting the social networking tools in library.

Conclusion :

No doubt that Social networking application tools are beneficial up to some extent. But one cannot ignore its disadvantages also. According to the survey it is observed that Social networking application tools cannot make face to face communication between librarians and readers. The communication skills are ignored in it. According to the survey it is observed that in online education learning is done at the learner's pace. The content can be repeated until the trainee understands it. The most promising advantage of online education is that, it is interactive too.

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Performance Evaluation of PMFBY in India

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Introduction:

India is a second rank worldwide in agricultural output. In 2016, agriculture and allied sectors like forestry, logging and fishing represented 15.4% of the GDP. India manages 16% of the world population on 2.4% of world land area. At the time of independence, more than one-half of the national income was contributed by agricultural. At the same time, more than 70% of total population was depended on agriculture. The agriculture secures faces the lot of challenges due to uncertainties in agriculture i.e. natural and artificial hazards. Still, more people in India make money for their livelihood from this sector, than from all other economic sectors. In rural India, households that depend upon income from agriculture (either self-employed or as agricultural workforce) accounted from nearly 70% of the population. According to the World Bank collection of development indicator, employment in agriculture in India was reported 41. 49 per cent in 2020. All this facts & figures show that, the need for the development of agricultural sector in India.

India has reached the stage of self-sufficiency but it is still cursed by nature. This poses a great risk to Indian farmers in agricultural production and on their way. It has been observed that fluctuations in crop production in the Indian subcontinent are mainly due to natural uncertainties such as droughts, floods, cyclones, storms, landslides, earthquakes etc. The government of India was introduced crop Insurance scheme to face these challenges.

Pradhan Mantri Fasal Bima Yojana (PMFBY) is the one of the largest crop insurance scheme, which was introduced in Feb. 2016. In this study, main focused on performance of PMFBY & RWBCIS in India from last three years.

Objectives of the study :

The objectives of concern study are as follows.

1. To study about crop insurance schemes in India
2. To measure the performance of crop insurance scheme in India
3. To analyzed the farmers participation, area insured and gross premium of crop insurance scheme
4. To suggest to upgrade the performance of crop insurance scheme in India

Research Methodology :

Data Collection: This is an analytical study; hence, Secondary data is an impetrate and powerful tool for the research. Researcher as complete research work is carried out on the basis of secondary data. The secondary data is collected through newspapers, magazine, government reports and internet. For accomplishing the objectives of the study, three years data is collected and analyzed it.

Research Area: The present study deals with the Performance evaluation of PMFBY. For justify the subject & detailed study proposes, PMFBY are selected in India.

Limitations of the study: In this study, only PMFBY was selected and only three years performance was measured of the agriculture insurance scheme. Other crop insurance schemes are not taken into account.

- **Pradhan Mantri Fasal Bima Yojana (PMFBY)**

Pradhan Mantri Fasal Bima Yojana (PMFBY) is one of the world's largest and important crop insurance programs. It's aimed to providing risk cover to Indian farmers. It was launched in early 2016 with the key feature being a highly subsidized and affordable premium to farmers. Under the scheme, only 2% premium of maximum to pay farmers during Kharif sowing, 1.5% during Rabi sowing for food and oilseed crops, whereas for annual commercial crops they have to pay a maximum of 5%. As a same, the Government of India and state government shared equally pay the subsidy on farmer's premium of actuarial premium rate. The National Agricultural Insurance Scheme (NAIS) as well as the modified NAIS has combined into PMFBY.

- **Performance evaluation of PMFBY in India**

The performance of crop insurance scheme especially PMFBY measured with the help of indicates. From last three years, performance was evaluated from 2018 to 2020. It includes farmer's participation, Lonee and Non-Lonee farmers, area insured, premium paid by farmers as well as government subsidy.

Farmer's participation:

From Kharif 2018 to Rabi 2020, total of 92.84 crore farmer applications have been approved under the scheme of PMFBY. In the Kharif Season 2018 to 2020, total of 58.5 crore and in Rabi season 34.34 crore farmers were participated from last three years. During 2018 to 2020, the participation of farmers was decline by -14.05 per cent. As a compare 2019 to 2018, farmer's participation was decline by -18.26 per cent and in the year 2019 to 2020, farmer's participation was decline by -9.84 per cent. The number of insured farmers has declined in a last three years regularly. Table no 01 shows the detailed performance in farmer's participation under PMFBY from 2018 to 2020.

Table No 01: Performance indicators in Farmers participation in PMFBY from 2018 to 2020

Year	Farmers coved in Kharif Season	Farmers coved in Rabi Season	Total	% Increase/ decries
2018	21663395	14685273	36348668	
2019	20051390	9660447	29711837	-18.26
2020	16794094	9995144	26789238	-9.84
Total	58508879	34340864	92849743	-14.05

Source: PMFBY Report 2018 to 2020

Area covered:

The total area insured in kharif and Rabi taken together has 133001.8 thousand hectors from 2018 to 2020. The area under PMFBY has decline by -3.21 per cent from 2018 to 2020. slightly by 6.5 percent (from 53.7 million ha in 2015-16 to 57.2 million ha in 2016-17). The area under the scheme has decreased from 45585.66 thousand hectare in 2018 to 44724.18 thousand hectare (PMFBY) in 2019, a decline of -1.89 per cent. Also, in next year, 2020 it has decline by -4.53 per cent.

As a compared to Kharif season 2018 to 2020, the area covered under PMFBY has increased from 27788.52 Thousand hector to 29303.25 thousand hectors in 2019. Apart from that, area

insured has decline in Rabi season from 2018 to 2020. Following table 02 indicates the performance in Area Covered in PMFBY from 2018 to 2020.

Table No 02: Performance indicators in Area covered in PMFBY from 2018 to 2020

Year	Area covered in Kharif Season (Thousand Hect.)	Area covered in Rabi Season (Thousand Hect.)	Total	% Increase/ decries
2018	27788.52	17797.14	45585.66	
2019	29303.25	15420.93	44724.18	-1.89
2020	26979.53	15712.41	42691.94	-4.53
Total	84071.3	48930.48	133001.8	-3.21

Source: PMFBY Report 2018 to 2020

Premium and Government Subsidy:

The premium paid by the farmers from 2018 to 2020 had 437708 lakh and state and central government had paid 7090269 lakh in that period. The gross premium has increased from year to year. During 2018 to 2020, it had increased from 2276445 lakh to 2504422 lakh and 2504422 lakh to 2747110 lakh.

During 2018 to 2020, the state and central government commonly paid the subsidy under these schemes. The subsidy paid by the state and central government on PMFBY had 92.89 per cent, 94.66 per cent and 94.83 per cent in the year 2018 to 2020 respectively. The following table 03 shows the performance in Premium and Govt. subsidy in PMFBY from 2018 to 2020.

Table No 03: Performance indicators in Premium and Govt. subsidy in PMFBY from 2018 to 2020

Year	Total State/Central Govt. Subsidy	Farmers Premium (in Lac.	Gross Premium (In Lac.)	Subsidy Paid In percent by Govt.
2018	2114482	161963	2276445	92.89
2019	2370777	133645	2504422	94.66
2020	2605010	142100	2747110	94.83
Total	**7090269**	**437708**	**7527977**	**94.13**

Source: PMFBY Report 2018 to 2020

Sum Insured:

As compared to 2018, the total sum insured all over the India has decline from Rs 21655889 lakh to Rs 20611720 lakh in 2019, a decline of about -4.82 per cent. Similarly, it has decline from Rs. 20611720 lakh to Rs. 19395291 lakh i.e. -5.9 per cent during 2019 to 2020. The total value of sum insured under PMFBY was Rs. 61662900 lakh, a decline average rate has -5.36 per cent in 2018 to 2020.

Table No 03: Performance indicators in Sum Insured in PMFBY from 2018 to 2020

Year	Sum Insured in Kharif Season (In Lac.)	Sum Insured in Rabi Season (In Lac.)	Total (In Lac.)	% Increase/ decries
2018	12394048	9261841	21655889	
2019	13425099	7186621	20611720	-4.82
2020	10953115	8442176	19395291	-5.9
Total	36772262	24890638	61662900	-5.36

Source: PMFBY Report 2018 to 2020

Conclusion:

As per the performance evaluate of PMFBY during 2018 to 2020, it is clearly indicates that, the number of farmers participation, area covered under PMFBY and sum insured had decline from last three year apart from Premium and government subsidy had increased. There is need to motivate the farmers towards crop insurance scheme. It is possible when the ground level motivation camp will be organized to door to door in every village.

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Digital Library Infrastructure and Services

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Abstract :

A quick look at the current state of digital libraries reveals that till now most digital libraries have focused mainly on providing access to diverse digital information resource. The expectation is that users will conduct a search or browse the collection in order to get access to the required information. However, providing access to information is just one among many different services provided by libraries and information systems. Traditional libraries have been engaged in providing different types reactive and proactive information services to their users.

Introduction :

Digital Library is a set of electronic resources and associated technical capabilities for creating Searching and using information A Digital library may be defined as a collection of information in digital formats and accessible across the networks.

What is a digital Library?

We understand a digital library to be an electronic collection of real or virtual resource, which may also be available elsewhere. These resources must be whole works, with which humans can have a complete cognitive or affective engagement. A digital library may allow either online or offline access to the elements it or organizes and houses, and may include multimedia as well as multilingual data. Although accessible online, a digital library is not identical to a website or a portal. However, while portals, specialized websites and search engines cover a wide range of subject areas, digital libraries are more narrowly focused around one or a specific group of disciplines. Digital libraries, moreover, attach content specific and highly descriptive metadata such as, descriptors or keywords to describe each item in the collection. Therefore, searches in a digital can produce more useful results, save time and effort in searching, and the best of cases browsers many directly access the text or multimedia content for which they executed their search.

Digital Libraries Meaning :

The term electronic library, digital library and virtual library have been used interchangeably and now widely accepted as description of the use of digital technology by libraries to acquire, store conserve and make available their contents to remote users. In abroad sense, digital library may be defined as an organized and managed collection of highly quality information contents in a variety of media (text still image, moving image, sound or combination thereof), but all in digital forms accessible over different electronic networks. Such a digital library includes a number of search or navigation aids that both operates within that particular library and allow access to other collection of information connected by network worldwide.

Digital library infrastructure :

A digital has certain technological such as

- Locally developed database

- Local library system with adequate personal computers having LAN and CD-ROM
- Electronic mail service
- Network connection to have access to other data bases.
- Various function to coordinate manage the entry and retrieve data.
- Multimedia Kit
- Well trained manpower
- Computer Hardware with Audio-Visuals, Video Conferencing Kit, Pentium Web Server,
- Printer, Scanner, Barcode Scanner, Barcode Printer, Digital graphic printer and UPS

Provision of LIS Services in Digital Library :

In digital library improved, instant and effective library and information services can be provided to the users irrespective of their location. The information can be accessed either from the library itself or from the department in the campus network environment or from other place over internet provided login and password for use is available with the end users. As per the services available in traditional libraries, improve services can be provided which are as follow

Access of CD-ROM based information retrieval services in a network environment;

- Access to On-line Public Access catalogue (OPAC) within the campus or over interest;
- Provision of on-line circulation services (like reservation and queries);
- Access to online databases for providing indexing and Abstracting Services;
- CAS and SDI Service through e-mail alert or group messaging;
- Online access to in –house databases through Campus LAN over Internet;

Digital Library Services :

Always library services are followed by library works. But now the advancement in information technology has brought changes in the concept of traditional library works as well as service. The recent trend and change in the information related field especially in collection, storing, processing and dissemination of information have resulted in to the evolution of digital libraries. Now most of the reference books like encyclopedias, dictionaries, directories, hand books, etc are published in electronic form. Similarly about 50% of the existing secondary resources like abstracting and indexing services are available in electronic form for example, chemical abstracts service, index Medicus, and Engineering index.

Personalized Services :

Most of the researches on digital library development have focused on access to and retrieval of digital information but they have overlooked the personalized service aspects, as primary goal of library information services. However the technology and information resources, on their own, cannot make up an effective digital library. On priority basis the personalized serviced in a digital library environment would help users to find information resources available in a digitally chaotic world

Web-based reference and information services :

Several reference and information services are now available on the web and many of these services are provided by non-library organization. Also a web site that provides a categorized listing of libraries that offer real-time reference services using specific software, live interactive communication tools, call centre management software, bulletin board services and

other INTERNET technologies. Of course, most of these services are designed for registered users of some specific libraries in- digital information environment. However some of these services, particularly the contents page services from publishers of journals, are free, while for others, such as Dialog Alerts, of Current Contents from ISI, users need to register and pay for the services.

Digital Reference Services of Academic Libraries :

Web based reference services are also now being provided by academic libraries, Recently a study report on web-based reference services reflects the current practices of digital library services in seventy academic libraries of USA. The study shows that university libraries allow their patrons to put reference questions in a variety ways 99 % offer e-mail reference, 96 % offer reference services by appointment while 29% of the libraries offer real –time virtual reference. These libraries use customer relationship management (CRM) software packages for providing web-based reference services in the virtual reference environment.

Co-operative Digital Library Services :

The rising cost of digital reference sources and its proper processing by the trained manpower and also the initial infrastructural investment for introducing new services in libraries have influenced different organizations to choose a co-operative model of digital reference services. As a result some co-operative project have been launched for providing web-based reference services to the users who can ask for such services from a remote location at any time.

Search Services :

The most basic access services is a search of a library's collection. Online catalogues have been provided author, title and limited subject access to local holdings (and more recently to union holdings across multiple libraries). The expectation for digital collections is that catalogue should seamlessly link to the digital collections itself so that remotely located users can find and display not only bibliographic information but also primary information contents.
The most common search mechanism, to search digital library contents is query line of form that allows users to enter term or terms as a query. Depending on the type of indexing the library uses ranked list or exact- matched set of results is returned to the users.

Filtering and Selective Dissemination of Information :

A Service that is particularly important in special libraries is selective dissemination of information sometime known as routing, alerting or filtering. Users develop interest profiles, and as new materials are added to the collection or become known to the library staff, they are compared to the profiles and the relevant items are passed on the users. Filtering Services are Particularly applicable to newswires, internet "news" and broadcast media abstracting services. Electronic user profile in conjunction with on-line databases services, has long been available and will surely proliferate as more library contents become available digitally.

Conclusion :

Libraries have been existed for centuries, while the rise of computer technology and digitization are twentieth century innovations. Traditional libraries are collections of history and knowledge they offer public access to information and knowledge representing diverse sources and viewpoints. But access to these resource in traditional libraries is restricted to a particular user community. Digital libraries allow users' access to knowledge worldwide. Digital libraries

like traditional once, select, acquire, catalogue, preserve and make available their contents by providing a series of services. They seek to merge and age old concept with modern technology while effectively steering it in a new direction.

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Sports Facilities and Sport Performance in the Soccer Sports Between Male and Female College Players : A Comparative Study

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Abstract:

Football played in almost all the countries both developing and developed countries are one of the most popular games in the world. Now-a-days, this game is played in almost all the countries having some differences in abided rules. The game which is played abided with the similar rules all over the world is known as "SOCCER". Most of the countries play soccer and participated in the international competitions. These competitions brought a consciousness among the players and coaches, as well that they keenly trying to develop the skills and performances of the player. However in this paper the researcher's main objectives were to find out the Soccer playing ability of the male college level players, to find out the soccer playing ability of the female college level players, to make a comparison of the soccer playing ability between male and female players etc. Therefore for these objectives the researcher took a sample of total 150 college level players (75 male and 75 female) and tested their soccer playing ability in terms of technic, tactics and fitness by the Mac Donald soccer skill test. It has been found that there is a little difference in the playing ability of male and female.

Introduction:

Association football, generally called soccer or football, turns out to be a team sport which is played between the two teams of eleven players each along with a ball, spherical in shape. More than about 200 million players play this game in around 200 countries, which makes it to be the most popular sport of the world played in a rectangular field having two goal posts at the two ends of the fields. The object of the game is to score by getting the ball into the opponents'goal. Players are not allowed to touch the ball with their hands or arms other than goalkeepers (and then only when within their penalty area). Other players mostly make use of their feet on order to strike or on order to pass the ball, however might also make use of any body part except the arms as well as the hands. The team which wins scores the most goals at the match's end. If the score of the game is equal at the end, then either the game calls for an extra time or leads to the declaration of a draw or leads to a penalty shootout, all depending on the competition format. In England, the game laws were originally organized in 1863 by the Football Association. The football association is internationally governed with the help of the International Federation of Association Football (FIFA; French: Federation International de Football Association), the organizing association of World Cups for women as well as men after every four years. (Encyclopædia Britannica, 2008).

During soccer success the play is continuous; it is a great sport for maintaining the cardiovascular health and fitness. People belonging to various ages and having several skill levels can take part in the game of soccer, with the players of varying sizes who are capable of

doing equally well.Soccer can even turn out to be a great kids sport who might not consist of high athletic ability levels, but who would definitely love to participate in such team sports. It is an ideal sport for men, women, girls and boys, all of whom plays the game under same rules and where the physically apt might play along the side of each other.

Health benefits of playing soccer :

Soccer can be a great workout and lots of fun. The health benefits include that it:

- Increases aerobic capacity and cardiovascular health
- lowers body fat and improves muscle tone
- Builds strength, flexibility and endurance
- Increases muscle and bone strength

Literature Review:

Najah and Rejeb (2015) examined a survey on the selected psychological skills owned by male youth players of soccer in various playing positions. The aforementioned study surveyed a total of 180 male players of soccer from Tunisia, belonging to the age group of 15 to 19 years from various clubs of the first and the third Youth Class partitions. The study observed all of their possible positional differences. Outcomes yielded major differences between the players' basic scores as well as the psychosomatic subscale scores in various playing positions.

Kadagadakai P.V and Pradhan.B. (2018)"Effect of fitness training and yogic practices on football passing skill" The treatment group showed significant improvement in passing skill is mainly due to regular physical fitness training of pushups, squat thrust, bench dips, sit ups, back extension, step up and shuttle run training along with dynamic Suryanamaskar, asana, breathing practices, Kapalabhati and pranayama..Rhythmic exercises such as practice of asan enhanced the flexibility. Therefore the present study shows that, the short time training program of fitness exercises and yogic practices helpful in improving motor related physical fitness components there by enhances passing skill of football players.

Singh.C.M(2020) "FOOTBALL PSYCHOLOGY" The review clearly shows that the scientific evidence is accumulating and that it is developing the psychology of football. Researchers are focusing on better understanding both performance improvement and personal growth through the aspects of participating in various football codes. it is found that the mental skills of players can be developed through systematic training, and this training affects the efficiency and personal well being. Success or failure on the field often depends on mental factors as well as physical factors.

Objectives:

The study has been conducted with the specific objectives-

- ✓ To find out the Soccer playing ability of the male college level players
- ✓ To find out the soccer playing ability of the female college level players
- ✓ To make a comparison of the soccer playing ability between male and female players.

Methodology:

Total one hundred fifty (150) football players were selected randomly from the Ghatal Rabindra SatabarsikiMahavidyalaya, Ghatal, Paschim Medinipur, and West Bengal age ranging between 17 to 22 years. Keeping the feasibility criterion in mind, especially in the case of availability of instruments, the following scales are chosen:-Mc Donald Soccer Skill Test & Playing ability by the three expert coaches. Frequency distribution and t Test were applied for data analysis.

Analysis:

Male Frequency distribution

Valid	AGE	WEIGHT	TECHNIC	TACTICS	FITNESS	SOCCER
N	75	75	75	75	75	75
Mean	20.37	51.08	7.17	7.31	7.34	17.05
S.E.Mean	.15	.27	.09	.10	.08	.15
Median	17.00	17.00	17.00	17.00	17.00	17.00
Mode	20.00	52.00	7.66	7.66	7.00	17.00
StdDev	1.31	2.34	.78	.83	.71	1.29
Variance	1.72	5.45	.60	.69	.51	1.65
Kurtosis	-.62	-.28	.81	.77	1.33	-.19
S.E.Kurt	.55	.55	.55	.55	.55	.55
Skewness	.30	-.29	-1.18	-1.11	-.80	-.50
S.E.Skew	.28	.28	.28	.28	.28	.28
Range	5.00	11.00	3.33	3.66	3.50	5.00
Minimum	18.00	45.00	5.00	5.00	5.00	14.00
Maximum	23.00	56.00	8.33	8.66	8.50	19.00
Sum	1528.00	3831.00	537.73	548.06	550.31	1279.00

The above table shows that out of total 75 male mean age is 20.37,mean weight 51.08, mean technic 7.17,tactics 7.31 and fitness 7.34. Their mean score in McDonald soccer skill test is 17.05. SD for age is 1.31, weight 2.34,technic .78,tactics .83 and fitness .71where as Macdonald soccer skill test SD is 1.29.Skewness value for weight,technic,tactics,fitness and Macdonal soccer skill test has negative value i.e -.29 and -1.18,-1.11,-.80,-.50 respectively. Kurtosis value for three variables age,weight and soccer skill test have negative values i.e -.62,-..28, and -.19 respectively. If we look into the variance, there is a little variance in the age but it is a little high in case of weight where as the variance for the different skills like technic, tactics and fitness is almost similar though there is little difference. The total sample belong to the age group 17-23yrs, weight 45-56kg.

Female Frequency Distribution

Valid	Age	Weight	Technic	Tactics	Fitness	Soccer
N	75	75	75	75	75	75
Mean	19.69	45.24	6.50	6.91	6.91	15.95
S.E.Mean	.11	.30	.11	.08	.09	.16
Median	16.00	16.00	16.00	16.00	16.00	16.00
Mode	20	44	.	7.33	7.50	16.00
StdDev	.96	2.61	.91	.68	.76	1.36
Variance	.92	6.83	.83	.47	.58	1.85
Kurtosis	-.04	.92	-1.24	-.78	-.07	-.63
S.E.Kurt	.55	.55	.55	.55	.55	.55
Skewness	.28	.78	-.10	-.28	-.70	-.33
S.E.Skew	.28	.28	.28	.28	.28	.28
Range	4.00	13.00	3.00	2.67	3.00	5.00
Minimum	18	40	5.00	5.33	5.00	13.00
Maximum	22	53	8.00	8.00	8.00	18.00
Sum	1477.00	3393.00	487.26	518.07	518.50	1196.50

The table shows that out of total 75 female mean age is 19.69,mean weight 45.24, mean technic 6.50,tactics 6.91 and fitness 6.91. Their mean score in McDonald soccer skill test is 15.95. SD for age is .96, weight 2.61,technic .91,tactics .68 and fitness .76 where as Macdonald soccer skill test SD is 1.36.Skewness value for technic,tactics,fitness and Macdonal soccer skill test has negative value i.e -.10 and -.28,-.70,-..33, respectively. Kurtosis value for three variables age, technic,tactics,fitness and soccer skill test have negative values i.e -.04,-.1.24,-.78,-.07 and -.63 respectively. If we look into the variance, there is a little variance in the age but it is a little high in case of weight where as the variance for the different skills like technic, tactics and fitness is not similar and there is little difference. The total sample belong to the age group 18-22yrs, weight 40-53kg.

Male MacDonald Soccer Skill Test frequency distribution

Valid	Frequency	Percent	ValidPercent	CumulativePercent
14.00	3	4.0%	4.0%	4.0%
15.00	7	9.3%	9.3%	13.3%
15.50	1	1.3%	1.3%	14.7%
16.00	9	12.0%	12.0%	26.7%
16.50	1	1.3%	1.3%	28.0%
17.00	25	33.3%	33.3%	61.3%
18.00	20	26.7%	26.7%	88.0%
19.00	9	12.0%	12.0%	100.0%
Total	75	100.0%		

The table 7 shows that maximum candidates score MacDonald Soccer Skill Test between 17 to 18out of 20. The candidates who score above 17 are 29 out of total male N(75).3 candidates score below 15. It proves that most of the candidates got much improvement through the training process. They have developed their skills in the training.

Female, MacDonald Soccer Skill (frequency test)

Valid	Frequency	Percent	ValidPercent	CumulativePercent
13.00	3	4.0%	4.0%	4.0%
13.50	2	2.7%	2.7%	6.7%
14.00	5	6.7%	6.7%	13.3%
14.50	3	4.0%	4.0%	17.3%
15.00	12	16.0%	16.0%	33.3%
15.50	4	5.3%	5.3%	38.7%
16.00	15	20.0%	20.0%	58.7%
16.50	6	8.0%	8.0%	66.7%
17.00	11	14.7%	14.7%	81.3%
17.50	6	8.0%	8.0%	89.3%
18.00	8	10.7%	10.7%	100.0%
Total	75	100.0%		

The table shows that maximum candidates score MacDonald Soccer Skill Test between 15 to 18out of 20. The candidates who score above 16 are 26 out of total female N (75).13 candidates score below 15. It proves that most of the candidates got much improvement through the training process. They have developed their skills in the training.

One sample test for Male Technic,Tactics,Fitness and MacDonald Soccer Skill

	TestValue=0.5					
	t	df	Sig.(2-tailed)	MeanDifference	95%ConfidenceIntervaloftheDifference	
					Lower	Upper
TECHNIC	74.29	74	.000	6.67	6.49	6.85
TACTICSF	70.74	74	.000	6.81	6.62	7.00
ITNESS	83.30	74	.000	6.84	6.67	7.00
SOCCER	111.52	74	.000	16.55	16.26	16.85

It is evident from the above table that ' t' value for Technic, Tactics, Fitness and Macdonald Soccer Skill test is 74.29,70.74,83.30 and 111.52 respectively at 74 df for each variable. Mean difference for Fitness is high i.e 6.84 as compared to Technic and Tactics. On the other hand 't' value for fitness is higher than Technic and Tactics. 't value for Soccer skill test is 111.52 and mean difference for Macdonald Soccer skill Test is 16.55.

One sample t test Female Technic, Tactics, Fitness and MacDonald Soccer Skill Test

	TestValue=0.5					
	t	df	Sig.(2-tailed)	MeanDifference	95%ConfidenceIntervaloftheDifference	
					Lower	Upper
Technic	57.11	74	.000	6.00	5.79	6.21
Tactics	81.03	74	.000	6.41	6.25	6.57
Fitness	72.70	74	.000	6.41	6.24	6.59
Soccer	98.33	74	.000	15.45	15.14	15.77

It is evident from the above table that ' t' value for Technic, Tactics, Fitness and Macdonald Soccer Skill test is 57.11,81.03,72.70 and 98.33 respectively at 74 df for each variable. Mean difference for Fitness is high i.e 6.41 as compared to Technic and Tactics. On the other hand 't' value for fitness is higher than Technic and Tactics. 't value for Soccer skill test is 98.33 and mean difference for Macdonald Soccer skill Test is 15.45.

Conclusion:

Fitness, technical and tactical skills are the most significant variables which are widely used in assessing performance in football. In relation to the player's maturity, it has been recommended that the youth players have to give more attention to ball handling and playing skills. Unfortunately, measuring skills development is also more problematic than fitness, because performance tests also depend on physical abilities. Hence, it is hard to split the growth of ball handling abilities from the development of bodily performance.

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National Digital Library of India: Features And Issues

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Abstract:

National Digital Library of India (N.D.L.I) is a public operation development dispatched through the Ministry of Human Re Development (M.H.R.D) to work with, work with & persuade understudies the nation over, paying little mind to age or registration. Limit at any rate. Dispatched on Education without the National Digital Library of India, it is a mixture of information & data containing a wide assortment of talks, courses & chronicles gathered, gathered, & kept up with by the best organizations in the countryside It is a stage intended to build advanced instructive assets accessible to advance motivation, strengthening, & learning for all residents of the country. The current review is an endeavor to comprehend the advantages, elements, & assortments of the National Digital Library of India (N.D.L. India) in its worldwide computerized space.

The concentrate likewise investigates taking in assets gave from numerous s & through the material accessible in different record designs. To finish the current work, the necessary information has been gathered from the authority site of N.D.L. India. The information was then broke down to accomplish the put out objectives. N.D.L. India desires to achieve a change in perspective in the training development by addressing numerous obstructions to accomplishing the objective of "Instruction for All" so they can enable themselves by giving information assets to each person. The concentrate additionally fills in as an aide for the expert local area to serve clients worldwide & particularly Indians.

Keywords: N.D.L. India, Digital Library, E-learning, National Digital Library of India, National Library, Information Community.

Introduction:

The idea of libraries is changing because of the rise of advanced innovations & administrations. Numerous computerized library programs have been dispatched in pretty much every side of the globe, including India. Nonetheless, experts have not yet completely understood the capability of computerized libraries & entryways. Specialists actually visit different sites to get to assets & they need to learn search & recovery methods independently, which is an extreme ruler & tedious errand. All the while, students regularly lose the most wanted assets paying little mind to their accessibility. Consequently, the electronic assets accessible for instruction & examination advancement are just too some extent used & not absolutely used . In this unique situation, the Ministry of Human Re Development (M.H.R.D) has dispatched a pilot project under the sponsorship of the National assignment on edification through Information & Communication Technology (NMEICT). It is called "National Digital Library of India "(N.D.L., India)". N.D.L. India gives content in various dialects & gives learning & exploration interface support (National Digital Library of India, 2019)s get together & gather round metadata just as other related substance.

(Government dispatches National Digital Library of India, 2018) Filter & Federated Search can be utilized to work with centered inquiry so data searchers can track down the right asset significantly quicker with less exertion. It has been created to offer help for experts, all things considered, at all levels, including specialists & long lasting students, with a wide

assortment of open access gadgets & professionals with different handicaps. It is intended to help understudies in the arrangement of cutthroat tests, to permit scientists to do explore from different s, & to become skilled at & plan for best practice from individuals all throughout the planet. N.D.L. India has teamed up with Indian instructive establishments, public libraries just as libraries in significant worldwide libraries to acquire books on an assortment of themes. N.D.L. India is a computerized library with more than 20 million examination materials, including an assortment of 40 lakh books & 1.26 crore articles N.D.L. India is right now probably the prevalent hold in worldwide the internet.

The computerized store or DR layer gives fundamental writing & securing administrations. Creator administrations are identified with content creation while securing administrations are identified with material loaning. The computerized library or DL layer is the center layer comprising of two significant ones.

The salient feature :

The N.D.L. India Portal has been produced to serve a wide scope of clients (from rudimentary to postgraduate level), specialists, library clients, educators, custodians, experts, individual clients, & long lasting students. Showing materials are accessible to understudies from rudimentary to postgraduate level. The fundamental benefit of this entryway is that the edge is intuitive & intelligent. For instance, if a 10th grader is searching for help in concentrating on physical science, it will just give a part of material reasonable for that level, which will be held when asked by a similar undergrad or graduate understudy. Various kinds of material prerequisites are uniquely leased. This sort of close to home communication is presently actually conceivable. N.D.L. India has such offices. Also, clients don't need to be in the library & search the book from one rack to another, subsequently saving clients time. It is in this manner like a tweaked administration gave in a 24x7 incorporated climate where clients can track down the right asset with negligible exertion & insignificant time.

N.D.L. India gathers metadata & content from the Institutional Digital Repositories (IDRs) all things considered, & organizes, any remaining advanced library drives & NMEICT projects & records on N.D.L. India server's single window. N.D.L. India offers an assortment of proxy ways of perusing themes like peruse by content kind, peruse by, peruse by subject, peruse by asset type. Original copies, video addresses, web courses, & so on in various arrangements like PDF, DOC, GIF, MP3, PPT, MP4, HTML, FLV, JPG, AVI file Etc. These materials are the computerized proxy of a characteristic advanced article or actual item or the advanced metadata of an actual article. The National Digital Library of India covers a wide scope of s like Ordinary Science, living Science, substantial Science, globe skill, Computer knowledge, Health & Medicine, Agriculture, Engineering Technology, Mathematics, Informatics, Social Science, Legal Studies, and Military Science. , Religion, Philosophy, Psychology, Education, History, Geography, Language, Literature & Art. Assets are accessible in more than 70 dialects. N.D.L. India doesn't store content, just devours metadata for N.D.L. search & peruse & conveys content (full text) from. The library consolidates the substance of different Indian advanced storehouses.
N.D.L. India's investors incorporate substance supporters like creators, distributers, inventory specialist co-ops, & teaming up associations (like DR the board & union of their substance in N.D.L. India). Customers are one more gathering of investors who can get to the vault & cover understudies, educators & general shoppers, purchaser associations (N.D.L. clients) & afterward the services & states that support the drive are clear

N.D.L. India issues:

1. **Risk for Content**:

N.D.L. India stores such material as is unreservedly accessible or institutionally gave/gave. Practically all of this substance is facilitated & gotten to from applicable s. The legitimacy of these materials relies upon the firm got from the material liable for the picture, uprightness, unwavering quality & similarity. N.D.L. India isn't liable for facilitating these issues.

2**. Specialized issues**:

Although it is not difficult to track down a book on N.D.L. India through the hunt window, it may not generally be accessible for guaranteed use as N.D.L. India doesn't assume any liability for the inaccessibility of the entrance because of specialized issues or different reasons (National Digital Indian Library, 2019).

3. **Copyright Challenges**:

In an endeavor to make the full text of N.D.L. India books, articles, original copies, proposition & so forth accessible to students, copyright difficulties have not completely empowered this. Albeit many s make their books accessible for nothing, a few s, like IISER & Bhopal, give just piece of the text, requiring approval of the full text. Springer, for instance, has different s that permits full-text admittance to memberships. Different s, for example, IIT Jodhpur additionally gave material from their library; nonetheless, this requires approval by a different login. Likewise, the N.D.L. India Portal has material that makes full text accessible from the part account.

4. **Digitization Issues:**

N.D.L. India isn't answerable for digitization issues like quality, precision, perceivability & clarity as it is the obligation of the s that add to digitization of reports. Numerous assets have been digitized utilizing bad quality gear, bringing about low quality reports. Inferior quality & perceivability screen readings are more unfavorable to actual wellbeing as it can prompt eye strain, back & neck issues. These issues can likewise go about as obstructions to long time periods perusing.

5. **Equipment & Software Standards:**

N.D.L. India is accessible in many configurations going from plain text to sight & sound records like JPG, PDF, MP3, Doc, HTML, FLV, & requires diverse programming to peruse them is required. Organizations & re-altering programming are not validated. Numerous configurations can cause tremendous issues for specialist co-ops & confound end clients. This is viewed as one of the significant disservices of N.D.L. India.

6. **Mechanical Maturity:**

The inescapable progression of innovation is out of date" because of fast advances in innovation. The s accessible in the present innovation can't be utilized with the upcoming innovation. Thus, we need to change the essentials starting with one arrangement then onto the next & starting with one programming then onto the next however this isn't a cycle & now & again it is actually unthinkable.

Conclusion:

N.D.L. India is presently probably the largest storehouse in world in using the internet, with data accessible to any client from anyplace in numerous dialects & arrangements. Data can

be customized dependent on schooling level, language decision, trouble level, content media & different components. It is consequently similar to a redone administration gave 24X7 so the students can find the ideal asset at the ideal time with negligible exertion. Because of the colossal multilingual populace & topographical development, India is confronting many difficulties in accomplishing the objective of "Instruction for All" and N.D.L. will assist India with conquering its difficulties. N.D.L. India desires to achieve a change in outlook in the instruction development - by enabling each resident with information assets, defeating some long-standing boundaries in schooling and introducing another learning period. Innovation is relied upon to open up numerous conceivable outcomes. With the right concentration, consolation and backing, N.D.L. India is set to turn into a public re, bringing a change in perspective in internet based substance development for scholastics and the overall population.

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Open Source Software for Libraries

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Abstract:

Open source software is the thing that engages customers to execute, share, copy, change, course, study, and work on any explanation. Open source library software needn't bother with the fundamental cost of business software and allows libraries to have more imperative manage above their work surroundings. Library specialists should think about the remuneration of open source software & related with their new development. They should have central data about decision, foundation and upkeep. Open source software requires more preparing risk than business software. Clerks don't contemplate the benefits of open source software for robotization and thusly don't like to use it. They don't have the stuff to assist open with sourcing software. The paper emanates on the very open source library software.

Keywords: Library Software, Library professional, Information Technology, Open Source, Library Software.

1. Introduction:

Open-source software is that which is accessible under a source code permit that permits clients to examine, adjust & work on the product & rearrange it to an altered or indispensable association. It is regularly evolved in a community, communitarian way. It is the mainly unmistakable illustration of open-source improvement & is frequently contrasted with client produced content.

For some, libraries, keeping up with their books & different media are an overwhelming errand, particularly as the library develops with more substance. Quite a while back we arranged the unrefined card index frameworks (recollect the DV decimal framework), however were hard to keep up with. With the present figuring innovation, keeping up with our libraries won't be simpler or more capable. The card index is gone & in certain libraries, it is a lot simpler to discover a book over a web association & get it when it shows up, as opposed to with nothing to do looking for your next perusing. Most libraries don't have the cash to consume huge totals, & what they find normally goes to purchase extra assets.

Because of the requirement for this product (& the related establishment & preparing costs) & the absence of assets accessible to spend on it, numerous libraries are left to secure themselves when refreshed with the most recent innovation goes the code is indistinguishable & substantially more. Open-source software, then again, is the inverse. The open source mentality rotates around sharing & coordinated effort, & these two significant viewpoints completely clarify open source software. There are numerous kinds of open source software arrangements accessible now which can be gotten to through the library.

2. Open Source Software for Libraries:

2.1 Koha:

It is a full-included open-source ILS (Integrated Library System) presently utilized by libraries all throughout the planet. For those of you new to ILS, this is a framework for following library action - finance, costs, buys & above all, really taking a look at different media Library Guardian. Numerous little libraries can't buy, introduce & keep up with ILS, & Koha is an

optimal decision. The Koha library is constructed utilizing ILS norms & utilizations the OPAC (Open Public Access Catalog) interface. Also, Koha doesn't include a merchant lock, so libraries can acquire specialized help from any party of their decision.

2.2 Evergreen:

Evergreen is another choice when exploring open source ILS choices which is Created by Equinox Software. Evergreen is strong, undertaking level ILS arrangement that can uphold huge libraries on a shortcoming open minded framework. It utilizes the guidelines agreeable & OPAC interface & offers various elements, including adaptable organization, work process advancement, & versatile software interfaces, & can be ported as an open-source & can profit from any local area commitment.

2.3 Opals:

It is a robotized open source library framework that can be utilized for some sorts of libraries. More than 2000 libraries all throughout the planet use Opal to deal with their assets. A limitless number of library individuals can get to it online without a moment's delay. It gives us numerous choices and fields to list the library material. With this free open source computerized library software, we get highlights like procurement the board and round administration. This product has a high level ordering highlight that can assist you with effectively discovering the library assets you need.

2.4 The Greenstone Digital Library Software:

It is an open source framework for making and showing software information bases. It assembles files with appealing and simple to-utilize compelling full text search and metadata-based perusing highlights. Besides, they are not difficult to keep up with and can be completely developed and reconstructed naturally. Framework Extensible: Software modules contain a wide assortment of archive and metadata types. Greenstone Software plans to engage clients, particularly those in colleges, libraries and other public assistance establishments, to fabricate their own computerized libraries.

2.5 DSpace:

It is a fantastic computerized authoritative storehouse that catches, stores, lists, stores, & rearranges the scholarly result of the University's examination personnel in advanced arrangements. It oversees & circulates computerized objects containing advanced documents & permits the creation, ordering & looking of subsidiary metadata to find & recover objects. DSpace is open-source software intended to run organizations & associations with somewhat restricted assets. It upholds the drawn out conservation of advanced substance put away in the storehouse. It is additionally intended to work with accommodation. DSpace upholds advanced substance accommodation, the executives & access.

2.6 Librarian:

The Librarian is utilized, where a productive & simple to-utilize library framework is consistently sought after. It's easy to use search interface helps in the buy interaction easily. It has a list framework dependent on Anglo-American principles. In it you will discover 20 distinct fields to add to the information base. Here you can rapidly & effectively make a part ID card. This open-source library the executive's software gives sequential control to oversee dissemination. This improves on the administration of interactive media assets. With this LMS, you likewise get a printable standardized tag. It likewise gives you a robotized email the board framework. Curator's free information the executive's software additionally permits you to tweak reports to suit your necessities.

2.7 BiblioQ:

BiblioQ is utilized by a wide range of libraries, little, medium, or enormous. It is an expert library the executive's framework reasonable for different QT Helper frameworks. BiblioteQ can investigate papers, recordings, inventory books & more. This free library the executive's framework upholds ARM engineering. You can be drag & drop the cover picture contingent upon your needs in this product. You can get a modified showcase highlight with this open-source software. It gives you a high level & confined hunt highlight. This permits you to effortlessly send out & add records. The product additionally upholds Z39.50 & SRU.

3. **Selection criteria for open source software**

Assessing open source software is not the same as exclusive projects. A significant contrast to assess is that the data accessible for open source software is by & large but not the same as exclusive projects; Source code, others' examination of program plan, conversation of how well it works between clients & engineers, & so on. Regularly restrictive projects consistently conceal all data from clients & just permit the product to run. The accompanying models can be followed for open source software choice.

4. **Advantages of O.S.S.:**

1. Low software cost: Open source arrangements by & large don't need a permit expense. There is no coherent expansion support charge. Costs will be brought about just for media, documentation, & backing whenever required.

2. Low equipment cost: As a rule, Linux & open source arrangements are generally smaller & compact, & therefore require less equipment ability to perform assignments like a customary server (Windows, Solaris) or workstation. The outcome will be not as much as what you can get with more affordable or more established equipment.

3. Scaling Capability: Linux & open source software & administrations know how to regularly be scaled marginally. Burden numerous choices for open source applications like adjusting, grouping, & data sets & email, giving organizations the capacity to scale for new turn of events or to coordinate to accomplish more with less.

4. Backing: Support is accessible for open source-regularly better than exclusive arrangements. In the first place, open source support is accessible for nothing & can be gotten to through the web-based local area by means of the Internet & furthermore, numerous tech. organizations are currently supporting open source with facility of free access on the web & staggered installment support.

5. Keep away from merchant lock-in: Frustration with seller lock-in is a reality for all IT supervisors. Notwithstanding the continuous permit charge, there is an absence of convenience & failure to modify the product to meet explicit prerequisites. Open source decision is a revelation of opportunity.

6. Coordinated Management: Specific open source innovations like CIM (Common Information Model) & WBEM (Web Based Enterprise Management) give the capacity to incorporate or incorporate server, administration, application & workstation the board for amazing organization.

7. Quality software: Evidence & examination Open source software proposes that it is great. The friend audit measure & local area guidelines, just as the presence of source code for the world to see, advance mastery in plan & coding.

8. Records Management: Each record identified with the books gave can be kept up with by the approved people. You can oversee return cutoff times & see the accessibility of each book. This product can likewise record fines from understudies.
9. Time Effective and Costly: By killing paper-based exercises, open source library the board software can save time just as diminish working expenses. By overseeing records & data on the web, the library the executive's framework does everything without problem.
10. Dependable and safe: Manual work regularly prompts blunders. Paper-based methodology can likewise prompt information misfortune. Yet, on the off chance that you utilize the library the board framework, you are utilizing dependable & secure software without turning to manual blunders.
11. Increment worker proficiency: The capacity of individuals to deal with the library is upgraded by the utilization of open source library software. Approved people might keep & keep up with appropriate records & subtleties of books like its release, number. Duplicates, return date, writer, issue date & late book bring punishment back.
12. Basic and simple to utilize: Open source library the board software has an extremely basic utility interface. The UI of most LMS software is basic & easy to use. Along these lines, there is no compelling reason to take extra IT backing to utilize the product.

Conclusion:

It is a robotized open-source library framework that can be utilized for some sorts of libraries. More than 2000 libraries all throughout the planet use Opal to deal with their assets. A limitless number of library individuals can get to it online without a moment's delay. It gives us numerous choices and fields to list the library material. With this free open-source computerized library software, we get highlights like procurement from the board and round administration. This product has a high-level ordering highlight that can assist you with effectively discovering the library assets you need.

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Bibliometric Analysis of Some Open Access Chemistry Journals Available in DOAJ Database

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Abstract :

This research deals with the selected open access journals in Chemistry from the DOAJ database for the period of 2017 and 2018 from six different journals, to know the countrywide collaboration in the field of chemical sciences and to analyze the research contributions from the BRICS country and tries to find out the research outputs in the field of chemistry through bibliometric analysis.Bibliometrics now a days has got importance due to its measurement of quantitative terms of information and is used widely by information scientists.

Keywords: Bibliometric Analysis, Chemistry, DOAJ, BRICS

I) Introduction

Chemistry is the scientific field that deals with all other fields of scientific research moreover or less.Bibliometric studies carried in the field of library and information science to measure the effectiveness as well efficiency of information, statistical techniques and visualization through network diagrams has got the importance. Bibliometric studies used to measure the research trends , authorship pattern, country collaboration , institutional outputs along with other areas of study.DOAJ is the open access directory widely used now a days by scholar to access the scholarly information. The political and economic partnership among countries BRICS(Brazil, Russia, India, China & South Africa) delegates elaborated bi or multilateral co-operation in the field of science, technology & innovation, this study focus the outputs from these countries in the field of pure chemistry.

II) Objectives

The objectives in bibliometric study here considered are

1) To identify the number of articles published during the year.
2) To identify the single and multi-authored articles.
3) To identify most used Top 10 keywords by Author & plot the keywords co-occurrence network diagram.
4) To identify the scientific outputs from the countries and BRICS countries.
5) To identify top 5 manuscripts per citation.

III) Scope and Coverage

Study is limited to the open access journals from the DOAJ database. The journal articles published from English language during the year 2017 & 2018 are considered for study irrespective of their frequency of distribution and only research articles are considered excluding other forms in journals. Analysis is done to find out the authorship pattern and scientific outputs from the country. Name of the six journals that are considered for study from the directory of open access journals DOAJ are

- Acta Chimica Slovenica
- Chemistry Central Journal
- Frontiers in Chemistry
- Journal of Chemistry

- Magnetochemistry
- Nanomaterials

IV) Literature Review :

Sharma and Mahapatra (2019)[1] studied the bibliometric analysis for the Pramana journal dedicated to Physics, the major focus on the study is to find out the collaborative pattern of authorship, study considered the period 2006-2015, the researcher has taken 2133 research papers for the study and found that double authored papers are more as compared with single author, three author and more. Also the rate of collaboration is increasing per year.

Maity and Teli (2015)[2] in their study of bibliometric analysis of LIS journals available in the DOAJ database from the year 2004-2014 a ten years of study they found that major contributions in the study area are from information and communication technology also find out the productivity of single author is more.

Bandopadhyay(2001)[3]in his study of Authorship patterns in 92 PhD thesis of different disciplines submitted to 'University of Burdwan'found that there is progression in collaboration trend from the period of 1950 to 1990 and he identified that subfield Nuclear Physics has higher collaboration.

Tiew, Abdullah and Kaur (2002)[4] in their bibliometric study of Malaysian Journal of Library and information Science during the period of articles published between 1996-200, out of total 77 articles year 1997 has more articles compared to other years and Malaysia has maximum number of articles.

Hadgali and Anandhalli (2015)[5]in their study of neurology related literature growth during the period of 1961 to 2010 found that the literature growth of neurology is consistently increasing.

Wagner and Wong(2012) [6] studied the BRIC representation in Science Citation Index Expanded (SCIE) found out of 15000 titles only 445 titles are from BRICS countries but these journals are less visible as compared with American or European countries.

Kumar and Asheulova(2011) [7]found in their study of BRICS countries that contributions in emerging fields of Physics are prolific from Brazil, China and India.

V) Methodology :

Open access journals that are listed in DOAJ as the Science: Chemistry subject category and having the DOAJ seal criteria also indexed in the Web of Science database with Social Science Index Expanded are taken for the study. After filtering with the criteria six journals were finalized and the year of study taken under consideration is 2017 & 2018, Excel sheet is prepared to record the observations and the analysis was done with the available software tools.

VI) Data Analysis and interpretation :

1) Number of Articles from each journal

Sr.No	Journal Title	Country Published	URL /Website	Frequency	No.of Articles
1	Acta Chimica Slovenica	Solvenia	https://acta.chem-soc.si/	Quarterly	227
2	Chemistry Central Journal	UK	https://bmcchem.biomedcentral.com/	Annual	284
3	Frontiers in Chemistry	Switzerland	https://www.frontiersin.org/journals/chemistry	Annual	609

4	Journal of Chemistry	UK	https://www.hindawi.com/journals/jchem/	Annual	462
5	Magnetochemistry	Switzerland	https://www.mdpi.com/journal/magnetochemistry	Quarterly	82
6	Nanomaterials	Switzerland	https://www.mdpi.com/journal/nanomaterials	Monthly	1377
				Total	3041

(Table 1: Journal details with number of articles journal website, their frequency of publishing and total research articles from year2017 and 2018.)

Out of six journals considered for the study 2 journals have quarterly publishing frequency three journals are annually publishing and one journal is monthly. Total 3401 articles have been taken for study.

2) Authorship Pattern

The authorship pattern found for all articles under the study as

Number of Single Authored Articles	46(0.42%)
Number of multi Authored Articles	11033(99.58%)
Total Number of Authors	**11079**

(Table 2: Single and Multi Authored Articles)

Thus for of 3401 articles under the study only single authored documents are 46 while the rest of the 11033 articles have multi authors.

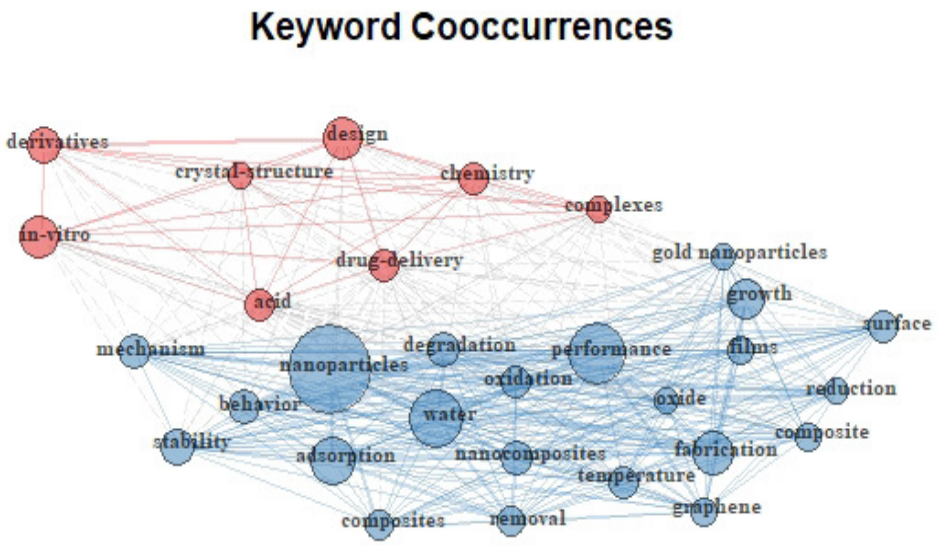
3) **To identify most used Top 10 keywords by Author**

Top 10 keywords used by Author in their research articles with their number of appearance

Sr.No	Author keywords	Total Number Of Appearance
1	NANOPARTICLES	55
2	ELECTROSPINNING	49
3	GRAPHENE	49
4	ADSORPTION	45
5	CYTOTOXICITY	39
6	NANOCOMPOSITES	36
7	PHOTOCATALYSIS	35
8	GRAPHENE OXIDE	34
9	MOLECULAR DOCKING	32
10	MAGNETIC NANOPARTICLES	31

(Table 3: Top 10 Keywords Listing with their number of Appearance)

Table 3 depicts that Nanoparticle is the widely used keyword with 55 number of appearances followed by the keyword Electropinning with 49 number of times,other keywords followed are Graphene,Adsorption,Cytotoxicity,Nanocomposites,Photocatalysis,Graphene Oxide, molecular Docking and Magnetic nanoparticles.

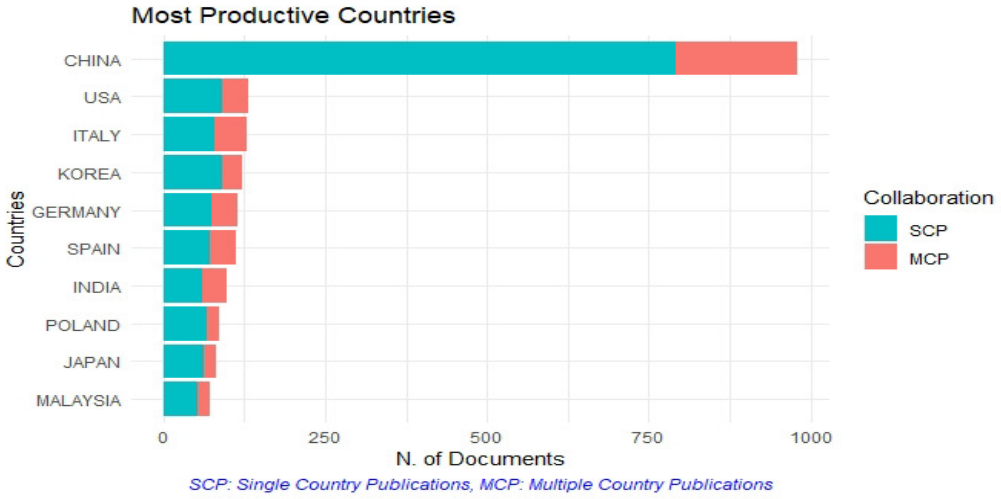


(Fig (Fig1: Network showing co-occurrences of keywords used.)

From the above keyword co-occurrence network it is depicted that nanoparticles is measuredly used keyword and in the other clusters chemistry, crystal structure and derivatives etc.

4) To identify the scientific outputs from the countries and BRICS countries

The following diagram depicts the scientific outputs from the top 10 countries as listed with single country publication and multi country publications.



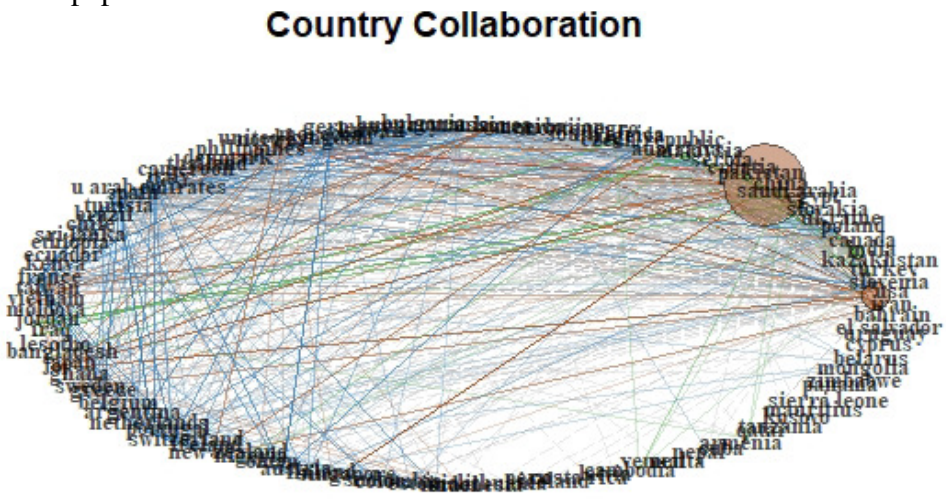
(Fig2: Most Productive Countries Scientific outputs.)

The following table shows the scientific outputs from Authors country of origin

Country	Articles	Frequency	SCP	MCP	MCP ratio
China	980	0.32279	792	188	0.1918
India	98	0.03228	61	37	0.3776
Brazil	40	0.1318	25	15	0.375
Russia	40	0.1318	27	13	0.325
South Africa	18	0.00593	9	9	0.5

(Table 4: BRICS countries outputs with SCP- Single Country Publication and MCP-Multi Countries Publication)

From the above figure 2 it is clear that more productive country is China followed by USA, Italy, Korea, Germany, Spain, India, Poland, japan and Malesia.From the table 4 China is having maximum scientific papers contribution.



(Fig 3: Countrywide collaboration Network)

5) To identify top 5 manuscript per citation with total citations per year

The following data table shows the top 5 papers with total citation (TC) and total citations per year.

Sr.No.	Paper	TC	TC per Year
1	MASON SA, 2018, FRONT CHEM	134	44.7
2	SHAPLA UM, 2018, CHEM CENT J	110	36.7
3	LIU Y, 2018, NANOMATERIALS	103	34.3
4	HE Q, 2018, NANOMATERIALS	100	33.3
5	HE Q, 2018, NANOMATERIALS-a-b-c	100	33.3

(Table 5: Top 5 Manuscripts with Authors and total citations)

Form the above table the Journal Frontiers in Chemistry has article with top citation followed by Chemistry Central Journal and Nanomaterial's article.

VII) Conclusions :

From the study we conclude that Science: Chemistry general category journals have strong strength of Multi Authored Articles, and Single Authored documents are very less. A nanoparticle is the frequently used Author keyword showing the research trend in the area of Nanoparticles. Countries China, Pakistan, Saudi Arabia forms measure network cluster. From the BRICS countries though China has more number of scientific output papers but there muti publication ratio with other countries is very less, India has good number of scientific papers and strong multi countries collaboration. Among BRICS South Africa has less number of research contributions.

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Effects of Online Training of Integrated Sun Salutation Yoga Programme on Body Weight Reduction and Muscular Strength of Sedentary Women During Covid-19

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Abstract-

Most people infected with Coronavirus disease (COVID-19) an infectious disease caused by the SARS-CoV-2 virus. During the outbreak of the coronavirus pandemic, a lot of protective measures were made for its prevention. But with this, many problems also started coming, out of those troubles major issue raised health status of adults and housewives who are working they had to be lockdown inside the house walls. It had various negative implications, including a fall in population physical activity levels, as well as increased physical inactivity and sedentary behaviour. Maintaining physical activity and fitness levels requires home-based physical exercise. Among the many home-based exercise options, Yoga not only improving and maintaining health-related physical fitness (example- cardiorespiratory endurance, muscular endurance, and body composition) as well physiological health and mental wellbeing. The purpose of the present study was to see the effects of online training of Integrated Sun Salutation Yoga Programme (ISSYP) on body weight reduction and muscular strength (abdominal and lower body) of sedentary women during Covid-19. The research scholar purposively selected 15 sedentary women aged between 24-36 years from Imphal district, Manipur . All the subject of the study were in experimental group. At the end of 6 weeks post-test was conduct for the experimental group. The paired 't'-test indicated significant differences in weight loss, abdominal muscular strength and lower body strength of women. It may thus be concluded that the changes has been significantly in body weight , abdominal strength and leg strength of sedentary women due to online ISSYP programme.

Keywords- Covid-19, Yoga, Sun Salutation, Muscular Strength , Endurance

Introduction :

The need of the 21st century is not only to achieve medical excellence in curing the patients but also and perhaps more importantly to prevent people from becoming sick (Van, 2010). At present, a major cause of morbidity and mortality is modern lifestyle which includes stress, physical inactivity and high fat diet leading to obesity. These factors manifest themselves as lifestyle diseases such as hypertension, diabetes mellitus and coronary artery disease (Yang, 2007). In Indian culture, yoga has traditionally been a part of daily routine which is meant for attaining healthy life(Singh, 2018). Sun salutation, also called as Suryanamaskar, sun adoration for health, efficiency and longevity is a part of Indian traditional yogic practices (Bhutkar,2011). Surya Namaskar (SN) is a sequential combination of yogic postures performed dynamically in synchrony with the breath. Although there are a number of reports on the effect of yoga training on pulmonary functions(Yadav, 2001), explosive leg strength of students(Singh, 2021), lower body strength (Singh, 2020), endurance (Madanmohan, 1992), and cardiovascular parameters(Sinha, 2004). Scientific literature is supportive on the physical, physiological effects

of SN that is an integral part of modern yoga training. Although the results of the studies reported positive outcomes, there is a lack of research conducted on online training programme. Additionally, there is limited research regarding the effect of online vinyasa training programme on body weight reduction and muscular strength of sedentary women. It has been suggested that SN at different speeds provides different benefits and that when it is done rapidly it warms up the body and acts as a cardio tonic, whereas when done slowly it strengthens and tones the musculature and enhances functioning of internal organs (Bhavanani, 2011). It has also been suggested that one can drive away depression through fast rounds or cool down hyperactivity with slow rounds.(Bhavanani, 2011). Hence, the present study wis designed to evaluate changes in body weight loss with integrated approach of sun salutation during covid-19 .

Therefore, the purpose of current study was to find the effects of 6 weeks online training of integrated sun salutation yoga programme (ISSYP) on body weight reduction and muscular strength of sedentary women of manipur during Covid-19.

Methodology :

The research scholar purposively selected 15 sedentary women aged between 24-36 years from Imphal district, Manipur . All the subject of the study were in experimental group. The following variables were selected for the present study: Weight Loss, Abdominal Muscular Strength and Lower body strength. After selecting the subjects, for the purpose of study pre data of both the groups related to Body Weight, Leg Strength and Abdominal Muscular Strength was taken before undergoing the Integrated Sun Salutation training programme. After collecting the initial data, the subjects were administered for six week training schedule, which was be 5 days per week for 30 mins duration. Immediately after the training schedule, Body Weight, Leg Strength and Abdominal Muscular Strength was again estimated by tests for respectively. Weight Loss was measure by using Weighing Machine. Abdominal Muscular Strength was measure by maximum number of crunches in 30 second time duration. Lower Body Muscular Strength was measure by Body Weight Squat for Maximum Time duration.

Procedure :

The Integrated Sun Salutation was taught and the practice sessions were conducted and supervised by the researcher himself along with his colleague to monitor the online class with was run on Zoom cloud meeting app . For teaching purpose, each step was explained and demonstrated before. The subjects performed the same and the necessary corrections were made. The rest of the instructions were given in between online training programme of Integrated Sun Salutation.

Table 1. An example of training sessions followed during a micro-cycle by intervention group.

BATTERY	DURATION
PRAYER	1 minute
WARM-UP	5 minutes
SUN SALUTATION	20 minutes
MEDITATION	3 minutes
RELAXATION	1 minute

Prayer: Universal prayer under the guidance of research scholar.

Warm-up: Active body warm-up with neck movements, shoulder movements, trunk movements, knee movements and wrist & ankle movements.

Sun Salutation:

1) Prayer Pose (Pranamasana)
2)Upward Salute (Hastauttanasana)
3)Standing Forward Bend (Hasta Padasana)
4)Low Lunge (Ashwa Sanchalanasana)
5)Plank (Phalakasana)
6)Knees-Chest-Chin (Ashtanga Namaskara)
7)Cobra (Bhujangasana)
8)Low Lunge (Ashwa Sanchalanasana)
9)Mountain Pose (Parvatasana)
10)Standing Forward Bend (Hasta Padasana)
11)Upward Salute (Hastauttanasana)
12)Prayer Pose (Pranamasana)

Meditation: quick mindful meditation.

Relaxation: Savasana.

The classes were of 30 minutes duration each and were conducted in the evening from 6:15p.m to 6:45 p.m. on five days a week basis, over a period of 6 weeks. A special appeal was made to the subjects so that they do not miss any of their classes. Nevertheless, some absences did occur.

Results

IBM SPSS software (version 20.0.0) was used to compute the results of paired 't'-test group design in the study to analyse the data. The subjects were into experimental group, the level of significance was set at .05, since no highly sophisticated tools were used in the study.

In order to determine the significance of difference in Weight Loss, Abdominal Muscular Strength and Lower body strength, paired 't'- test was applied. The results of study are presented in tabular form and table for each selected variable separately. Table 2 indicates the values of the mean, standard deviation, and standard error of the mean for the data on body weight, abdominal strength and leg strength pre and post after the online integrated sun salutation programme.

Table2. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Body Weight_Pre	55.2600	15	6.07298	1.56804
	BodyWeight_ Post	51.3400	15	4.78656	1.23588
Pair 2	Ab Strength _Pre	10.6000	15	1.76473	.45565
	Ab Strength_Post	15.6000	15	1.63881	.42314
Pair 3	Leg Strength_Pre	25.6667	15	2.96808	.76636
	Leg Strngth_Post	33.2667	15	3.23964	.83647

Table3. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BodyWeight_Pre - BodyWeight_Post	3.9200	2.91895	.75367	2.30354	5.53646	5.201	14	.000
Pair 2	Abd Strength_Pre Abd Strength_Pro	-5.0000	1.77281	.45774	-5.98175	-4.01825	-10.923	14	.000
Pair 3	Leg Strength_Pre – Leg Strength_Post	-7.6000	1.50238	.38791	-8.43199	-6.76801	-19.592	14	.000

Table 3. Indicates that the value of pair 1, t-statistic is 5.201. This t-value is significant as the p value is 0.000 which is less than .05. In Pair 2, t-statistic is 10.923. This t-value is significant as the p value is 0.000 which is less than .05. In Pair 3, t-statistic is 19.592. This t-value is significant as the p value is 0.000 which is less than .05.

Thus, the null hypothesis of no differences before and after online ISSYP programme is rejected, and therefore, it may be concluded that body weight , abdominal strength and leg strength of sedentary women in the state Manipur is not same. Since the null hypothesis has been rejected, it may thus be concluded that the changes has been significantly in body weight, abdominal strength and leg strength of sedentary women due to online ISSYP programme.

Discussion :

In the present research study statistical results revealed that 6 weeks online integrated sun salutation training programme is effective in improving weight loss, abdominal muscular strength and lower body strength of sedentary women of Manipur State. The paired 't'-test for dependent variables exhibited that there was a significant difference on weight loss, abdominal muscular strength and lower body strength in experimental training group. The findings of our study are in line with the previous study conducted in similar kind of studies (Singh, V.,2019) significant effect of 6 weeks Vinyasa practice with selected physical variables i.e. Lower Body Strength and Dynamic Balance of Body. The subjects were 20 male subjects aged ranged between 17-25 years of L.N.I.P.E, Gwalior., (Neetu Singh, 2012), significant effect of six weeks yoga practice with selected physiological and physical variables of female athletes, of 18 to 24 years students.

Previous studies have also suggested, Sinha and colleagues who studied energy cost and cardiorespiratory changes during the practice, as well as Bhutkar and colleagues who conducted a pilot study on 6 months of Surya Namaskar practice on cardiorespiratory fitness parameters.

Sinha and colleagues had concluded that Surya Namaskar is an ideal form of aerobic exercise having static, stretching and dynamic muscular movements involving all major joints.

The results contribute in recognizing online ISSYP training a form of yoga as a potential tool for a full and lasting physical development of abdominal muscular strength and lower body strength and controlling wight loss.

Conclusion :

Hence the researcher can conclude that six week Online ISSYP programme is effective in body weight reduction and muscular strength (abdominal and lower body) of sedentary women during Covid-19. This pilot study further encourages researcher to proceed with a larger scale study on similar studies. And from a prospect of health related physical fitness it is very well accepted that Sun Salutation, a form of yogic practice home-based exercise programme, establishes its significant improvement, leading to a fit body.

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Utilization of Mobile Instant Messaging Applications for Health Communication by Auxiliary Nurse Midwives, Visakhapatnam, Andhra Pradesh

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Subject: Nursing.

Abstract :

Health system in India is designed as a three-tier structure comprising primary, secondary, and tertiary facilities. Multipurpose Health Assistant Female (MPHAF) also called as Auxiliary nurse midwife (ANM)s are the health workers who play a crucial role in the health system, by providing primary health services to the community at a sub-centre level. The primary literature analysis noted that communication is an important factor for ANMs daily duty routine. Delay in communication with supervisors, peer group, subordinates and beneficiary's results, in inefficiencies in health service provisionAt the face of the problem of delayed communication, MIM can act as an important mitigating tool. ANMs are using these applications in reporting to the supervisors, training the subordinates (ASHA, Anganwadi workers) and also in educating beneficiaries regarding health information. Considering the research gap the study aimed at estimating the proportion of utilization and understanding the potential of MIM in the health ecosystem of Andhra Pradesh, by assessing and understanding the utilization of MIM by ANMs for health worker communication

Key Words: Mobile instant messaging, Auxiliary nurse midwife (ANM), Health communication, Utilization of Mobile Instant Messaging.

Introduction :

Health system in India is designed as a three-tier structure comprising primary, secondary, and tertiary facilities. The primary health care services in rural areas were provided by sub-centre, primary and community health centres. Multipurpose Health Assistant Female (MPHAF) also called as Auxiliary nurse midwife (ANM)s are the health workers who play a crucial role in the health system, by providing primary health services to the community of 3000 to 5000 population (Mavalankar, 2008). The ANMs work at the level of subcenter and are instrumental in the delivery of essential primary health care services.

Objectives :

1. To estimate the proportion of utilization of MIM applications among ANMs for health worker communication
2. To understand the practice of usage of MIM applications among health workers (i.e., ANMs) for health information communication
3. To identify the type of information communicated using MIM application by ANMs
4. To understand the facilitators and barriers in the utilization of MIM application usage by health workers (i.e., ANMs) for health worker communication.

Review Of Literature :

The literature search for review was done by two methods:

a. Electronic search: Electronic search was done by using keywords in the databases, the search was done in databases like Google Scholar, PubMed & J gate. The keywords used are "Instant messaging health worker", "WhatsApp" "Mobile Instant Messaging"

"Frontline Health Workers", "Health worker communication" "Messaging" "Community Health Workers".

b. Manual search: The manual search is by bibliographic search and hand search.

The literature review identified that the most used mobile instant messaging application is WhatsApp with 2 billion users globally (Clement, 2019).

Some studies were interventional studies where the WhatsApp is installed and create a group for the participants, and the messages from that group are analyzed qualitatively (Dorwal, 2016).

Some studies did secondary data, in which the researcher takes the old messages from the WhatsApp chat and analyzed both quantitatively and qualitatively (Johnston & Athanasiou, 2015).

Data Collection :

The study adopted concurrent mixed methods. The research population of the study were ANMs currently working in Visakhapatnam district, Andhra Pradesh. Quantitative data was collected using a survey of sample size 259 and analysed using SPSS. The qualitative data was collected with in-depth interviews of 10 ANMs and done thematic analysis using ATLAS ti. The triangulation was done to mix the results in the discussion. The literature review helps the researcher to adopt the technology acceptance model (TAM) in measuring the utilization of MIM with the framework. this framework includes the 9 dimensions which influence the utilization they are i) intention to use, ii) perceived usefulness, iii) perceived ease of use iv) voluntariness v) subjective norm vi) image vii) results demonstrability viii) human technology interaction ix) technical competence.

Result :

The study observed that 100% of ANMs are using MIM for health communication. in understanding the practice of MIM utilization the study also observed regularity of utilization and Monthly active usage. It was observed that 96.9% of ANMs are having regular utilization and average MAU is 27.84 times per month. In the bivariate analysis, the study observed that intention to use, perceived usefulness, perceived ease of use, image, job relevance and technical competence were positively associated with regularity of utilization. the linear regression model finds that intention to use is positively predicted the monthly active usage whereas technical competence is negatively predicted In Health sector MIM utilization has widespread like public/private and also among people working inside/outside infrastructure. As discussed in the initial chapters of this dissertation, the MIM applications are used by MPHA(F)/ANM for health communication across all states of India. The extant literature has shown that there are only a few studies all over the world and mostly in African countries. Taking this as a research gap the current study aims to understand the utilization of mobile instant messaging applications for health communication among ANMs. This is the first study of this kind in India. The method used to achieve the objectives is a concurrent mixed method, where the quantitative method uses the survey approach and qualitative method used the in-depth interview approach.

Discussion :

Mobile instant messaging (MIM) applications like WhatsApp, Telegram, Facebook messenger etc., came into prominence after the smartphone revolution post-2010. These applications though primarily designed for messaging and social networking are increasingly

finding their use in the workplace environment. Specifically, with features such as multimedia and document sharing, audio/video calling, group messaging etc., these applications are increasingly used including in the areas of health In Health sector MIM utilization has widespread like public/private and also among people working inside/outside infrastructure. As discussed in the initial chapters of this dissertation, the MIM applications are used by MPHA(F)/ANM for health communication across all states of India. The extant literature has shown that there are only a few studies all over the world and mostly in African countries.

Taking this as a research gap the current study aims to understand the utilization of mobile instant messaging applications for health communication among ANMs. This is the first study of this kind in India. The method used to achieve the objectives is a concurrent mixed method, where the quantitative method uses the survey approach and qualitative method used the in- depth interview approach. Concluding the discussion, the chapter elaborately discussed results obtained from both quantitative and qualitative methods. The results were mixed with the help of triangulation and discussed both results combined. This discussion demonstrated that utilization of MIM by ANMs was triggered by behaviour intention/intention to use. The other TAM factors also indirectly impacting the utilization, however all the other TAM factors include perceived usefulness, perceived ease of use, voluntariness, image, results demonstrability and job relevance is triggering the intention to use and this intention of users will trigger the

utilization. however, the technical competence of ANMs is negatively predicted monthly active usage, means increasing technical abilities having negative effect on utilization. this is because of influence of other factors on MAU. Coming to the barriers of MIM utilization among ANMs for health communication are low network, differences in technical capacities among users, unwanted messages and dual workload which hinders the MIM utilization.

Conclusion :

Both qualitative and quantitative findings found that there were very good utilization and high acceptance of such MIM application for health communication. soon the ANMs will have a health communication completely based on the technology. This high enthusiasm needs more support from the health system itself. The health system can adopt a new programme or it can make changes in current programmes. For example, if the government itself provide a mobile instant messaging tool in the already exists mHealth technology like ANMdigi or ANMOL will give the potential benefits of the health system prominence.

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National Education Policy 2020

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Introduction :

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. Universal high-quality education is the best way forward for developing and maximizing our country's rich talents and resources for the good of the individual, the society, the country, and the world. India will have the highest population of young people in the world over the next decade, and our ability to provide high-quality educational opportunities to them will determine the future of our country.

The gap between the current state of learning outcomes and what is required must be bridged through undertaking major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education through higher education.

The aim must be for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of social or economic background.

This National Education Policy 2020 is the first education policy of the 21st century and aims to address the many growing developmental imperatives of our country. This Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st century education, including SDG4, while building upon India's traditions and value systems.

Education Policy lays particular emphasis on the development of the creative potential of each individual. It is based on the principle that education must develop not only cognitive capacities - both the 'foundational capacities 'of literacy and numeracy and 'higher-order' cognitive capacities, such as critical thinking and problem solving – but also social, ethical, and emotional capacities and dispositions. The teacher must be at the centre of the fundamental reforms in the education system. The new education policy must help re-establish teachers, at all levels, as the most respected and essential members of our society, because they truly shape our next generation of citizens. It must do everything to empower teachers and help them to do their job as effectively as possible. The new education policy must help recruit the very best and brightest to enter the teaching profession at all levels, by ensuring livelihood, respect, dignity, and autonomy, while also instilling in the system basic methods of quality control and accountability.

The new education policy must provide to all students, irrespective of their place of residence, a quality education system, with particular focus on historically marginalized, disadvantaged, and underrepresented groups. Education is a great leveler and is the best tool for achieving economic and social mobility, inclusion, and equality. Initiatives must be in place to

ensure that all students from such groups, despite inherent obstacles, are provided various targeted opportunities to enter and excel in the educational system.

These elements must be incorporated taking into account the local and global needs of the country, and with a respect for and deference to its rich diversity and culture. Instilling knowledge of India and its varied social, cultural, and technological needs, its inimitable artistic, language, and knowledge traditions, and its strong ethics in India's young people is considered critical for purposes of national pride, self-confidence, self-knowledge, cooperation, and integration.

1986 Policies

The implementation of previous policies on education has focused largely on issues of access and equity. The unfinished agenda of the National Policy on Education 1986, modified in 1992 (NPE 1986/92), is appropriately dealt with in this Policy. A major development since the last Policy of 1986/92 has been the Right of Children to Free and Compulsory Education Act 2009 which laid down legal underpinnings for achieving universal elementary education. A good education institution is one in which every student feels welcomed and cared for, where a safe and stimulating learning environment exists, where a wide range of learning experiences offered, and where good physical infrastructure and appropriate resources conducive to learning available to all students. Attaining these qualities must be the goal of every educational institution. However, at the same time, there must also be seamless integration and coordination across institutions and across all stages of education.

Main Characteristics :

• recognizing, identifying, and fostering the unique capabilities of each student, by sensitizing teachers as well as parents to promote each student's holistic development in both academic and non-academic spheres;

• according the highest priority to achieving Foundational Literacy and Numeracy

• flexibility, so that learners have the ability to choose their learning trajectories and programmes, and thereby choose their own paths in life according to their talents and interests;

• no hard separations between arts and sciences, between curricular and extra-curricular activities, between vocational and academic streams, etc.

• multidisciplinarity and a holistic education across the sciences, social sciences, arts,humanities, and sports for a multidisciplinary world in order to ensure the unity and integrity of all knowledge;

• respect for diversity and respect for the local context in all curriculum, pedagogy, and policy, always keeping in mind that education is a concurrent subject;

• full equity and inclusion as the cornerstone of all educational decisions to ensure that all students are able to thrive in the education system;

• teachers and faculty as the heart of the learning process – their recruitment, continuous professional development, positive working environments and service conditions.

Challenges In The Current Higher Education System

1. Fragmented higher education ecosystem.
2. Lack of quality higher education in socioeconomically challenged areas.
3. Lack of research funding across disciplines .
4. Large number of affiliations to universities resulting in poor under graduate performance.

Key Notes

The NEP brings about a range of changes in the system of higher education aiming to improve it with the goal of , creation of greater oppurtunities for individual emplyoment .

1. Creating a system consisting large , multi disciplanary universities and colleges with at least one in or near every district.
2. Offering faculty and institutional autonomy.
3. Curriculum , pedagogy , assessment and student support for enhanced student experiences.
4. Establish national research foundation .

Features of National Education Policy 2021

The New Education Policy is the third education policy of independent India in which fundamental changes have been made.

Under the new education policy, the educational sector will also be linked to technology, in which maximum digital accounts will be given in all schools.

In the new education policy, all types of educational content will be translated into the regional language of that region, so that the regional language can be promoted in the educational field.

Vocational test internship will be given to the children from class VI onwards.

Under the new education policy, now many other options will be given to the children in studies.

Now other options will also be kept in class X, in which the student will not be able to choose any stream and choose the subjects as per his wish.

Under the new education policy, students will be taught coding from class 6 itself.

Virtual lab will also be made in the educational sector so that the quality of educational areas can be increased.

Under the new education policy, the new educational pattern of 5+3+3+4 has been changed by changing the educational pattern of 10+2 which has been going on for years, in which 3 years free New Education Policy PDF (NEP) National Education Policy 2021 – New Education Policy | National education policySchool education will be given to the children.

Under the new education policy, education will be universalized, which excludes some education.

Stages of National Education Policy 2021

The phases of the New Education Policy are divided into 4 phases. After abolishing the 10+2 formula of the old education policy, the government is going to implement the new education policy in the formula 5+3+3+4. 3 years of free schooling and 12 years of schooling have been included in the new pattern of this new formula. It has been made mandatory to follow this formula by government and non-government institutions. Let us know the four steps of the new formula of the new education policy…!

Foundation Stage: –

Children from 3 to 8 years of age have been included in the foundation stage of the new education policy. In which 3 years of pre-schooling has been included under which the language skills and educational level of the students will be assessed and the focus will be on its development.

Preparatory Stage: –

In this stage children of 8 to 11 years have been included in which children from 3rd to 5th grade will be there. In this stage of the new education policy, special focus will be on strengthening the numerical skills of the students, while all the children will also be given knowledge of the regional language.

Middle Stage :-

Within this stage, children from class VI to VIII have been included, in which coding will be started from the children of class VI. All the children will be provided vocational test as well as business internship opportunities.

Secondary Stage :–

In this stage, students from class VIII to class 12 have been included. Within this stage, multiple elective educational courses have been introduced by eliminating the academic curriculum from class VIII to XII as well. Students can choose their subjects as per their choice and not within a specified stream. Under the new education policy, students have been given the freedom to choose subjects, students can study science subjects as well as arts or commerce subjects simultaneously educational fields such as medical and law.

Conclusions :

National Higher Educational Qualification Framework (NHEQF) will be formulated by the GEC and will be in sync with the National Skills Qualifications Framework (NSQF) . Higher education qualification leading to a degree / diploma/certificate will be described by the NHEQF in terms of such learning outcomes . In addition,the GEC will set up facilitative norms for issues, such as credit transfer, equivalence , etc through the NHEQF.

Higher Education Grants Commission (HEGC) will be created and will take care of fundind and financing of higher education based on transparent criteria , including the Institutional Development Plans (IDPs) prepared by the institutions and the progress made in the implementation of IDPs . HEGC will be entrusted with disbursement of scolarships and on developmental funds for new focus areas and expanding quality programme offerings in HEIs across disciplines and fields.

The professional council , such as ICAR,VCI and NCTE etc , referred to as Proffessional Standard Setting Bodies (PSSBs) will be invited to be members of the GEC. As members of the GEC , they would specify the curriculum framework , against which educational institutional will prepare their own curricula. National Research Foundation to promote high quality research . NRF will be soon set up and look after funding , mentoring and building quality of research in India.

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Library Webpage : An Unique Source of Information

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Abstract :

This paper reflect the modernization of academic Library, after modernization many libraries design their library web page, basically library webpage is a mirror of any library, well design and organized library web page as an excellent media for publicizing the library functions, activities, library programmes and services it's also focus on features, standards of library webpage and librarian's initiatives.

Keyword: Library webpage, ICT, Library portal, Library webpage features.

Introduction:

Advances in the ICT have increased capabilities such as high resolution capture devices drastically increase of digital storage capacity and explosive growth of World Wide Web and high band width network and increasing number of security system in network domain, Library web page play a vital role in information dissemination. It's a unique source of information. Librarian should plan for ICT based services for their readers. The planning approach should focus on identifying key environment issues influencing the library and defining a vision of services that describe ultimate outcomes. ICT plan involving assessment of existing technology and services through library web page. ICT application to the library administration, management and provide services have become integrate part of modem libraries. Most of the libraries are functioning in automated environment.

Library web page is a mirror of any library. Library webpage has become popular among the college libraries to input their valuable resources. A good well designed and organized library web page services as an excellent media for publicizing the library function, activities, programme and the services. The library webpage ensure a lot of saving of the library staff time as answer to the frequently asked questions. Library webpage also provide the information about important library announcements starting the new library services, setting up a new facilities etc. Information communication technology has also facilitated networking, creation and accessing of remote electronic data books and wide range of information & product through Library web page. Use of information communication technology and access to electronic information network is slowly transforming libraries from book-center to information center.

Library web page is a key of library holding. In other words, Library web page is a place where information is organized in systematic manner. It is today's need because of increasing the library users in the world. Library web page typically provide a gateway to an institution's resource By listing them for users and creating a direct link to the native interface of each resource. Such listings are available on most of libraries web pages today.

Resource sharing

Lack of effective and efficient technology has been a major hurdle for resources sharing in India besides the lack of cooperation among the participating libraries. Library web page provides the technology to link libraries and to make the library users aware of the collections of

others and create library web page which is the most important requirement at this juncture where economic considerations are forcing die libraries to cooperate. Internet could be a platform for decentralized cooperative library network where every individual library keeps its resources available on the net which can be shared by other libraries.

Features of Library Web Page

- Mirror of the Library
- Provide 24*7 service
- Access information remotely
- Information available on fingertips
- List of all holding of particular Library
- Information access through WEB-OPAC
- Web linkage
- Access to the online databases
- TCP/IP shall be supported

Standardization of library web page

When we are observe the library web pages they found vary from each other, there is no standard use to design the library web pages. Every web page designer use different ideas to make the library web page, it's also found that the link and hyperlink are not properly post on web pages, so there should be a standard to design the library web pages properly. There is need to evaluate the library web pages and the following criteria should be followed.

- Accuracy
- Authority
- Objectivity
- Currency or timeline
- Coverage
- Usability

Need to evaluate library web page :

Traditional sources come across different stages of filtering. These sources are evaluated by a referee or an authority or editor, etc. For a journal article to be published, it usually goes through some peer review before it is accepted for publication. Unlike most traditional information sources, no one has to approve the content before putting it on the Internet. This means that the quality of the information found on the Net must be evaluated very carefully. It is the job of the searched to evaluate the sources before using in order to determine whether the source will meet the need or not

Function of library web Page :

Searching would be far easier for the user if the library could present resources in a consistent, organized gateway. This should be customized for different user groups.

- Users would learn to search more effectively if there is one fully functional library maintained search interface available for any database they wanted to use.
- It would often be convenient to search multiple databases from one search box. This implies the ability, in a single search, to interrogate databases that use different metadata standards, especially in different curatorial domains.

- Specifically the system should be able to search databases of images and a proliferating array of multimedia types, and ideally show thumbnails or previews in search results.
- The search results from spread searches need to be presented in an intelligible way to the user, ideally with de-duplication and sorting of results.
- The system must understand licenses, such that it only offers options to users that are available to them, based on their access rights and the license, although it can help create awareness and drive demand for protected resources through alerting, personalization and customization functions.
- Link resolution services should be supported. That is rather than pointing at specific static URLs for content, web requests should pass through an intermediary service where a final URL is calculated for any resource at the time of the user accessing it. This offers a scalable way to manage constantly changing URLs and the opportunity to develop further middleware support services.
- The user should be able to save hits or searches', including for reuse on databases other than the one it was first created for.
- Another central requirement is that there should be a single point of authentication. The user must not be constantly challenged for a password, in fact cross searching of multiple accesses controlled 3 datasets is impractical without some sort of single sign on or caching a credentials or trust between servers.
- The system must provide central management tools for handling a variety of http based query syntaxes, since standards are developing rapidly to meet the needs of specific domains.

Librarian's Initiatives to make a Library web Page :

According to Zemon (2019) as educators who organize and evaluate information resources. Academic librarians bring unique perspective and skills to the development of portal in their colleges and universities for portal planning and implementation, they bring their expertise with content, their commitment to user's services and their experience in creating customized web based information deliveiy through libraiy portal. He also take a initiatives as a

- Content creator
- Copyright experts
- Digital reference service personnel
- Metadata creator

Librarians, Information Technology staff and other academic staff will have to co-operate more. The portal implementation itself will force collaboration, systems thinking, and will break-up functional silos. Staff at every level will realize that in order to succeed in this environment, collaboration, and openness with information will become essential. All systems are interconnected and a diverse work force has to work together in order to enable and users centered services.

Current scenario of Library web page in rural part of India :

The current status of use of library web page in college Libraries in rural parts of India has not reached-a very high level due to lack of budget, lack of manpower, lack of skill & staff and lack of training are the main constraints for not automating library activities. Even though library professionals have shown a positive attitude towards the use of ICT application and

modernization they need extensive and appropriate training to make use of ICT tools in rural areas libraries.

Conclusion :

The portal will become the agent, which transforms the library into a learning organization. Building a portal takes vision, leadership, and sustained co-operative effort from many diverse stakeholders, systems thinking, organizational openness and promotion of personal trust. The portal will force

Institution and academic libraries to focus on outcomes to users. Portals will help institutions respond directly to user's expectations with visible increase in service quality and learning outcomes. A successful library portal will also enhance the learning and research environment of he campus and will contribute to a better informed and more open society. Ultimately, the library portal will change the organizational culture of institution of higher learning and help them evolve into real learning organizations.

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OER Awareness and Role of Librarians

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Introduction :

The world we live is in a state of constant change. Changes are experienced over a significant period in our lives. Due to covid pandemic technological change has become unavoidable. Though readers are reading books, journals etc. they had to shift to e reading. As the reader is not approaching the library, library has to be made available at the doorstep of the reader. Physically taking the library to the reader may be possible in a limited way, but the vast amount of content available in the digital form can temporarily replace the need to be physically serving the needs of the reader. The librarians have to motivate readers to use e resources and provide them with requisite knowhow about available e resources and especially the Open Education Resources (OER) to the students and faculty alike.

While performing these tasks, the librarian felt the need to evaluate the existing awareness about different OERs available to the community so that efforts could be directed in appropriate manner. This paper presents the findings of a nationwide survey of OER awareness conducted by the Librarian, Gandhi Shikshan Bhavan's Smt. Surajba College of Education and the Librarian of Lords College of Education. The survey was administered through an online questionnaire using Google Forms and was responded by about 500 participants all over the country. The respondents included students and faculty members of different colleges and universities in India.

What is OER?

Open Educational Resources are defined as "technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes". They are typically made freely available over the Web or the Internet.
Open Educational Resources (OER) are those teaching and learning materials that are available to anyone free of cost and under an open license to allow others to retain, reuse, revise, remix and redistribute them with few or no restrictions.

The term Open Educational Resources first came into use at a conference hosted by UNESCO in2002, defined as "the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non -commercial purposes" (Johnstone, 2005). The definition of OER now most often used is: "open educational resources are digitized materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research

What does it include?

1. Open course ware
2. Open textbooks
3. Open learning
4. Stakeholders

What activities does it include?

1. Retain
2. Reuse
3. Revise
4. Remix
5. Redistribute

Advantages

1. Low cost -OER are mostly freely available so anybody anywhere any place any time readers can use OERS.
2. Readers can pick and choose required information from each source
3. It is a potential way to bridge gap between formal and non formal education.

Disadvantages

1. 1.Lack of standard licence is one of the challenges that OER face.
2. 2.Quality of material is questionable because that can be created by anyone.
3. 3.Few technological issues can be faced by users e.g. Internet issue, low internet bandwidth

Few higher education initiatives taken by India

1. IGNOU
2. NDLI
3. NPTEL
4. E-PATHSHALA
5. SWAYAM

Review of literature :

Vivien R Ol states in his paper Open educational resources: staff attitudes and awareness states ere is a positive collegiate culture within the faculty, and overcoming the lack of awareness and dismantling the barriers to sharing will help advance the open educational practices, benefitting faculty, staff and community.

Jenny Haymann in his research paper titles Awareness and use oER open educational resources in Ontario: preliminary study of post-secondary Educator perspective states that respondents are familiar with concepts and practices use of OER as part of their course.

Deshmukh Umesh states in Open Education resources and the role of librarian that OER is very encouraging trend as a librarian who are custodian of information are highly aware of OER even though it is new concept in the field of library and information science.

Open Educational Resources: Role of Librarians by Meghana Sanjiva and Dr Sushma Poudwal, Librarians have taken some steps in integrating OER into the library collection and services. Much, however, needs to be done like creating metadata and adding them to the E-resource collection.

Objectives of the Survey

1. To find out familiarity among readers about open educational resources?
2. To explore level of information literacy needed to be delivered by library professionals regarding awareness OER users.

Rational

During covid period, when face to face teaching is not possible, OERs are very useful. OERs are playing significant role in open and distance learning. Specially during the pandemic situation, the researcher found great need of awareness of OERs among users. So to understand knowledge of readers regarding the OERs was very essential. The findings would help the

librarian develop his information literacy programme. Following key elements were observed interacting with the students and faculty members

- Lack of preparation time: Teachers have not prepared their learning content to adapt to online learning, and preparing such content takes time. Similarly, several universities and schools have not improved their online learning environments to support this kind of learning experience.
- Teacher/learner isolation: In this first-ever application of pure long-term online learning (without face-to-face learning or blended learning), both teachers and learners should not feel that they are left alone during the teaching and learning processes.
- Need for effective pedagogical approaches: New effective pedagogical approaches are needed to keep learners motivated and engaged during this long period of online learning,
- To help overcome the problem of limited time to prepare online learning content, teachers should make use of the thousands of open educational resources (OER).

This situation required researcher to understand familiarities of OER among reader spread all over India. As a librarian, actions needed to be taken for motivating for the same.

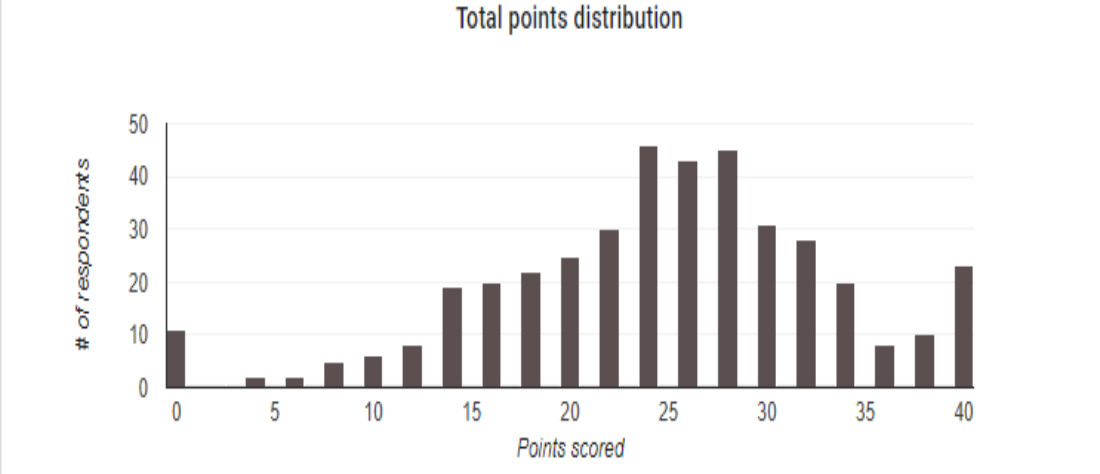
Methodology :

An online, nationwide quiz was launched to students, researchers and faculty members of various colleges and university using google forms as a tool. The quiz contained 25 multiple choice questions to understand the awareness and depth of knowledge about OERs in the academic community. The quiz was subjected to reliability and validity before it was launched. The responses were analysed using capability of spreadsheets and inferences drawn from the analysis.

Data Analysis

Of the total respondents, it was observed that 29% respondents scored below average on a point scale of 0 to 40 marks. It was encouraging to see that 71 % of the respondents scored above average indicating significant awareness about OERs.

Average	Median	Range
24.59 / 40 points	26 / 40 points	0 - 40 points



Score Range					
	0-10	11-20	21-30	31-40	Total
No of Respondents	26	94	195	99	414
	6.28%	22.71%	47.10%	23.91%	

It was also observed that the respondents were aware of different OERs available to them, it was not complete. Further, there was a little bit of confusion with regards to the right source for a specific information, article, thesis etc. The librarians would do well in exploring different OERs for the specific needs of their faculty and students and propagate the relevant information to their community members. Conducting such awareness sessions and refreshing the knowledge at regular frequency could be an approach that the librarians should take.

Role of librarian :

Librarian should familiarise with all OER terms and he should educate readers about this information. Librarians should play following roles regarding OER.

- Discover OER- He should motivate faculty members to write and generate and share material in OER which will be very useful to the students. Material should be related their syllabus.
- Promotion of OER- Librarian should orient readers about content and use of OER. He can use blogs, facebook, twitter but best way is to use library website. Librarian can give assignments based on OER. Librarian can render selection dissemination service with the USE of OER. EG FOR PhD students can use this OER for their research.
- Manage OER-This is a new role of librarian. To manage OER means, help in meta data, develop subject based guides, managing intellectual property rights, informing proper licensing
- 4.Use of OER-Librarian can conduct sessions of use of OER under umbrella of Information literacy programme. He can assign work and he can motivate readers to use OER.

Conclusion :

The global education community continues to face the major challenge of providing interactive and motivating educational experience during school and university closure. In this special situation, Open Educational resources are very useful. To familiarize these sources to readers is major role expected by librarian. Librarian should explore, propagate, keep users updated and then motivate the users to use relevant databases as well as create and share the information to users.

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Application of Information Technology in Libraries: A Eyebird Review

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Abstract:

Information is an indispensable for human development as air is essential for the survival of all living organisms on earth, including human beings. The pace of change brought about by new information technologies has a key effect on the way people live, work, and play worldwide. The increasing role played by information technology in the development of library services for an active reaction to the challenges of the information service providing. The paper attempts to discuss the fast development of Information Technology and its application in the library services.

Key words: Information Technology, Libraries, Electronic Library, Digital Library, E-Resources

Introduction:

The application of information technology in library and Information centers has developed in the western countries since the 1940's. In the 1960's the use of information technology has been started in the developing countries and that too is in different stages. The rapid development of Information and communication technology has made a special impact on the method of information acquisition, Processing, Storing & dissemination of information. The invention of the Internet has brought a major change in the scenario of library and information services. Due to this impact of information technology, it has created challenges and opportunities for the information professional around the world.

The concept of information technology (IT) as a universal information technology is the new science of information collection, storage, processing and transmission. However, IT connotes an ensemble of technologies which covers computer and storage technologies, to store and processing information known as information processing, connected together with telecommunication technologies, which are capable of transmitting information to distances. Information technology covers all aspects of arts, or science of processing data to produce information. This information processing, storing and dissemination with the assistance of computer is called the information technology (IT) (Brown, 1983). Information Technology is a generic term used to denote all activities connected with computer based processing, storage and transfer of information. Information Technology means not only a single unit of technology, but the integration and convergence of a large number of technologies which have come together to serve and meet the user's needs in the age of information revolution (Chowdhury and Quiyum, 1989).

Information Technology

a) According to the Webster's New encyclopedia, "Information Technology is the collective term for various technologies involved in the processing and transmission of Information they include computing telecommunications and microelectronics".

b) According to ALA Glossary "Information Technology as the application of computers and

technologies to the acquisition, organization, storage, retrieval and dissemination of information".

c) According to the British Department of Industry, it defines Information Technology as "The acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by microelectronics based combination of computing and telecommunication .

Information Technology Based Library Services:

Information technology has changed the function of the library. University libraries are using the information technology to increase the efficiency and effectiveness of their day to day library work and services.

Acquisition, cataloguing, circulation or binding are the works connected with library services. These activities cover the administrative services, technical services, reader services, and special services. Administrative services include the budget preparing and administrating; selecting, supervising and training staff; library development planning; policies and procedures creating and supervising. The function of acquisition, cataloguing, classification and circulation works fall in technical services. Readers' services include the reference & Information services and documentation services. These types of services can be managed with the help of integrated library automation software. The influence of information technology can be seen in the following readers' services.

a. Selective Dissemination and Information (SDI) Services:

Various methodology is used to address the recent development on the internet especially the web information overload. The information retrieval has become synonymous with browsing which can be stated as the inability to search the required bit of information. The ranking is used as the most important feature of every search engine which emphasizes only on its weak point, high retrieval ratio, and low precision ratio. The web environment provides facilities where the end user can subscribe to the SDI services which have the same SDI features found in the online commercial vendor system. In the intelligent agents which address the personal information needs of the ends users, it can transform the nature of web browsing and make it personally productive and effective environment for both data-based producers and end users.

b. Online Searching:

The typical area of information professional work covers online searching. It includes all level of searching from information broker, who gives services at a fee to that of professional employed in a private company who is paid for online searching and is highly specialized in the subject.

The navigator who is to search the internet via Gopher, Archie and the web-can be said as an online searching because it is done in the real mode (i.e. via Transmission control protocol/ internet protocol and client-server architecture). Internet could also be regarded as the fastest development online infrastructure consisting of a wide variety of navigator and search services. These developments are very critical in predicting current and future trends of the online searching environment. The documents which are needed for learning activities can be browsed online and there is no need to subscribe to the costly printed journals. The materials which are downloaded can be stored on computers. Many times it happens that the actual data does not resemble the downloaded data due to which the ratio between recall and relevance does not match and for error-free search strategy multi-skill is required.

c. Web-based Indexes and Databases:

The CD-ROM becomes widely available in the late 1980's was determined as a medium of highest storage and longevity. Due to its advantages, all the library resources were made available through CD-ROM as it has decreased the cost. The libraries nowadays are witnessing another migration to web-based bibliographic databases from bibliographic databases on CD-ROM. The web-based interface provides fast access to users by using hyperlink and other facilities in the web document from the full-text publisher websites. The CD-ROM version of the bibliographic databases has been migrated to the web-based version and due to which the resources are open for remote users.

d. OPAC to Web OPAC:

The integrated library management software, nowadays, uses web-based interface and has replaced the telnet connection by using the websites instead of telnet links. The webs OPAC are hyperlinked to other records in the database like an author is a hyperlink to all the records to the database for that author. The library websites are turning themselves into a more logical gateway for the catalogue and other web-based library resources. The acceptability of web-based interfaces is much known to the users with its graphical and navigational interfaces.

e. Digital Reference Service:

The key areas of the digital library include reference service and imparting training to the library users. Now the librarians use the digital reference format instead of waiting for the reference desk. The reference librarian also delivers reference services that require deep intellectual understanding which can be delivered through electronically mediated reference services which are available through libraries for other information centers.

The digital reference service provides internet base question and answer services which can be called as ask-an-expert or ask a librarian service which connects individual to specialize person of that particular subject, who are also known as volunteers or mentors, time information specialist and are affiliated to various libraries virtual reference desk.

f. Electronic Document Delivery:

Electronic document delivery does not need the sender and receiver of information to be available at the same time. It can give varieties of option such as creating, editing, storing, retrieving, transmitting and receiving the stored information when needed. This can be helpful to the people who are working on a large project which is spread over the ·geographical area and wants to communicate with each other. The preparation and delivery cost are comparatively less for the electronic transfer of information compared to the traditional services such as telex, letter or courier. If some materials are not available in a particular system then it can be acquired from other system and can be transmitted to the required users. Videotape, video desk, magnetic tape, CD-ROM etc can be used effectively in an electronic document delivery system for instant and convenient access to the electronic documents. This mechanism is faster compared to the online ordering of document where due to communication shortcoming, it may take several days before they require documents received by the users. The transmission of information can be achieved by several means which includes telefax and facsimile transmission which uses a telecommunication link to transmit both textual and geographical materials.

ADONIS (Advanced document over network information services) is an example of electronic document delivery system and is a consortium of major European publishers including

Blackwell, Springer-Verlag, Pergamon, Elsevier, Academic and Wiley in association with many governmental agencies and British library documentation supply center. This consortium has a database of about five thousand important journals which are supplemented by back files provided by the publishers. The feature of electronic document delivery system includes dissemination of content, list of periodicals, books monograph etc; supply of full text of document requires; online documents ordering; automatic document delivery as per specific documents, such as documents on standing order of regular basis and selective dissemination of information through profile matching.

g. Electronic Clipping Services:

On lines of SDI, the clipping services provide professional news both in real time and with a periodic update by many database vendors. The users can register the profiles on major databases to monitor and provide customized services to the customers which include current events company and industry news. The example of clipping services includes passport of data time Alert service of Dialog (Knight- Ridder), CLIP of DOW Jones/Retrieval, News Flash of News net, Eclipse of Nexis, etc. The worldwide known foreign news alert service that is the world news connection is an online use provider developed by NITS (National technical information service) of US Department of Commerce uses open sources information from government, private industry, and academician. The customizable news services like custom clips, Forcast, Internet News Alert, News Hound, Heads UP, etc provide only that news which is important and filter the noise to rescue the user from information overloading.

h. Internet Bases Services:

The users' application of internet covers some subject fields like business, commerce, culture, education, research, science & technology, recreation etc. The areas of the internet are unlimited and endless. It provides access to both commercial and noncommercial sources which include full-text databases, table of content books and newsletters, electronic and online journals, the library catalogue, e-mail directories etc.

The Internet can be used as a means for accessing varieties of information which includes free software internet news, paper electronic shopping merchandise clip ware etc. Wealth of information for the University libraries is provided by the internet. It includes acquisition, reference services, price verification, clarification regarding price exchange rates can be done by the internet.

The internet has raised the concept of digital villages that have no location yet they connect individuals and shares objective and interest. The most active users of the internet are the scholars who have diverse discussion forums which use e-mail, e-journals for debating and sharing their ideas.

Advantages: There are many advantages of Information Technology. Some important points are cited below:

- Easy to collect different library resources
- Collaboration & creation of Library network
- Avoids time-consuming effort done by the librarian
- Increases the range of services offered
- Less time consuming
- Efficiency can be increased

- Easy & speedy access to information
- Improves the quality of library service
- Increases in the knowledge & experience
- Integration within the organization
- Improvement in the status of libraries
- Improvement in the communication facilities
- Remote access by users
- 24x 7 service can be offered
- Access to unlimited information from different sources
- More up to date information
- The flexibility of Information to the users
- Workload reduce of library staff
- Combining data from different source

Classification of Information Technology Based Services

Information technology based services can organize on the basis of three main criteria.

I. Apparatus and Amenities
II. Customer Services
III. Electronic Sources

I. Apparatus and Amenities: The equipments and facilities available in the library are illuminating in the following headings.

a. ***Computers:*** Computer-based technologies have become dominant forces to shape and reshape the products and services the academic library has to offer. The success of the IT enabled services in the library is based on the efficiency of the equipment provided in the library i.e. most modern technology, not on the basis of number of equipments.

b. ***OPAC:*** An Online Public Access Catalog (OPAC) is an online database of materials held by a library or group of libraries. Users search a library catalog principally to locate books and other material physically located at a library .

c. ***Union Catalogue:*** A union catalog is a combined library catalog describing the collections of a number of libraries. Union catalogs have been created in a range of media, including book format, microform, cards and more recently, networked electronic databases. Union catalogs are useful to librarians, as they assist in locating and requesting materials from other libraries through interlibrary loan service .

d. ***CD-ROM*****:** Presents a state-of-the-art review of the applications of CD-ROMs in academic libraries, embracing all aspects of library involvement and staffing implications. Concludes that CD-ROM is having a huge impact on the way academic libraries function and the services they offer to their users .

e. ***Scanner*****:** In computing, an image scanner—often abbreviated to just scanner— is a device that optically scans images, printed text, handwriting, or an object, and converts it to a digital image.. Mechanically driven scanners that move the document are typically used for large-format documents, where a flatbed design would be impractical .

f. ***RFID*****:** Radio frequency identification is a term used for technologies utilizing radio waves for identifying individual items automatically. The most common way is storing a serial number identifying a product and related information on a microchip attached to an

antenna. RFID is used very similar to bar codes

g. ***Tele text:*** Teletext is a television information retrieval service developed in the United Kingdom in the early 1970s. It offers a range of text-based information, typically including national, international and sporting news, weather and TV schedules. Teletext information is broadcast in the vertical blanking interval between image frames in a broadcast television signal .

h. ***Facsimile*****:** A facsimile is a copy or reproduction of an old book, manuscript, map, art, or other item of historical value that is as true to the original source as possible. It differs from other forms of reproduction by attempting to replicate the source as accurately as possible in terms of scale, color, condition, and other material qualities. For books and manuscripts, this also entails a complete copy of all pages; hence an incomplete copy is a "partial facsimile".

i. ***Photocopy*****:** A photocopier is a machine that makes paper copies of documents and other visual images quickly and cheaply. Most current photocopiers use a technology called xerography, a dry process using heat. Photocopying is widely used in library.

j. ***Printing technology*****:** In computing, a printer is a peripheral which produces a text and/or graphics of documents stored in electronic form, usually on physical print media such as paper or transparencies .

k. ***Barcode*****:** A barcode reader (or barcode scanner) is an electronic device for reading printed barcodes. Like a flatbed scanner, it consists of a light source, a lens and a light sensor translating optical impulses into electrical ones. Additionally, nearly all barcode readers contain decoder circuitry analyzing the barcode's image data provided by the sensor and sending the barcode's content to the scanner's output port .

II. Customer Services

a. ***Document delivery services:*** The Document Delivery Service (DDS) delivers copies of journal articles and book chapters from participating Libraries. Fees apply for most Document Delivery Services. To fulfill the information needs of the end user through information/document supply is a document delivery service. This service is provided on No Profit - No Loss Basis and Expected to be prompt.

b. ***Interlibrary loan*****:** Inter library loan means a cooperative arrangement among libraries by which one library may borrow material from another library. In other words a loan of library materials by one library to another library.

c. ***Indexing and abstracting services:*** a method which is used to retrieve information form a table in memory or a file on a direct access store or the art of compiling an index. The preparation of abstracts, usually in a limited field, by an individual, an industrial organization of r restricted use or a commercial organization: the abstracts being published and supplied regularly to subscribers. Also the organization producing the abstracts. Such services may be either comprehensive or selective .

d. ***Chat services*****:** Online chat may refer to any kind of communication over the Internet, that offers an instantaneous transmission of text-based messages from sender to receiver, hence the delay for visual access to the sent message shall not hamper the flow of communications in any of the directions. Online chat may address as well point-to-point communications as well as multicast communications from one sender to many receivers .

e. ***CAS*****:** The purpose of a current-awareness service is to inform the users about new acquisitions in their libraries. Public libraries in particular have used display boards and shelves to draw attention to recent additions, and many libraries produce complete or selective lists for circulation to patrons. Some libraries have adopted a practice of selective dissemination of information .

f. ***SDI*****:** Selective dissemination of information ("SDI") was originally a phrase related to library and information science. SDI refers to tools and resources used to keep a user informed of new resources on specified topics. Selective Dissemination of Information (SDI) was a concept first described by Hans Peter Luhn of IBM in the 1950's .

g. ***Scanned copies:*** A scanning service for material not available electronically, which is held by the Library. This includes articles from journals and chapters from books.

a) ***Bulletin board services:*** A Bulletin Board System, or BBS, is a computer system running software that allows users to connect and log in to the system using a terminal. Once logged in, a user can perform functions such as uploading and downloading software and data, reading news and bulletins, and exchanging messages with other users, either through electronic mail or in public message boards.

b) ***Electronic services and e- resources****:* The important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by internet access to commonly available electronic resources, mainly CD-ROM, OPACs, E-Journals, E-Books, ETD and Internet, which are replacing the print media .

c) ***Digital library:*** A digital library is a library in which collections are stored in digital formats and accessible by computers. The digital content may be stored locally, or accessed remotely via computer networks. A digital library is a type of information retrieval system .

III. Electronic Sources

a. ***Audiovisual materials:*** The Audiovisual Collection contains a wide range of audio- visual material to support the research and study needs of staff and students .

b. ***Internet:*** With the advent of digital revolution, communication has become easier and faster and decision are mad instantaneously. The internet which is the latest among the superhighways has cut down the distance and made it easier to have access to information to all people at all places and at all the times .

c. ***Library website****:* Library website helps to recognize the facilities and information sources available in the library. In most of the library website online catalogue is included. Online catalogue helps to ascertain a client whether the information is available in the library.

d. ***Database*****:** A database is an organized collection of data for one or more purposes, usually in digital form. The data are typically organized to model relevant aspects of reality, in a way that supports processes requiring the information .

Conclusion

As eventual remarks, it is reminded that libraries are operating in a quickly changing situation, they should be aware of latest technologies to continue and maintain the importance of the service offerings. Utilization of Information Technology in present libraries is optimistic to

gain right information at the right time in the right place and at the right cost. Information Technology helps to progress the rank of the library and it condense the work stack of the library professions. Information Technology has broken the worldwide boundaries, new apparatus and methods help to provide better services to our clients.

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Library Access Control System Based on Face Recognition

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Abstract:

Face recognition technology is getting faster and more accurate every year. This means that it could also soon be used to make our day to day lives more convenient. The Library access control system based on face recognition is superior to the traditional library access control system. Touchless face based access control and attendance system is powered by artificial intelligence technologies. "Using your face print, business, hotels, financial sectors and educational institutions will be able to seamlessly verify who you are without the use of a physical Id. The technology is increasingly used in mobile devices and consumer products as a way to authenticate users. In class rooms and libraries, access controls and testing facilities are using it to take attendance and prevent cheating".

Key Words: Face Recognition Technology, Artificial Intelligence, Biometric Recognition, RFID Technology, Access Control System, Attendance System

Introduction:

Facial recognition is a way of recognizing a human face through technology. "A facial recognition system uses biometrics to map facial features from a photograph or video. It compares the information with a database of known faces to find a match. During the initiation of this system, there is the basic procedure that must be undertaken to ensure that in a group of people, all their data is fed into one system and can be accessed easily to run the facial recognition tests. Where this data is stored is highly sealed to avoid leakage of this sensitive data of any individual. This face recognition technology is used in both security and attendance applications".

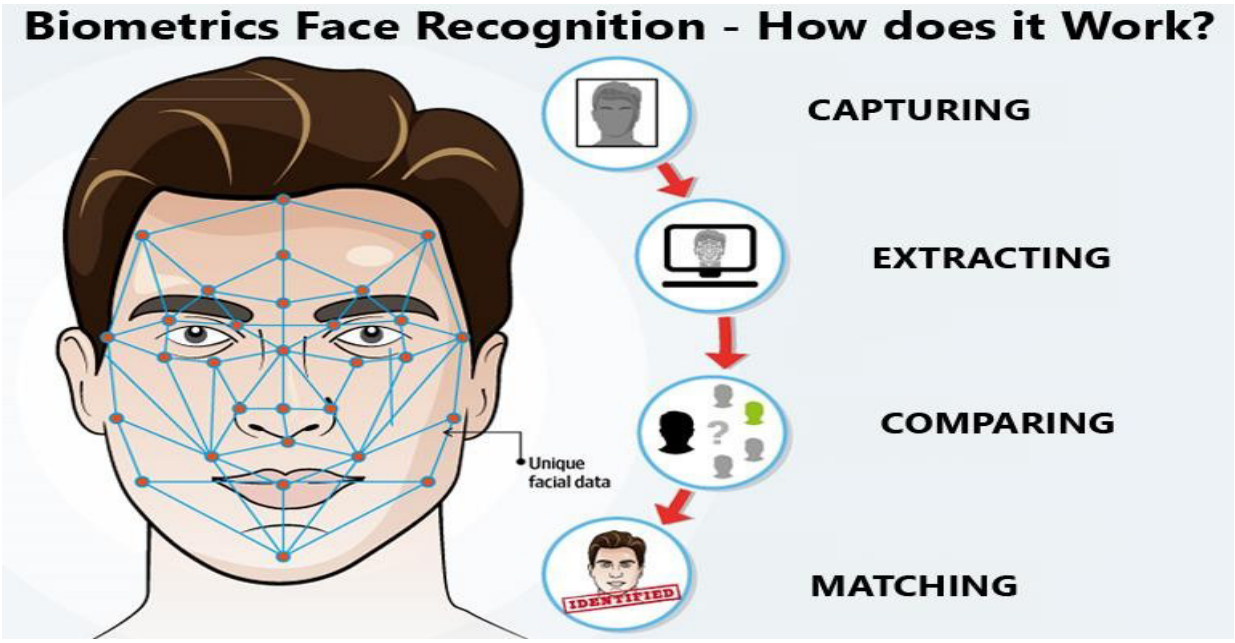
History of Face Recognition:

Facial Recognition actually was brought up on about 1960, in the name of Woodrow Wilson Bledsoe decided he was going to hand-draw proportion analysis with side by side faces. So pretty impressive thing to do in 1960 wasn't until 1991 where we actually started using computers to run these proportion analysis. And then in 2002 the super bowl in Tampa Florida was the first real commercial use of facial recognition by the United States. In 2010 Facebook started researching if they could use facial recognition to auto tag photos and in 2014 they said that they could do it 97.6% which was the sane as the human eye could recognize. And then in 2015 Google came out and said they have had a hundred percent accuracy. In 2017 the iPhonex came out in consumer technology. In recent 2020 is up there because there are "650 million cameras in the world right now are cameras on the street corners, cameras on computers and cameras on phones. In the next year there will be 1 billion cameras which means that there is an incredible amount of infrastructure out there. But the one thing that they lack is scalable architecture to ingest that video footage and to make sense of it".

Face Recognition System Works:

Face recognition identifies "a person based on specific aspects of their physiology. Though the software can vary the process of Face recognition tends to follow these basic steps".

- First, your face is captured with a photo or video. It doesn't matter if you are alone or in a crowd. It can happen in real time.
- The software then measures a variety of Face features called landmarks or nodal points on the face. These could include the distance between the eyes, the width of the nose, depth of eye sockets, and distance from forehead to chin. Each program uses different nodal points and may collect up to 80 different measurements.
- This information is then converted into a mathematical formula which represents your unique Face signature. That Face signature is then compared to a database of known faces. This can all happen in a matter of seconds.



Face Recognition over other biometric:

Face recognition is a biometric tool as with other commonly used biometric technologies like finger print recognition, iris recognition and finger vein pattern recognition.

- Face recognition doesn't require physical interaction on behalf of the user.
- Face recognition is accurate and allows for high enrolment and verification rate.
- Face recognition doesn't require an expert to interpret the comparison result.
- Face recognition can use your existing hardware infrastructure, existing cameras and image capture devices will work with no problems.
- Face recognition is the only biometric that allow you to perform passive identification in a one to many environments. (For example. Airport Terminals, Industries and Educational Organizations.)

Library Access Control System:

Many Universities, Organizations and colleges use RFID technology to control the library access as well as the attendance of the patrons and some colleges use biometric attendance machine to monitor the attendance of the users to utilize the library services. "Some use the fingerprints biometric system while others use the biometric face recognition system. In both cases, patrons have to initially submit their data physically through initial and complete

scans of either their fingers for prints or their faces". Library access control system based on Face Recognition is designed that, whenever the patrons want to check in to the library, they just run their facial scan in front of the biometric face recognition attendance machine. The same should happen in the checkout procedure. Then the facial recognition system identifies the patron and take the attendance of the patron as well as provide the library access control. This system advantageous because it helps track the time of the patron to check in and how far he utilized the library services. "The machine saves all the data accurately and when needed, it sends it the administration for their records. To ensure that the system works, you should avoid implying different facial expressions. You should be calm as you were during the first scan".

Library Access Control System based on Face Recognition

The device is automatic, "once turned on and directed on the individual, it runs the authentication process and determines the results accordingly. Due to current technological developments, the biometric system has grown popular globally. Developers continue to advance this system incorporating the 3D technology to make it even more efficient and accurate".

Advantages of Face Recognition Technology:

- The face recognition time is less than one second, so the system can solve the low recognition speed of the library access control system fundamentally.
- Face recognition is easy to use and in many cases it can be performed without a person even knowing.
- Face recognition is also one of the most inexpensive biometric in the market and its price should continue to go down.
- There are many benefits to face recognition systems such as its convenience and social acceptability, all you need is your picture taken for it to work.

Disadvantages of Face Recognition Technology:

- Face recognition system can't tell the difference between Identical Twins.

Conclusion:

Face recognition technologies have been associated generally with very costly top secure applications. Today the core technologies have evolved and the cost of equipment is going down dramatically. Certain applications of face recognition technology are now cost effective, reliable

and highly accurate. As a result there are no technological or financial barriers for stepping from the pilot project to widespread deployment. During this COVID, facial recognition used for access control has now become mainstream due to various reasons i.e) ability to perform a touchless access, the need for setting up touchless systems in offices, Large scale familiarity and use of face ID by Apple for mobile unlock, arrival of privacy focussed companies that provide a secure, privacy oriented platform for using face recognition, improvements to facial recognition accuracy, which is now on par with a person's ability to identity someone.

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Covid-19 and the Revamping & Improvements in the Indian Legal System

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Abstract :

December 2019 witnessed the outbreak of one of the deadliest viruses ever when China reported some cases of unusual pneumonia to the World Health Organization (WHO). The virus remained unknown for a brief period of time, but it spread rampantly across Europe and Asia in the months of January and February. Slowly it moved towards the United States, putting the whole world under lockdown. The epicenter of this virus was identified to be in Wuhan, China. WHO declared a public health emergency of international concern and named the virus COVID-19.

*As of April 24, there have been around **2,800,000** (changing rapidly every subsequent hour) reported cases of COVID-19 worldwide. India witnessed its first case of COVID-19 on January 30. As of April 24, the figure for active cases in India is around **18,000** and death toll is around 723. In order to curb the spread of this virus, the Prime Minister of India, Narendra Modi, announced a nationwide lockdown for 21 days on March 24. The lockdown was later extended until May 3 by the prime minister on April 14.*

This piece is an attempt to analyze various challenges that are arising during this unprecedented lockdown and how the legal service authorities are ensuring provision of legal aid and basic amenities across India.

The European Court of Human Rights, under Sections 6(1) and 6(3), discusses the concept of legal aid without mentioning the term itself. They aim to protect the interest of every litigant and create an equal platform for each person who is in dire need of justice by assisting them. The United Nation's International Convention on Civil and Political Rights provides for legal assistance in criminal matters.

*The Constitution of India promotes and upholds the importance of equality in society. Various articles of the Constitution promote welfare of the poor and of those who are in need of justice and care. **Article 39A** of the Constitution provides for free legal aid to the poor and weaker sections of the society, and it ensures justice for all. The article mandates that economic, or any other, disability should not hinder the opportunity of anyone to access justice and legal remedies.*

*The National Legal Service Authority (NALSA) was created under **Section 3** of the Legal Services Authorities Act, 1987 (**Act**). The objective of NALSA is to supervise and monitor the provision of legal aid as described under **Section 2(1)(c)** of the Act. Section 12 of the Act specifies the category of people who are eligible for availing these legal services. NALSA also disburses funds and grants to NGOs for implementing legal aid schemes and programs.*

Introduction:

Coronavirus is a typical 'black swan' phenomenon.[1] The global coronavirus outbreak has destabilized the world economy, reduced the earnings of companies as well as individuals, increased unemployment rates and significantly reduced stock markets. As India battles the Kovid-19 tsunami, the global impact is likely to worsen.

[1] 1 T.S. Eliot, 'The Journey of the Magi' (Faber and Gwyer, 1927)

Global Epidemic which has caused lockdowns in numerous nations around the world, causes disruption in all aspects of life for an indefinite period of time. Social-distance has emerged as the most powerful weapon to prevent the spread of this highly contagious virus in a large scale society. However, these social distance indicators have reshaped and transformed many industries around the world.[2]

The epidemic has also disrupted and severely affected the Indian legal landscape. Under the responsibilities of social distance and the nation again under lockdown orders, the legal institutions in India and the Indian judicial system have once again had to close their doors to the common man. However, given that the complete closure of the Indian justice system is unfavorable, legal entities have implemented policies to work from home, while judicial administrators have embraced the technology by conducting hearings via video conferencing.

This article attempts to study and critically analyze the impact of the global epidemic on India's legal system. This article will further consider and evaluate the approaches adopted by the judiciary and legal professionals to reduce the impact of COVID-19 on the Indian legal industry.[3]

Changes to the Indian Legal System

Covid-19 has affected the Indian legal system more than ever before. He sheds a harsh light on the old ways in which justice is done, law is taught and legal services are provided. The workings have been modified and adapted with surprising speed and ease.

In just a few days, law schools were transformed into online schooling and learning, courts resorted to a virtual court system and legal entities continued to work from home on technology proving to be the lifeline for the Indian legal landscape.[4]

The impact of the epidemic has been seen mainly in Indian courtrooms. To comply with the rules of social distance and prevent the spread of the second wave of this contagious virus, Indian courts have again resorted to virtual court rooms to ensure that the administration of justice continues uninterrupted. [5]

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[2] WHO Director General's opening remarks at the media briefing on Covid 19- 11 March 2020 (WHO) < https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020 > accessed on 22/10/21.

[3] Gary L. Benotn, 'How will the Coronavirus Impact International Arbitration?' (Kluwer Arbitration Blog, 13 March,2020) < http://arbitrationblog.kluwerarbitration.com/2020/03/13/how-will-the-coronavirus-impact-international-arbitration/ > accessed on 22/10/21

[4] 5 Mark A. Cohen, ' Covid-19 and the Reformation of Legal Culture' (Forbes, 14 April, 2020) < https://www.forbes.com/sites/markcohen1/2020/04/14/covid-19-and-the-reformation-of-legal-culture/#4b8c3168171d>

[5] 7In Re: Guidelines for Court Functioning through Video Conferencing during COVID- 19 Pandemic, 2020 SCC Online SC 355

It should be noted that the concept of virtual court is not a new concept in India. In 2003, Maharashtra State v. In Praful Desai VIII, the Supreme Court of India ruled that the recording of evidence by video conferencing by the court would be treated as 'established by law'. [6]

Since then, India has framed guidelines in this regard in several lower courts and conducted judicial proceedings through video conferencing.

India's growing Covid-19 crisis has dealt a major blow to the Indian legal system as most of the judicial officers and staff members of various courts test positive for the virus. Sadly, many judicial officials have also fallen victim to this deadly disease. During this quarantine period and in view of public health concerns, Indian courts are now hearing only the most urgent matters filed in 2021 at all levels. Cases that do not fall into the above category have been "N Block" adjourned, testimonies have been canceled or rescheduled, and various deadlines have been extended. [7]

In this virtual court system, except for the parties and their respective lawyers whose cases are being heard by the bench, the parties and / or advocates awaiting their turn are also allowed to join before the 'virtual' like the physical courts. On their screens, live proceedings of cases taken by the bench. In addition, the media as representatives of the public are also provided a special facility, in which they are allowed to enter the virtual court room and they can observe the proceedings of all the cases conducted by the bench (s).

In light of the epidemic and to prevent the spread of this deadly virus, many criminal courts in India have granted interim bail to under trials due to overcrowded jails. Whereas, in cases of child custody and right to visit, Indian courts have advised parents to replace physical contact with electronic contact.[8]

However, in view of the difficulties posed by this epidemic, the Supreme Court of India has extended the statutory time limit in all proceedings, including the filing of arguments, regardless of the time limit prescribed in general or special laws. The directive of the Supreme Court of India to provide extension in the limitation period applies to all the courts and tribunals of India.The Covid-19 outbreak has also disrupted the liquidation process under the Bankruptcy and Insolvency Code, 2016 (IBC). It has been ordered that the period of lockdown be excluded from the calculation of any statutory timeline under IBC. In addition, the National Company Law Appellate Tribunal has also directed that any interim order / stay order may continue till the next date of hearing, which may be notified later. The Bankruptcy Code, 2016 has introduced a Regulation 47A which states that "Subject to the provisions of the Code, COVID-19 shall not be subject to a period of lockdown imposed by the Central Government in the wake of an outbreak. Calculated for computational purposes "

Similarly, alternative dispute resolution methods in India have also been affected by the coronavirus epidemic. Nationwide lockdown prevents the physical conduct of arbitration and

[6] (2003) 4 SCC 601

[7] Office Order dated April 18, 2021, High Court of Delhi at New Delhi < https://delhihighcourt.nic.in/writereaddata/Upload/PublicNotices/PublicNotice_59R6UXN01KB.PDF

[8] Vishal Verma v. Twinkle Vinayak < https://images.assettype.com/barandbench/2020-04/13dadb7c-e292-4c5f-99f0-a46ad4e7e107/Vishal_Verma_Order.pdf>

arbitration. Most hearings are adjourned or are being conducted by virtual video conferencing. However, considering the severity of the epidemic and India is again under curfew and lockdown, the Supreme Court of India has postponed the time limit for passing arbitral award as mandatory under Section 29A of the Arbitration and Reconciliation (Amendment) Act, 2015. Until the next command. [9]

There has also been an epidemic

transformed the way law schools impart education to students. The law schools in India have suspended campus learning processes and have moved to online teaching methods to ensure continuity of the learning process.

Furthermore, to embrace the new normal and to remain connected to law, many judges and lawyers in the country have been holding webinars, lectures and talks on numerous areas in law.Law Firms have also enforced work from home policies during this countrywide lockdown period to minimize the potential business impact of Covid-19. The pandemic has kept lawyers and law firms engaged in advising and assisting clients on force majeure provisions and termination of contracts. Lawyers are now reanalysing contractual terms including provisions as to arbitral seats and venues, governing laws, institutions, procedures and force majeure. The global pandemic has also led to a rapid increase in the rate of unemployment in the country causing companies to deal with a lot of legal complications. Thus, legal professionals have been engrossed in guiding these businesses as they navigate unemployment, confidentiality and non-compete clauses, gratuity, severance pay and numerous other challenges.

Looming Challenges to the Legal Culture

The way law schools taught students changed. Law schools in India have suspended campus learning processes and turned to online teaching methods to ensure the continuity of the learning process. In addition, many of the country's judges and lawyers are conducting webinars, lectures and talks on numerous areas of law, in order to accept the new general and stay connected to the law. To reduce the potential commercial impact of Covid-19, law firms have implemented home-based policies during this nationwide lockdown period. The epidemic has kept lawyers and legal entities engaged in advising and assisting clients on mandatory provisions and termination of contracts. Prosecutors are now re-examining the terms of the agreement, including provisions such as arbitral meetings and venues, governing laws, institutions, procedures, and force majors. The global epidemic has also led to a sharp rise in the country's unemployment rate, which has caused companies to face many legal complications. Thus, legal professionals are busy guiding these businesses as they navigate unemployment, privacy and non-competitive clauses, gratuity, severance pay and numerous other challenges.

Advantages of the Legal Systems' cultural reboot

After improving the Indian legal landscape by adopting technology during this unprecedented global crisis, the Indian legal system has implemented and protected our ancient customs - justice, at any cost, forever!

[9] Office Order dated April 18, 2021, High Court of Delhi at New Delhi
< https://delhihighcourt.nic.in/writereaddata/Upload/PublicNotices/PublicNotice_59R6UXN01KB.PDF)

Even in these unprecedented times, information technology has ensured that justice is not disrupted. The Indian legal industry is increasingly relying on IT-enabled virtual systems and communication facilities to mitigate the effects of the global epidemic. However, despite the challenges of this new system, virtual technology is flourishing in the Indian legal system.

Undoubtedly, because the epidemic will last longer, more hearings will be conducted virtually. This change in the justice delivery system could be the turning point of the Indian legal landscape as online dispute resolution will be widely implemented and adopted. Moreover, with the significant reach of the internet in today's times, it will provide access to justice to all while addressing health concerns.

The virus will also change the way evidence is collected and transmitted. Reliance on paper documents is expected to decrease drastically as courts promote e-filing and electronic documents rely heavily on preventing the spread of this infectious virus. This in turn will lead to a reduction in paper waste which is a major environmental concern in India. Moreover, the special facility given to the media also motivates them to report almost all the cases and their consequences comprehensively.

These are all indications that India's legal system is likely to be modernized. This epidemic will change the Indian legal culture.

A New Way Forward

The current epidemic situation is unpredictable. It is difficult to say how long social distance commands and movement restrictions will remain in force. It is expected that these preventive measures will continue for a long time even after the current situation subsides.

The current circumstances are likely to turbocharge the transformation of the Indian legal system. It is likely that Covid-19 will take the law into the digital age and restructure its landscape. The judicial directive to introduce a virtual court system to make the justice delivery system accessible to everyone is a welcome change. In doing so, the Indian courts have upheld the core tenet of the Indian legal system, i.e., justice must not only be done but must be seen to be done. In the present circumstances, arbitration is expected to be the most desired and versatile method for resolving disputes.

Challenges in these difficult times should be used by the Indian legal system as an opportunity to improve and strengthen their operating procedures to minimize the effects of the Covid-19 epidemic as early as possible. That being said, where on the one hand a rapid transition time is needed, on the other hand, ultimately it depends on the individual ability of the stakeholders to accept and adopt this dynamic situation.

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A Study on Police Investigation Process

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Abstract :

Police and their functions are very important in criminal justice system. Because it is the principal duty of the police to arrest criminals and conduct them until the conclusion of trial for preventing crime. Police are legally authorized to use force and other means of coercion to execute public and social order.

Keywords: police investigation process,Duty of police officer.

Introduction :

Police has important role in the criminal justice process in India. The main objectives of the Police are to provide immediate help to the victim, to take preventive actions, to arrest the accused, to investigate fairly the crime, to enforce and to maintain law and order situation.
important players, namely, the police, the prosecution, and the judiciary. The activities of the police are crucial to rendering justice in criminal cases and affect the operations of the entire criminal justice system. The police are usually the first to make contact with the victims, the witnesses, and the accused. The police play a key role through the course of investigation, particularly in the identification of the accused, and establishing the guilt of the accused during trial in criminal cases.

As a former head of the police force (DGP & IGP) of Karnataka, I have had the opportunity to understand the nuances of the criminal justice system in great detail. I find that the system mostly works for the benefit of the rich and the powerful, and not for the innocent victim or the cause of justice. In this chapter, I will touch upon some of the prevailing aberrations in the criminal justice system, the challenges that the police face, and the ways in which the police can work with other stakeholders, especially the judiciary, to improve the overall efficiency of the criminal justice system.

The plaintiff / informant will give verbal / written information to the in-charge of the police station about the occurrence of any criminal act. This is called a note (C r p c- 154).
According to C r p c-156 a police officer may investigate a cognizable crime without the permission of the court.

After registering the FIR, according to cr p c-157, the information has to be given to the Magistrate with immediate effect.

The police officer will first study the complaint in the investigation of the crime and will study who, to whom, where, when, what work, by whom and the purpose of committing the crime and get the declining details from the complainant on the basis of special statement.

The police officer should immediately visit the crime scene and in the presence of two independent commissions and, if necessary, in the presence of the FSL officer, write the commission of the crime scene as written by the commission. Necessary samples should also be obtained as per the guidance of the FSL officer.
The statement of an eyewitness or a witness who knows nothing should be recorded. (C r p c160)
Any evidence that the accused has committed a crime should be collected.

Scientific evidence, electronic evidence and circumstantial evidence should be collected. The eyewitness or the victim's statement should be obtained before the magistrate as per cr p c 164.

In case the accused do not know each other, the accused should be identified before the Executive Magistrate. (Cr p c 54 (A)) (evi Act-9) Special attention should be paid to the evidence of the presence of the accused at the place where the crime was committed at the time of the crime.

- _In case of atrocities against women like rape, it is necessary to have a woman as a Punch.
- _ Medical examination of the accused / victim should be done immediately without delay.
- If there is sufficient evidence of committing a crime against the accused, he should be detained and arrested and following the judgment of DK Basu.
- Submit to a ruling magistrate within 24 hours. Need to get more police remand. (For evidence)
- _ By studying the modus operandi of the type of crime, the person who has committed the crime by sound type should be examined.
- _ The nearest police station and the nearest district should be written first for the investigation of the accused.
- _ The place to be built should be secured immediately and the evidence should not be tampered with.
- It is advisable to do it on the fifth day. If it is to be done at night, the need for arrangement of lights should be mentioned in the Punchnama.
- Collect all the evidence at the end of the investigation and study and file a chargesheet against the accused as per Crp c 173.
- _ Mention that there is a place Uniquelandmark near the place where the Punch's Mama crime is. Make a map of it with the Revenue Circle Officer.
- _AV for strong evidence against the accused. As per Section 8, the Discovery Commission is very important and is valid in court.
- _Panchosvatantra, educated, honest to take.
- _CDR detail, pen drive, CCTV footage is important electronic evidence. It needs to be valued so that it can be challenged in court.
- Seek the help of Dog Squad to know the direction of escape of the accused.

Conclusion :

Criminal investigation can be improved by making each investigation a team effort. A central repository for all investigation records and collected data should be created and duly protected with access rights. Each member of the investigating team should have access to all relevant case data, but no individual member can scuttle an entire investigation. The accused does not know from where the next missile will come. The only challenge is that, unlike an investigative journalist, the IO has to ensure that relevant facts are translated into admissible evidence in the proceedings of the trial court. That is a tough challenge and needs suitable amendments to Section 164 of the CrPC to include preservation of all relevant evidence. But the first step is to start working on building a repository of knowledge and information pertaining to the material evidence that is collected at source, and that it is validated, verified, and correlated

with other bits and pieces during the arduous investigative processes. Experts should be able to analyse material facts from wherever they are and add value to the appreciation of evidence. All relevant facts can thus be collected and preserved digitally in a legally admissible form.

Reforms in the criminal justice system are urgently needed in India. Today, a number of policemen are ready for police reforms, but unless the judiciary makes it a pointed action programme, the political class will not allow this to happen.

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Sah Bano's Case Effect Regarding Divorce of Muslim Women in India

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Abstract :

Since Independence, the Indian government has struggled to achieve political modernity within acceptable religious boundaries. Religious diversity in India necessitates governmental sensitivity toward sometimes opposing principles, and yet, when religious practices threaten an individual's access to the rights of citizenship, a secular government has to intervene. The Indian Supreme Court case of Mohammad Ahmed Khan v. Shah Bano Begum and others brought to the forefront issues of citizenship, minority identity, and national sovereignty amidst an environment of fear and tension during the mid 1980s.

The case and its ensuing controversy reflect the threat religious fundamentalism can pose to liberal democracy without the intervention of a uniform civil code. India suffers from a specific brand of communalism that was fostered by British imperialists as a means of weakening the Nationalist Movement by forcing religious rather than national allegiance. Religious identification was a means of mobilizing politically, and the resulting political divide between Hindus and Muslims worsened progressively despite the efforts of Mahatma Gandhi and Jawaharlal Nehru, eventually leading to Partition in 1947.

The Shah Bano controversy was the first of the Rajiv Gandhi government, which came into power following the 1984 assassination of Mrs. Indira Gandhi. What began with a citizen, Shah Bano Begum, utilizing her Fundamental Right to petition the court, became a permeating political dilemma with far-reaching consequences. From India's beginnings as an independent nation, nationalist leaders like Mahatma Gandhi and Jawaharlal Nehru devoted themselves to the ideals of tolerance, equality, and unity. With Shah Bano, those ideals became contradictory, and the politicization of religion usurped the practice of democratic government by fomenting disunity among the Indian populace. Muslim fundamentalists sacrificed equality to preserve their religious identity.

The absence of a uniform civil code enabled the political conflagration that became known as the Shah Bano controversy. Although the CrPC (Criminal Procedure Code) was established over a century earlier, personal law remained virtually unchallenged until the 1940s when Prime Minister Jawaharlal Nehru and Law Minister B.R. Ambedkar began pushing for the Hindu Code Bill, and "the reform of personal laws became an acid test of India's commitment to secularism and modernization."Article 44 of the Indian Constitution described the importance of enacting a civil code for all of India, but only at a time when national unity was more secure.[3] The tremendous social and political unrest following Partition meant the civil code was abandoned until Muslims felt less threatened by the perceived power of the Hindu majority, and communal tensions abated.

Introduction :

The meaning of secularism became a struggle between the state's responsibility to protect the individual, and the preservation of oppressive religious traditions. The unwillingness of the Indian government led by Prime Minister Rajiv Gandhi to enforce the equal rights of Muslim women in the case of Shah Bano represented a monumental failure of government to protect the rights of the individual citizen. Social equality was undermined by religious politics and secularism became a weapon with which Hindus and Muslims alike sought to alter the Indian Constitution. In the aftermath of the Supreme Court judgment in Shah Bano, the maintenance of personal laws served as a rallying point for communal demands, and brought into question the true meaning of the religious tolerance so valued by the founders of Democratic India.

At the time of its adoption in 1949, the purpose of the Indian Constitution was to promote egalitarianism and preserve national unity, while assuaging fears among the Muslims that remained in India following Partition that the government was not Hindu but Indian. Steps were taken to preserve and protect the religious identities of communal groups newly unified under one governing body. Although criminal law in India had been applied uniformly since the 1830s, civil law was left purposely uncodified, and personal laws were sustained to govern individual religious communities.

Islamic personal law, known as the Shariat, governs marriage, divorce, inheritance, and other family affairs. When the Indian Supreme Court interpreted the Shariat as a means of applying it to their ruling in the Shah Bano case, the subsequent involvement of Muslim fundamentalists, Hindu extremists, and women's rights activists led to one of the most dangerous political crises India had faced since Partition. The Shah Bano case evoked a tremendous response among almost every citizen of India, and reinforced the principle that secular nations like India cannot allow religious communalism to distort their commitment to democracy.

The Making of a Controversy

Nehru and Ambedkar were sympathetic to feelings of vulnerability among Muslims in light of surging communal mobilization among groups seeking to anchor themselves in the bedrock of nationally mandated religious tolerance. Having helped found Democratic India upon principles of tolerance and coexistence as well as national unity, both men understood that "to tamper with what [the Muslims] considered hallowed tradition -the word of God- would make them even less secure."

Conservative Muslims opposed the passage of a uniform civil code, arguing that not only was it too progressive, but that because their personal laws were guided by religion, any change affecting personal law was a violation of the religious freedom guaranteed by the decidedly secular Indian Constitution. However, committed to eradicating untouchability and elevating the status of women, Mahatma Gandhi and Jawaharlal Nehru campaigned for the passage of a uniform civil code that would be applicable to Hindus and available to any other religious group on a voluntary basis. The Hindu Code Bill was intended to promote social equality by uniformly applying laws of inheritance, maintenance, inter-caste marriage, divorce, monogamy, and adoption that had traditionally fallen under the purview of personal laws.

Hindu communal groups, including the Rashtriya Swayamsevak Sangh,* established the Anti-Hindu-Code Committee, attacking social progressives like Nehru and Ambedkar for violating Hindu scriptures and interfering with the practice of Hinduism.[7] The bill eventually passed in three separate sections in 1954, 1955, and 1956, rather than in its entirety as Nehru had hoped. It did not apply to the Muslim community, where the Shariat continued to guide civil matters. The Indian commitment to secularism thus enabled the Muslim community to limit legislative modernization affecting women, leaving "intact the male option of polygamy and unilateral divorce, both of which have been banned in several Muslim countries but remain legal in India."

Muslim women remained oppressed while women of every other religious group, including Hindus, Jains, Sikhs, Christians, Buddhists and all others, acquired all the rights of citizenship. To avoid further alienating the Muslim community, gender equity was subordinated to the commitment to secularism. The Shariat overruled the Indian Constitution in regards to the rights

of citizenship for Muslim women, and religious tolerance meant disenfranchisement through the application of personal laws.

Mohammed Ahmed Khan v. Shah Bano Begum and Others

Shah Bano Begum married Mohammad Ahmed Khan in 1932. They produced three sons and two daughters. Mr. Khan took another wife, legally according to Islamic law, with whom he produced additional children. The entire extended family shared a home, from which Mr. Khan expelled Shah Bano in 1975, forcing her to take refuge with one of her adult sons. Shah Bano received maintenance from her husband for two years, after which he claimed he had fulfilled his obligations under Islamic law because according to the fundamentalist interpretation of the Shariat, "the Muslim husband enjoys the privilege of being able to discard his wife whenever he chooses to do so."

In 1978 Shah Bano petitioned for and was awarded maintenance under India's CrPC by the Judicial Magistrate of Indore.[10] Despite the paltry amount awarded her, 25 Rs per month by the Lower Court, and later 179.2 Rs per month by the High Court, Khan took the case to the Supreme Court, demanding that the relatives of Shah Bano take responsibility for her care.[11] Mr. Khan then divorced Shah Bano through the triple-talaq method of unilateral divorce, the least approved method of divorce under Islamic law.[12] He proceeded to take the case to the Indian Supreme Court, arguing that the lower court rulings violated his rights as a Muslim by inhibiting his adherence to the Shariat.

Chief Justice Y. V. Chandrachud delivered the opinion of the court, upholding the lower court rulings. Seeking to circumvent a personal law they considered "ruthless in its inequality," the Supreme Court ruled that Mr. Khan had violated Section 125 of the CrPC, which decrees that "a person who, having sufficient means neglects or refuses to maintain his wife who is unable to maintain herself" can be forced to do so by the court or face a fine and/or imprisonment.
The court further commented in support of the enactment of a uniform civil code as described in Article 44 of the Indian Constitution, as a means of preventing further contradictions between the Shariat and the Constitution.[14] The AIMPLB (All India Muslim Personal Law Board) intervened on behalf of Mohammad Ahmed Khan and took issue with not only the ruling as a violation of their constitutional rights as a religious minority, but also the language regarding Article 44, which they said would subvert the practice of Islam and lead to its eventual disappearance in India.

What should have been a women's rights issue grew into the focal point of religious antagonism between Hindu and Muslim extremists. Muslim religious leaders issued a proclamation against the judgment as a violation of Islamic law. Chief Justice Chandrachud expressed his belief that "interpretation of law, personal or otherwise, is not only the function but the obligation of the court."[15] Essentially, the government gave women more rights than were acceptable to conservatives within the Muslim community, but even more significant was their desire to mobilize politically against the Hindu majority government. Heightening the tension, "Hindu right-wing parties used secularism to insist on the removal of Muslim privileges and the enactment of a uniform civil code."

The issue went beyond the question of what was good for Shah Bano, or even for the Muslim community, and became a question of what would benefit the few politicians who were willing to sacrifice Nehruvian ideals to increase their political power. Having attempted to "cut across the barriers of religion" by applying a secular law to Shah Bano's plea, the Supreme Court

drew criticism from fundamentalist Muslims for contradicting the Shariat.Article 125 of the CrPC was frequently utilized by the court to rescue "needy divorcees, rendered homeless, from moral danger and from resorting to a means of livelihood contrary to peace, tranquility and social health." The AIMPLB argued that application of the CrPC to force Muslim men to pay maintenance to their wives interfered with the practice of Islam, and yet according to the courts interpretation, the Qu'ran dictates binding obligations upon men regarding treatment of former wives.The court took steps to justify their ruling to Muslims concerned with their adherence to the Shariat and in doing so became susceptible to cries of violating India's secular tradition.

When communal identity is defined by religious traditions, social transformation that affects religion is seen as a threat to that identity, and thus evokes an emotional response. Rather than remaining a question of Shah Bano's demand for maintenance, the case became a battle to protect the Muslim identity from what fundamentalists considered "the Hindu's homogenizing influence."[20] In addition to the broader argument between right-wing Hindus and Muslim fundamentalists, the Shah Bano case wrought divisions within the Muslim community. Despite their claim to speak for all Muslims, the AIMPLB represented only the extremists, polarizing moderates and progressives. Women's groups like the NIWF (National Indian Women's Federation) and AIDWA (All India Democratic Women's Association) spoke out in favor of the judgment as a progressive step toward equality for Muslim women.

The involvement of Hindu communalists acted as a counter-productive catalyst, invoking fear in the Muslim community. The treatment of women became a distinguishing factor to promote communal solidarity, and their fears of losing religious identity drove some in the Muslim community to oppose the judgment. Extremists on all sides of the issue re-oriented themselves around religious ideals as a means of garnering political strength, and morality and social welfare took a backseat to religious politics. "Tempted by its political utility, religion [fell] into the trap of communalism" and national identity was a casualty of communal demands.[22] Shah Bano was not the first woman to go to the courts and demand maintenance based upon the CrPC. The case became controversial with the political opportunism of the AIMPLB and the Hindu right wing. Religion became a weapon both exploitative and divisive used to dismantle India's democracy.

The exploitation of religious confrontation as a political tool was not new in India. Used effectively by the British as a means of discouraging Indian national unity, religious nationalism was codified in 1935 with the passage of the Government of India Act which gave Hindus and Muslims separate political representatives and made religious identification the key to political power.[23] Their focus on preservation of personal laws following the Shah Bano judgment became a means of unifying the Muslim community and gaining political strength to counter the Hindu majority. "Communal mobilization meant using Islam as a political adhesive between Muslim communities which would otherwise have little in common."[24] Political actors motivated by their desire for control transformed what should have been a compassion-driven judgment into an emotional battle of accusatory extremism.

Rather than a women's rights issue, Shah Bano became a symbol for the discrepancy between the beliefs of Hindus and Muslims. Arguing that application of the CrPC to force Muslim men to pay maintenance to their wives interfered with the practice of Islam, Maulana Abdul Hasan Nadvi, the President of the AIMPLB, described preservation of the Shariat as "the most important problem for the Muslims of India."[25] The courts interpretation of the Qu'ran was

portrayed as a violation of their constitutional right to religious freedom, with government threatening the Shariat and consequently the Muslim community. By presenting the issue as governmental activism to the detriment of Islam, Muslim fundamentalists invoked fear among many who had potentially favored further integration by inciting political mobilization along communal lines.

Syed Shahabuddin, leader of the conservative Janata party and newly elected Parliamentarian, opposed the judgment because he did not consider any facet of Indian government capable of properly applying the Shariat to the Muslim community.[26] Shahabuddin accused the Supreme Court of showing "utter disregard for Muslim personal law."[27] The treatment of women became a distinguishing factor to promote communal solidarity, and conservatives rationalized the chauvinism through religious authoritarianism. The judgment "became a rallying point for a community afflicted by the siege mentality."[28] Muslim communalists like the Jamiyat-al-ulema-I-Hind portrayed adherence to the Shariat as vital to the preservation of the Muslim identity.

Although the Shah Bano judgment could have been a great boon to the women's movement in India, the violent division between the conservative AIMPLB and the RSS tainted the true issue. The court fulfilled its obligations, but Parliament responded fearing Muslim communal violence would threaten national security. Because the progressives could not "incite people to indulge in violence and become a threat to the internal security of the country," the Rajiv Gandhi government opted for a speedy albeit backward solution. Feminists and both Hindu and Muslim progressives blamed Hindu communalists like the Rashtriya Swayamsevak Sangh for convoluting the issue of the uniform civil code.[30]

Hindu extremists portrayed Muslim opposition to the judgment "as an example of the general backwardness of Muslims," despite their own historical opposition to Article 44.[31] In an Indian Telegraph interview of Arif Mohammad Khan, a Muslim parliamentarian who supported the Shah Bano judgment, Khan blamed Muslim conservative leaders who "were creating communalism and tension in society, which compelled the Government to bring in a measure which could diffuse the tension."[32] Despite his initial support of the Shah Bano judgment, in lieu of rising communal tension, Rajiv Gandhi bypassed an opportunity for social progression and sacrificed the individual rights of Shah Bano.

Allowing oppression of any member of a religious community weakens the entire community, and yet Muslim fundamentalists sacrificed the social needs of their citizens, exploiting Shah Bano to gain influence in the Rajiv Gandhi government. Group mobilization to gain political power forces recognition of the community, but makes it incumbent upon the community to extend those rights to each member. The actions of the AIMPLB represented the "flagrant exercise of a power-drunk autocracy," flaunting their communalism as a political weapon.[33] Rajiv Gandhi's own electoral insecurities manifested in his response to communal interests. Where Nehru had sought to maintain national unity and make Indian Muslims feel secure, Rajiv Gandhi sought to placate Muslim fundamentalists and gain political security with his support of the Muslim Women Protection of Rights On Divorce Bill authored by A.K. Sen and presented to Parliament on February 19, 1986.[34]

Muslim Woman or Indian Citizen?

Public policy exists to meet the needs of all the citizens of the nation, and yet religious identity usurped the basic needs of an elderly citizen when Shah Bano's duties as a Muslim

interfered with her rights as an Indian citizen. Zoya Hasan, Chairperson of the Committee for the Protection of Rights of Muslim Women, speaking for the women's movement, pointed out "in the guise of freedom of religion, Muslim women are being denied constitutional and human rights." When communal identity conflicts with the duties of citizenship, it is that identity which must adapt. Personal laws necessitate the mutual exclusivity of the individual as both Muslim woman and Indian citizen, and in India it is only Muslims who are allowed to maintain personal laws.

The Shah Bano case brought back to the surface "contradictions generated by the constitutional guarantee of equality and non-discrimination for women and the continued applicability of personal law." In their study on Muslim women in India, Zoya Hasan and Ritu Menon indicated that by not enforcing equality, the government facilitates inequality. Women's advocates considered the continued absence of a uniform civil code to represent "state inaction which institutionalizes discrimination through religious personal laws."The Muslim Women's Bill, designed to placate Muslim communalists, placed maintenance for Muslim divorcees outside the purview of the CrPC. By codifying their subjugation, the bill was a cruel step backward for Muslim women and the women's movement, making it almost impossible for divorcees to receive maintenance from a spouse unwilling to fulfill his legal obligations.

The bill limited the payment of maintenance upon divorce to the period of iddat, approximately three months, as well as repayment of mehr, or dowry.[38] On the occasion the woman remained unable to support herself, responsibility for her care went to her relatives and failing that, to the State Wakf board. Wakf boards, however, were not guaranteed sources of support. They existed only in large cities, and not funded by the government subsist upon philanthropic donations from within the Muslim community. Additionally, only by obtaining the signed consent of her husband could a women petition the court under Section 125 of the CrPC.

In his ruling, Chief Justice Chandrachud addressed the need for social reform in the Muslim community. Through its application of the CrPC to Shah Bano, the court sought to elevate the status of a population within Indian society whom had been "traditionally subjected to unjust treatment," putting pressure on the Muslim community to justify the role of Muslim women in society. Social progression was treated as a threat to Islam, and preservation of religious identity was used to couch a multitude of non-democratic practices, namely the unequal treatment of women. The ruling threatened the embedded subjugation of women in the Muslim community, which "glorified the lot of Indian women by making a virtue of their required patience, self-denial and chastity." Shah Bano was forced into destitution by the personal laws of the Muslim community and the government had the responsibility to protect her as an Indian citizen. Due to electoral politics, the Indian government did not fulfill that role.

The Muslim Women's Bill exploited the traditions of tolerance and coexistence cultivated by Gandhi and Nehru. The Shariat represented the "structured disempowerment of Muslim women." Article 44 of the Indian constitution ascribes the need for a uniform civil code as a means of ensuring the equal application of the law to the many and diverse sections of Indian society. The Muslim Women's Bill reinforced a sectarian division upon the Indian women's community. Communalism won, not Shah Bano, and not the women of India. The rights of women could not compete with those who claimed to speak for all of Islam, and would oppress the weak in the name of God or Allah. In a letter which she signed with only a

thumbprint renouncing the Supreme Court ruling in her favor, Shah Bano expressed remorse about unwittingly "going against the Shariat" by petitioning the court for maintenance.

With the guidance of conservative Muslims from Indore, Shah Bano was led to believe that the CrPC interfered with the practice of Islam and therefore she could not accept it as a true Muslim woman.[45] The AIMPLB forced a contradiction between the national and religious allegiances of Indian Muslim women. The Muslim Women's Bill was a violation of Article 15 of the Indian constitution, which says "the state shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth, or any of them," by taking away the right of the Muslim woman to claim her status as Indian citizen.[46] In the face of religious fundamentalism, democracies cannot allow religious tolerance to inhibit the application of constitutionally endowed rights.

Invisible Women

According to conservatives, Muslim women are defined by their role as wife and mother. Regardless of their role however, it is the government's job to protect each citizen as well as to preserve national sovereignty, and "Muslim women probably comprise the poorest and most disadvantaged group in the country."[47] Secular laws do not seek to displace religious identity, but religious identity must accede to the laws of the state in which the individual resides. Their forced dependence upon their husbands, their paternal family, or the Wakf Boards keeps Muslim women from claiming their rights as equal citizens. "The litigant who approached the lower courts was a poor female Muslim subject made painfully aware of being disadvantaged by her religion and her sex, and in need of economic assistance."Despite being a Muslim woman, Shah Bano had the right to petition the court for maintenance as an Indian citizen, and yet she was attacked by Muslim fundamentalists for seeking justice through Indian law rather than the Shariat.

For fundamentalists, the patriarchal domination of women became symbolic of community strength. "Islam, to the Indian Muslim, became a matter of group differentiation and group solidarity rather than a system of immutable customs." So any change in Islamic law, even regarding marriage and divorce was seen as a threat to the entire Muslim community. Differing religious traditions among Muslim communities in India dictate the role played by the women within the community, and the role of women is an integral part of the larger Muslim identity. According to Muslim fundamentalists, the court was attempting to "force a Muslim Indian to be a good citizen and a bad Muslim" by upholding laws that contravene the Shariat.

Because Muslim women in India are defined by their sex, personal laws like the Shariat directly oppress women. India is divided by the "legal separation of private and public through the continuation of personal laws, even though they are in direct contradiction of the Fundamental Rights of citizens." Muslim women have continually been forced to resist legislative changes from which they would benefit in deference to their religious convictions. Shah Bano eventually renounced her award, and in essence her citizenship, having been socially ostracized and targeted with demonstrations and protests within the Muslim community.

Without a uniform civil code, traditionally weaker citizens are forced to rely upon the generosity and social consciousness of those who hold the power, and rights for some citizens are treated as privileges able to be withheld from others. For Muslim women, personal laws "make it difficult to overtly diversify their role playing, while symbolically maintaining their traditional identity."[53] By applying the CrPC to requests for maintenance, the courts hoped to prevent those with power from "suppressing the rights of Muslim women under the cover of

some religious decrees which are neither authentic nor consistent with the humanistic and rational spirit of Islam."[54] The Fundamental Rights endowed by the Indian Constitution extend to all citizens, and communalistic politics usurped governmental obligations to meet the basic needs of a destitute woman; Shah Bano's duties as a Muslim interfered with her rights as an Indian citizen.

The Shah Bano Factor

During the Shah Bano controversy, religious practices become a method of political organizing and a means of acquiring support for representatives of communal strength rather than true concerns affecting a majority of the community. After the judgment, Muslim communalists gained the upper hand in Indian politics by making the vital issue one of religious freedom rather than social equality. The Indian Government avoided the long-standing tension between secularism and religious communalism by enabling the continuation of personal laws that were discriminatory toward Muslim women with their support of the Muslim Women's Bill.

There were several issues at stake, including "government's appeasement of Muslim fundamentalists, denial of rights to Muslim women, damage done to secularism, danger to unity of the country," and the basic needs of Shah Bano herself.[56] In an interview, Rajiv Gandhi spoke of his concerns for the fears among the larger Muslim community about the disappearance of Islam in India. With their support for the Muslim Women's Bill Congress-I surrendered their commitment to sustaining the Indian Constitution to the demands of Muslim communalists.

Rajiv Gandhi became concerned when Syed Shahabuddin of the Janata Party, an outspoken member of the movement against the Shah Bano judgment, defeated Congress-I candidate Maulana Asrarul Quasimi in the 1986 mid-term elections. Despite his acknowledgment of a need "to break through what [had] become a vested interest," Prime Minister Gandhi supported Muslim communalists and their demands with the Muslim Women's Bill.[58] Mr. Gandhi admitted that his support of the bill was a proactive response to the feelings of vulnerability among Muslims in India rather than to protect the rights of women. Women's groups like the NFIW (National Federation of Indian Women) felt abandoned by the government, and the AIDWA (All India Democratic Women's Association) "said the government had bartered away the right of women for electoral gains."[59] Prime Minister Gandhi's appeasement of communal groups was a figurative slap in the face to the women's groups who had felt the Shah Bano judgement was a step in the direction of equality for Muslim women.

Rather than following the path of Nehru, the Rajiv Gandhi government gave in to communalists who chose to obscure the issue of women's rights with religious fanaticism, and national identity was thus a casualty of communal demands.[60] When drafting the constitution, Nehru and Ambedkar exercised neutrality toward religion to assuage the tense vulnerability felt among religious minorities, mainly Muslims. They tried to create a state that could enforce secularism without violating the rights of religious communities, but failed to account for those who would sacrifice the individual members of their communities for political purposes. Sensing an opportunity for political victory, the AIMPLB utilized religion as a vehicle of political mobilization. "The Ulamas and the Muslim leadership [were] not interested in the genuine and burning problems of the Muslim masses but appeal[ed] to them on emotional issues by raising a cry of Islam and the divine Shariat in danger and thus notice [d] them as vote banks"[61] Muslim fundamentalists like the AIMPLB and Janata invoked fear as a distraction from the true issues plaguing a majority of the Muslim community.

The passage of the Muslim Women's Bill represented a triumph of communalism over individual rights. Although conservative spokesman Syed Shahabuddin claimed the bill would "safeguard the majority voice of the minority community," it actually forced the application of the Shariat upon all Muslims, even those who had supported the Shah Bano judgment.[62] In his rush to pacify the fundamentalist uproar, Rajiv Gandhi did not consult with Congress-I Muslim leaders, only with those who had originally opposed the judgment.[63] Prime Minister Gandhi ignored the multitude of letters and petitions from women supporting the bill.[64]

Danial Latifi described the bill, directed at his client Shah Bano, as "obnoxious to Islamic principles"[65] and State Minister for Home Affairs, Mr. Arif Mohammad Khan, a Muslim member of the Lok Sabha, resigned following the presentation of the Muslim Women's Bill. Fear of losing political support led Congress-I to sacrifice their moderate constituents to placate Muslim extremists, thus protecting their personal electability and facilitating the continuation of retrogressive laws. "The Muslims had felt at the time of independence and soon after, that India [would] protect their system," and if supporting distasteful legislation would maintain the status quo, Rajiv Gandhi was willing to suborn principle to political power.[66] Governmental appeasement of Muslim extremism through the maintenance of non-democratic personal laws was thus disguised as secularism.

he Shah Bano case led to an abuse of secular ideals to gain political power. An unforeseen and perhaps unavoidable discrepancy in the creation of the Indian Constitution was the maintenance of Muslim personal laws. The secular state both "keeps religion apart from the state for the sake of religious liberty…" and "ensures equality of free citizenship."[67] The Indian government demands not just tolerance and coexistence, but respect for and acknowledgement of all religions, the two largest being Hinduism and Islam. Religious politicization demands the need for an aggressive secularism to balance the power of the federal government. "Culture nationalism…calls for the erasure of all specific identities and demands the constitution of a culturally homogenous nation," which could not work for India.[68] Secular nations cannot allow religion to distort their commitment to egalitarianism, and yet the Shah Bano controversy threatened India's tradition of religious tolerance, and raised the question of how a secular nation should treat a religious minority that threatens national sovereignty.

Indian secularism mandates national respect for all religions, and yet tolerance of traditional inequalities, even those propagated by citizens who proclaim moral righteousness, is unacceptable and yet common in certain religious communities. "By insisting that on some matters Muslims should be exempt from the requirements of secularism, Muslim and government leaders progressively eroded the very secularism on which the security of Muslims depended in a Hindu-majority country."[69] Any law that affects the religious practices of a community would appear to that community as non-secular. By politicizing religion, the line between church and state became blurred, weakening the commitment to secularism and threatening the validity of the Indian Constitution.

Secularism facilitates governmental ability to meet the evolving needs of all its citizens equally. Laws should be considered legitimate just so long as they have the goal of preserving the rights of citizens without regard to the religious practices of those citizens. Arguing, in his judgment in Shah Bano, "the religion professed by a spouse or by the spouses has no place" in determining the legal requirement for maintenance, Chief Justice Chandrachud adhered to the secular intentions of the constitution.[70] Political stability depends upon equal application of the

law to all citizens. The maintenance of communal identities hinders the survival of an Indian identity, and devalues the meaning of citizenship.

There is an important difference between a state that is tolerant and a state that is secular. While the goal of secularism is to respect religious identity while protecting the equal rights of citizenship, "to tolerate is to refrain form interfering in the affairs of any individual or group, however disagreeable or morally repugnant, even though one has the power to do so."[71] By applying the CrPC, the court prevented conservative Muslim men from "suppressing the rights of Muslim women under the cover of some religious decrees which are neither authentic nor consistent with the humanistic and rational spirit of Islam."[72] Application of what was a secular criminal code ensured objectivity and was designed to protect religious rights. Secularism demands that people are treated as equal individual citizens of India and not as cogs in a machine of religiosity, and even allows them to abstain from the practice of any religion.[73] Difficulty arises when a religious identified group is in the majority and holds political power, and the Shah Bano controversy exemplified the need for "a balance between the rights of individuals, the interests of collective entities, and the interests of the state."[74] Shah Bano's rights as an Indian citizen and the egalitarian, democratic ideals of the Indian constitution were subordinated to the religiosity of an aggressive interest group.

Communalists made religion a threat to Indian democracy. Their opportunistic demands were destructive to the premise of religious tolerance, and made religion seem inadaptable to life in a modern society. Because the fundamentalist interpretation of "religion decrees subservience to authority, non-negotiable dogma, and a willingness to bear any sacrifice and pay any price in pursuit of paradise in the world beyond time" Muslim extremists abandoned their investment in progressive democracy.[75] In the letter she dictated renouncing the Supreme Court ruling in her favor, Shah Bano expressed remorse about unwittingly injuring the Muslims of India by following the constitution rather than the Shariat.[76] Due to the violent divisions promoted by escalating communalism, she was unable to survive as both a devout Muslim and a practicing democrat. Exploiting the secularism that enabled them to maintain their personal laws and hence their religious identity, the AIMPLB sacrificed Indian democratic values for political power.

Conclusion :

In a secular democracy, the state must intervene when a community does not extend equal rights to each member of that community. The government must utilize its power to force religious communities to treat each individual members of the community in accordance with the laws of the nation state, even if doing so weakens the communal identity. Religious practices can be maintained in a secular nation. However, with the Shah Bano controversy, communal groups sullied the traditions of religious tolerance and cultural diversity for which India is known by politicizing their extreme demands. In a vast political system like India's, certain elements depend upon their religion as the basis for their social interactions, and on occasion, only through recognition of group rights can the needs of each individual within the group be met. With their involvement in the case of Shah Bano, religious communalists forced a needless contradiction between the personal religious practices of the individual and that individual's adherence to the democratic principles of the Indian constitution.

Fundamentalism must yield to modernity because the regressive necessity of religious traditions negates the social progression necessary for democratic success. Religion and the individual become so intertwined that one cannot act without affecting the other, and neither can easily

adapt to modern society. In an effort to moderate their judgment, the Supreme Court reconciled their ruling with the Qu'ran and in so doing left themselves open to criticism by Muslim fundamentalists for overstepping their bounds. Respect for religious laws cannot outweigh adherence to secular laws, and attempting to temper constitutional law through a filter of religiosity is unnecessary and detrimental to the unity of the nation. Personal laws that violate the constitution should not be allowed. A uniform civil code would rectify that problem. The Muslim community, like the entire country, contains both liberals and conservatives. Only when the law is applied equally to each citizen will secular democracy prevail.

It is the women in the Muslim religious community that are subjugated by personal law. Membership in a religious group should not negate one's entitlement to justice, especially when that individual is involuntarily forced to endure subjugation, as was Shah Bano Begum. The sovereign state must intervene when a community does not extend the rights of citizenship to each member. The Indian government failed Muslim women by passing legislation that allowed the continuation of non-democratic practices within the Muslim community.

The sovereign state must utilize its power to ensure religious communities treat their individual members in accordance with the laws of the nation-state, even if doing so weakens the communal identity. Fundamentalists cannot exist successfully in a modern democracy, just as secular democracy cannot succeed by constantly yielding to communal demands. Communalism distorts secular ideals and individual rights in the name of political expediency. The Shah Bano controversy made tangible the concept that traditions of oppression should not be maintained, and to do so in the name of religion is not acceptable in a secular democracy.

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ICT Challenges to Lis Professional

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Abstract :

Due to the drastically change in technology and rapidly invention in electronics area the information communication technology is not limited to computer operation and application only but it's beyond the computer and near to artificial Intelligence Today there is no need to purchase any software we can manage numbers of libraries or Information centers on different location through one server. This paper also focus on multifaceted role of Librarian and the current scenario of application of ICT in rural parts of India.

Keywords: ICT, LIS Profession, Change Management

Introduction :

Education libraries develop and design their collections and services to meet the institutional programme of the institutions. Academic library have been acquiring, processing, circulating and preserving information materials in all media, although emphasis has been on paper base materials such as books and journals. Introduce the information communication technology in an academic library has been improved and change the face of information acquisition, processing, dissemination and storage. Information is being acquired both in paper and electronic format and academic libraries are able to convert some of their collections to machine readable format, information communication technology has also facilitated networking creation and accessing of remote electronic data books and wide range of information network is use of information communication technology and access to electronic information networks is slowly transforming libraries from book-Centre to information Centre. We are living through a revolution in information communication technology which is transforming the way knowledge is stored and exchanged; touching the very core of our culture. This is era of information explosion in which the large amount of information is being generated at every movement. The ability to collect, store and disseminate the large amount of information needs application of new technologies. New information has become very vital tool, possessing of which reveals economic and social advantages. In the information technology advancements are also emerging equally fast as the expectation level to cope with the large amount of information. Information technologies are shaping and changing all of our institutions as these are closely related to the mission of libraries and are changing capabilities of libraries.

Characteristics Ict Anable Libraries :

In order to understand the magnitude of change which our theory of the modern library must encompass let us try to describe the characteristics of the modernize library and to do o independently of the library environment academic, national, public or commercial,

- Access to the modernize library is not bounded in space or time. It can be accessed from anywhere at any time.
- Content in electronic form will steadily increase and content in printed form will decrease
- Content is in textual, image and sound form
- Usage of electronic information as a proportion of total usage will steadily increase and usage of printed material as a proportion of total usage will decrease
- Expenditure on information will shift from ownership to subscription and licensing

- Expenditure on equipment and infrastructure will increase
- Usage of buildings will shift from stockholding to places for study, animation and citizenship
- Recruitment, Training and Job of Library Staff will be re-profiled

Role Of Librarian In Ictanable Libraries :

Today's modern library where the advancement in computer technology has brought so much changes in the digital age, all major institution including the government, organization businesses and most of all the education system has been highly influenced by this modernization that has been highly advantageous to the society. The technology continues to grow by leaps and bound without measure and it will continue to grow us long as the needs for technology continue to arise. So the question lies on what would be the role of College Libraries in the library if users seem to gather all information on their own using their computers? Of yesterday's libraries.

Today Librarians can also be called a Media Specialist they are the modern librarians who have recognized and adopted the importance of technology. As you can see the role of the librarian is highly technologically advance nowadays. A certain college, university should learn a harness the importance of the evolving technology and mastery to become highly relevant in the digital age.

These changes has been brought about by college library desire to stay in touch with the latest trends, expand and develop innovative ideas and define a clear highest education standard for the welfare of college users. College Librarians are contributors of changes in a professional degree.

Undeniably there will be times that there are users who know how to use such technology, but Librarians are like teachers ready to teach to use computers and other media inside the library. This has been their basic roles to help users to learn to adopt such technology and to bring in forefront the technology system if needed. These are the qualities of highly effective modern Librarian or Library Media Specialist in the digital age.

ICT Challenges To Lis Professionals :

- Librarian should be administrative expertise to create and manage convenient accessible and cost effective information services that are aligned with the strategic direction of the academic institute.
- Librarian should as an information provider with IT skilled specialists functioning in an automated environment.
- Needs for bigger financial investments to avail of electronic resources.
- Needs for continuous learning for Library staff and users.
- Modern libraries and Librarians are become more & more important but there is a need to change.
- Constantly evolving ITS (Hardware and Software).
- To provide scholarly access to elected relevant information resources, giving high value to the needs and expectation of users.
- From a paper-based environment with IT skilled specialists functioning in an automated environment.
- Funds for acquisition of ICT facility.
- Storage and preservation of electronics information resources
- Maintenance and security issues.
- Information literacy among library users.
- Unreliable power Supply.

- Providing access to internet and internet based services.
- Providing access to web based resources.
- Providing access local or internal information. Resources in digital form.

ICT Challenges And Manage The Change In The Library :

Change management in ICT is a systematic approach to dealing with change both from the perspective of an organization and on the individual level. A somewhat ambiguous term, change management in ICT has at least three different aspects, including adapting to ICT change, controlling the ICT change, and effecting the ICT change. A proactive approach to dealing with change is at the core of all three aspects. For an organization, change management means defining and implementing procedures and/or technologies to deal with changes in the library environment. Successfully adaptation is crucial within the library as it is in the library organizations and the individuals in them inevitably encounter changing conditions that they are powerless to control. The more effectively you deal with change, the more likely you are to thrive. Adaptation might involve establishing a structured methodology for responding to changes in the library environment. Terry Paulson, the author of Paulson on Change, quotes an uncle's advice "It's easiest to ride a horse in the direction it is going." In other words, don't Struggle against change learn to use it to your advantage In a computer system environment, change management refers to a systematic approach to keeping track of the details of the library services & Systems.

Current Scenario Of Modernization Of Libraries In Rural Parts Of India :

The current status of library automation and librarian attitudes towards the use of ITC in college libraries in rural parts in India has not reached a very high level due to lack of budget, lack of manpower, lack of skill & staff and lack of training are the main constraints for not automating library activities. Even though library professionals have shown a positive attitude towards the use of ICT application and modernization they need extensive and appropriate training to make use of ICT tools in rural areas libraries.

Conclusion :

In the 21st century everyone going through many changes to face the future challenges ICT has transformed the role of not only libraries but also library professionals in the changing environment in which they work. Library professionals are functioning under great pressure to become more efficient to deliver more effective services to the users. As the role of LIS at the forefront of innovation in the world. LIS professionals need to confident and competent that they can prepare for new ICT challenges.

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Automated Library System: Trends and Future

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Abstract :

This article focused on the overview of library automation and the changing scenario of library management. The impact of ICT has changed the library operation and its functionality in to a fast to faster mode. Clients need not to visit shelf to shelf to find out a document. They just get their documents sitting in front of a desktop. Automation has reduced the man power. This article will discuss about the concept of automation, its requirement and various components helps to automate library. Some software package has given which are available for automation purposes.

Keywords: Automation, Cataloging, Library software, OPAC.

1. Introduction

The library plays a critical role in our society it is an important component of any educational institution, which is hub of the teaching, and learning activities where students, researchers and teachers can explore the vast resources of information. In the age of information communication technology, computers are being used for day-to-day housekeeping activity of the library which saves the time of the end users, and library professional also and at the same time avoid duplication of work and make the library service smooth and effective. In the age of ICT library scenario has been drastically changed in terms of collection, organization and services. Simultaneously, user's demands and attitudes have changed in its kinds. Also the information seeking behavior of user has dynamically changed. They want relevant, authentic information very quickly within a single place at their hand .This concept has posed challenges for library professionals for quick delivery of library services and information. This development in library field has brought the idea of Library Automation.

Concept And Meaning Of Library Automation :

The word "automation" has been derived from Greek word "automose" means something, which has power of spontaneous motion or self-movement. The term "automation" was first introduced by D.S. Harder in 1936, who was then with General Motor Company in the U.S. He used the term automation to mean automatic handling of parts between progressive production processes.

According to Encyclopedia of Library and Information Science, "automation is the technology concerned with the design and development of process and system that minimize the necessity of human intervention in operation" (Kent, 1977). According to McGraw Hill Encyclopedia of Science and Technology automation as "a coined word having no precise generally accepted technical meaning but widely used to imply the concept, development, or use of highly automatic machinery or control systems" (McGraw, 1982). Webster's Third new International Dictionary of English Language Automation is defined as "automatically controlled operation of an apparatus, process or system by mechanical or electronic device that takes place of human organs of observation, effort and decision". (Gove, 1966) According to the Oxford English Dictionary automation as "application of automatic control to any branch of industry or science by extension, the use of electronic or mechanical devices to replace human labour".

(Simpson & Weiner, 1989). Library automation, stated in single term, is the application of computers and utilization of computer based product and services in the performance of different library operations and functions in provision of various services and production of output products. Library automation may be defined as the application of automatic and semiautomatic data processing machines (computers) to perform traditional library housekeeping activities such as acquisition, circulation, cataloguing and reference and serials control. Today "Library Automation" is by far the most commonly used terms to describe the mechanization of library activities using the computer. (Uddin, 2009). Encyclopedia of Library and Information Sciences "Library Automation is the use of automatic and semiautomatic data processing machines to perform such traditional library activities as acquisitions, cataloguing, and circulation. These activities are not necessarily performed in traditional ways, the activities themselves are those traditionally associated with libraries; library automation may thus be distinguished from related fields such as information retrieval fields such as information retrieval, automatic indexing and abstracting and automatic textual analysis" (Kent, 1977).

Need and Objectives of Library Automation :

Information explosion has resulted in the production of a large amount of literatures in every field of knowledge .Accordingly the print documents are coming to the library in huge numbers which is not possible for a library to manage the collection manually. Now a days no user has time to search the required and relevant information from the dense heap of information collection .They have no time to go shelve by shelve to pick up a book . So it necessitated for library automation. In most of libraries are yet to be automated. The various factors that necessitated changing a manually operated library system an automated library system are as follows.

- Recording keeping activities of library can be done effectively in automated environment.
- Issue, return and renewal of books can be performed quickly and searching of documents through Online Public Access Catalogue (OPAC) which is a powerful tool of library automation.
- It will be cost effectiveness • Maintain bibliographical records of all the materials, in a computerized form.
- Provide bibliographical details through a single enumerative access point of holdings of a library. • Reduce the repetition in the technical processes of housekeeping operations.
- Provide access to information at a faster rate.
- Share the resources through library networking and implement new IT processes to provide high quality information.

1) Service-oriented Architecture (SoA) in ILS Service-Oriented Architecture (SOA) is an ICT architectural style that supports seamless flow of information, which is independent of systems, platforms, software architecture, data structures etc. In short it supports sharing of services and datasets in heterogeneous information infrastructure. The term serviceorientation indicates a way of thinking in terms of services, service-based development and the outcomes/deliverables of services. SoA is now established as a mature architectural style and the ILSs have started switching to this promising architectural style to provide end users innovative library services and opportunities to other libraries to utilise resources and services (through application program interface). The SoA is an essential attribute of an ILS to support Cloud Computing. It facilitates the effective use of the Cloud.

2) Cloud-based library automation Cloud computing is network based computing facilities that support on-demand use of hardware and software resources. Libraries can take advantages of cloud computing in the following ways:

i) using ILS available in remote server through web browser without any installation;

ii) hosting the Web-OPAC and staff interfaces in remote server without burden of local management of server and arrangement of IP address and domain name;

iii) setting up own remote file storage and database system (with scheduled backups). The cloud computing mainly supports three facilities.

These are Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). The Cloud based library automation has following advantages:

i) Resource pooling (cloud computing providers provides a vast network of servers and hard drives for use by client libraries);

ii) Virtualisation (libraries do not have to care about the physical management of hardware, software, user interface, data backup and hardware compatibility);

iii) Elasticity (addition of storage space on-demand in hard disk or increasing server bandwidth can be done easily);

iv) Geographical scalability (cloud computing allows libraries to replicate data to several branch libraries world-wide);

v) Automatic resource deployment (libraries only needs to choose the types and specifications of the resources required and the cloud will configure it automatically);

vi) Metered billing (library will be charged for only what they use). As a whole cloud-based library automation is quite useful and cost effective for small and medium sized libraries. Large-scale libraries may offer datasets on the cloud for use by small libraries (Data as a Service (DaaS)). Some of the well -known cloud-based services are listed in Table 1.1 for your ready reference.

Table 1.1: Cloud platform, systems and services

Cloud platform	Cloud systems	Cloud services
Software as a Service (SaaS)	Server Virtualisation, Open URL resolver, Application software	GoogleDoc, GoogleApps, OpenID, Adobe
Platform as a Service (PaaS)	Cloud based ILS, Inter Library Loan	LibLime, OSSLab, N-LARN project in India, Polaris,Exlibris
Infrastructure as a Service (IaaS)	Discovery services, Digital repository, Web hosting, Storage	Amason Elastic Compute Cloud (EC2), Amazon Simple Storage Solution (S3), Dropbox Cloud storage

The major cloud service providers and related services are listed in Table 1.2.

Table 1.2: Cloud providers and services

Cloud providers,	Types of services
Amazon Web Services	IaaS, PaaS, SaaS
EMC	SaaS
Eucalyptus	IaaS open source Software
Google	PaaS (AppEngine), SaaS
IBM	PaaS, SaaS
Lincode	IaaS
Microsoft	PaaS (Asure), SaaS
Rackspace	IaaS, PaaS, SaaS
Salesforce.com	PaaS, SaaS
VMware vCloud	PaaS, SaaS

3) Linked Open Data (LOD)

Linked Open Data (LOD) refers to publishing and connecting structured data on the Web for use in public domain. The three Key technologies that support LOD are: URI (Uniform Resource Identifier, a generic means to identify entities or concepts in the web), HTTP (Hypertext Transfer Protocol, a simple yet universal mechanism for retrieving resources, or descriptions of resources over the web), and RDF (Resource Description Framework, a generic graphical data model to structure and link data that describes things in the web). Linked Open Data (LOD) has two basic purposes:

i) publish and link structured data on the Web; and

ii) create a single globally connected data space based on the web architecture. Tim Berners-Lee advocated four rules for converting dataset to LOD.

These are:

1) Use URIs as names for things;
2) Use HTTP URIs so that people can look up those names;
3) When someone looks up a URI, provide useful information, using the standards (RDF, SPARQL); and
4) Include links to other URIs, so that they can discover more things.

W3C established Library Linked Data Incubator Group in 2011 "to help increase global interoperability of library data on the Web, by bringing together people involved in Semantic Web activities — focusing on Linked Data — in the library community and beyond, building on existing initiatives, and identifying collaboration tracks for the future." Libraries may utilise bibliographic data, authority data, classification schemes, vocabulary control devices etc. available as LOD for enriching existing library services and for introducing new information services. Some major examples of library LOD are – AGROVOC multilingual structured and controlled vocabulary, British National Bibliography (BNB) published as Linked Data, VIAF, LCSH, LC Name Authority File (NAF) provides authoritative data, MARC country, and language codes, Dewey.info etc. ILSs are taking advantages of integrating LOD available in library domain through appropriate APIs. For example, the cataloguing module of Koha can be linked with VIAF (Virtual Internet Authority File – a linked dataset of authority data from 21 major national libraries of the world) for getting authority data automatically to control name authority in local library catalogue.

4) Web-scale library management

Web-scale library management service is essentially, a cloud based solution developed by OCLC. In this service OCLC member libraries are not only getting shared computing infrastructure but also shared data from WorldCat. OCLC is successfully mixing four basic elements of cloud computing i.e. IaaS, PaaS, SaaS and DaaS (see cloud computing section above). There has been a change in trends of library automation. It is no longer about which library provides the largest collection but about which library can provide their community with the best means to access the materials they need, regardless of location (OCLC, 2011). Libraries can increase visibility at the global scale and accessibility to services at the wider scale by using the new Web-scale library management facility.

The architecture of OCLC's Web-scale library management is given in Fig. 1.3.

5) Web 2.0 compliant ILS

The present web (often referred as web 1.0 in blogsphere) is progressing towards a User-centred entity with the support of an advanced set of technological tools that are collaborative, interactive and dynamic in nature. Radfar (2005) identified following characteristics of web 2.0 – i) a platform enabling the utilisation of distributed services; ii) a phenomenon describing the transformation of the web from a publication medium to a platform for distributed services; and iii) a technology that leverages, contributes, or describes the transformation of the web into a platform for services. ILSs are all set to take advantages of participative architecture of the web and introducing new services like user tagging of subject descriptors, ratings of documents by users, RSS feed for search query, integration with web 2.0 services like read/write web, collaborative web, social networking tools and information mashup. This new trend ILS is also termed as ILS 2.0.

6) Information mashup

Information mashups tools allow remixing of data, technologies or services from different online sources to create new hybrid services (O'Reilly, 2005) through lightweight application programming interface (API). ILS uses information mashup in managing and integrating virtual contents distributed globally with local library resources. Information mashups are becoming popular application of Web 2.0 around the world such as KohaZon (integration of Koha OPAC with Amazon services), WikiBios (a mashup where user can create on-line biographies of each other in a Wiki setup), LibraryLookup (integration of Google maps with library directory service in UK) and many more such instances.

7) Interactive user interface: OPAC 2.0

Most of the ILSs now support web-OPACs. OPAC 2.0 is the next generation web-OPAC where users can interact, collaborate and participate in library workflows such as describing resources (folksonomy), tagging subject descriptors, rating of documents, creating personalised information environment, posting on library blog, suggesting new documents, commenting on library services, publishing book reviews, posting likes on facebook for library books and many such facilities. ILSs are increasingly taking advantages of web 2.0 technologies and services to convert static OPAC into dynamic OPAC 2.0.

8) New cataloguing standards

Document description models and standards are changing rapidly. We have now E-R (entity-relationship) based bibliographic data model known as FRBR (Functional Requirements

for Bibliographic Records, developed by IFLA in 1998) in place of flat data structure of ISBD. Similarly FRAD ((Functional Requirements for Authority Data, developed by IFLA in 2009), FRSAR (Functional Requirements for Subject Authority Records, developed by IFLA in 2010) are now established data models for managing name authority and subject authority respectively. These changes call upon necessary data structures in ILSs to suite FRBR, FRAD and FRSAD. Both commercial ILS group (e.g. Vitua ILS from VTLS group) and open source ILS group (e.g. Koha) are in the process of implementing the structural changes to address the improvements in cataloguing.

9) Application of discovery tools

Uses of discovery tools are increasing in libraries. Discovery tools, powered by federated search mechanisms, allow library patrons to perform concurrent searching in the library catalogue (metadata level), journal articles (full-text level), electronic theses and dissertations, consortia databases, public web, open access repositories, union catalogues etc. through a single-search interface with a set of feature-rich tools to support users. Discovery tools – i) can be integrated with existing library OPAC; ii) can import metadata into one index; iii) can apply one set of search algorithms to retrieve and rank results. As a result these tools support rich user experiences in terms of speed, relevance, and ability to interact consistently with results. Moreover, the unified interface is a big boost for users as they no longer need to choose a specific search tool to begin their search. These tools are available commercially (e.g. EBSCO Discovery Service) and also as open source products (such as VuFind, SOPAC, Blacklight, OpenBib etc.).

10) Digital media archiving module

The distinction between automated library system and digital library is blurring day-by-day. This is because of the fact that most of the ILSs are integrating digital media arching module or DMA (e.g. NewGenLib 3.0 onwards) to handle full-text discovery of documents in different formats. This trend of ILS is important in the sense that in future library can handle both automated and digital library systems through a single instance of ILS. Another advantage of DMA is the scope to integrate courseware in multimedia formats in case of academic libraries. Some ILSs are also achieving compatibility with OAI/PMH standard to support metadata harvesting in ILS (e.g. Koha version 3.10.1 onwards).

11) Community information services as outreach process

Community information services meant to support community members with the information originated in the community. The service includes three broad groups – survival information such as that related to health, housing, income, legal protection, economic opportunity, political rights etc.; citizen action information required for effective participation as individual or member of a group in the social, political, legal, economic process; and local information i.e. basic information concerning courses, educational facilities, government agencies, local organisations, fractional groups, health professionals etc. including a calendar of local events. ILSs now (e.g. Vitua ILS and Koha are supporting MARC 21 community information format to handle community information resources) are trying to include community information service module to extend the role of ILS to provide outreach services.

12) Increasing use of open source software

The domain of library and information science, right from the beginning of the open source movement, is benefitted through structured effort and software philanthropy. We have matured ILSs like Koha (comparable to any global ILS), Evergreen, Emilda, NewGenLib; comprehensive digital library software like DSpace from the MIT, US (with support from HP), Greenstone Digital Library Software (or GSDL) from University of Waikato (presently supported by UNESCO). Use of open source ILSs are increasing all over the world because of the transparent use of library standards and scope of customisation to suite the specific requirements of a library. Moreover commercial ILSs are also utilising open source components like MARCEdit & ISISMARC (MARC cataloguing tools), YAS toolkit (Z39.50 client and server), Lucene & Solr (Text retrieval engines), Unicode-compliant multilingual tools etc. The use of open source software in library automation ensures 3F – fund (as these are free of cost), freedom (as these are free to customise) and fraternity (as these are supported by international communities).

Conclusion :

Now a day Library Automation has become the buzz word in library profession and has become a bare necessity for any libraries. An automated library can provide better library services to their users and can maintain the library more properly which a manual library can't do. The record keeping activities and various report generation becomes very easy in an automated library system. But the success of any library automation programme depends upon its proper planning and execution. Hence library professionals need to take right initiatives in right direction.

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Digital Libraries and Its Challenges in the Present Scenario

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Abstract :

This paper reflects upon concept and reforming characteristics of digital libraries. Impact of creation and implementation of digital libraries around the world is also considered in this paper. Adaptive roles and activities of Librarian in digital environment to make the most out of digital library services can also prove beneficial. The challenges and issues hindering the creation of a true Digital Library have also been taken in consideration.

Keywords: Digital Libraries, Characteristics, Impact, Information

Introduction:

Advancement in ICT, specifically Internet, has enabled significant changes in generation, distribution, access and use of data and information. Recent technological developments in the past few decades have brought dramatic changes in the traditional concept of library, leading to a new system called "Digital Library" where the reading materials are not limited to print and paper as main components.

The creation of Digital Libraries for virtual access of digital information resources from anywhere in the world, has been one of the most essential contributions of internet and web technology advancements. Digital library can produce more useful results, save time and effort in searching reading materials.

Definition:

Abundant Definitions in reference to the concept of Digital Libraries is available in the literature of Library Science. Most of the definitions have been influenced and formulated by the people, who actively contributed in the research projects for digital library. Digital Library definitions vary on basis of the understanding of the concepts of libraries with respect to massive electronic databases as well as the extent and nature of the research projects by the researchers. Notable researchers in the field of Library Sciences such as Oppenheim and Smithson (1999), Chowdhury and Chowdhury (1999), Brophy (2000), Arms (2000), Clayton and Gorman (2001) have discussed characteristics, impacts and challenges in accomplishing digital libraries.

In 1994 IEEE CAIA Workshop on Intelligent Access to On-line Digital Libraries (Gladney et al., 1994), the comprehensive definition of a digital library, emphasizing on both technical as well as service aspects was framed as: "A digital library is an assemblage of digital computing, storage, and communications machinery together with the content and software needed to reproduce, emulate, and extend the services provided by conventional libraries based on paper and other material means of collecting, cataloging, finding, and disseminating information. A full service digital library must accomplish all essential services of traditional libraries and also exploit the well-known advantages of digital storage, searching, and communication."

Characteristics of Digital Libraries:

The major characteristics associated with Digital Libraries may be described as follows:

- Well organized and managed collection of reading resources.
- Digital libraries have information resources that are large and persistent over time.
- Digital Libraries may provide access to various information resources and data ranging from texture, vocal, pictorial, video and numeric information, over the internet digitally.
- Reduction in physical space of infrastructure and maintenance unlike traditional libraries.
- Access to variety of information and data resources residing on different server's overseas encouraging interoperability.
- Contrary to traditional libraries, access to identical reading materials at the corresponding time around the globe.
- Advancement in Collection Development policies to perform the crucial role of providing the best information resource to the reader or user at the right time.
- Implementation of an appropriate mechanisms in collection development policies to filter the unwanted resources from the abundant information in digital libraries.
- Digital Libraries should be capable of operating multilingual resources, in order to accomplish dream of developing a global information center.
- Digital Libraries must provide the researchers and users with effective, easy to use and appropriate searching tools and retrieval facilities.
- Digital Libraries should be able to diminish language, time and space barriers, for the users to harness information in any language, at anytime and anywhere in the world.

Impact of Digital Libraries:

Creation and Implementation of Digital Libraries is based on the belief of better delivery and access of information to end users, unlike traditional libraries. A brief note down of potential beliefs of having Digital Libraries by Arms (2000b, 4-7) is listed below:

- **Digital Library delivers information to the readers**

  On contrary to physical visit to a library for information, Digital Libraries can provide information to the readers in real-time. Readers don not have to be limited to the working hours of a traditional library for access and retrieval of information. Use of appropriate access management mechanisms can prove beneficial to the readers to gain information anywhere around the globe, when they require it.

- **Advanced computing and operation of information**

  Technological advancement has boosted and simplified the computing and operation facilities for access and retrieval of information by Digital Libraries. Implementation of improved search engines and large storage databases has facilitated the readers in access to sophisticated information search mechanisms.

- **Advanced information distribution**

  Sharing of information over the internet among readers as well as members of organizations and institutions is facilitated by means of Digital Libraries. Digital Libraries have also enabled the readers, recommend as well as get recommendations regarding the information they are in need for, from their peers.

- **Real time Access to information**

  Many authors and publishers are publishing their literature work in Digital Libraries. Digital Libraries provide early and quick access of information to readers by diminishing the

time lag witnessed in traditional libraries. Traditional Libraries experience time lag between creation and access of a particular information resource. Readers are able to view and access information published in a particular time frame, by means of internet and servers, which may be unavailable in traditional libraries at that particular instance of time.

Challenges:

Creation, implementation and management an effective and fully operational digital library can prove challenging and expensive. Few major issues and challenges faced during development of digital libraries are enlisted below:

1. Accommodation of digital materials will require advancement, enhancement and upgradation of current technical architecture. Development of advanced technological facilities and mechanisms for digitization of analog collections.
2. Unavailability and lack of usage of
   - high-speed internet facilities
   - relatively large databases that support majority of digital formats
   - data storage over local as well as remote network
3. Building digital collection is a serious barrier in creation of digital libraries. Digital collections can be built by usage of following three essential methods:
   - Digitization of existing collections by conversion of paper and print materials to digital format.
   - Acquisition of original digital contributions like electronic books, journal and datasets by authors, scholars and publishers.
   - Availability of links and pointers to other servers and library collections for access of information and resources not stored in house digital library.
4. Lack of common Metadata standards is another issue to information access and retrieval. Data required and used to describe the context, content and attributes of any specific entity of digital library is called Metadata. Metadata is similar to cataloging of records that describes the collection and is familiar to all librarians worldwide.
5. Problem of naming or mentioning identifiers is another hindrance to smooth digital library functioning. Names are unique identifiers for digital objects or any documents in metadata. Names in metadata of digital libraries hold the same amount of importance as that of ISBN numbers in traditional libraries. They serve the purposes of unique identification of citations, information retrieval, pointers, links and management of copyright.
6. Copyright and rights management is by far the most vexed barrier for advancement of digital library. Digital informative resources are more prone to copyright violation as the collection can be easily copied due to access by multiple users simultaneously.
7. Rights Management is a developed and more advanced mechanism for management of copyright, by access to information resources without violation of copyright over digital libraries. Current right management functions available to use include:
   - Identification and authentication of users
   - Put forward copyright status of each digital resource material
   - Impart restrictions on use of copyrighted materials
   - Charge fees associated with copyrighted material for usage
8. Maintaining the availability of digital information in perpetuity is such another issue. The preservation of information is a barrier related to technology. Non-upgradation of technical

storage mediums, high power performance servers and mechanisms for efficient access can hinder the development of a digital library and its purpose. The preservation of access to content in digital libraries is also equally essential.

Conclusion:

Redesign and upgradation of technical architecture is the major barrier to overcome, followed by other challenges, to produce fully functional digital library. Similarly they are in dire need of meeting evolving demands of users, implementing new mechanisms and advanced technologies, managing effective changes and improving overall performance to face the current as well as future challenges. The challenges must be diminished and acted upon today to ensure that the libraries have better and secure future ahead.

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Applications of Complete Graphs and Cube Graphs

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Abstract :

*Graph theory is an important area in mathematics with many applications. Also, the graph factorization is one of the most flourishing area in graph theory. A factorization of a graph **G** is a set of spanning sub-graph of **G** that are pairwise edge- disjoint and whose union is **G**. Factorization is one of the most active research areas in graph theory. In this work 1-factors, 2-factors and 3-factors of complete graphs were used to create higher order factors. There are different methods to create factors of a graph. In this work degree factors were used. Since it is difficult to create complete graphs manually when the number of nodes increases, a MATLAB code was created to construct complete graphs and identify their factors.*

Keywords- Complete graph, Cube graph, Factors of a graph, Factorization.

Introduction :

Graph theory has many applications in all disciplines. Factors are one of the most interesting areas in Graph Theory. The concept of factorization of a graph was introduced in 1847 by Kirkman. Factors can be constructed using different methods and the degree factors are used in our work. Further, generalized Hadamard matrices can be used to construct 2-factors of a graph.[1].

In general, a graph is represented as a set of vertices (nodes or points) connected by edges (arcs or lines). Therefore, graphs are structures that used to model pair-wise relations between objects. We provide brief summary of definitions which are necessary for the present work.

Definition 1 (Graph)

A simple graph G consists of a non-empty finite set V(G) of elements called vertices (or nodes), and a finite set E(G) of distinct unordered pairs of distinct elements of V(G) called edges.

Definition 2 (Complete Graph)

A simple graph in which every pair of distinct vertices are connected by an edge is called a complete graph. We denote the complete graph on n vertices by K_n.

Definition 3 (Cube Graph)

A cube graph Q_k is a graph obtained by labeling all vertices using bit strings of length k and two vertices are adjacent whenever corresponding bit strings differ only at one place. Cube graphs Q_k has 2^k vertices and
$k.\ 2^{k-1}$ edges. Further, cube graph Q_k is a regular graph of degree k.

Definition 4 (Degree of a vertex)

The degree of a vertex is the number of edges incident with that vertex.

Definition 5 (n-Factor of a Graph)

A factor that is n-regular is called a n-factor.

Definition 6 (Factorization of a Graph)

If a graph G can be represented as the edge-disjoint union of factors $F_1, F_2, \ldots, F_k$, then $\{F_1, F_2, F_3, \ldots, F_k\}$ is referred as a factorization of a graph G.

Material and Methods:

If a graph G has a n-factorization, then G satisfies two conditions. First condition is that G must be a collection of edge-disjoint n-factors and secondly, the union of n-factors must be the graph G. Factor of a graph G is a spanning sub graph of G having the same vertex set in G and not necessarily having the all edges as in G. If the degree of a spanning sub-graph of G is 1 in every vertex, then it is called a 1-factor of the graph G. The following example represents the cubic graph with three spanning sub graphs G_1, $G_2$and $G_3$of degree 1. Therefore G_1, $G_2$and $G_3$are 1-factors of graph G. Since, the union of these three 1-factors is the graph G, it is called a 1-factorization of G.

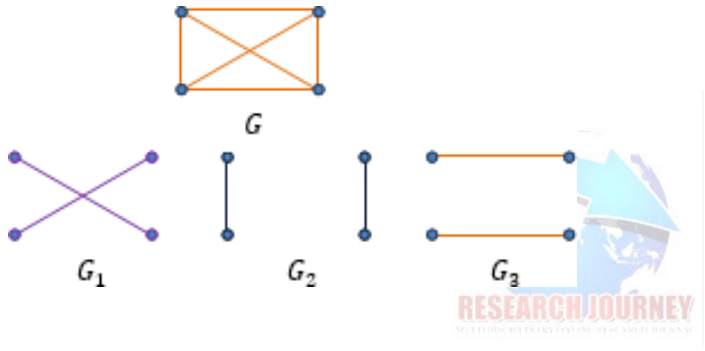

Figure 1: 1-factorization of K_4

Theorem

Cube graph Q_k has k number of 1-factors.

Proof:

Consider the cube graph $Q_k$with 2^kvertices and

$k.2^{k-1}$ edges which is regular of degree k. Since

1- factors are collection of edges of degree 1 and one 1-factor of G has 2^{k-1} edges. The number of

1-factors of G is k. That is $k.2^{k-1}/\ 2^{k-1} = k$.

Example1:

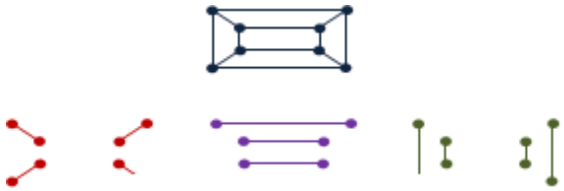

Figure 2: 1-factors of cube graph

2- factor is a sub-graph of a graph G whose each vertex is of degree two and union of these sub-graphs forms the original graph. Vertices of a 2-factorable graph G must have even degree. 3-factorization is the collection of 3-factors. 3-factor is a subgraph of a graph G whose each of the vertices are having degree three. Following figure will show an example of 3- factorization of K_{10}.

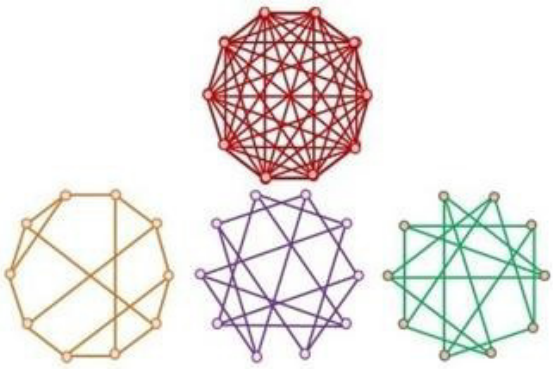

Figure 3: 3-factors of K_{10}

Using 1-factors of 1-factorization we can obtain 2- factors. Following figure will show the construction of 2 factors using 1-factors of K_4.

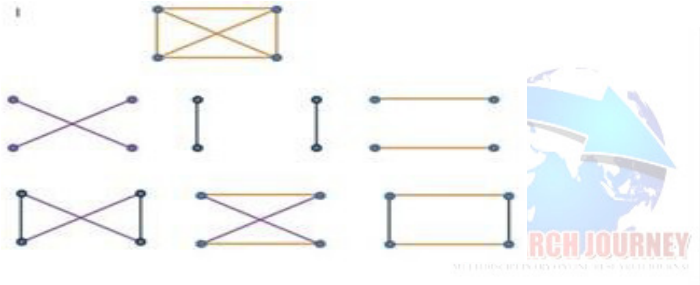

Figure 4: Construction of 2-factors using 1-factors

There are three ways to obtain 2-factors using

1-factors of a 1-factorization of complete graph K_4.

The number of 1-factors of K_4 is ${}^3C_2 = 3$.

Consider 1-factorization of K_6. This has five 1-factors. Figure 5 gives 1-factors of K_6 and Figure 6 gives 2- factors constructed using 1-factors of K_6.

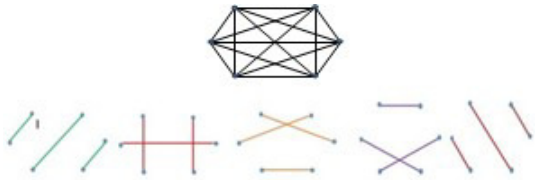

Figure 5: 1-factorization of K_6

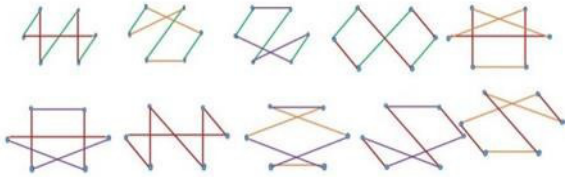

Figure 6: Construction of 2-factors using 1-factors of K_6

There are ${}^5C_2 = 10$ ways to obtain 2-factors using 1- factors of K_6..Here we can have 2-factors only.

Further, 2-factorization is not possible since the vertices are having odd degree.

Considering 2-factors of any complete graph in the form K_{2n+1}, $n > 1$, one can construct ${}^mC_2$ number of 4-factors. where m is the number of 2-factors of K_{2n+1},

Example 2: Consider the complete graph K_5. This has 2-factors and ${}^2C_2$ number of 4-factors. Since ${}^2C_2=1$,

K_5 has only one 4-factor and it is the given graph.

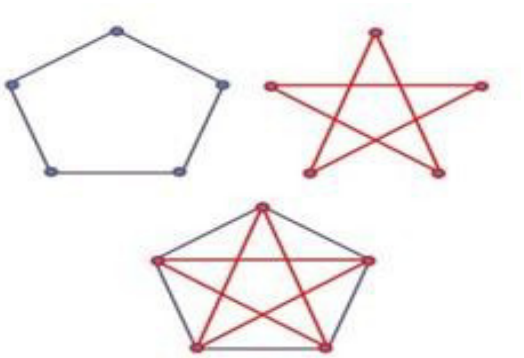

Figure 7: Construction of 4 factors using 2-factors of K_5

Example 3: Consider the complete graph of K_{10}. This has three 3-factors and it is a 3 factorization

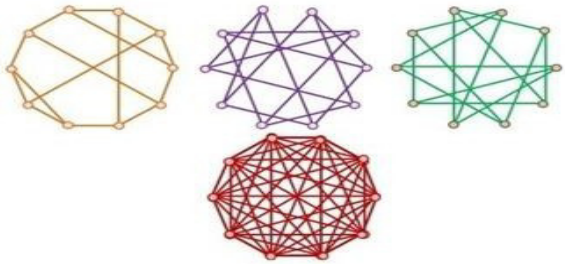

Figure 8: 3-factors of K_{10}

Results and Discussion :

It has been shown that the cube graph Q_k can have k number of 1-factors. Also, it has been clearly described that higher order factors can be constructed using smaller factors of a complete graph. Moreover, from the complete graphs of the form K_{2n} with $n > 1$, using 1-factorization we can have 2-factors but not 2-factorization. To obtain 2-factorization by the using same method, complete graphs of the form K_{2n+1} should be used. Further, 4-factors can be constructed using 2-factorization of any complete graph of the form K_{4n+1} with $n > 1$. For the complete graphs K_{3n+1} with $n > 0$, 3-factors can be constructed and those gives 3-factorization. Using smaller factors, one can construct higher order factors but not higher order factorizations.

Since it is difficult to construct higher degree factors of complete graphs manually, we created a MATLAB program to draw any complete graph and identify its factors.

Conclusion :

Factorization is the most fascinating area of graph theory with various applications. It has been shown that cube graph Q_k can have k number of 1-factors and that theorem has been proved. Moreover, 1-factors, 2- factors and 3-factors of complete graphs have been constructed. As future work, we are planning to apply the properties of factors to solve graph theoretic problems.

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R. K. Talreja College Library Circulation Section : Study with RACI Matrix

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Abstract:

There are many management terms and tools such as SWOT analysis, RACI matrix etc. Library science also includes library management. Hence, many management practices can be implemented in college libraries. Researcher has tried to study and analyse circulation section of the R. K. Talreja College library with the use of RACI Matrix.

Key words: RACI Matrix, College Libraries, Responsibility Assignment

Introduction:

In any type of organization work/tasks are done by human resource. To ensure quality results, quantitative out puts, achieve targets, optimum use of resources and for many more reasons Human Resource management is of prime importance. The role of RACI matrix can be explained with famous adage "A picture is worth a thousand words." Listing, counting, responsibility assignment of any task, activities is possible through RACI chart. Work area, task responsibility, line of action, information flow and each aspect related to work are crystal clear with the preparation of RACI Matrix. RACI matrix acts as a pictorial representation of human resource, and work. It also helps in better understanding of human resource and further planning. Santos (2021) [4] explains the RACI acronym as "Responsible, Accountable, consulted, and Informed." RACI is an example of a responsibility assignment matrix. It is a charting system that illustrates the given task's goal and the required action for each person. This assists with reducing confusion on expectations. This in turn increases work and services efficiency. Decisions can be made more quickly, accountability is clear and work load is evenly distributed.

Responsible: The person who actually carries out the process or task assignment and is responsible to get the job done.

Accountable: The person who is ultimately accountable for process or task being completed appropriately. Responsible person(s) are accountable to this person.

Consulted: People who are not directly involved with carrying out the task. However, they are consulted. They may be stakeholder or subject matter expert.

Informed: Those who receive output from the process or task, or who have a need to stay informed.

Literature Review:

Beasley (2016) [1] defends library leadership from leadership philosophies imported from other fields. Author opined that library leadership exist as quite distinct from other forms of leadership. Author discusses giving leadership away in RACI terms which means assigning true responsibility for any given task to others. Not just to know who is responsible but also to analyse who may need support in that task. Or who may need to be facilitated, who should be given resources, and who needs to be protected from to risk unanticipated cones quinces. No

matter how much responsibility is given away, it is critical to note that accountability rests with the leader. Accountability is part of titled leadership that cannot be given away.

Muhtasim (2018) [3] Created RACI matrix for the finance division of Uniliver to ensure that the employees have a clear idea regarding their tasks and activities, and what role they hold for the work carried out by them. Author drafted idea of all the tasks. These tasks are then accumulated and put in a single date base and created own RACI model.

Santos (2021) [4] explains what is RACI ?, what is RACI Chart ?, what make a RACI chart useful ? Further, RACI is explained with the example and RACI project management software is introduced.

Elhady and Abushama (2015) [2] explains RACI tool in the context of software projects. How it is helpful and makes the workplace more fiiled and more dominated by project work.

Table 1: Circulation Section

CIRCULATION SECTION						
JOB DISCRIPITION	**Principal/Vice Principal**	**Librarian**	**Asst. Librarian**	**Clerk**	**Attendant**	**Peon**
Book Issue/Return Student		CI		AR	R	R
Book Issue Return Staff		CI		AR	R	R
Reference Service		CI		AR	R	
Defaulters List	I	A		R		
Work related to Fine (Penalty)	I	A		R		
No Dues for Leaving Certificate	I	A	R	C		
Replacment Copies Work		A		R		
Reference Books Issual Record		A		R		
Inhouse Printing Facility		I		AR	C	
Inter Library Loan		A		R		
Student log in/log out		I			AR	
Recovery of books /fine		A		R	R	
Guidance to students while using Network resource Centre		I		A	R	
Book Bank Deposit Refund		I		AR		
Pending Dues and Books Yearly and for Many Years.		A		R		
Extended membership For Passed Out Students		A		R		
Making available Reprographic Study Material to students		A		R		
Current Awareness Service		A		R		

Table 1. Indicate that total 19 tasks are listed as job description under the main heading circulation. Principal and / or Vice Principals are being only informed about the work done. Librarian is accountable for 11 tasks out of 19 tasks. Librarian is informed and consulted by library staff as per requirement and situation. Actual execution of work is done by clerk, attendant and peon in maximum tasks to be done.

Table 2: Representation: Percentage of Work

DETAIL REPRESENTATION						
RACI MATRIX	**Principal/Vice Principal**	**Librarian**	**Asst. Librarian**	**Clerk**	**Attendant**	**Peon**
Count of R	0	0	1	10	5	2
Count of A	0	11	0	1	0	0
Count of C	0	0	0	1	1	0
Count of I	3	4	0	0	0	0
Count of CI	0	3	0	0	0	0
Count of AR	0	0	0	5	1	0
∑	**3**	**18**	**1**	**17**	**7**	**2**
% of Work	**6**	**38**	**2**	**35**	**15**	**4**

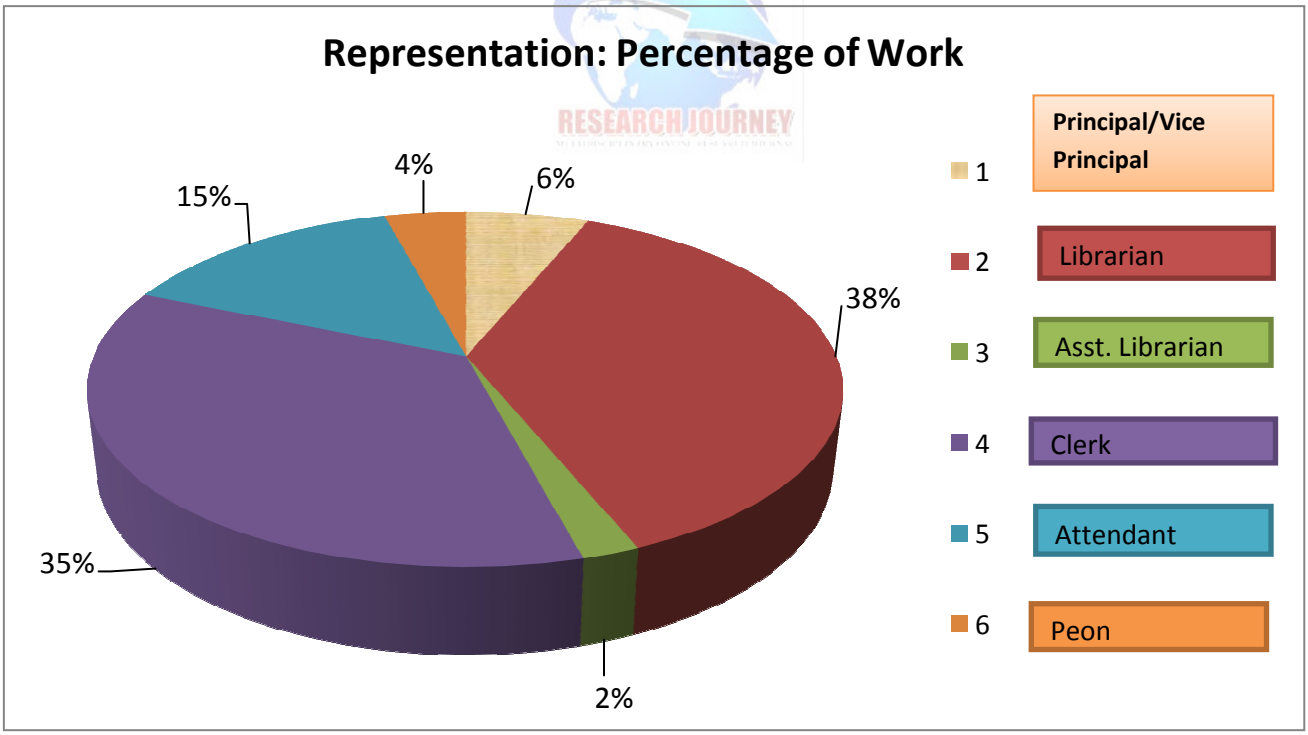

Figure 1.

Table 2. and Figure 1. indicate that Principal and / or Vice Principal is involved in 6% work. 38% work is done by librarian. Share of Assistant Librarian's work is 2%. Major portion of

work is done by clerk and attendant that are 35% and 15% respectively. Contribution in work from peon is 2%.

Conclusion:

RACI tool can be used by any type of domain and in any work place. It is as simple as where ever human resource is used to get the task to be accomplished, RACI tool can be used. It creates a path for future planning, advancement, corrections in the system etc. Decentralization of work becomes easier. It helps in decision making. Human resource gets clarity in their work flow and description.

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Effect of ICT on Rural Educational Libraries System in India

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Abstracts:

This article is creates an awareness about Impact of Information Communication Technology on Rural Development: An Overview. what is Special Technology/Telecommunications Issues in Rural Communities Like and What is ICT, Traditional Rural Agricultural Information Systems with examples, Constraints to the Development and Utilization of Rural Tele centers and lastly focus on Guidelines for Establishing Effective Rural Tele centers.

Keywords: ICT, Rural Development, Rural Communities, Traditional Rural Agricultural Information Systems, Rural Telecentres, Effective Rural Telecentres

Introduction:

In the developing countries, the information age has yet to reach the rural population except where entertainment is concerned. The rural population requires at least some of the tools of the information age to take advantage of knowledge- intensive techniques involved in sustainable crop and animal husbandry; to get better value- added for their product via information links to markets; and to obtain up-to-date, accurate information on entitlements, such as health or welfare benefits. This paper will assess the impact of information and communication technologies on the transition to sustainable agriculture and rural development. It will also document their role in promoting knowledge- empowerment in rural families.

The public employment service, Jobcentre Plus, has promoted its Internet 'job bank' and telephone help lines as important supplementary services throughout the country and as its primary means of contact with job seekers in remote rural areas. The four major areas of rural development -- economic growth, education, public health and safety, and community -- are each greatly affected by technology and communications policy.

Special Technology/Telecommunications Issues in Rural Communities Like-

Basic Telephony -- The quality of telephone service is usually worse in rural areas than in urban or suburban communities. Line availability and service are both haphazard. Multiple small phone companies serve localized rural areas -- which means expensive "long distance" calls over relatively short distances.

Universal Service -- Much of the state and federal telephone taxes are re-invested with the telecommunications companies through "universal service" programs in four ways: (a) subsidizing telephone lines in "high cost" rural areas, (b) subsidizing telephone connections and services for poor families, (c) connecting schools and libraries to the internet (through the Schools and Libraries Division), and (d) connecting rural health services through the Internet (with the Rural Health Care Division).

Deployment of Advanced Telecommunications, or Digital Access -- The "digital revolution" means that different forms of communication (telephone, television, and computer information) can use the same pathways, typically fiber optic cables. Since an actual fiber optic cable must be physically strung from point to point, low-density areas of the country are not profitable to telecom companies. Whereas the telephone network and the interstate highways were subsidized by state and federal governments, the evolving high-speed telecommunications network is not. The result is a great deal of "over-building" in metropolitan areas -- and few "pipelines" in rural areas.

Wireless telephone service, or cellular, is a workable alternative to wire line telephone service in extremely rural areas. However, wireless companies do not receive the same kind of universal service subsidies, one has to regulate the spectrum that these wireless services use, and many local communities charge local tower siting fees.

Local cable television franchises can require operators to provide public, educational, and governmental (PEG) access funding, equipment and facilities; high-speed "institutional network' or "I-nets"; and Internet access in exchange for the use of local rights-of-way and easements. However, various federal laws and court decisions have affected what local communities can request as compensation. Plus, recent mergers of traditional cable television companies are blurring the lines between the services that may be regulated by local and state authorities.

Direct Broadcast Satellite (DBS) serve homes, farms, and businesses outside the loop of cable television and on the fringe of broadcast signals. Originally, DBS companies (such as Prime Star) were barred from providing local broadcast programming. However, government can allow the re-broadcast of some "local" television stations under specific conditions. But the term "local" is used loosely since the closest TV station may be scores of miles away geographically -- and would be unlikely to cover the events and issues of small towns outside its primary signal area.

Federal and state public technology program appropriations for information technology may be the only way some rural communities can get connected.
Community technology centers are often the only ways rural small businesses and families can get access to the Internet. In most cases, metropolitan areas have local dial-in access, both residential and commercial high-speed telephone lines, access through cable television, and even satellite access. Rural areas are usually limited in these options.

Rural Signposts and Way Stations: Keeping up with changes in information technology and communications can be a difficult task. And understanding the different levels and aspects of public policy can be confusing. But citizen involvement in making policy and directing technology is critical for rural development. Fortunately, many organizations and individuals are dedicated to making technology and communication policy work for rural communities. However, more active local involvement is critical in shaping the public policy that can bring the "Technological Revolution" to all people -- and help rural America become more economically stable, better educated, safe and secure, and more equitable, and support truly livable communities.

Information Communication Technology:

New Internet-based information communication technologies (ICTs) have the potential to open new information channels to the information-poor rural areas of developing countries.

The role of telecentres for making such ICTs available to rural inhabitants is considered with reference to traditional agricultural information system. New ICTs can educate and empower rural farmers and offer limited employment to locals but there are numerous constrains to the development of telecentres and utilization of the computer-based services that they offer. Most important of these limitations are the lack of information and computer skills in rural areas and the pressing survival needs of rural dwellers that relegate information to a luxury rather than a necessity. If telecentres are to contribute to information provision in rural areas then they must be multi-purpose and integrated into a comprehensive overall rural development strategy.

There is a widespread belief that information is vital for rural development (e.g. Mchombu 1992; du Toit & Strooh 1995; Wishart 1995; Gericke 1997). Munyua (2000), for example, regards information as the least expensive input for rural development and a basic [necessary] ingredient for bringing about social and economic change in rural areas. Rural areas in developing countries are generally perceived to be an information desert that is becoming increasingly marginalized as the technology and information gap between rural and urban areas widens (Wakelin & Simelane 1995). Rural communities, where agriculture is commonly the main activity, require information on inter alia, supply of agricultural inputs (seed, fertilizer), new technologies and innovations, early warnings (pests, drought disease) and credit facilities, markets etc (Munyua 2000). New information communication technologies (ICTs) based on computers and the communication networks that connect them (the Internet) are regarded by some as the means to bridge the urban-rural "information gap" (Munyua 2000). Studies (e.g. Kaniki 1989; Karlsson 1995; Leach 1999) have highlighted the short-comings of traditional print- and library-based methods of providing information to rural farmers who are generally illiterate and relatively remote from formal sources of information (e.g. extension stations, libraries). Proponents of the new ICTs suggest that technology can overcome these barriers by delivering information right to the rural people via 'telecentres'.

In this paper the potential of computer-based ICTs, as made available via a rural telecentre, for improving the traditional rural agricultural information system (RAIS) is considered. A brief outline of how information is currently delivered in rural areas provides a backdrop for evaluating how telecentres may facilitate agricultural development. Finally, the limitations and constraints of telecentres are highlighted and some guidelines for effective employment of telecentres in rural areas are noted.

Traditional Rural Agricultural Information Systems: An agricultural information system (AIS) can be defined as "a system in which agricultural information is generated, transformed, transferred, consolidated, received and fed back in such a manner that these processes function synergically [sic] to underpin knowledge utilisation by agricultural producers.

New ICTs are usually made available to rural inhabitants at a centralised venue or building, commonly called a telecentre. A telecentre may offer a variety of communication and electronic services, including telephones, fax, photocopying, printing, computers with word-processing, spreadsheet, scanning and presentation applications, as well as Internet for e-mail and World Wide Web (WWW) access. Connections to libraries, cooperative catalogues and other bibliographic databases may also be available at a telecentre. Other services that could be offered via a telecentre include helping clients with various administrative tasks such as filling out forms, preparing a curriculum vitae etc.,maintaining a skills/qualification database for potential employees, and training in the use of computers and other technology. Potentially, a

rural telecentre could become the information 'hub' or centre of the RAIS that captures, repackages and disseminates information to rural inhabitants (Munyua 2000).

Decision-making: Farmers require timely and up-to-date information to make sound decisions. Such information can be made available via e-mail or the WWW at a telecentre. To be most valuable, this information needs to be offered on a local or at least regional scale. Computerized decision support systems (see Kerstenet al. 2000) could be made available at a centre for farmers and development workers to use.

Marketing: Advertising and ordering of produce (usually with off-line transactions) can give communities efficient access to new regional and global markets.

Empowerment: Richardson (1996), in a seminal study on the role of the Internet in rural development, noted that Internet is the first medium that allows every user to be a sender, receiver, narrowcaster and broadcaster. Internet can therefore give communities a "voice" to open up dialogue and interaction with their peers and all other actors in the development process (Munyua 2000). Communities can also have a say over the form and content of information systems developed to meet their needs (see Guidelines below). As noted earlier, farmer-farmer networks for sharing and mutual support can be facilitated by Internet technology made available at a telecentre.

Employment: A telecentre, depending on its sophistication, might require a manager, subject matter specialist(s), translator and information technology technicians. Local people could potentially be trained to fulfill one or more of these roles (see skills identification below) and thereby reduce the flow of human capacity towards urban centres (Munyua 2000). Telecentres could also provide computer and information skills training to create rural entrepreneurs.

Education: New ICTs have the potential "... to enhance education through distance learning" (Munyua 2000: 2). Telematics, or distance learning through the Internet, is currently being employed to assist with the upgrading of agricultural researchers in previously disadvantaged universities in South Africa

Constraints to the Development and Utilization of Rural Telecentres: Anderson et al. (1999) warn that lessons learned from implementing other information technology need to be applied when introducing new ICTs otherwise the "rush to 'wire' rural areas may result in development 'short circuits"(p. 5). Experience with developing telecentres in rural areas has revealed the following limitations and constraints that need to be addressed if telecentres are to contribute positively to food security, increased agricultural production and to rural development in general.

(1) Lack of infrastructure: Electricity to power ICTs is obviously the primary constraint to developing a telecentre. However generators could be used for limited periods if a local power point is not available. Additionally, rural areas commonly lack communication (telephone) lines.

(2) Illiteracy: It is frequently maintained that "illiteracy is a fundamental barrier to participation in knowledge societies" (Mansell & Wehn1998: 35). However, recent research

suggests that illiteracy is not a real obstacle to using print material, or text in an electronic format, as someone can usually be found to read for a person or group (Carter 1999; Leach 1999). However, information available on the WWW is mostly in English and text therefore needs to be translated into the local vernacular before presentation to be most effective.

(3) Lack of Information Skills: Computer-based information systems assume a minimal level of competency of their users (pers. comm.; A. Kaniki, University of Natal, Pietermaritzburg) but the technological skills and 'information literacy' to make effective use of sophisticated ICTs are particularly low in rural communities (Communication for Development Group 1998). It is difficult to find information on the Internet, even for computer-literate users, as information on the Internet is not organise logically or indexed systematically. Skills are needed to interrogate the system and to effectively use the information found to meet an information need, assuming even that this need has been identified and clearly articulated (Kaniki 1996). Information intermediaries are therefore crucial to assist and train telecentre users. A key lesson learned from employing sophisticated agricultural information systems in developed countries is that training is important to provide farmers with the concepts and criteria with which to assess the information they receive or find (Röling 1988). As noted earlier, telematics is regarded by some as a potential means of teaching for both children and adults. However, even in First World countries with advanced telecommunication networks, technical problems can severely limit the promise of on-line learning (Owston 1997).

(4) Inappropriate Modes of Information Transfer: Provision of information via Internet is largely one-way, from the source to a passive receiver, offering little or no feedback to the user. This amounts to an electronic form of the outdated and ineffective 'top-down, transfer-of-knowledge' model for agricultural information systems (see Traditional systems above). There is a danger that information delivered in such a manner may assume an "aura of truth" in the mind of the user (similar to printed material) so that he or she will not question its validity or applicability. Software needs to be developed that allows the user to interact with information system, by, for example, adding content (local knowledge) or giving feedback to the developer/provider. Khumalo (1998) emphasises that the software and communication equipment must not be subject to repeated failures (e.g. network downtime) otherwise clients will not trust, and therefore make continued use of, the ICTs provided. It is, however, impossible to guarantee good Internet service in a remote rural setting let alone in a highly-wired city environment.

(5) Inequitable Information Provision: Because effective use of ICTs available in telecentres requires information need(s) awareness and a minimum level of computer and information literacy, there is the danger of telecentre-based RAIs reaching only the most progressive and skilled farmers who know their needs and invest time in learning how to use the new technology. The poorest and most destitute (especially women and he disabled) can thus be completely missed (Munyua 2000). Non adopters of the new information technology may be limited by ecological conditions and a lack of capacity to innovate, or simply by more pressing survival needs (Röling 1988). Information could become "power" for information gatekeepers in certain communities and information workers therefore need to be aware of the "power

dimensions of knowledge utilisation" (Röling 1988: 31) that might impede information diffusion. However, traditional means of sharing information that exist within communities can, and should, be harnessed to ensure that information provided via an electronic medium eventually reaches the whole community (Burton 1999).

Guidelines for Establishing Effective Rural Telecentres: On overall policy framework comprising an integrated set of laws and guidelines for shaping the development and utilization of telecentres and ICTs in general in rural areas needs to be developed to ensure their effective implementation (Munyua 2000). If an existing structure such as a school building, an extension office or a community centre is not available and suitable to house the telecentre then a permanent or semi-permanent (e.g. shipping container) will have to be built. Before establishing a telecentre, the information needs of the community need to be assessed (e.g. www.cabi.org/training/trngnews.htm), i.e. the time tested adage - "know our audience" (Communication for Development Group 1998: 1). Community profiling and information needs and skills assessment are crucial to the success of any rural information system (Kaniki 1999). Information workers need to "listen" to what people already know, what they aspire to become, what they perceive is possible and what they can productively sustain (Communication for Development Group 1998: 11). Therefore, participatory methods (e.g. Participatory Rural Communication Appraisal (PRCA); Anderson et al. 1999) should be employed to understand the information needs and communication patterns of communities (where and how people communicate, what is communicated, and by whom) as well as to conduct regular assessments of the use of the telecentre by the community members (e.g. number of users, which services most used) (ibid). Monitoring allows for the system to evolve to best meet the (ever changing) information needs of the community. Training and capacity building must be an integral part of all ICT projects so as to create and maintain the critical mass of users needed to sustain the project (Munyua 2000). At the onset of the project, rural inhabitants need to be familiarised with the equipment and services offered so that the technology will not remain "alien" to them (Anderson et al. 1999: 3). Ongoing training will also be required in the management and use of various ICTs available at a telecentre (Richardson 1996; Khumalo 1998). The content of the message delivered by ICTs at a rural telecentre should be adapted for specific target categories (e.g. subsistence farmers, women, etc) (Röling 1988). Indigenous knowledge can be fused with exotic (outside) information into something new, what Karlsson (1995) refers to as synergistic knowledge. Numerous authors (e.g. Richardson 1996; Carter 1999; Munyua 2000) note the importance of including local content, preferably rich in pictures and audio-visual assists, in all extension material including those delivered electronically. Communities need to be intricately involved in the development and repackaging of information to harness their indigenous (local) knowledge and to ensure the relevance of the information to their local situation (Stilwell 1999) Conventional ('old') information technology can be linked to the new ICTs by, for example, making radio programs available via Internet for people to access whenever convenient (after the farm work has been done) (Munyua 2000). The particular mix or combination of media used will depend on the actual community as "rural communities are not all the same" (Leach 1999). Long-term funding for the telecentre needs to be secured at its inception. Users need to pay according to their means for services rendered by a telecentre (Munyua 2000) but such funds will not support all

the costs of the telecentre, especially staff salaries (Khumalo 1998). As yet, there are few examples of sustained success (Munyua 2000). For telecentres to be successful it is necessary that they form part of a multipurpose community centre (MPCC) which provides many community services (e.g. for meetings, workshops etc) apart from information and telecommunication (Gericke 1998; Miller 1999).

These MPCCs ideally need to be multi-sectoral (for researchers, extentionists, trainers, educationist) and multidisciplinary (agriculture, health, business, etc). They could become a local gathering place for sharing information and for self-education (Communication for Development Group 1998). In such MPCCs, new ICTswill most likely play a supportive role, akin to that of print(Leach 1999), to oral and other more traditional means of information transfer and sharing (Communication for Development Group 1998).Most importantly, a 'whole-system', integrated approach to rural information provision should be adopted which involves all parties(researchers, extentionists, development workers, farmers) and all facets of the rural system (Röling 1988). "In circumstances of poverty and hardship, freedom of access to information can be perceived as irrelevant" (Gericke 1997: 3). Röling (1988) maintains that information systems will begin to make a difference only once the economic and structural essentials of community development, e.g. health, water, housing, infrastructure, have been addressed. Kaniki (1999) supports this by emphasising that agriculture is essentially an interdisciplinary activity that cannot be separated from other environmental, social, economic and political forces affecting rural livelihoods.

Conclusions:

Experience with the implementation of ICTs in developing countries suggest that the Internet and other new information technologies cannot provide an immediate solution to the lack of information in developing countries (Kaniki 1996) and that such technologies will not simply allow these countries to 'leapfrog' generations of technological change to move from an agrarian to an information society (Communication for Development Group 1998; Burton 1999). The prevailing "contemporary vision of the power of communications [telephone, radio, TV, Internet] to propel the poor and marginalized into the mainstream of economic activity..." (Burton 1999: 225) needs to be tempered by a sober and clear understanding of the socio-economic and environmental conditions that constrain development in rural areas. A key lesson is that information by itself is not enough (Munyua2000) and communication on its own leads nowhere (Communication for Development Group 1998), i.e. relevant information clearly communicated is a necessary but not sufficient condition for rural development. Anderson et al. (1999: 1) encapsulate this by noting that "In the enthusiasm for [new] ICTs and their potential, we should not forget that the focus should be on [developing] people, organizations and processes rather than on the technologies themselves."

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Nano Technology in Health and Hygeine Food Processing

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Abstract:

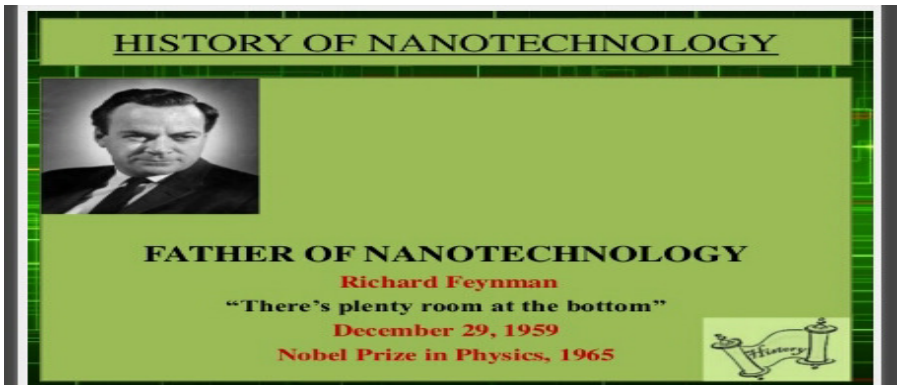
Nanotechnology is a newly emerging novel food packaging technique, which can be increase the shelf life of food, minimize the spoilage, ensure the food safety, repair the tears in packaging, reduce the problem of food shortage, and finally improve the health of the people. It is hoped that nanotechnology has a great potential in food industries as it may be used to manufacture about 25% of all food packaging in near future. Emphasis is given to assess the safety of ingredients in nanoparticles before their use in food products including packaging.

Keywords : Food products, Food safety, Human health, Nanoparticles, Nanotechnology, Packaging, Product.

Introduction:

Nanotechnology is the science of very small material that has a big impact in food industry including packaging. Nanoparticals are mixed with polymer chain to improve the gas barrier properties, as well as temperature, humidity resistance of packaging.

Nanotechnology is a newly emerging technique, which involves the characterization, fabrication, and manipulation of structures, devices or materials that have at least one dimension having 1-100 nm in length. This technology deals with nanomaterials and nanosystems commonaly smaller than 100 nanometers. Nanomaterials are defined as materials with any external dimension on the nanoscale, and are clustered into three classes, namely nanoparticles, nanofibers and nanoplates. Presently, over 400 companies in the world are developing nanotechnology for its application in food and food packaging it is estimated that over 400,000 scientist are working in the field of nanotechnology. Nanotechnologies are projected to impact use of nanomaterials at least US Dollar 3 trillion by the year 2020 Wesly et al. An active packaging can be designed to stop microbial growth once the package is opened by the consumer and rewrapped with an active film portion of the package. Nanotechnology application in food industries can be utilized to detect bacteria in packaging, or produce stronger flavor, color quality, and safety for increasing the barrier properties. Precautions are needed to apply nanotechnology in food as very little knowledge is available on its impact on environmental and human health. This communication aims to present the latest development in the field of nanotechnologies for food packaging application

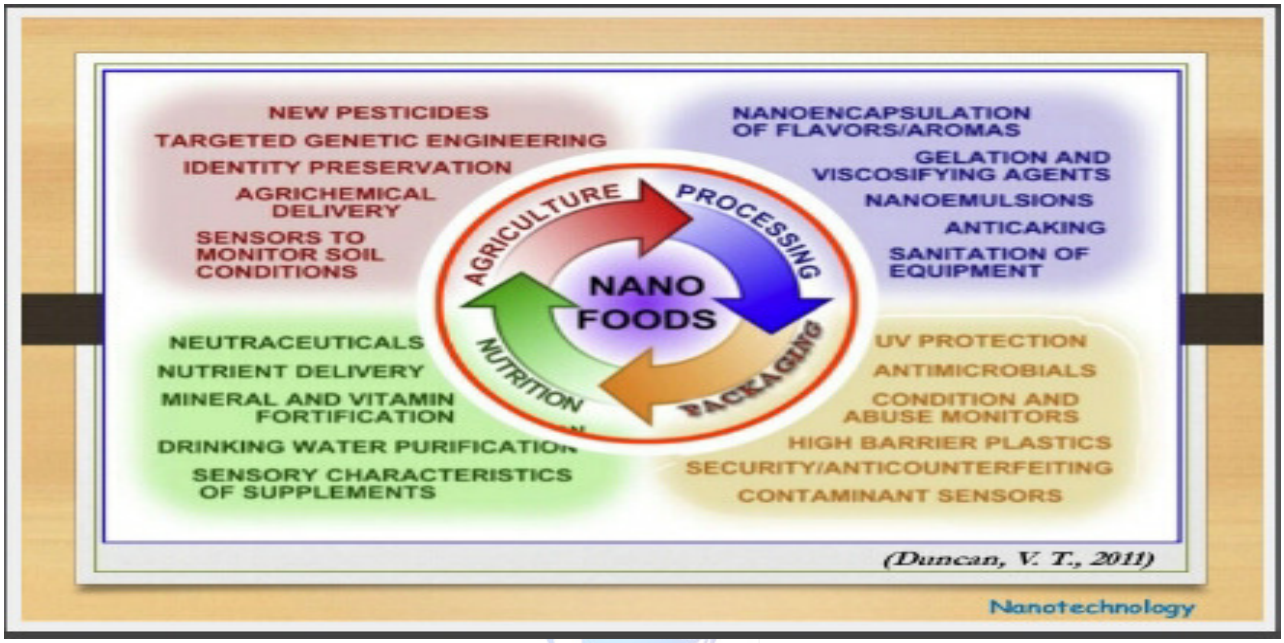


Nano Science and Nanotechnology:

" Nanoscience is a study of phenomena and manipulation of materials at atomic, molecular, and micromalecular scales, here properties differs significantly from those at a large scale."

" Nanotechnology involves the characterization, fabrication and/or manipulation of structures devices or materials that have at least one dimension is approximately 1-100 nm in length."

Mechanisms of Nanotechnology in Food Science and Technology



Agriculture:

- Nanocapsules for delivery of pesticides, fertilizer and other agrichemicals more efficiently
- Nanosenser for monitoring soil conditions and crop growth.
- Nanoparticles to deliver DNA to plants (targeted genetic engineering).

Processing:

- Nanocapsules to improve bioavailability of neutraceuticals in standard ingredients such as cooking oils.
- Nanotubes abd nanoparticles as gelation and viscosifying agents.
- Nanoemulsions and particles for better availability and dispersion of nutrients.

Packaging:

- Antibodies attached to fluorescent nanoparticles to detect chemicals foodborne pathogens
- Biodegradable nanosensors for temperature, moisture and time monitoring
- Nanoclays and nanofilms as barrier materials to prevent spotlage and prevent oxygen absorption

Nutritions:

- Nanosize powders to increase absorption of nutrients
- Cellulose nanocrystal composite as drug carrier
- Vitamin sprays dispersing active molecules into nanodroplets for belter absorption.

Nanotechnology Applications in Agriculture and Food.

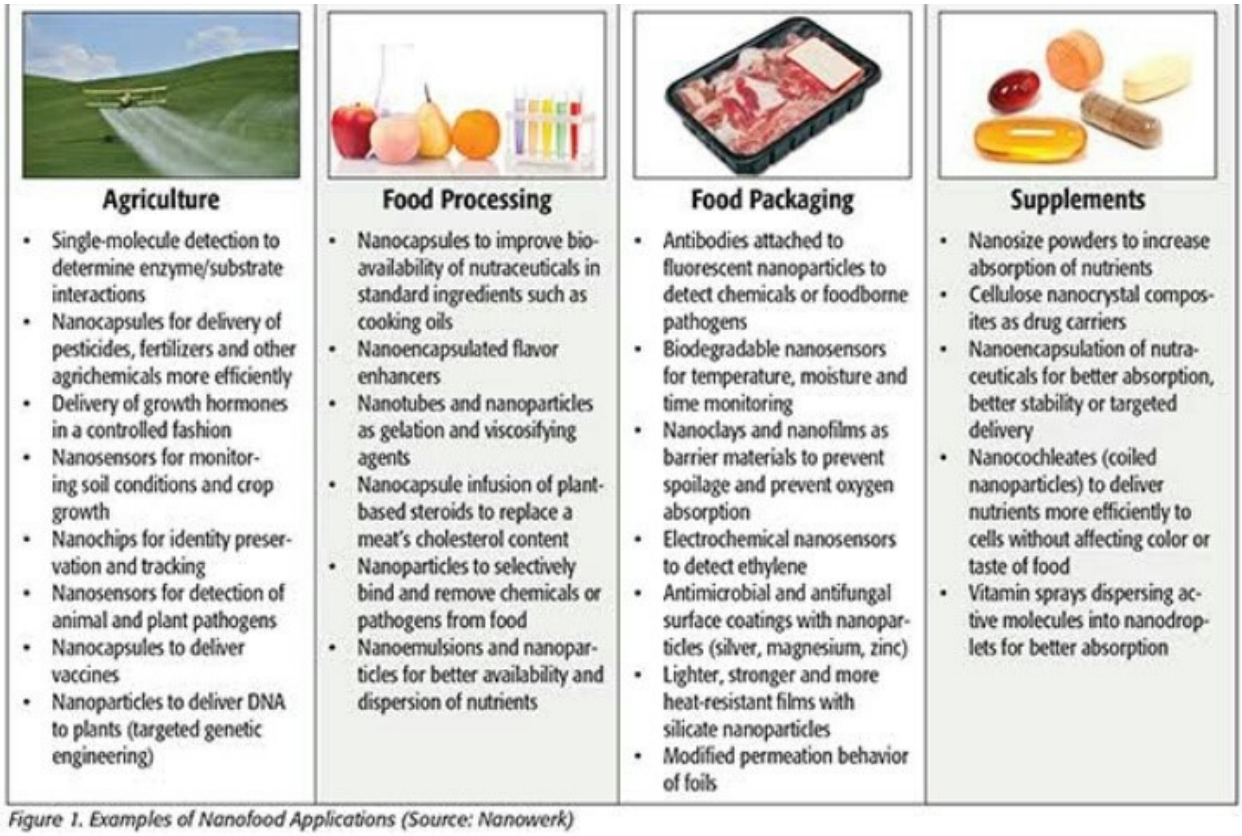


Figure 1. Examples of Nanofood Applications (Source: Nanowerk)

How Far We are from Nanotechnology

According to definition in a recent report ("Nanotechnology in Agriculture and Food")food is "nanofood" when nanoparticles, nanotechnology techniques, or tools are used during cultivation, production, processing, or packaging of the food. It does not mean atomically modified food or food produced by nanomachines.

In the forefront of nanofood development is Kraft Foods, which took the industry's lead when it established the Nanotek Consortium, a collaboration of 15 universities and national research labs, in 2000.other large companies, such as Nestle and Unilever, are exploring improved emulsifiers that will make food texture more uniform. These huge Western companies are responsible for the bulk of the food industry's research and development: however, the nanofood industry is truly a global phenomenon.

A joint effort among universities in India and Mexico is directed at developing nontoxic nanoscale herbicides. Researchers at Tamil Nadu Agricultural University in India and Monterrey Tech in Mexico are looking for ways to attack a weed's seed coating and prevent it from germinating.

The range of current nanofood research and development is as impressive as the industry's projected growth. Last August, UK-based Cientifica estimated that nanotechnologies in the food industry were currently valued at $410 million and would grow to $5.8 billion by 2015.

Conclusion:

As developments in nanotechnology continue to emerge, its applicability to the food industry is sure to increase. The success of these advancements will be dependent on consumer acceptance and the exploration of regulatory issues. Food producers and manufacturers could make great strides in food safety by using nanotechnology, and consumers would reap benefits as well. Many companies are conducting research in nanotechnology and its application to food products and as more of its functionalities become evident, the level of interest is certain to increase. Nanotechnology has already made inroads into the food industry and it is claimed that more than 300 foods have already been developed with this technology.

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Applications of Laplace Transformation in Technology

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Abstract :

In this paper, we will discuss about applications of Laplace Transform in different engineering fields. Also we discuss about how to solve differential equations by using Laplace Transform. How to find transfer function of mechanical system, How to use Laplace Transform in nuclear physics as well as Automation engineering, Control engineering and Signal processing.

Keywords: - Laplace transform; differential equations; Inverse Laplace Transform

I. Introduction:

In mathematics, the Laplace transform is a widely used integral transform. It has many important applications in mathematics, physics, engineering and probability theory. The Laplace transform is related to the Fourier transform, but whereas the Fourier transformer solves a function or signal into its modes of vibration, the Laplace transform resolves a function into. Like the Fourier transform, the Laplace transform is used for solving differential and integral equations. In physics and engineering, it is used for analysis of linear time-invariant systems such as electrical circuits, harmonic oscillators, optical devices, and mechanical systems.

The frequency-domain, where the same inputs and outputs are functions of complex angular frequency, in radians per unit time. Given a simple mathematical or functional description of an input or output to a system, the Laplace transform provides an alternative functional often simplifies the process of analyzing the behavior of the system, or in synthesizing a new system based on a set of specifications. Denoted L{f(t)}, it is a Linear operator on a function f (t) (original) with a real argument t ($t \geq 0$) that transforms it to a Function *F* (s) (image) with a complex arguments. This transformation is essentially bijective for the majority of practical uses; the respective pairs of f (t) and F (s) are matched in tables. The Laplace transform has the useful property that many relationships and operations over the originals f (t) correspond to simpler relationships and operations over the images F (s).

II. History :

The Laplace transform is named in honor of mathematician and astronomer Pierre-Simon Laplace, who used the transform in his work on probability theory. From 1744, Leonhard Euler investigated integrals of the form

$$z = \int X(x).e^{ax}dx$$

$$z = \int X(x).e^{-\lambda}dx$$

as solutions of differential equations but did not pursue the matter very far. Joseph Louis Lagrange was an admirer of Euler and, in his work on integrating probability density functions, investigated expressions of the form

$$\int X(x).e^{-ax}.a^{x}dx$$

Which some modern historians have interpreted within modern Laplace transform theory. These types of integrals seem first to have attracted Laplace's attention in 1782 where he was following in the spirit of Euler in using the integrals themselves as solutions of equations. However, in1785, Laplace took the critical step forward when, rather than just looking for a solution in the form of an integral, he started to apply the transforms in the sense that was later to become popular. He used an integral of the form

$$\int x^2.\phi(s)dx$$

in to a Mellin transform, to transform the whole of a difference equation, in order to look for solutions of the transformed equation. He then went on to apply the Laplace transform in the same way and started to derive some of its properties, beginning to appreciate its potential power. Laplace also recognized that Joseph Fourier's method of Fourier series for solving the diffusion equation could only apply to a limited region of space as the solutions were periodic. In 1809, Laplace applied his transform to find solutions that diffused indefinitely in space.

III. Formal Definition

The Laplace transform of a function f (t), defined for all real numbers $t \geq 0$, is the function $F(s)$, defined by:

$$L\{f(t)\} = F(s) = \int_0^{\infty} f(t).e^{-st}\,dt$$

The parameter s is a complex number:

$s = \sigma - i\omega$

With real numbers σ and ω.

The meaning of the integral depends on types of functions of interest. A necessary condition for existence of the integral is that f must be locally integrable on $[0,\infty)$. For locally integrable functions that decay at infinity or are of exponential type, the integral can be understood as a (proper) Lebesgue integral [1]. However, for many applications it is necessary to regard it as a conditionally convergent improper integral at ∞. Still more generally, the integral can be understood in a weak sense and this is dealt with below. One can define the Laplace transform of a finite Borel measure μ by the Lebesgue integral.

$$(L\mu)(s) = \int_{[0,\infty)} e^{-st} d\mu(t)$$

An important special case is where μ is a probability measure or, even more specifically, the Dirac delta function. In operational calculus, the Laplace transform of a measure is often treated as though the measure came from a distribution function *f*. In that case, to avoid potential confusion, one often writes

$$(Lf)(s) = \int_0^{\infty} e^{-st}.f(t)\,dt$$

IV. Proof of the Laplace Transform of A Function's Derivative

It is often convenient to us the differentiate-on property of the Laplace transform to find the transform of a function's derivative. This can be derived from the basic expression for a Laplace transform as follows [3]:

$$L\{f(t)\} = \int_0^{\infty} f(t).e^{-st}\,dt$$

$$=\left\{{}_0^{\infty}\frac{f(t)e^{-st}}{-s}\cdot-\int_0^{\infty}\frac{e^{-st}}{-s}.f'(t)\,dt\right.$$

$$=\frac{-f(0)}{s}+\frac{1}{s}.L\{f'(t)\}$$

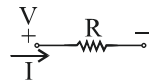
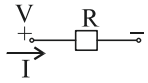
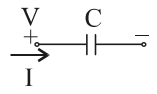
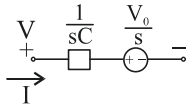
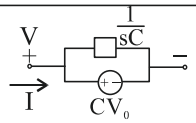
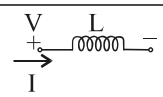
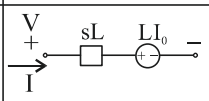
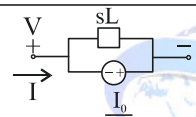
It yields. $L\left\{\frac{df}{dt}\right\}=s.L\{f(t)\}-f(0)$

Yielding and in the bilateral case, we have

$$L\left\{\frac{df}{dt}\right\}=s.\int_0^{\infty}f(t).e^{-st}\,dt-s.L\{f(t)\}$$

V. S-Domain Equivalent Circuits and Impedances

The Laplace transform is often used in circuit analysis, and simple conversions to the s-Domain of circuit elements can be made. Circuit elements can be transformed into impedances, very similar to phase or impedances.

Time Domain	s-Domain	
	 (same as normal)	
		
		

Note that the resistor is exactly the same in the time domain and the s-Domain. The sources are put in if there are initial conditions on the circuit elements. For example, if a capacitor has an initial voltage across it, or if the inductor has an initial current through it, the sources inserted in the s-Domain account for that. The Laplace transform is used frequently in engineering and physics; the output of a linear time invariant system can be calculated by convolving its unit impulse response with the input signal. Performing this calculation in Laplace space turns the convolution into a multiplication; the latter being easier to solve because of its algebraic form. For more information, see control theory [7].

The Laplace transform can also be used to solve differential equations and is used extensively in electrical engineering. The Laplace transform reduces a linear differential equation to an algebraic equation, which can then be solved by the formal rules of algebra. The original differential equation can then be solved by applying the inverse Laplace transform. The English electrical engineer Oliver Heaviside first proposed a similar scheme, although without using the Laplace transform; and the resulting operational calculus is credited as the Heaviside calculus [8, 9].

The following examples, derived from applications in physics and engineering, will use SI units of measure. SI is based on meters for distance, kilograms for mass, seconds for time, and amperes for electric current.

Example 1: Solving a differential equation

Laplace transform use in nuclear physics

Consider the following first-order, linear differential equation:

$$\frac{dN}{dt} = -\lambda N$$

This equation is the fundamental relationship describing radioactive decay,

$N = N(t)$

Where represents the number of undecayed atoms remaining in a sample of a radioactive isotope time t (in seconds) and is the decay constant. We can use the Laplace transform to solve this equation. Rearranging the equation to one side,

$$\frac{dN}{dt} + \lambda N = 0$$

We have next, we take the Laplace transform of both sides of the equation:

$$\left(S.\breve{N}(s) - N_0\right) + \lambda.\breve{N}(s) = 0$$

Where, $\breve{N}(s) = L\{N(t)\}$ and $N_0 = L\{N(t)\}$

Solving, $\breve{N}(s) = \frac{N_0}{s+\lambda}$

We find finally, we take the inverse Laplace transform to find the general solution

$$N\{(t)\} = L^{-1}\{N(s)\} = L^{-1}\left\{\frac{N_0}{s+\lambda}\right\}$$

$$N\{(t)\} = N_0.e^{-\lambda t}$$

Which is indeed the correct form for radioactive decay.

Example 2: Deriving the complex impedance for a capacitor Laplace transform use in of electrical circuit theory.

The constitutive relation governing the dynamic behavior of a capacitor is the following differential equation:

$$i = C\left(s.V(s) - V_0\right)$$

Where, C is the capacitance (in farads) of the capacitor, $i = i(t)$ is the electric current (in amperes) through the capacitor as a function of time, and $v = v(t)$ is the voltage (in volts) across the terminals of the capacitor, also as a function of time. Taking the Laplace transform of this equation, we obtain

$$I(s) = C\left(s.V(s) - V_0\right)$$

Where, $I(s) = L\{i(t)\}$

$V(s) = L\{V(t)\}$

And $V_0 = V(t)$ at $t = 0$

Solving for $V(s)$ we have,

$$V(s) = \frac{I(s)}{sC} + \frac{V_0}{s}$$

The definition of the complex impedance Z (in ohms) is the ratio of the complex voltage V divided by the complex current I while holding the initial state V at zero:

$$Z(s) = \frac{V(s)}{I(s)} \text{ at } V_0 = 0$$

Using this definition and the previous equation, we find:

$$Z(s)=\frac{1}{sC}$$

Which is the correct expression for the complex impedance of a capacitor.

Applications of Laplace Transform in Science and Engineering Fields:

This section describes the applications of Laplace Transform in the area of science and engineering. The Laplace Transform is widely used in following science and engineering field.

1. Analysis of electronic circuits: Laplace Transform is widely used by electronic engineers to solve quickly differential equations occurring in the analysis of electronic circuits.
2. System modeling: Laplace Transform is used to simplify calculations in system modeling, where large number of differential equations are used.
3. Digital signal processing: One can not imagine solving digital signal processing problems without employing Laplace Transform.
4. Nuclear Physics: In order to get the true form of radioactive decay a Laplace Transform is used. It makes easy to study analytic part of Nuclear physics possible.
5. Process Control: Laplace Transform is used for process controls. It helps to analyze the variables which when altered, produce desired manipulations in the result.

Conclusions:

The paper presented the application of Laplace transform in different areas of physics and electrical power engineering. Besides these, Laplace transform is a very effective mathematical tool to simplify very complex problems in the area of stability and control. Laplace transforms have become an integral part of modern science, being used in a vast number of different disciplines. Whether they are being used in electrical circuit analysis, signal processing, or even in modeling radioactive decay in nuclear physics, they have quickly gained popularity among the intellectual community that deals with these subjects on a day to day basis. With the ease of application of Laplace transforms in myriad of scientific applications, many research software's have made it.

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Logical Thinking & Short Cuts in Mathematics

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Abstract :

Mathematics is a more abstract subject. Now a day developments in mathematics are more and more. To do mathematics in easy way, we have to find some shortcut methods to do mathematical calculations and to solve complicated mathematical expressions. In the ancient time there is method named as 'Vedic Mathematics', this method was used to do mathematical calculations in easy way.

In this paper we see some easy ways to do mathematical calculations in quick and effective manner. Also, we are discussing about some shortcut methods in mathematics which will help us in solving mathematical problems in Differential Calculus, Integral Calculus, Linear Algebra . . . etc.

Keywords: Vedic Mathematics, Differential Calculus, Integral Calculus, logic.

1. Introduction

Shortcuts methods or tricks in mathematical calculations are very much important because it helps us to do calculation in easy way and so that it will give us a relief from lengthy and tedious process in mathematical calculations. Vedic Mathematics is a collection of lots of mathematical tricks. Some of them are Multiplication of number 11 with any number, Multiplication of any 2 by 2 digit numbers, Multiplication of two numbers which are very close to a number which is in power of 10 i.e. 10, 100, 1000, 10000,. etc. Here we will discuss about some tricks in mathematics which will help us in solving problems in Differential Calculus and Problems in Integral Calculus.

2. Short Cut Methos in Differential Calculus:

Partial Fraction:

Consider a general expression of the type (x+a)/ (x-b)(x+c) Partial fraction of this expression.
While differentiating an expression of the type $\frac{x+6}{(x-5)(x+3)}$ it becomes quite difficult to differentiate this expression as it is. First we simplify this expression,
i.e. we do partial fraction as below,

$$\frac{x+6}{(x-5)(x+3)} = \frac{A}{(x-5)} + \frac{B}{(x+3)} \qquad (1)$$

Here, A and B are the unknowns which we have to determine,

From the above expression (1) we have,

$$x + 6 = A(x + 3) + B(x - 5)$$
$$= Ax + 3A + Bx - 5B$$

The polynomial from the L.H.S. and the polynomial on the R.H.S. are same.
∴ The coefficients of the same power of x are same
∴ 1 = A + B and 6 = 3A – 5B

$$A + B = 1$$
$$3A - 5B = 6$$

Multiply by 5 to equation (1) and add in to equation (2)

$$5A + 5B = 5$$
$$3A - 5B = 6$$
$$8A + 0B = 11$$

This gives, A = 11/8 ⇒11\8 + B = 1 ⇒ B=1- 11\8 ⇒ B = -3/8
A= 11/8 and B= -3/8

Now, I would like to explain here a short cut method to find values of A and B from above equation (1),

First to find value of A, on R.H.S. tell me the denominator of A when it will become 0 (zero), if x = 5, put x = 5 in L.H.S. side while ignore bracket (x – 5) in L.H.S

∴ We put x=5 in (x+6)/(x+3) this gives us 11/8 and this is a value of A i.e. A= 11/8.
Secondly, to find value of B , on R.H.S. tell me the denominator of B when it will become 0 (zero), if x = –3, put x = –3 in L.H.S. side while ignore bracket (x + 3) in L.H.S

∴ We put x=-3 in (x+6)/(x-5) this gives us -3/8 ∴ B= -3/8.

3. Logical Thinking Methods:

Human life is full of puzzles. To overcome upon all these puzzles, humans have to improve or develop their thinking power. That is human have to think logically.
Time Bound Situation:

Consider Situation: Four boys standing over four steps one behind the other.
There are four hats of two colors. All four boys know the number of hats and colors of hats. Two hats are of red color and remaining two are of blue. Without knowing the color of hat to the boy, put one hat on head of each boy.

Conditions:
1) Don't talk with each other.
2) Don't see your hat.
3) Only see in forward direction so that you can see hats of only two boys in front of you.
Which boy will give the right answer of following question in above situation within 2 minutes?
Q) What is color of hat on your own head?

3.1 Time Bound Situation:

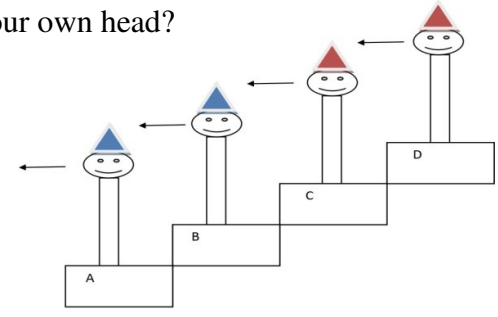

Figure 1: Situation No. 1]

In Situation No.1] Boys at position A and B, having hats of same color (Blue) and the boys at positions C and D having hats of same color (Red). In this situation, the boy at position C will give the correct answer.

In Situation No.2] Boys at position B and C, having hats of same color (Blue) and the boys at positions A and D having hats of same color (Red). In this situation, the boy at position D will give the correct answer.

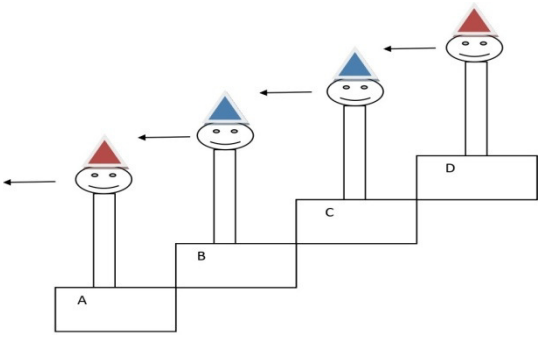

Figure 2: Situation No. 2]

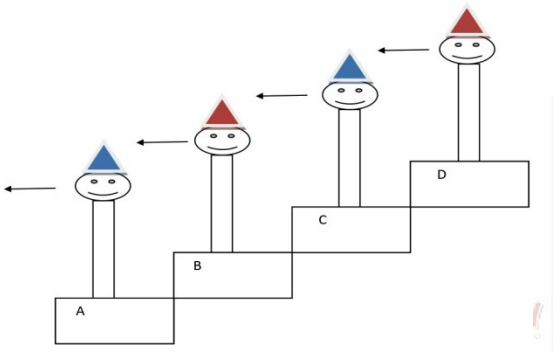

Figure 3: Situation No. 3]

In Situation No.3] Boys at position A and C, having hats of same color (Blue) and the boys at positions B and D having hats of same color (Red). In this situation, the boy at position D will give the correct answer at the end of 2nd minute. He will give the answer if he is thinking logically.

4. Conclusion :

The short cut method of partial fraction will help us to solve problems involving partial fraction such as differentiation of function and integration of function. In the section 4, we get an idea of thinking logically within time bound. Thus overall reader will be beneficial of getting knowledge of shortcut method in mathematics and idea of logical thinking.

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A Study of Plastic Recycling

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Abstract:

Plastic recycling is an increasingly important issue in today's society. There are many investigation and techniques used by recycling industry today.

The focus of the development of recycling plot has been to sort out and the material recycle the most common plastic namely polythene(LDPE & HDPE), polypropylene (PP), polyvinyl chloride(PVC), polystyrene(PS) where as the other plastics have been sorted out for energy recovery. Having these delimitations, a good recycling process plant can be achieved.

Keywords : Plastic, recycling.

Introduction:

Plastic recycling is the process of recovering scrap or waste plastic & reprocessing the material into usefull products , sometimes completely different in form from their original state. For example : melting down soft drink bottles and then casting them as plastic chairs and tables. Plastic 'recycling' is largely a misnomer since plastic beverage bottles (soda, juice, milk) are never reformed into new beverage bottles; this requires virgin plastic. There simply is no cycle involved with the "recycling" of plastic beverage containers.

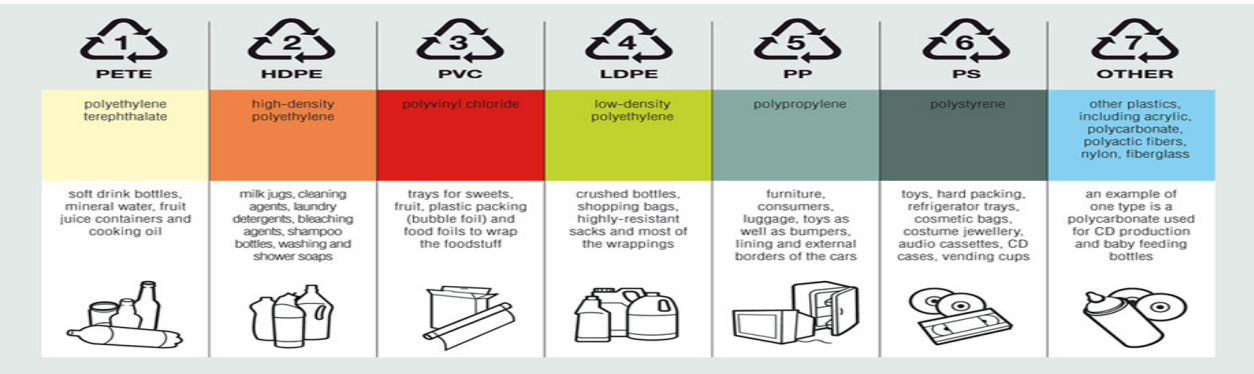
Plastics are also recycled/ reprocessed during the manufacturing process of plastic goods such as polyethylene film and bags . A percentage of the recycled pellets are then re-introduced into the main production operation. This closed-loop operation has taken place since 1970s and has made the production of some plastic products amonggest the most efficient operation today.

The Need for Recycling Plastic:

Plastics are durable, lightweight and inexpensive materials. They can readily be molded into various products which find uses in a plethora of applications. Every year, more than 100 million tons of plastics are manufactured across the globe. Around 200 billion pounds of new plastic material is thermoformed, foamed, laminated and extruded into millions of packages and products. Consequently, the reuse, recovery and the recycling of plastics are extremely important.

Types of Plastics recycles:

There are six common types of plastics. Following are some typical products you will find for each of plastic:



Stages of Plastic Recycling:

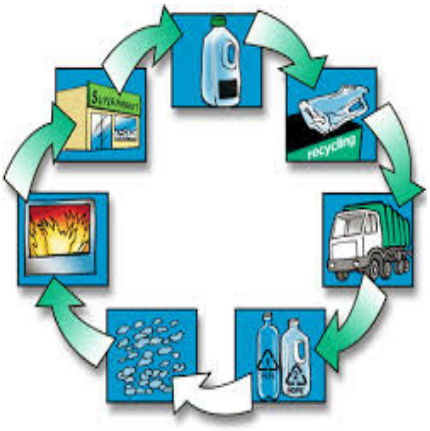


Figure of plastic recycling

Stages in Plastic Recycling

Before any plastic waste is recycled, it needs to go through five different stages so that it can be further used for making various types of products.

- **Sorting:** It is necessary that every plastic item is separated according to its make and type so that it can be processed accordingly in the shredding machine.
- **Washing:** Once the sorting has been done, the plastic waste needs to be washed properly to remove impurities such as labels and adhesives. This enhances the quality of the finished product.
- **Shredding:** After washing, the plastic waste is loaded into different conveyer belts that run the waste through the different shredders. These shredders tear up the plastic into small pellets, preparing them for recycling into other products.
- **Identification and Classification of Plastic:** After shredding, a proper testing of the plastic pellets is conducted in order to ascertain their quality and class.
- **Extruding:** This involves melting the shredded plastic so that it can be extruded into pellets, which are then used for making different types of plastic products.

Processes of Plastic Recycling

Among the many processes of recycling plastic waste, the following two are the most popular in the industry.

Waste plastic pyrolysis to fuel oil

Plastic pyrolysis can convert petroleumbased waste streams such as plastics into fuels and carbons.Given below is the list of suitable plastic raw materials for pyrolysis:
Mixed plastic (HDPE, LDPE, PE, PP, Nylon, Teflon, PS, ABS, FRP etc.) Mixed-waste plastic from waste paper mill Multi-layered plastic.

Heat compression:

Heat compression takes all unsorted, cleaned plastic in all forms, from soft plastic bags to hard industrial waste, and mixes the load in tumblers (large rotating drums resembling giant clothes dryers). The most obvious benefit to this method is that all plastic is recyclable, not just matching forms. However, criticism rises from the energy costs of rotating the drums, and heating the post-melt pipes.

Advantages of recycling:

- Plastic recycling helps to reduce the energy usage. Its reduces the consumption of fresh raw materials.
- It reduces to the water pollution.
- It reduces the air pollution by reducing the need for conventional wish disposal.
- It reduces the green house effect and emissions.
- Plastic recycling can reduces the need for the allied activates such as the transportation and mining which are the biggest produces of green house gases.

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पालघर जिल्ह्यातील आदिवासींच्या सामाजिक-सांस्कृतिक जीवनावर आधुनिकीकरणाचा परिणाम

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८९९९५५९८११

सारांश:

आदिवासी समुदाय हा भारतीय समाजाचा वैशिष्ट्यपूर्ण भाग असून त्याचे अस्तित्व मानवाच्या उत्क्रांती पासून आहे. मानवाची भटकंती अवस्था संपुष्टात येऊन मानवी जीवनास स्थिरता प्राप्त होण्यासाठी आपल्या उदरनिर्वाहाच्या साधनांच्या मदतीने पृथ्वीवर वेगवेगळ्या प्रदेशात मानवी समूह स्थिर झाला व आपले जीवन जगण्यास सुरुवात केली. असाच जंगल, नदीखोरे, डोंगर,दरी-कपारी मध्ये निवास करणारा सामान्य समाजापासून दूर असणारा एक समुदाय तयार झाला त्यासच आदिवासी समाज म्हणून ओळखले गेले. त्यांनी त्यांच्या सुरक्षिततेच्या तसेच दैनंदिन गरजा पूर्तेच्या दृष्टीकोनातून स्वतःचे स्वतंत्र समाज नियम, रूढी परंपरा व संस्कृती तयार केली आणि पिढ्यानपिढ्या या रूढी परंपरा, नियम, भाषा व संस्कृतिचे संरक्षण आणि संक्रमण झाल्याचे दिसून येते. आजही विज्ञान व तंत्रज्ञानाच्या युगात समाजामध्ये त्यांचे प्रतिबिंब आढळते. परंतु विज्ञानाच्या क्रांतीमुळे अनेक सोयी-सुविधा साधन व माध्यमांचा शोध लागला त्याचा मानवाने स्वतःच्या प्रगतीसाठी उपयोग करून घेतला. त्यामुळे भारतीय समाजात मोठ्या प्रमाणावर परिवर्तन झाल्याचे दिसून येत आहे त्यास आदिम आदिवासी समाजही अपवाद नाही. विज्ञान क्रांतीमुळे आधुनिकीकरण झाले त्यामुळे आदिवासींचे समाजजीवन,कुटुंब पद्धती, विवाह पद्धती, समाजात स्त्रियांचे स्थान, धर्मश्रद्धा तसेच बोलीभाषा, राहणीमान, सण-उत्सव, हस्तकला, गीते, कथा-पोवाडे अशा सांस्कृतिक जीवनात सकारात्मक परिवर्तन घडून आले आहे तर काही सामाजिक व सांस्कृतिक वैशिष्ट्यांचा लोप पावत आहे. पर्यायाने त्यांचे सामाजिक व सांस्कृतिक जीवन आधुनिकीकरणामुळे प्रभावित झाले आहे.

बीज शब्द : *आदिवासी, समाज जीवन, संस्कृतिक जीवन, वैज्ञानिक क्रांती, आधुनिकीकरण, आधुनिकीकरणाचा प्रभाव.*

प्रस्तावना:

मानवाची भटकंती अवस्था संपुष्टात आल्यानंतर मानवी जीवनास स्थिरता प्राप्त होण्यासाठी मानवाने उदरनिर्वाहाच्या साधनांच्या मदतीने पृथ्वीवर वेगवेगळ्या प्रदेशात वास्तव्यास सुरुवात केली. काहींनी लहान खेडी, उद्योग व्यवसायाने गजबजलेली ठिकाणे तर काही निसर्गाच्या सानिध्यात सामान्य वस्तीपासून दूर जंगल, नदी-खोरे, डोंगर-कपारीतून वास्तव्यास सुरुवात के ली. त्यांनाच 'जंगलाचे राजे' तसेच 'धरतीची लेकरे' म्हणून समजले जाते. अशा जंगलात राहणाऱ्या समाजाला आदिम किंवा आदिवासी म्हणून ओळखले जाऊ लागले. आदिवासी म्हणजे मूळचे विशिष्ट प्रदेशातील रहिवासी म्हणून त्यांचा उल्लेख केला जातो. परंतु असे नाही की, ते खूप प्राचीन किंवा त्यांना खूप मोठा इतिहास आहे. ज्याप्रमाणे सर्वसामान्य समाजाचा इतिहास आहे त्याचप्रमाणे आणि तेवढाच इतिहास पाषाण युगापासून ते धातु युगापर्यंत आदिवासींचा ही आहे. फरक एवढाच की हा समाज सामान्य समाज वस्तीपासून दूर दुर्गम भागात वास्तव्यास राहिला स्वतःच्या चालीरीती परंपरा धर्मश्रद्धा तयार झाल्या आणि त्यांचेच आचरण करत नैसर्गिक वातावरणात निसर्गावर प्रेम करत निसर्गपूजक

होऊन स्वच्छंदी पाखरासारखे जीवन जगू लागला व आधुनिक ज्ञान तंत्रज्ञान विकासापासून दूर राहिला म्हणून त्यांना अधिक किंवा आदिवासी हे नामाभिधान प्राप्त झाले.

भारतात अनादी काळापासून मानवाच्या अस्तित्व पासूनच आदिवासी समाजाचे अस्तित्व वेगवेगळ्या प्रदेशांमध्ये दिसून येते संस्कृतिक विविधतेने नटलेला हा समाज देशात विविध राज्यांमध्ये आढळून येतो या संदर्भात महाराष्ट्र राज्य ही महत्त्वपूर्ण आहे. महाराष्ट्रात वैशिष्ट्यपूर्ण भिल्ल, गोंड, वारली, कोळी, ठाकूर, बैगा,खोंड, कोरकू, मुंडा, उराव, परधान व वाघरी या आदिवासी जमाती आढळतात.

आदिवासी संकल्पना:

आदिवासी या शब्दासाठी इंग्रजीत (Aborigional) असा प्रतिशब्द अनेक अभ्यासकांनी वापरला असून त्याचा अर्थ अगदी प्राचीन किंवा अगदी मूळचे रहिवासी असा घेतला जातो.

१. मानवशास्त्रज्ञ: आदिवासी म्हणजे अगदी प्राचीन किंवा मूळचे रहिवासी असा अर्थ करीत नाहीत तर आदिवासींचा इतिहास पाहता इतर समाजाला जेवढा इतिहास लाभला आहे. तेवढाच आदिवासींच्या वाट्याला आहे आणि इतर समाजापेक्षा निकृष्ट किंवा गौण नाहीत. ही अनेक अभ्यासकांना प्रचिती आली आहे. सुधारलेल्या समाजाच्या मानाने आदिवासी यांचे राहणीमान मागासलेले रानटी असले तरी त्यांचे आचार विचार व समाजव्यवस्था वाखानण्याजोगी आहे त्यांची सामाजिक नियम आणि व्यवस्था व सांस्कृतिक वैशिष्ट्य पूर्णता पाहता आश्चर्य वाटते म्हणून आदिवासी म्हणजे अप्रगत गौण निकृष्ट हे समीकरण चुकीचे आहे.

२. गिलीन व गीलीन: "एका विशिष्ट भूप्रदेशावर राहणारा समान बोली भाषा बोलणारा व समान सांस्कृतिक जीवन जगणारा पण अक्षर ओळख नसणारा स्थानीय गटांच्या समुच्चयाला आदिवासी समाज म्हणतात."

२. डब्ल्यू जे पेरी: "समान बोलीभाषा बोलणाऱ्या व एकाच भूप्रदेशावर वास्तव्य करणाऱ्या समूहाला आदिम समाज म्हणतात."

संशोधन अभ्यासाची गरज व महत्त्व:

सदर संशोधन आधुनिकीकरणामुळे आदिवासींचे सामाजिक सांस्कृतिक जीवनातील परिवर्तन जाणून घेण्याच्या दृष्टिकोनातून महत्त्वपूर्ण आहे. सदर संशोधन विषयाचा विचार करता असे दिसून येते की पालघर जिल्हा हा मुंबईसारख्या महानगरात पासून अगदी जवळच असल्याने शहरीकरणासंबंधित अनेक सोयीसुविधांचा जसे की रेल्वे, उद्योग, शिक्षण, आरोग्य विषयक सुविधा, वाहतूक व्यवस्था यांचा आदिवासींच्या जीवनमानावर कसा प्रभाव पडलेला आहे? त्यामुळे समाजात काही समस्या निर्माण होतात काय? त्यांच्या संस्कृतिक जीवनात बाधा येते काय? अथवा समाजावर आधुनिक प्रसार माध्यमे तसेच समाज माध्यमांचा सकारात्मक परिणाम दिसून येतो काय? याविषयी शोध घेण्याच्या दृष्टीने संबंधित विषयाची गरज व महत्त्व लक्षात येते.

अभ्यासाची उद्दिष्टे:

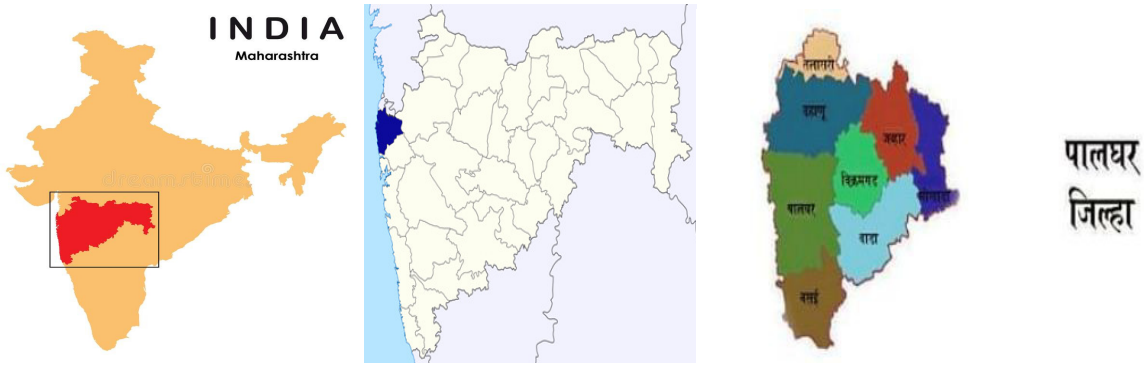
१. आदिवासींच्या सामाजिक व सांस्कृतिक जीवनाचा शोध घेणे.

२. आदिवासींचा सामाजिक व सांस्कृतिक दृष्टिकोनाचा अभ्यास करणे.

३. आदिवासींच्या सामाजिक व सांस्कृतिक जीवनावरील आधुनिकीकरणाचा परिणाम अभ्यासणे.

अभ्यास क्षेत्र :

संशोधकाने आदिवासींच्या समाज जीवनावरील आधुनिकीकरणाचा परिणाम अभ्यासण्यासाठी पालघर जिल्ह्याची निवड केली असून जिल्ह्याचा अक्षवृत्तीय विस्तार 19 अंश 17" उत्तर अक्षवृत्त ते 20 अंश 13" उत्तर अक्षवृत्त आणि रेखावृत्तीय विस्तार 72अंश 39" पूर्व रेखावृत्त ते 73 अंश 17"पूर्व रेखवृत्त आहे. सदर जिल्ह्यातील वाडा तालुक्यामधून अभ्यासाच्या दृष्टीने माहितीचे संकलन केले आहे.



माहितीचे संकलन व विश्लेषण:

आदिवासींच्या सामाजिक व संस्कृती जीवनावरील आधुनिकीकरणाचा परिणाम अभ्यासण्यासाठी आणि सद्यस्थिती जाणून घेण्यासाठी माहितीचे संकलन प्रश्नावली या साधनाचा वापर करून वर्णनात्मक सर्वेक्षण पद्धतीने असंभाव्य पद्धतीचा उपयोग करून प्रासंगिक नमुना निवडून पालघर जिल्ह्यातील वाडा तालुका व सदर तालुक्यातील तीन पाढे व प्रत्येक पाड्यावरील दहा कुटुंबे निवडून अशा ३० कुटुंबाच्या माध्यमातून माहिती संकलित केली गेली आहे.

माहितीचे विश्लेषण:

कोष्टक क्र.१

१. आदिवासींच्या सामाजिक जीवनावर आधुनिकीकरणाचा परिणाम.

अ. क्र.	विधाने	होय %	नाही %	काही प्रमाणात /अंशतः %
१.	सामाजिक संघटनातील वरिष्ठांचे आजही स्थान अबाधित आहे.	64	36	00
२.	आदिवासी कुटुंब कोणत्या प्रकारची आहेत?	25	70	05
३.	आदिवासी कुटुंब पद्धती	पितृसत्ताक 100	मातृसत्ताक 00	00
४.	आपण जातीव्यवस्था मानता का?	46.66	33.33	20
५.	तरुणांना आपला जोडीदार निवडण्याचे स्वातंत्र्य आहे काय?	13.33	66.66	20
६.	गैर आदिवासी सोबत विवाह करण्याचे स्वातंत्र्य मिळते काय?	00	67	33
७.	आदिवासी समाजात हुंडा पद्धतीचा अवलंब केला जातो काय?	3.33	96.66	00
८.	सद्यस्थितीत आदिवासी समाजात बहुपत्नीत्व प्रथा चालू आहे काय?	03	63	24
९.	आदिवासी समाजामध्ये बालविवाह प्रथा आहे का?	07	73	20

१०.	आम्ही हिंदू धर्माचे पालन करतो.		100	00	00
११.	आदिवासी समाजामध्ये काळी जादू, भूत, चमत्कार अशा गोष्टींवर विश्वास ठेवला जातो काय?		23.33	50	26.66
१२.	नरबळी प्रथा आदिवासी समाजात अस्तित्वात आहे काय?		00	100	00
१३.	आपल्या समाजात विवाहयोग्य वय किती मानले जाते?	महिला18-20वर्षे	80%	15	5
		पुरुष 24-25 वर्षे	85%	11	4

(स्रोत: संशोधकाकडून संकलित माहितीच्या आधारे)

अर्थनिर्वचन:

वरील कोष्टक क्रमांक:१ च्या निरीक्षणावरून असे दिसून येते की आदिवासींच्या सामाजिक जीवनावर आधुनिकीकरणाचा परिणाम या संदर्भात समाजात आजही वरिष्ठांचे स्थान अबाधित आहे असे मानणाऱ्या प्रतिसादकांचे प्रमाण 64.33% तर न मानणारे यांचे प्रमाण केवळ 36.66% इतके आहे. त्याप्रमाणे आदिवासींची कुटुंब पद्धती ही 100%पितृसत्ताक असून 70 % विभक्त 25% संयुक्त तर 5% कुटुंब पद्धती मिश्र स्वरूपाचे आहेत.

आदिवासी समाजात जाती व्यवस्थेला प्राधान्य देणाऱ्यांचे शेकडा प्रमाण 46.66% तर प्राधान्य न देणाऱ्यांचे शेकडा प्रमाण 33.33% तर अंशिक स्वरूपात माननारे 20% एवढे प्रतिसादक आहेत.आदिवासी समाजात आपला जोडीदार निवडण्यासाठी चे स्वातंत्र्य असणारे यांचे शेकडा प्रमाण 33.33% नाही म्हणणारे प्रतिसादक 66.66% तर अंशतः असणारे 20% प्रतिसाद आहेत तर गैर आदिवासी जोडीदार निवडण्याचे स्वातंत्र्य हे केवळ 33.33%लोकांना आहे. तर 66.66% लोकांना स्वातंत्र्य नाही. आदिवासी समाजात आजही 96.66% हुंडा पद्धतीचा अवलंब केला जात नाही. आदिवासी समाजात बहुपत्नीत्व मानत नाहीत यांचे शेकडा प्रमाण 63% आहे. आदिम समाजात बालविवाह प्रथा न मानणारे यांचे शेकडा प्रमाण 73% असून त्यांच्यामध्ये विवाहासाठी मुलीचे वय 18 ते 20 वर्ष 80% लोक मानतात तर मुलांसाठी विवाह योग्य वय 24 ते 25 वर्ष 85% प्रतिसादक मानतात. आदिवासी समाज 100% हिंदू धर्माचे पालन करणारे आहेत. या समाजात काळी जादू अंधश्रद्धा चमत्कार या गोष्टींवर विश्वास असून त्याचे शेकडा प्रमाण केवळ 23.33% आहे. तर नाही म्हणणारे यांचे प्रमाण हे 50% असून अंशिक स्वरुपात अंधश्रद्धा मानणारे यांचे प्रमाण 26.66% आहे. आदिम समाजात नरबळीला पूर्णतः म्हणजेच 100% विरोध केला जातो असे दिसून येते.

कोष्टक क्र. २

२. आदिवासींच्या सांस्कृतिक जीवनावरील आधुनिकीकरणाचा परिणाम.

अ. क्र.	विधाने	होय %	नाही %	अंशतः %
१	आम्ही आधुनिक वस्त्रे (कपडे) परिधान करतो.	100		
२	लग्नसोहळे, जन्म सोहळा व इतर क्रमिक कार्यक्रम आधुनिक पद्धतीने साजरे करतो.	05	43	52

३	मला पारंपारिक आदिवासी हस्तकला व चित्रकला ज्ञात आहेत.		16.66	66	23.33
४	आम्हाला आदिवासी कथा, पोवाडे, गीते ज्ञात आहेत.		16.66	60	23.33
५	आधुनिकीकरणामुळे रुढी परंपरांमध्ये परिवर्तन झाले आहे.		83	07	10
६	दैनंदिन व्यवहारात भाषेचा वापर करतो.	मराठी	90	10	00
		आदिवासी	08	77	15
		इतर	02	90	8
७	आम्ही सण उत्सव साजरे करतो.	पारंपारिक	10	50	40
		प्रगत	50	30	20
		दोन्ही	40	50	10
८	घरांची रचना..... प्रकारची आहे.	झोपडी	40	50	10
		कच्चे	50	40	10
		पक्के	07	80	13

(स्रोत: संशोधकाकडून संकलित माहितीच्या आधारे)

अर्थनिर्वचन:

आदिवासींच्या सांस्कृतिक जीवनावरील परिणाम या संदर्भात वरील कोष्टक क्र. २ चे निरीक्षण केले असता असे दिसून येते की, वर्तमान परिस्थितीमध्ये आदिवासी लोक आधुनिक कपडे वापरतात याविषयी होय म्हणणाऱ्या प्रतिसादकांचे शेकडा प्रमाण 100% आहे. आदिवासी समाजामध्ये दैनंदिन व्यवहारात मराठी भाषेचा वापर 90% तर आदिवासी भाषेचा वापर 8% आणि इतर भाषेचा केवळ 2% वापर होतो आहे. यावरून हे स्पष्ट होते की, आदिवासी भाषेचा दिवसेंदिवस लोप होत आहे. आदिवासी समाजात सद्यस्थितीत पारंपारिक लग्नसोहळे, जन्म सोहळे व क्रमिक कार्यक्रमास जास्त महत्व असून यासंदर्भात परंपरागत लग्न सोहळा व कार्यक्रम साजरे करण्याचे शेकडा प्रमाण 42% तर अंशिक स्वरूपात मानणाऱ्याचे शेकडा प्रमाण 57% एवढे आहे. सण व उत्सवाच्या संदर्भात पारंपारिक पद्धतीने केवळ 10% प्रगत 50 % तर दोन्ही पद्धतीने सण उत्सव साजरे करणारे यांचे शेकडा प्रमाण 40% इतके आहे. आदिवासी समाजात पारंपारिक चित्रकला व हस्तकलेचा लोप होताना दिसून येतो आहे यासंदर्भात ज्ञात असणाऱ्यांचे शेकडा प्रमाण 16% तर ज्ञात नसणाऱ्यांचे 66% शेकडा प्रमाण आहे. आदिवासी समाजाची निवासस्थाने आजही 40% झोपडी पद्धती 50% कच्ची घरे तर केवळ 7% पक्की घरे दिसून येतात. आधुनिकीकरणामुळे वर्तमान परिस्थितीत आदिवासी पोवाडे, कथा, गीते लोप पावत आहेत. आज करमणुकीची विभिन्न साधने उपलब्ध असल्याने ही परंपरागत सुख देणारी संस्कृतीचे वर्णन करणारी गीते कथा पोवाडे लोप पावत आहेत.

निष्कर्ष:

अ. आदिवासींच्या समाजजीवनावर आधुनिकीकरणाचा परिणाम.

१. आदिवासी समाजामध्ये वर्तमान ज्ञान- विज्ञान व तंत्रज्ञानाच्या युगातही वरिष्ठांचे स्थान अबाधित आहे.

२. आदिवासींची कुटुंब पद्धती विभक्त असून पितृसत्ता आहे.

३. आदिवासी समाजात जातीव्यवस्था प्रामुख्याने मानली जाते.

४. आदिवासी समाजात आयुष्याचा जोडीदार निवडण्याचे स्वातंत्र्य नसून मुलींचे विवाहयोग्य वय 18 ते 20 वर्षे तर मुलांचे विवाहयोग्य वय 24 ते 25 वर्षे मानले जाते.

५. आदिवासी समाजात आंतरजातीय विवाह होत नाहीत.

६. आदिवासी समाजात हुंडा पद्धतीचा अवलंब केला जात नाही.

७. आदिवासी समाजात बाल विवाहाला मान्यता दिली जात नाही.

८. आदिवासी समाज पूर्णपणे हिंदू धर्माचे पालन करतो.

९. आदिवासी आजही रुढी-परंपरा, धर्मश्रद्धा, काळी जादू, भूत, चमत्कार याविषयी विश्वास करतात.

ब. आदिवासींच्या सांस्कृतिक जीवनावर आधुनिकीकरणाचा परिणाम:

१. आदिवासी लोक आधुनिक कपड्यांचा वापर करतात आणि त्यांच्या राहणीमानात परिवर्तन झाल्याचे दिसून येते.

२. दैनंदिन व्यवहारात जास्तीत जास्त मराठी भाषेचा वापर होत असून परंपरागत आदिवासी भाषा दिवसेंदिवस लोप पावत आहे.

३. लग्नसोहळे, जन्म सोहळा व क्रमिक कार्यक्रम आधुनिक पद्धतीने साजरे करण्याचे प्रमाण वाढले आहे.

४. आदिवासी लोक सण-उत्सव आधुनिक पद्धतीने साजरे करतात. (दिवाळी, दसरा, होळी इ.)

५. वर्तमान परिस्थितीमध्ये आदिवासी समाज पारंपारिक आदिवासी कला, चित्रकला, हस्तकला, कथा,गीते, पोवाडे यापासून दूर जात आहे असे लक्षात येते.

६. आदिवासींच्या घरांच्या रचनेत काही प्रमाणात बदल घडून येत आहेत.

७. आदिवासींच्या रुढी परंपरांमध्ये परिवर्तन होऊन काही आदिवासी वैशिष्ट्यांचा लोप होत आहे.

संदर्भ सूची:

१. बन्सी बिहारी पंडित: *"परिणामकारक संशोधन प्रस्ताव व अहवाल"* प्रशांत पब्लिकेशन्स, ३, प्रताप नगर, जळगाव. प्रथम आवृत्ती सन २०१७.

२. डॉ. गोविंद गारे: *"महाराष्ट्रातील आदिवासी जमाती"* कॉन्टीनेन्टल प्रकाशन विजय नगर, पुणे. प्रथम आवृत्ती सन २०००.

३. डॉ. सुदाम जाधव: *"आदिवासी साहित्य"* सुलबा प्रकाशन औरंगाबाद. प्रथम आवृत्ती सन १९९९.

४. डॉ. चंद्रकांत गायकवाड: *"आदिवासी संस्कृती आणि साहित्य"* संगत प्रकाशन नांदेड, प्रथमावृत्ती सन २०१०.

५. महाराष्ट्र संकेत स्थळ: आदिवासी विकास विभाग www.maharashtra.gov.in

६. डॉ. गोविंद गारे: *"आदिवासी लोकनृत्य लय, ताल, सूर"* कॉन्टीनेन्टल प्रकाशन विजय नगर, पुणे. प्रथम आवृत्ती सन २००४.

७. गुरुनाथ नाडगोंडे: *"भारतीय आदिवासी"* कॉन्टीनेन्टल प्रकाशन विजय नगर, पुणे. चतुर्थ आवृत्ती सन २०१२.

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