ISSN 0976-0628

Chetana's
Institute of Management & Research
AICTE New Delhi Approved & ISO 21001 : 2018 Certified

Volume XV, Issue 2 September 2023

Journal of Management Research

(Peer Reviewed Journal)

Chetana's
Institute of Management & Research
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Volume XV, Issue 2 **September 2023**

Journal of Management Research

From the Editor's Desk

Welcome to CIMR: Journal of Management Research, **Volume XV, Issue 2, dated September 2023.**

The '*CIMR: Journal of Management Research'* is an open access bi-annual journal published by 'Chetana's Institute of Management & Research, Mumbai'. CIMR: *Journal of Management Research* is aimed to provide a platform to researchers to publish their original research work in the field of social sciences, commerce, business management, library sciences, information technology, industrial psychology and many more, for disseminating the knowledge. '*CIMR: Journal of Management Research' is double-blind peer reviewed journal with ISSN No.* 0976-0628. The journal is indexed in **ProQuest Database**.

Library at CIMR offers resources and encourages creativity and innovative methods of learning and teaching. Apart from this the library at CIMR serves as a gateway to knowledge and research.

This issue of the CIMR Journal is dedicated for understanding library both as a science and art. The journal begins with the first chapter on research ethics, the most important and imperative requirement of all research. The second chapter focuses on how library can be used by non-academics, which will improve reading habits. The explanations in all chapters are very lucid, with examples and case studies. Chapter 3, 4 and 5 very eloquently explains about World Wide Web, the role of government in shaping the digital library and the overall digital transformation in higher education. The authors of chapters 6, 7, 8 and 9 have emphasised on the interdisciplinary approach with special attention to ICT, Content Analysis and utilization of digital library. Chapter 10 to 13, focusses on the use of technology in library, for knowledge Management and Innovative Practices.

This issue of the journal will provide a wide range of articles and knowledge on library and library science.

We wish to express our sincere appreciation to all authors who have contributed to this issue and supported us in this amazing journey of library research studies. We are sure you will enjoy reading the articles and extend the scope of related research topics and keep contributing your research articles.

Please share your feedback and comments with –
publication@cimr.in; library@cimr.in

Best Wishes
Dr. Siddhi Jagdale

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Chetan Sudhakar Sonawane
Librarian, KMC College, Khopoli,
Dist-Raigad, Pin 410203, Maharashtra, India
Dhanaji N. Lavate
Librarian, Public Night Degree College
Santacruz (East), Mumbai 400055
Corresponding author Email: dhanajipndc@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Sonawane C., Lavate D. (2023).
The Need for Research Ethics in Higher Education Curriculum
Journal of Management Research
XV(2), 1-12 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

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ISSN No. 0976-0628 Volume XV(2) pg 1-12

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The Need for Research Ethics in Higher Education Curriculum

Mr. Chetan Sudhakar Sonawane
Librarian, KMC College, Khopoli,
Dist-Raigad, Pin 410203, Maharashtra, India
Mr. Dhanaji N. Lavate
Librarian, Public Night Degree College
Santacruz (East), Mumbai 400055
Email: dhanajipndc@gmail.com

ABSTRACT

Research ethics ensures integrity, credibility, and responsible conduct of research activities in the higher education domain. This research paper outlines the significance of incorporating research ethics in the higher education institutions curriculum. It studies the ethical issues faced by researchers and scholars, describe the advantages of research ethics for education, and provides suggestions for incorporating research ethics training into higher educational programs. By equipping students and professionals with a solid ethical foundation, we can promote ethical research practices, safeguard the welfare of participants, and enhance the quality and impact of research in higher education.

Keywords: Research ethics, Higher education, Curriculum

1. INTRODUCTION

Institutions of higher learning are essential for increasing knowledge, encouraging critical thinking, and putting people on the path to professional development (Chankselian, Qoraboyev and Gimranova, 2021). Research is the foundation for innovation, knowledge production, and fact-based decision-making in the academic world. It becomes increasingly important to address the ethical issues raised by research operations as they develop and grow. To ensure ethical research practices, protect the welfare of study participants, and uphold the integrity and authority of academic endeavors, it is crucial that research ethics be incorporated into higher education curricula. The importance of ethical consideration in doing research across a range of areas has long been acknowledged. A framework for responsible behavior that takes into account the treatment of human subjects, data integrity, conflicts of interest, and adherence to ethical rules is provided by ethical principles and guidelines for researchers. Due to ethical missteps, examples of research misconduct, and the realization of the complicated ethical environment surrounding academic research, the necessity to integrate research ethics within the curriculum of higher education has received growing attention in recent years.

1.1 Problem Statement:

Despite the importance of research ethics, there has not been much progress in integrating thorough research ethics instruction into curricula in higher education. Students and researchers might not have the required ethical awareness, information, or expertise to successfully negotiate the ethical problems presented by their research activities. This discrepancy prompts worries about the possible negative effects of unethical research techniques, including drawback to participants, weakened research integrity, and diminished public confidence in academic institutions.

1.2 Objectives:

The purpose of this research paper is to examine the demand for research ethics instruction in higher education. It will look at the ethical issues that face academics and researchers, consider the advantages of including research ethics education, and offer suggestions for including research ethics education in higher education programs. We can provide students and professionals with the ethical foundation required to conduct research responsibly, protect the rights of participants, and contribute to the advancement of knowledge in an ethical and reliable manner by addressing the gaps in research ethics education.

The role of research ethics in higher education, the advantages of research ethics education, methods for incorporating research ethics into the curriculum, issues facing research ethics education, and its future directions will all be covered in the following sections of this research paper. By doing this, we hope to draw attention to the significance of research ethics in higher education and promote the adoption of thorough research ethics education programs that are in line with the changing ethical climate of scholarly research.

2. ROLE OF RESEARCH ETHICS IN HIGHER EDUCATION

2.1 Definition and Principles of Research Ethics:

The rules, regulations, and standards that control the moral conduct of research are collectively referred to as research ethics. It offers a framework for academics, institutions, and researchers to guarantee the safety of research participants, uphold honesty, and uphold the principles of responsible and ethical research practices. Respecting one's own autonomy as well as beneficence, justice, and integrity are important research ethical principles. These guidelines help researchers perform ethically sound, human rights-compliant, and in line with social norms and values investigations.

2.2 Ethical Challenges in Higher Education Research:

Many different disciplines, research approaches, and situations are frequently used in higher education research. Due to this variability, there are certain ethical issues that need to be resolved. Obtaining participants' informed consent, upholding privacy and confidentiality, handling conflicts of interest, guaranteeing study integrity, avoiding plagiarism, and dealing with concerns relating to power relations and vulnerability are some of these difficulties. In the context of higher education research, rising ethical issues like the use of big data, online research, and international collaborations also need to be carefully considered (Parsell, Ambler and Jacenyik-Trawoger, 2014).

2.3 Implications of Unethical Research Conduct:

Failure to uphold research ethics can have severe consequences for individuals, institutions, and society as a whole. Unethical research practices can lead to harm or exploitation of research

participants, damage the credibility of research findings, erode public trust in academic institutions, and have legal and regulatory implications. Moreover, unethical research practices undermine the pursuit of knowledge, hinder scientific progress, and hinder the potential benefits that research can bring to the society. In higher education, research ethics play a vital role in ensuring the quality, integrity, and societal impact of research. The following sections will discuss the benefits of integrating research ethics education into higher education curricula, highlighting the importance of ethical awareness, participant protection, research integrity, and the development of ethical competencies among students and researchers (Brown, Spiro and Quinton, 2020).

3. BENEFITS OF RESEARCH ETHICS IN EDUCATION

3.1 Fostering Ethical Awareness and Responsibility:

Research ethics education cultivates a heightened ethical awareness among students and researchers. By exploring ethical dilemmas, case studies, and ethical frameworks, individuals gain a deeper understanding of the ethical considerations inherent in research. This awareness fosters a sense of responsibility towards conducting research with integrity, respect for human rights, and adherence to ethical standards. It empowers individuals to critically reflect on their own values and biases, promoting ethical decision-making in their research endeavors.

3.2 Promoting Research Integrity and Rigor:

Research integrity and rigor are promoted by incorporating research ethics education into curricula for higher education. Emphasizing the value of integrity, openness, and responsibility helps people build a solid ethical basis that penetrates every phase of the research process. Accurate reporting, meticulous data gathering and analysis, and responsible sharing of study findings are all qualities that ethical training instills. This enhances the overall quality of research undertaken in higher education by promoting the legitimacy and dependability of research findings.

3.3 Enhancing Research Quality and Impact:

Education in research ethics helps to improve the value and effect of research. The design, technique, and data analysis of research are all intricately entwined with ethical considerations. Individuals might approach their study with a more comprehensive and integrated perspective by incorporating ethical concepts into the research process. The ability to think critically, weigh opposing viewpoints, and foresee and handle ethical dilemmas are all encouraged through ethical training. This results in more reliable research designs, sophisticated analysis, and more societal relevant and helpful research outcomes.

Students and researchers are better equipped to negotiate the challenging ethical environment of research when research ethics education is incorporated into higher education courses. It gives students the ethical skills they need to conduct research responsibly, safeguard participants, uphold their integrity, and make ethically responsible contributions to the development of knowledge. The strategies for incorporating research ethics into curricula for higher education, including target audiences, key elements, and pedagogical approaches, will be covered in the parts that follow (Ramrathan, Le Grange and Shawa, 2017).

4. INTEGRATING RESEARCH ETHICS IN HIGHER EDUCATION CURRICULUM

4.1 Target Audience and Educational Levels:

A wide range of audiences, including undergraduate and graduate students, faculty members, researchers, and other stakeholders involved in research activities, should be the focus of research

ethics education integration into the higher education curriculum. Incorporating research ethics instruction at all academic levels, including bachelors, masters, and doctorate programmes, is crucial to ensuring that students establish a solid ethical foundation from the start of their academic careers.

4.2 Core Components of Research Ethics Education:

The key elements of research ethics education should cover the fundamental rules, regulations, and procedures of ethical research. These elements could consist of:

a) The need of introducing students to ethical concepts like respect for autonomy, beneficence, justice, and integrity is discussed in the section of this paper. They should get acquainted with pertinent institutional policies, codes of conduct for each discipline, and ethical standards.
b) Informed consent and research participant protection: It is crucial to stress the value of informed consent as well as confidentiality, privacy, and participant rights protection. Informed consent should be obtained, privacy and confidentiality should be maintained, and any risks and advantages for study participants should be addressed by students.
c) Research financing and conflict of interest: Students should be informed about potential conflict of interest in research, such as monetary conflicts or reporting bias. It is essential to comprehend the moral ramifications of study financing, sponsorship, and potential impact on research results.
d) Research misconduct and responsible authorship: Students need to understand what constitutes research misconduct, which includes fabrication of data and plagiarism. To encourage research integrity, it is important to emphasize responsible authorship practices, such as attribution, acknowledgments, and authorship criteria.

4.3 Interdisciplinary and Program-specific Integration:

Recognizing that ethical problems apply to diverse research domains and disciplines, research ethics education should adopt an interdisciplinary approach. It should be customized to meet the unique needs and specifications of various academic programmes. For instance, human subjects-related issues may be the focus of research ethics training in the social sciences, whereas data integrity and ethical testing may be the focus in STEM disciplines. Collaboration between faculty members from many disciplines can make it easier to incorporate instruction in research ethics into the overall curriculum (Lambrechts, Mula, Ceulemans, Molderez and Gaeremynck, 2013).

4.4 Pedagogical Approaches and Teaching Methods:

To successfully include research ethics into the curricula of higher education, a range of pedagogical approaches and instructional techniques can be used. These may consist of:

a) Case studies and moral conundrums: Students are pushed to think critically and make moral judgements when real-world case studies and ethical conundrums are presented. This enables students to examine and debate moral dilemmas, provide moral solutions, and consider the effects of various decisions.

b) Group discussions, debates, and ethical reflection exercises can help students get a deeper knowledge of ethical concepts and how to apply them in research situations. These exercises also encourage students to reflect on their own ethical ideals and biases.

c) Professional ethics instruction: Including professional ethics instruction in the curriculum gives students the chance to build ethical skills applicable to their future employment. In publishing ethics may be taken into account (Roberts, 2015).

5. DEVELOPING RESEARCH ETHICS COMPETENCIES

It is crucial to concentrate on building research ethics capabilities among students and researchers in order to ensure the successful integration of research ethics in the higher education curriculum. These abilities, attitudes, and knowledge are all required to negotiate the ethical ramifications of research. For the development of research ethical abilities, the following areas are essential:

5.1 Ethical Principles and Codes of Conduct:

Students should develop a thorough awareness of the moral standards that govern research, such as respect for autonomy, beneficence, fairness, and integrity. They ought to be knowledgeable about pertinent institutional policies, codes of behaviour, and moral standards that are particular to each discipline. Through their research careers, individuals can manage ethical issues and make well-informed ethical decisions because to this foundation.

5.2 Informed permission and Research Participant Protection:

Students should learn how to secure research participants' informed permission by assuring that they are aware of the study's goals, risks, and benefits. They should also become familiar with techniques for preserving participant anonymity, confidentiality, and privacy. Training ought to include the difficulties involved in working with vulnerable populations, guarantee fair access to research opportunities, and encourage inclusion in research methods.

5.3 Conflict of Interest and Research Funding:

Conflict of interest that could occur when conducting research must be recognized and handled by students. They ought to learn how to spot such conflicts and comprehend the ethical ramifications. They should also develop the skills necessary to handle the complexity of funding, sponsorship, and the impact of financial interests on research outputs. Transparency in funding sources for research and competence in responsible financial disclosure are essential (Fleming and Zegwaard, 2018).

5.4 Research Misconduct and Responsible Authorship:

Students should be educated about research misconduct, including plagiarism, data fabrication, and falsification. They should understand the consequences of research misconduct for individuals, institutions, and the scientific community. Developing competencies in responsible authorship practices, including appropriate attribution, acknowledgment, and adherence to authorship criteria, fosters integrity in research dissemination and publication. To develop these research ethics competencies, higher education institutions can employ a range of educational strategies. These may include interactive workshops, seminars, online modules, ethical review simulations, and mentorship programs. by nurturing research ethics competencies, students and researchers become equipped to navigate complex ethical dilemmas, uphold the highest standards of integrity, and there contributing to the responsible and ethical development of the knowledge (Chowdhury, 2018).

6. IMPLEMENTATION STRATEGIES

To effectively integrate research ethics into the higher education curriculum, institutions can employ several strategies. These strategies focus on creating a comprehensive and sustainable approach to research ethics education. Here are some key implementation strategies:

6.1 Establishing Institutional Commitment:
Institutional commitment is essential for the successful integration of research ethics education. Institutions should develop and communicate clear policies and guidelines regarding research ethics. They should allocate resources, including funding, faculty expertise, and administrative support, to ensure the implementation and sustainability of research ethics education initiatives. Additionally, creating an institutional research ethics committee or designating an ethics officer can provide guidance and oversight in promoting research ethics.

6.2 Curriculum Integration:
Integrate research ethics across the curriculum by incorporating research ethics components into existing courses, particularly research methods and ethics-related courses. Develop new courses or modules dedicated solely to research ethics, catering to the specific needs of different disciplines. Ensure that research ethics education is progressive, building upon foundational knowledge and skills throughout the educational journey.

6.3 Faculty Development:
Offer faculty development programs to enhance their knowledge and skills in research ethics. This can include workshops, seminars, and training sessions on research ethics principles, best practices, and pedagogical approaches. Faculty members play a crucial role in imparting research ethics education to students and should be equipped with the necessary tools and resources to effectively teach and mentor students in research ethics.

6.4 Integration of the Ethical Review Process:
Include the ethical review procedure in your coursework and research endeavours. Encouraging students to submit research projects for ethical evaluation, either through partnership with institutional ethics committees or by use of dummy ethics committees. This hands-on learning experience guarantee that students follow ethical norms from the start of their studies and aids them in understanding the ethical issues related to research.

6.5 Ongoing Evaluation and Assessment:
Implement tools for gauging the success of campaigns to educate people about research ethics. Assess students' comprehension of research ethics principles and how to apply them in real-world situations by using evaluation tools, surveys, and feedback systems. Analyze how research ethics education has affected student's ethical awareness, judgement, and research habits. Incorporate criticism and make appropriate changes to the curriculum and instructional strategies to continuously enhance the teaching of research ethics.

Higher education institutions can promote a culture of research ethics by putting these techniques into practice, ensuring that students and researchers have the information, abilities, and ethical awareness required for responsible and significant research. This all-encompassing strategy makes it easier to incorporate research ethics into higher education's culture and encourages moral behavior (Lozano, Merrill, Sammalisto, Ceulemans and Lozano, 2017).

7. ASSESSING AND EVALUATING RESEARCH ETHICS IN EDUCATION

It is essential to assess and evaluate research ethics education in order to confirm its efficacy and make ongoing changes. Strong assessment and evaluation techniques offer insightful information about the results of initiatives for research ethics education, highlight areas for development, and provide guidance for future curriculum design. The following are important factors to take into

account while considering research ethics education:

7.1 Assessment of Learning Outcomes:
Assessing learning outcomes is a crucial part of assessing research ethics education. Establish learning goals that are specific, measurable, and in line with desired competencies and moral standards. Create evaluation tools that gauge students' comprehension of research ethics topics, ethical decision-making abilities, and capacity to apply ethical principles in research contexts, such as quizzes, case studies, or ethical reflection activities. The caliber of students' ethical thinking and conduct in research-related assignments or projects can be judged using rubrics or scoring procedures.

7.2 Surveys and Feedback:
Student, faculty, and other stakeholder surveys and feedback are important sources of data for assessing research ethics education. Create and distribute questionnaires to gather quantitative and qualitative information on participants' opinions of the success of initiatives to promote research ethics education. Focus group talks, interviews, and anonymous online forums can all be used to gather feedback. Examine the comments to learn more about the delivery and content of research ethics education, as well as its advantages and disadvantages.

7.3 Ethical Review Process Evaluation:
If students engage in the ethical review process as part of their research projects, evaluate the effectiveness of the process itself. Assess the quality of research proposals, adherence to ethical guidelines, and the feedback provided by faculty or institutional ethics committees. This evaluation can identify strengths and weaknesses in the ethical review process and inform improvements in the ethical oversight of research projects.

7.4 Collaboration with Research Ethics Experts:
Collaborate with research ethics experts, external evaluators, or institutional research offices to ensure the validity and reliability of assessment and evaluation methods. Seek their input in designing assessment tools, analyzing data, and interpreting results. External expertise enhances the rigor and credibility of the assessment process and provides valuable perspectives on the best practices in research ethics education evaluation.

7.5 Continuous Improvement:
Use the findings from assessments and evaluations to drive continuous improvement in research ethics education. Identify areas that require further attention or modification in the curriculum, teaching methods, or support resources. Engage in reflective practices and collaborate with faculty members, students, and stakeholders to implement changes that enhance the effectiveness of research ethics education.

By systematically assessing and evaluating research ethics education, higher education institutions can ensure that their efforts in promoting ethical conduct in research are effective, impactful, and responsive to evolving needs. This evaluation process supports the ongoing enhancement of research ethics education initiatives and contributes to the cultivation of ethical research cultures within academic communities (Darling-Hammond, Flook, Cook-Harvey, Barron and Osher, 2020).

8. BEST PRACTICES AND CASE STUDIES

Best practices and case studies in research ethics education can improve the learning process and

give students real-world examples of how to apply ethical principles in various research circumstances. The following are some recommended best practices and case study strategies:

8.1 Active Learning and Experiential Learning:
Encourage active learning strategies that involve students in the investigation and application of research ethical concepts. Students can actively participate and analyze moral quandaries through experiential learning techniques like role-playing, simulations, or group debates. These methods promote moral reasoning, critical thinking, and group problem-solving abilities.

8.2 Case Studies:
Include case studies that depict actual research circumstances with moral dilemmas. Students can apply ethical ideas to their particular fields through case studies, which can be either multidisciplinary or discipline-specific. These case studies ought to be created to encourage deliberative dialogue, ethical investigation, and judgement. Students can investigate alternative points of view, offer morally sound solutions, and consider the effects of various decisions.

8.3 Ethical Reflection and Discussion:
Include regular conversations and reflection tasks on ethics in the teaching of research ethics. Give pupils the chance to consider their own moral principles, prejudices, and guiding principles. Encourage students to share their ideas, worries, and insights about research ethics by engaging in open discussions. Activities that encourage ethical contemplation promote self-awareness, critical thinking, and the growth of ethical judgement.

8.4 Interdisciplinary Collaboration:
Encourage interdisciplinary cooperation between students from many disciplines to examine issues with research ethics. Students learn about other viewpoints and how to manage ethical dilemmas unique to particular areas by cooperating with one another. Multidisciplinary teams working together on projects or conversations build a comprehensive understanding of research ethics and advance multidisciplinary ethical dialogue.

8.5 Ethical Mentoring and Role Modeling:
Encourage academic members and research supervisors to serve as ethical mentors and role models. Faculty members should engage in ethical debates, model ethical research practices, and help students navigate ethical dilemmas. Mentorship programmes encourage ethical development and offer advice in challenging research scenarios by pairing students with seasoned researchers or ethical authorities.

8.6 Continuous Assessment and Feedback:
Utilize continuous assessment techniques, such as quizzes, case studies, or tasks requiring ethical thinking, to evaluate students' comprehension of research ethics topics. Give pupils timely feedback, emphasizing areas for development and reiterating ethical reasoning abilities. Students can monitor their progress, get advice, and make changes to their ethical decision-making process using this feedback-driven approach (Darling-Hammond, Flook, Cook-Harvey, Barron and Osher, 2020).

9. CHALLENGES AND FUTURE DIRECTION

While integrating research ethics into higher education curriculum brings numerous benefits, it also presents certain challenges. Addressing these challenges and considering future directions are essential for the continuous improvement of research ethics education. Here are some key

challenges and potential avenues for future development.

9.1 Faculty Training and Support:
One challenge is ensuring that faculty members possess the necessary knowledge and expertise to effectively teach research ethics. Institutions should prioritize faculty training and support programs to enhance their understanding of research ethics principles, pedagogical approaches, and emerging ethical issues. Ongoing professional development opportunities can equip faculty members with the tools and resources needed to deliver high-quality research ethics education.

9.2 Interdisciplinary and Contextualized Approaches:
Research ethics education should cater to the diverse needs and contexts of different disciplines. Developing interdisciplinary and context-specific research ethics modules or courses can address the unique ethical challenges faced in various fields. Tailoring research ethics education to the specific research methods, methodologies, and ethical considerations within disciplines enhances relevance and applicability.

9.3 Internationalization of Research Ethics Education:
As research becomes increasingly globalized, it is crucial to address the ethical considerations that arise in international and cross-cultural research collaborations. Integrating international perspectives and promoting cultural sensitivity within research ethics education can prepare students to navigate the ethical complexities of global research projects. Collaboration with international institutions and organizations can facilitate the exchange of best practices and the development of shared ethics standard.

9.4 Challenges in Technology and Ethics:
New ethical issues are raised by technological advancements like big data analytics, artificial intelligence, and genetic research. The ethical implications of new technology should be discussed, and it is important to make sure that research ethics education keeps up with technical development. Students must be prepared for ethical research practices in the digital age by focusing on data protection, digital research ethics, and responsible technology use.

9.5 Ethical Difficulties in Funding for Research:
The impact of research financing on moral judgement and potential conflicts of interest continues to be the problem. The ethical issues surrounding funding sources should be addressed in the future, along with financial disclosure transparency and the inclusion of debates on ethical research funding practices in research ethics education. Protecting research integrity and public confidence can be achieved by teaching students how to manage the ethical ramifications of financing and industry partnerships.

Higher education institutions may make sure that research ethics education is current, adaptable, and successful by addressing these issues and embracing the future. Developing a research culture that prioritizes integrity and ethical behavior is made possible by improving research ethics education (Slade and Prinsloo, 2013).

10. CONCLUSION

In higher education, research ethics education is crucial because it gives students the knowledge, abilities, and ethical awareness needed to conduct ethically sound and significant research. The need of including research ethics in the curricula for higher education has been debated, with a

focus on its function in fostering moral behavior, guaranteeing research integrity, and preserving participant and community welfare. Education in research ethics has many advantages. It develops ethical reasoning abilities, promotes an ethical culture, and improves students' comprehension of the ethical implications of research. Institutions prepare students to handle challenging ethical issues, make wise decisions, and uphold ethical standards throughout their research careers by including research ethics into the curriculum. In conclusion, research ethics education is an indispensable component of higher education. It instills ethical values, empowers students with the necessary competencies, and prepares them to navigate the ethical complexities of research. By integrating research ethics into the curriculum and embracing best practices, institutions contribute to the cultivation of ethical researchers who will shape the future of scientific inquiry and innovation with integrity, accountability, and social responsibility.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 13-21

Journal of Management Research
Peer Reviewed Journal

Needs of Non-academic Library Users: A Case Study of CCYM's Reading Room

Dr. Sandhya Pagare
Librarian
Hashu Advani College of Special Education, Mumbai
Corresponding author Email: p27sandhya@gmail.com; sresearch21.11.22@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Pagare S. (2023).
Needs of Non-academic Library Users: A Case Study of CCYM's Reading Room
Journal of Management Research
XV(2), 13-21 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 13-21

Journal of Management Research
Peer Reviewed Journal

Needs of Non-academic Library Users: A Case Study of CCYM's Reading Room

Dr. Sandhya Pagare
Librarian
Hashu Advani College of Special Education, Mumbai
Email: p27sandhya@gmail.com; sresearch21.11.22@gmail.com

ABSTRACT

As the world evolves, so do the requirements of library patrons. Population expansion raises new challenges for all levels of society. Students in cities lack adequate room for peaceful reading due to overcrowding. This type of difficulty was addressed in the present paper. The library can fulfil its social responsibility by creating a reading environment for India's youth. CCYM's Reading room is serving the society and fulfilling social responsibilities. The users of this reading room avail this service due to lack of basic needs for reading culture. The present study is the case study.

Keywords: Reading space, Libraries' social responsibility, Public reading rooms or halls, Best practices of the libraries.

1. INTRODUCTION

Libraries have a long history of serving the requirements of their patrons, extending back to ancient India. All types of libraries offer a variety of facilities and services. They provide best practises to their users. Over millennia, the human population has increased. As a result, metropolises lack space for basic necessities. Readers lack adequate space to study or concentrate on their studies, as well as an appropriate reading atmosphere. A reading space or a hall is provided for pupils in many sorts of libraries. Working professionals and readers preparing for competitive exams or other private studies are not admitted at these libraries. These readers are accepted by some libraries and private service providers. They provide reading space for these readers through a variety of payment options. This type of service is critical since it allows these readers to be more productive.

The London School of Economics and Political Science allows 3 hours per week for group study rooms and separate booths, and 6 hours per week for individuals with previous booking (*Using the Library Space*, 2023). The Institute of Chartered Accountants of India, Delhi, solely provides a reading room for (Chartered Accountants) CA students. They have created an app for it. Beneficiaries can reserve their seats by choosing from several pricing levels for a day or a month. They provide online services 24 hours a day, seven days a week (*ICAI - the Institute of Chartered Accountants of India*, 2023). The Reading Square in Vile Parle, Mumbai, offers this

service for a quiet, distraction-free environment (*The Reading Square – READING LIBRARY and STUDY ROOM for PRODUCTIVITY*, 2023). Reading rooms can be found all around Mumbai, Maharashtra, India, and even the world.

The Reading Room of Chembur Colony Yuvak Mandal (CCYM) is located in Chembur, Mumbai. The researcher conducted a survey to demonstrate the significance of this reading room in the Mumbai neighbourhoods of Kurla, Chembur, Govandi, and Mankhurd. Many activities are taking place under the auspices of CCYM. In terms of management and admission, CCYM's Hashu Advani College of Special Education in Chembur, Mumbai, is in charge of this reading room. These responsibilities are handled by a professional qualified librarian.

2. CCYM'S READING ROOM

2.1 Background:

CCYM was founded in 1953. It was the late Shree Hashu Advani's brainchild. The CCYM presently offers a wide range of activities. One of CCYM's most popular activities is its reading room. It serves readers in and around Mumbai's Chembur neighbourhood. Students from various colleges, candidates for various competitive examinations, students enrolled in professional courses, and so on. Admission was allowed on the basis of first-come, first-served. CCYM, on the other hand, charges a monthly minimum payment of approximately 170/- in order to accommodate as many students and readers as feasible. From 7 a.m. until 11 p.m., the reading room is open. This service is provided to society through CCYM, which is essentially an NGO. They serve customers from various walks of life. CCYM never refuses admission to female readers. The reading room first opened its doors in 1987.

CCYM's Reading Room

3. OBJECTIVES OF THE STUDY

i. To find out the usefulness of CCYM's Reading Room to its users
ii. To find out the purposes of joining CCYM's Reading Room

iii. To explore the opinions of the reading room members about availability of the more number of the staff members and more number of reading rooms.
iv. To investigate the role of the reading room members for assisting and supporting the library's efforts to improve services, facilities, and surroundings.

4. RESEARCH DESIGN

4.1 Population:
The members of the reading room of CCYM were taken into consideration. Till now the total beneficiaries are 2000. Only the members from 2016 onwards were taken for the present study.

4.2 Sampling:
The convenient sampling is considered for the present study.

4.3 Research Tool:
The survey method was used for the data collection. A questionnaire was prepared with the assistance of the Google Form and mailed to the respondents.

4.4 Data Collection:
The researcher requested them to fill on the spot by providing QR code of the questionnaire. Also, the Google form link has been mailed to the members.

4.5 Scope:
The present study is undertaken for CCYM's Reading Room. However, it will be helpful to all librarians to provide this kind of services as a best practices of the college, institutes and so on.

4.6 Limitations:
The present study is limited to CCYM's Reading Room only.

5. DATA ANALYSIS AND INTERPRETATION

5.1 Demographic Profile:

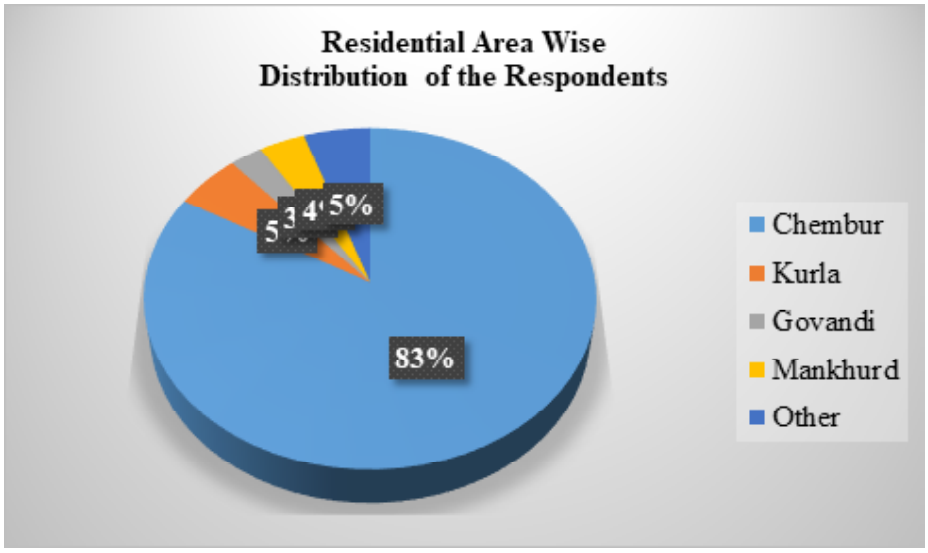

Figure 1: Residential Area-Wise Distribution of the Respondents

The majority of the respondents (83%) were the residential area of Chembur located in Mumbai. The reading room had also accommodated the readers of the nearby local area, as well as walk-ins. Total 77 respondents responded to the present case study survey.

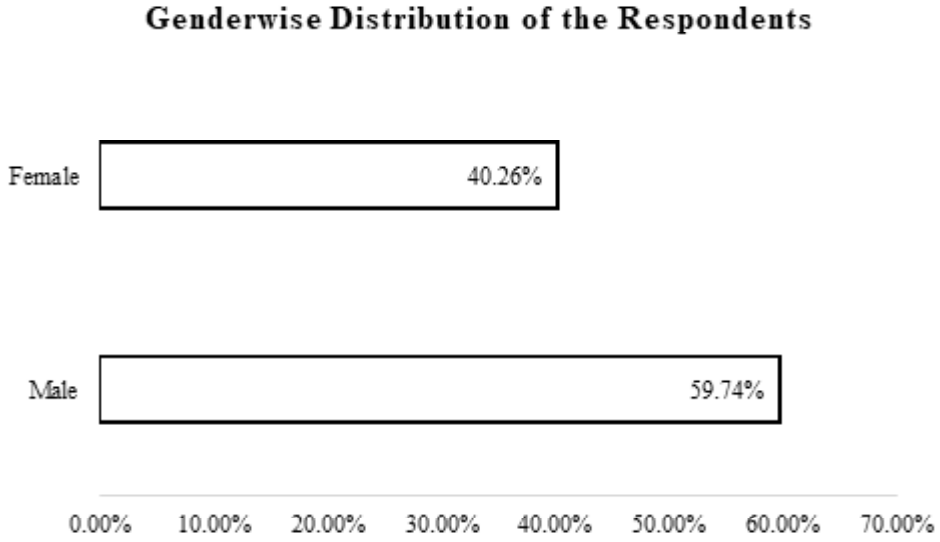

Figure 2: Gender wise Distribution of the Respondents

The majority of the respondents were male (59.74%); and female respondents (40.26%) responded to this study willingly.

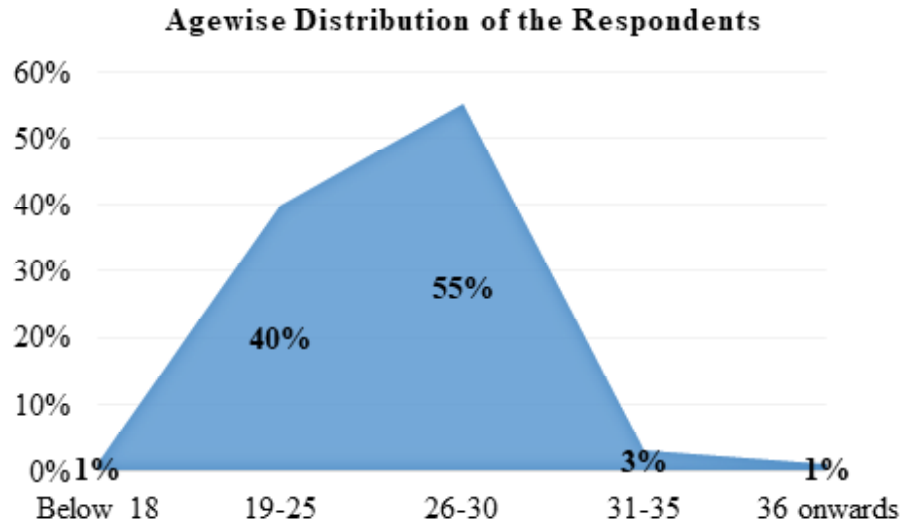

Figure 3: Age wise Distribution of the Respondents

The reading room is open for all citizens, there is no age bar, region or gender. The majority of the respondents (55%) were from the age range 26-30 and most of the respondents (40%) were from the age range 19-25.

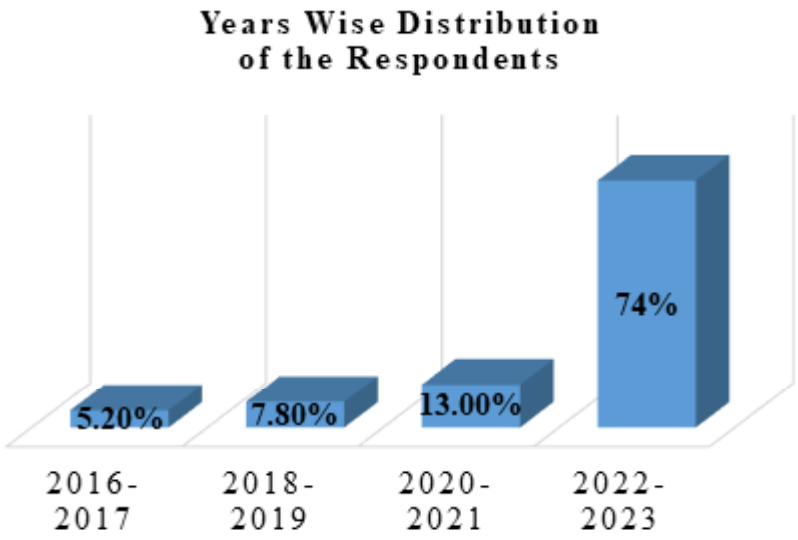

Figure 4: Years Wise Distribution of the Respondents

The present study used convenient sampling, hence the majority of the respondents were from the latest years of the membership. About 74% of the respondents were from 2022-2023 period used the reading room for their higher studies, competitive examinations and other studies.

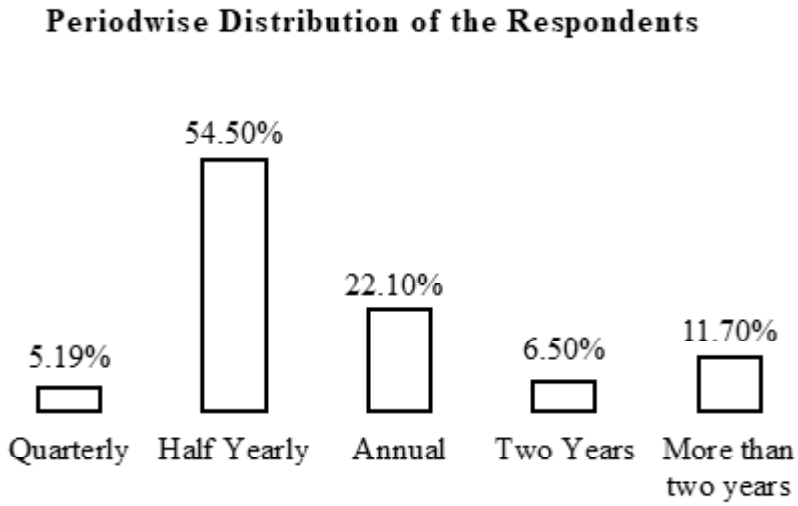

Figure 5: Period wise Distribution of the Respondents

The CCYM's Reading Room offers two typed flexible membership plans. It starts with quarterly membership to half yearly membership. For this survey, the majority of respondents (54.50%) utilised the reading room for six months, about 22.10% used the reading room for a year, and approximately 11.70% used the reading room for more than two years.

The readers in the CCYM's Reading Room had a wide range of interests. The significant majority of respondents were studying for Maharashtra Public Service Commission (MPSC), Union Public Service Commission (UPSC), and Staff Selection Commission (SSC) exams. It demonstrates that the readers are career-oriented and want job security as well as a competitive compensation package.

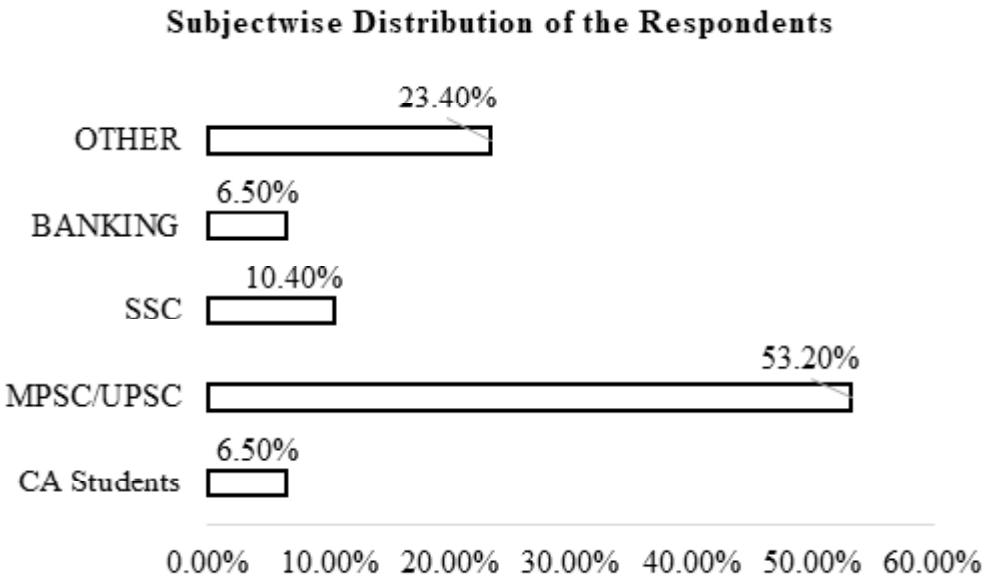

Figure 6: Subject wise Distribution of the Respondents

5.2 Usefulness of the CCYM's Reading Room:

The respondents were asked how useful the CCYM reading room was for their reading and learning.

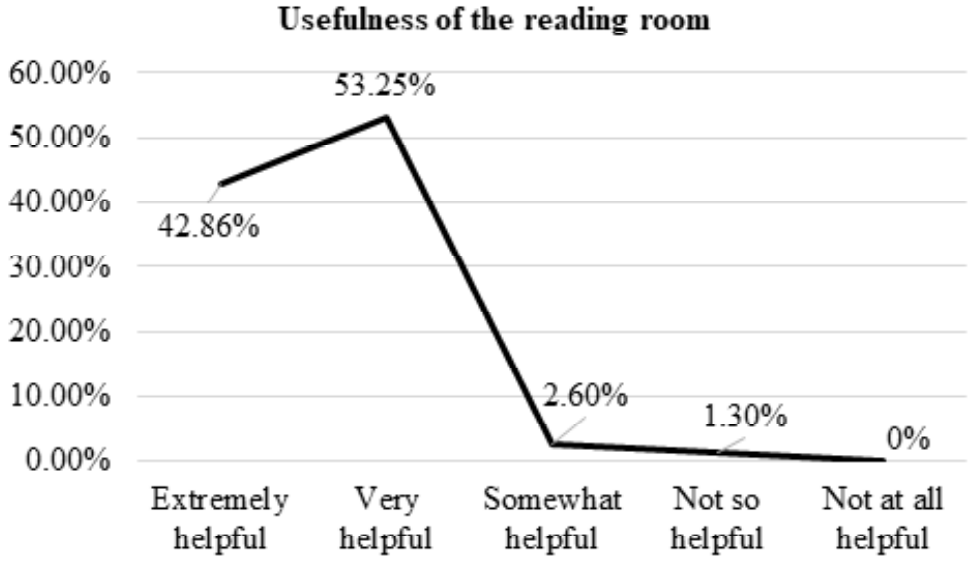

Figure 7: Usefulness of the reading room

The majority of responders (96%) agreed, and they thought the reading area was very useful for their studies. However, about 1.30% of those polled did not find the reading room useful.

5.3 Purposes of joining CCYM's Reading Room:

The present study tried to find out the purposes of the joing the CCYM's reading room.

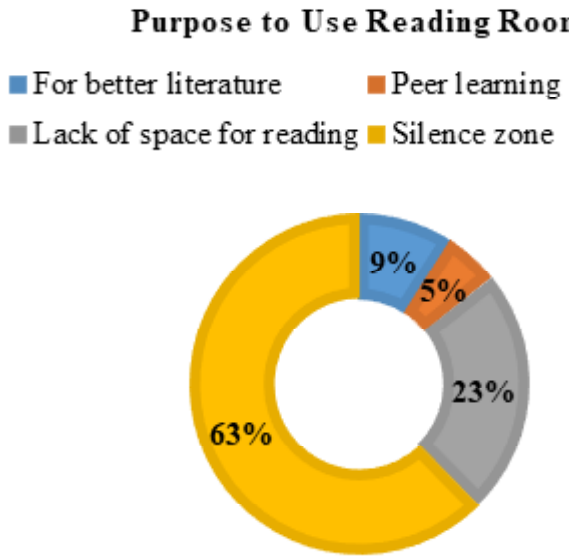

Figure 8: Purpose to Use Reading Room

The majority of the respondents (63%) used the reading room as they desired a peaceful atmosphere for their studies, which lead to better productivity and concentration. About (23%) of responders did not have enough space or sufficient organisation to complete their extensive reading and preparations. Another reason they joined the reading room was for better literature and peer learning.

5.4 Requirement for more number of the reading room and Requirement for manpower:

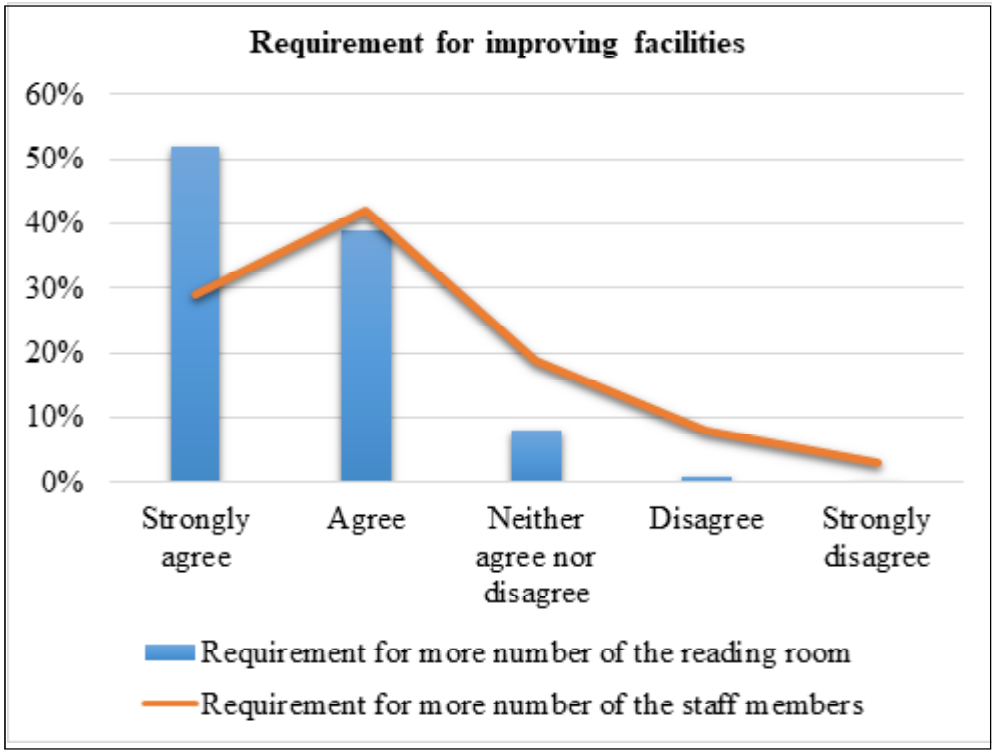

Figure 9: Requirement for improving facilities

The current study investigated the possibilities for upgrading CCYM's Reading Rooms. To provide better service, the majority of respondents said that more reading rooms and staff personnel were required..

5.5 Support for overall improvement of the Reading Room:

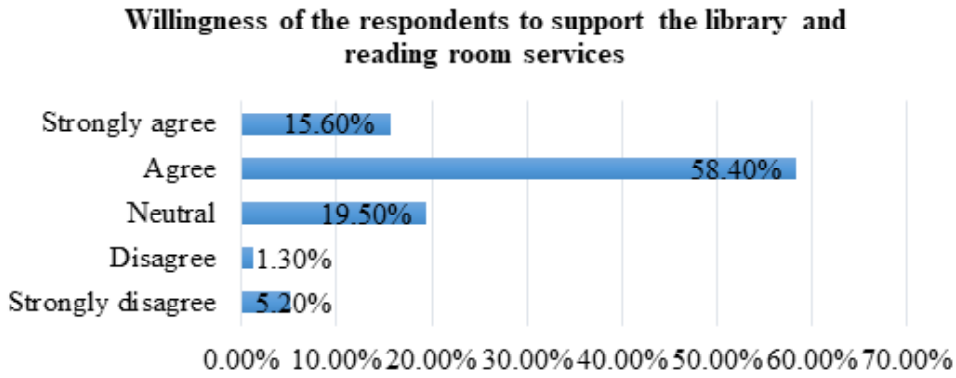

Figure 10: Willingness of the respondents to support the library and reading room services

The current survey discovered that about 74% of respondents were willing to assist the CCYM's Reading Room in order to improve its services, demonstrating the readers' gratitude to the CCYM's Reading Room.

6. OBSERVATIONAL FINDINGS

The data analysis and interpretation show the essential significance of the reading room in addressing society's intellectual needs. These kind of reading areas are in high demand. The serene and pleasant setting necessary for young people to pursue their academic and professional goals.

7. CONCLUSION

There is a need to create a safe and secure environment for female students to complete their higher education or competitive examinations. For the next generation to reach their full potential, adequate facilities and infrastructure are essential. The younger generation is studying for MPSC or UPSC exams, indicating their commitment to serve the country. The CCYM's reading room is doing an excellent job of improving society and strengthening the country.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 22-27

Journal of Management Research
Peer Reviewed Journal

Impact of World Wide Web on Library and Information Services

Mr. Kantilal Tamhane
Librarian, Tatyasaheb Kore Institute of Engineering and Technology (Autonomous), Warananagar.
Mr. Sagar Kadam
Library Assistant, Tatyasaheb Kore Institute of Engineering and Technology (Autonomous), Warananagar.
Corresponding author Email: kantilal85@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Tamhane K., Kadam S. (2023).
Impact of World Wide Web on Library and Information Services
Journal of Management Research
XV(2), 22-27 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

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Mr. Kantilal Tamhane
Librarian, Tatyasaheb Kore Institute of Engineering and Technology (Autonomous), Warananagar.
Mr. Sagar Kadam
Library Assistant, Tatyasaheb Kore Institute of Engineering and Technology (Autonomous), Warananagar.
Email: kantilal85@gmail.com; sakadam10@gmail.com

ABSTRACT

21st Century is known as "Computer Era". In this world all the fields of work going with the help of the computer and hence the easier and faster. The main origin of this computer era was in North America in the form of the discovery of the Internet by Advanced Research Projects Agency (ARPA) in 1969 as ARPAnet. With the help of World Wide Web we can get any kind of information at any time at any place. There is no limit of time and space.

In this paper author discussed the history of www i.e. Internet, Internet tools and services, Impact of www on library and information science, resources available on websites, from all the available resources E-books and E-journals are widely discussed. Also the evaluation factors of web based resources are discussed and conclusion is derived that with the help of www the libraries becomes the super power houses of the information.

Keywords: World Wide Web (www), E-resources, E-books, E-journals, Web based library services.

1. INTRODUCTION

In this global village, information explosion is very fast due to which it has become easy to find accurate information in very less time. The occurrence of internet and www has changed the way of accessing the information in different forms, services provided by www are so efficient and enhanced that user can get information at anytime, anywhere in any format. There is drastic change in the information storage, retrieval and communication because of the www, hence most of the libraries are preferred to give the web based information services to their users for more satisfaction of their information needs.

Shanhong, T. (2002) Nowaday's information needs of users are getting changed, they are shifting from print form of information to electronic form. Hence the author tries to focus on online services. the libraries are trying to meet the needs of users by providing them web based services in the form of E-resources. The www provides good platforms for the libraries to share their information in electronic form to get access in very short time and at their own location.

2. HISTORY OF WORLD WIDE WEB

In 1969 the Advanced Research Projects Agency (ARPA) in U.S. discovers the new network connection between two computers known as ARPAnet, with the help of which they connected the computers of four universities. The main idea behind the formation of this network was to share the information within the project personnel. In this same network in 1972 more than 40 different sites were get connected for sharing of information and by means of communication.

After 1970 many new small-small networks came into existence and atlast all those networks got together and formed the network of network in 1991 known as Internet. According to the report of INFLIBNET regional training program 2004. In 1995 near about 30,000 computers were connected in this network, in 1998 it goes to 65,00 and in 2000 it was about 200 Million, in 2018 it becomes 22 billion. In India in 1997 the users of internet was 2,00,000 in 2000 it was 15,00,000 and in 2002 it crosses the 80,00,000 as on today there are 692 million users connected to internet, this information is generated from the INFLIBNET web.

3. WORLD WIDE WEB SHORT DESCRIPTION

www is the short form of world wide web which allow us to connect worldwide for our seek of information and communication.www connect us to all types of protocols (Internet protocols) for communication like Email, FTP, Gopher, Telnet, Usenet, News and apart from these all, the www has its own protocol known as http (Hyper Text Transfer Protocol). For any kind of search we require http along with site name and dot(.) and the domain name like
.com is used for development and access to the commercial sites
.org is used for development and access to the organizational sites
.net is used for development and access to the network communication sites
.edu is used for development and access to the educational sites
.gov is used for development and access to the government sites
.biz is used for development and access to the business sites
.pro is used for development and access to the professional sites
.info is used for development and access to the informational content sites
.mil is used for development and access to the military site

4. TOOLS AND SERVICES OF INTERNET

1. E-mail: used to send electronic mails from one computer to another computer across the world containing text, audio, video, graphics, pictures etc.
2. Telnet: Used for remote login which allows us to connect to remote machines & login and use the facilities like online databases, web OPACs etc.
3. FTP (File Transfer Protocol): Used to transfer the different forms of files amongst the widely connected computers.
4. WWW (World Wide Web): This is the navigational tool which enables to browse information linked to other related information which includes hyperlinks, hypertexts and hyper Medias.

Hypertext is the text which is colorful and glowing continuously on the web page which is written in hypertext markup language (HTML) and hyper link is the line on which the arrow of mouse becomes the hand shape and which allow us to connect with the next page of the information. www provides unlimited access to large universe for E-documents.

Apart from these there are many more tools available like Gopher, Archie, Veronica, Usenet, Bulletin board services etc.

5. IMPACT OF WWW ON LIBRARY AND INFORMATION SERVICES

Kiran, K., & Diljit, S. (2012) Www has such impact on library services that we can say no other innovation has that much impact in the field of library and information science. Because of the innovation of the www the world becomes global village of information and the sharing of information for the libraries amongst their users is becoming much easier. Sahoo, D. R., & Sharma, D. (2015) with the help of web user can do following things.

1. User can search the information on the subject of his interest.
2. User can check the availability of books in particular library using web OPAC.
3. User can check the availability of books on particular subject.
4. User can check the current trends in his research subject.
5. User can check number of books issued on his name from library with client-server.
6. User can get the information in any format like text, PDF, excel, audio, video and many more.
7. User can check this all things from his home or the place of work also.
8. User can get immediate reference service with the help of web.

6. RESOURCES AVAILABLE ON WEB

Number of primary and secondary sources of information are available on internet hence it is becoming easier to give short range and long range reference services with the help of internet.

Resources available on internet

Gavit, B. K. (2019) Audio book, booklet, case studies, newspapers, periodicals, photographs, posters, scripts, album, almanac, annual report, article, audio lecture, autobiography, bibliography, broadcast, brochure, calendar, catalogue, chart, conference proceedings, data sets, directories, e-book, gazette, graphs, handouts, law act, law report, lecture note, magazines, manual, manuscript, map, monograph, patent, presentation, proceedings, question set, quiz, report, standards, syllabus, synopsis, video lectures, web courses.

E-Books: E-book is the short form of electronic book**.** The book is published in electronic form and specially used to read with the help of computer, laptop, android mobiles, tabs; is known as e-book.

Sahu, S. K., & Arya, S. K. (2013) As electronic form of documents are very much useful that is the reason all libraries are now switching from printed forms of books to the electronic forms of books. E-books are indexed online hence there is no time required to search book in stack, also once you got the book title in catalogue you need to click on the link which will take you to the actual e-book. Hence no need to go to stack room to search the book physically.

Advantages of E-books

1. **Expanded usage:** One e-book can be accessed by many users at the same time and the e-books are available 24/7 for use.
2. **Expanded offerings:** E-books provide better availability and a wide range of content to users, e-books are generally sold by attractive packages hence there are more books available for purchase.
3. **Reduction in library staff work:** E-books are not needed to shelves and unshaved hence

library staff can save their time and efforts required for these types of work.

4. **Minimal the number of library staff:** As these books are automatically issued and not needed to shelves the staff requirement for library get minimize and the library can save the expense on excess staff.
5. There is no need of maintenance for e-books, no damage problem, no security needed, no issue of book loss.
6. **Functionality:** E-books allows to search within the catalogues and also within the books inside content for particular matter within the seconds.
7. **Updated:** E-books are very much easy to keep the updates and their updated editions comes to the users within the short time itself.

E-journals
E-journals are the journals published in electronic form stored on the server computer or website and access through the computer.

Characteristics of E-journals
Different search methods.
Does not require maintenance by library or the content provider.
Protects the IP of the content provider.
Does not breach the security of content provider.
Does not violate the privacy of the users.
Easy cross references.
Digital object identifier
Search solver.
Long term access.
Independent of space and time.
Stability and accessibility.
Interactivity and customization.
Overcomes the problem of lack of storage space.

7. EVALUATION OF E-RESOURCES

Rojer, S. A. (2001) The information we are getting from online sources have to be analyzed for its accuracy, authenticity, reliability and usefulness. Following are some questions with which we can analyze the information for its authentication.

1. Who is the author of resources?
2. How correct the information is?
3. Who is the publisher of resources?
4. What is the objective of content?
5. Accuracy of the content
5. How easily we can use the information? (user friendly)
6. For whom this information is important?
7. What is the purpose behind searching this information?

8. CONCLUSION

As libraries are getting facilitated by the internet, their roles are getting changed from the traditional role of book stores to becoming dynamic power houses of information. www is showing wide impact on the library professionals and users of the libraries, their information seeks, way to find the information, way to get information, way to use the information everything has been changed.

With the help of web it becomes so easy to get information; users are getting information of their own interest at anytime anywhere. The needs of information are getting fulfilled and also the time required for this fulfillment is so less. Hence the introduction of webs in the field of library and information science is known as one of the most important revolution in this field.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 28-34

Journal of Management Research
Peer Reviewed Journal

Role of the Indian Government in Shaping the Culture of Digital Education

Mr. Ganesh Wagh
Assistant Professor
Ashoka International Centre for Educational Studies & Research, Nashik
Corresponding author Email: ganeshwagh2011@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Wagh G. (2023).
Role of the Indian Government in Shaping the Culture of Digital Education
Journal of Management Research
XV(2), 28-34 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 28-34

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Role of the Indian Government in Shaping the Culture of Digital Education

Mr. Ganesh Wagh
Assistant Professor
Ashoka International Centre for Educational Studies & Research, Nashik
Email: ganeshwagh2011@gmail.com

ABSTRACT

The India report on Digital Education is an attempt to capture and compile all initiatives taken by the Education departments of States and UTs. The scale of work undertaken by each state and UT will help initiate discussions, replications, adaptations, and collaborations and provide inspirational lessons to other countries. One of the key initiatives taken by the Indian Government is the Digital India campaign, which aims to transform India into a digitally empowered society and knowledge economy. Under this campaign, various programs and policies have been implemented to promote digital literacy and access to education through digital platforms. The government has also launched several initiatives like the National Digital Literacy Mission and the National Digital Infrastructure for teachers to enhance digital skills among students and teachers. These initiatives focus on providing training and resources to improve digital literacy and enable effective use of technology in education.

Keywords: Digital Education, Digital India Campaign, Programs and Policies for Digital Education, National Digital Literacy Mission, National Digital Infrastructure, Digital Skills.

INTRODUCTION

The Indian government has implemented measures to promote the use of digital learning platforms in schools and institutions. The National Education Policy 2020 supports the use of digital tools for teaching and learning and emphasizes the integration of technology in education. Furthermore, the government has made attempts to bridge the digital divide by giving students in rural and distant locations with internet access and digital equipment. Initiatives such as the Digital India, Rural BPO Scheme and The Bharat Net project aim to provide digital education to kids from all backgrounds. Overall, the Indian government has played an important role in establishing the country's digital education culture. It has tried to promote digital literacy through numerous initiatives, policies, and programs. Digital Initiative for shaping the culture of Digital Education is as follows:

NATIONAL DIGITAL LITERACY MISSION

The Indian government created the National Digital Literacy Mission (NDLM) to promote digital literacy among residents across the country. The purpose is to provide individuals with the digital skills and information they need to participate in the digital world. Various training programs and courses are offered by the NDLM to improve digital literacy. These programs address a variety of topics, such as basic computer skills, internet usage, online safety, and digital financial literacy. The objective is to reach out to people from all walks of life, particularly those in rural areas and marginalized populations. The NDLM administers a network of training centers known as Training Partners (TPs), which are in charge of offering training programs. The government selects and appoints these TPs based on their ability to give quality training. The mission also emphasizes the significance of certification in validating persons' digital abilities. Participants who complete the training programs obtain a digital literacy certificate, which can improve their employability and offer up prospects in a variety of industries. The National Digital Literacy Mission has helped to bridge the digital divide and promote digital inclusion in India. The mission seeks to empower individuals with digital skills so that they can have access to information, services, and opportunities available in the digital world.

NATIONAL DIGITAL INFRASTRUCTURE

The term "National Digital Infrastructure" refers to the technological framework and resources that underpin a country's digital networking and communication infrastructure. Broadband connectivity, digital networks, data centers, and other digital infrastructure facilities are all included. The National Digital Infrastructure in India is critical to allowing digital transformation and supporting the growth of the digital economy. The Indian government recognizes the value of a strong digital infrastructure and has launched many projects to build and expand it. The BharatNet project, which aims to bring broadband connectivity to all villages in India, is one of the primary projects. Optical fiber cables are being built as part of this initiative to connect rural communities, allowing residents to access high-speed internet services. This effort is critical in closing the digital gap and providing access to digital services and opportunities to people living in distant places. In addition to BharatNet, the government has built the National Knowledge Network (NKN), a high-speed network that connects educational and scientific institutions throughout the country. NKN promotes digital education and research by facilitating collaboration, resource sharing, and access to digital resources. Furthermore, the government has established data centers and cloud infrastructure to facilitate digital data storage, processing, and administration. These capabilities are required for a variety of digital services, such as e-governance, e-commerce, and digital education platforms. Education, healthcare, governance, and business all benefit from the National Digital Infrastructure. It lays the groundwork for digital projects and services, enabling networking, data sharing, and digital transactions.

PM E-VIDYA

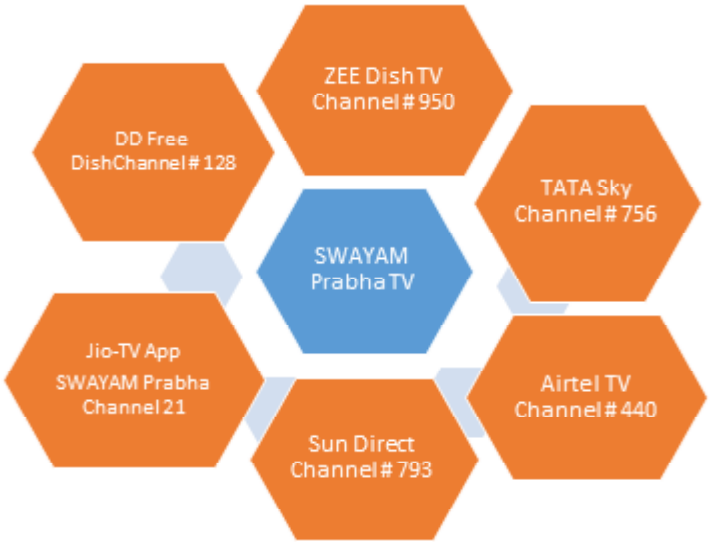
The Indian government launched PM E-Vidya to encourage digital education and online learning across the country. It is part of the wider Digital India effort and strives to give all children with accessible and high-quality education, especially during difficult times like the COVID-19 pandemic. Various online platforms and materials have been made available to students at all stages of education, from elementary school to higher education, through the PM E-Vidya program. This includes the DIKSHA platform, which provides students and teachers with digital textbooks, e-learning content, and interactive modules. The SWAYAM platform, which offers Massive Open

Online Courses (MOOCs) for higher education, is also included in the program. These courses span a wide range of topics and are provided by prestigious universities and academics from across the country. To guarantee that students have access to these online resources, the government has taken steps to give students in need with internet connectivity and digital gadgets. This involves the distribution of tablets, computers, and cell phones to students from low-income families. PM E-Vidya also focuses on preparing teachers to use digital tools and platforms effectively in the classroom. Training programs and workshops are held to help people improve their digital abilities and provide quality education through online channels.

DIKSHA

DIKSHA is an Indian government-created digital platform that provides digital education tools to instructors, students, and parents. It is an acronym that stands for Digital Infrastructure for Knowledge Sharing. DIKSHA provides a variety of educational content, such as textbooks, lesson plans, interactive modules, films, and tests. The platform's goal is to improve education quality by giving access to high-quality learning materials and tools. It serves kids in kindergarten upto grade 12 and covers a wide range of subjects and themes. DIKSHA allows teachers to access instructional resources, prepare lesson plans, and track student progress.

DIKSHA also supports many languages, making it available to students and teachers from all over India. It is accessible via a mobile app or a website, allowing users to learn and teach whenever and wherever they want. DIKSHA has been aggressively pushed by the Indian government in schools and colleges across the country. DIKSHA has been integrated into a variety of educational initiatives and programs to promote digital learning and improve the overall learning experience. DIKSHA is an Indian government-created digital portal that provides educational resources and promotes digital learning. It strives to improve educational quality by providing a variety of learning materials and tools for teachers, students, and parents.



SWAYAM Prabha TV is an Indian government program that provides educational content via television networks. It is part of the SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) program, which intends to provide students across the country with free online courses. SWAYAM Prabha TV channels transmit educational information 24 hours a day, seven days a week, covering a wide range of courses and specialties. Lectures, tutorials, and other

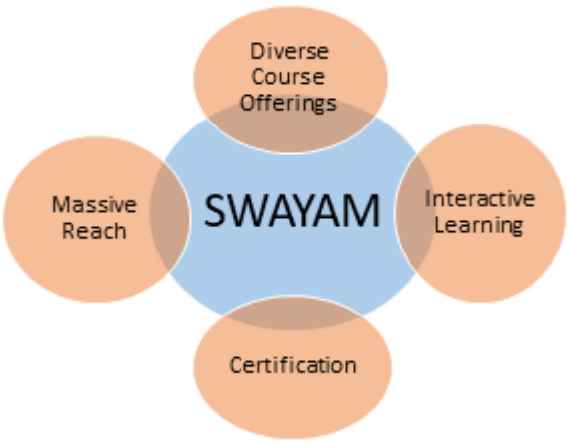
instructional resources provided by professionals from prestigious institutions and universities are included in the curriculum. The purpose of SWAYAM Prabha TV is to reach students who may not have access to the internet or digital devices, particularly in rural areas. By presenting educational information on television, the initiative hopes to make quality education more accessible to a wider audience. SWAYAM Prabha TV's content is offered in many languages, meeting the diverse linguistic demands of students across India. It includes a wide range of educational levels, from elementary school to higher education, including areas such as physics, mathematics, social sciences, humanities, engineering, and more. SWAYAM Prabha TV supplements the online courses available on the SWAYAM platform, giving students another way to acquire educational content. It is an excellent resource for self-study, exam preparation, and general knowledge improvement.

E-PATHSHALA

E-Pathshala is an Indian government program that attempts to provide digital tools for students and teachers. It is a website that provides a variety of educational products such as textbooks, audio-visual resources, e-books, and interactive learning modules. E-pathshala includes a wide range of courses and educational levels, from primary to higher secondary. The platform is intended to improve access to high-quality educational information and to promote digital learning in schools throughout India. It provides a centralized store of digital resources that students, teachers, and parents can access. E-Pathshala also supports several languages, providing instructional materials in a variety of regional languages. The Indian government hopes to bridge the digital divide and provide educational tools to kids from all backgrounds through E-Pathshala. The platform is part of a bigger government initiative to promote digital education and integrate technology into the learning process.

SWAYAM

SWAYAM is one of the major digital projects launched by the Indian government as part of its Digital India effort to promote digital education in the country. By delivering free and freely accessible online courses to learners across India, the platform strives to democratize education and bridge the educational gap.



SWAYAM has made great achievements in changing the face of digital education in India, and it has been favorably embraced by both students and instructors. It is consistent with the government's goal of leveraging digital technology to promote inclusive and accessible education

for all residents. Please keep in mind that the program may have grown or extended after my previous update, therefore the most up-to-date information on SWAYAM and other digital education platforms should be obtained from official government sources.

NPTEL

The NPTEL (National Programme on Technology Enhanced Learning) program was launched jointly by the Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc). NPTEL seeks to improve the quality of education in India by offering free online courses and learning tools in a variety of subjects. NPTEL provides high-quality video lectures, course materials, and assignments in the fields of engineering, science, humanities, and management. Professors from IITs and other prestigious Indian institutes design and teach the courses. NPTEL provides students and learners with a platform to acquire knowledge and educational resources for self-study and professional growth.

While NPTEL is not a government scheme, it has received assistance and money from the Government of India's Ministry of Education (previously known as the Ministry of Human Resource Development). With the government's assistance, NPTEL has been able to increase its course offerings and reach a wider audience across the country.

FINDINGS

1. Overall, the Indian Government's National Digital Literacy Mission is an important initiative to promote digital literacy and equip citizens with essential skills. Overall, the Indian Government's National Digital Literacy Mission is a significant initiative to promote digital literacy and provide citizens with the required skills to properly traverse the digital realm.
2. Overall, India's National Digital Infrastructure is a comprehensive framework that includes many components and efforts to boost digital connectivity and promote digital economy growth. It is critical in facilitating digital transformation, promoting digital services, and encouraging inclusive development.
3. Overall, PM E-Vidya is a significant Indian government project to promote digital education and online learning. It strives to close the educational access gap, particularly during difficult times, and to offer students the resources and assistance they need to succeed.
4. The vision & venture of DIKSHA is to provide effective and varying academic surroundings that nurture original thinking and create young, assured people with an experience of obligation in the direction of society.
5. SWAYAM Prabha Channel consists of various coaching techniques along with differentiated preparation, lecture-primarily based preparation, era-primarily based mastering, group learning, man or woman learning, inquiry-based studying, kinaesthetic studying, sport-based gaining knowledge of, and expeditionary studying.
6. In a pathshala, the gadget of education was bendy. There were no constant prices, no published books, no separate school homes, no benches or chairs, no blackboards, no gadgets for separate training, no attendance registers, no annual examinations, and no ordinary timetable.
7. The authorities-run SWAYAM MOOCs with over 10% of the entire charge, have outperformed any eLearning platform by using a large margin. The whole enrolment, such as people who

don't have examinations and credit, is three.1 crore with a ratio of 40:60 break up between lady and male applicants respectively.

8. NPTEL online certification guides are valuable to cozy top jobs. everybody who no longer belongs to the IIT device nonetheless gets a certificate from IITs after pursuing the NPTEL route.

CONCLUSION

To summarise, the government's engagement in digital education development is critical to realizing technology's potential to improve education. Governments can establish an environment that promotes inclusive, accessible, and high-quality digital learning experiences for learners of all ages and backgrounds by providing the necessary infrastructure, legislation, financing, and support.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 35-43

Journal of Management Research
Peer Reviewed Journal

Digital Transformation of Libraries

Dr. Chandrashekhar D. Wani
DES's M. D. Palesha Commerce College, Dhule
Mr. Sagar B. Londhe
Tata Management Training Centre, Pune
Corresponding author Email: cdwani23@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Londhe S. (2023).
Digital Transformation of Libraries
Journal of Management Research
XV(2), 35-43 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 35-43

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Dr. Chandrashekhar D. Wani
DES's M. D. Palesha Commerce College, Dhule
Mr. Sagar B. Londhe
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Email: cdwani23@gmail.com

ABSTRACT

The incorporation of digital tools and technologies into a variety of operational aspects of research. The digital transformation of libraries refers to efforts to increase effectiveness, enhance services, and adapt to a changing environment. The application of data analytics, the acceptance of digital platforms, the digitization of content, the installation of online services, etc. Understanding user preferences and habits is only one example of how libraries are undergoing digital change. This development allows libraries to provide seamless information access, interact with people remotely, and remain relevant in the digital age. ICT has had such an enormous impact that it has altered the old concept of libraries from a repository of books to an intellectual information diffusion hub.

Keywords: ICT, Digital libraries, Research, Databases.

INTRODUCTION

Libraries have long been used as information and resource centres, giving students access to books, periodicals, and other physical resources for academic purposes. However, libraries have undergone a considerable transition since the introduction of digital technology and the Internet. Libraries can now stretch far beyond their physical limits thanks to the digital revolution, making knowledge accessible to users at any time and from any location. Additionally, it has made it possible for libraries to provide a variety of digital resources, such as e-books, online databases, and multimedia materials, giving patrons more convenience and flexibility.

Objectives

1. To study the Digital transformation of libraries.

2. To know the importance of transformation of libraries in the digital era.

3. To understand the impact of digitization on library collections.

DEFINITION OF DIGITAL TRANSFORMATION:

Digital transformation refers to the integration of digital technology and tools into various aspects of an organization's operations in order to enhance efficiency, improve services, and adapt to the changing environment. In the context of libraries, digital transformation entails the adoption of digital platforms, digitization of resources, implementation of online services, and the utilization of data analytics to understand user preferences and behaviours. This transformation enables libraries to provide seamless access to information, engage with users remotely, and stay relevant in the digital age.

IMPORTANCE OF LIBRARIES IN THE DIGITAL AGE

Libraries are essential in the digital age for facilitating information access and promoting literacy. Despite the growing number of Internet resources, libraries remain significant because they provide well-maintained collections and carefully chosen items. Additionally, libraries act as social and intellectual hubs for their surrounding areas. They bridge the digital divide, provide access to technology, and foster digital literacy. Libraries are crucial for assisting people in the digital world in such a fast-proceeding period. Libraries have been greatly impacted by the digital revolution, which has improved information availability and changed how conventional library services are provided. Libraries have been able to digitize their holdings, thanks to the development of digital technology, making millions of books, journals, and other papers available to anyone with an internet connection. Libraries now offer online databases, e-books, and multimedia resources because of embracing technology to improve their services. Libraries have experienced a digital revolution that has improved their usability for users all over the world. In conclusion, the digitization of libraries has fundamentally changed how knowledge is shared and accessed. Libraries can now expand their holdings beyond physical boundaries thanks to digital platforms, giving users access to a wide range of information. Additionally, digitization initiatives and online cataloging systems have made it simpler for users to find and obtain the required resources. However, this change also brings with its difficulties, including maintaining the authenticity of physical collections and assuring digital inclusivity. In general, libraries need to keep evolving and adapting to the new needs of their users in the digital age.

THE IMPACT OF DIGITIZATION ON LIBRARY COLLECTIONS

There is potential for improved accessibility with library collections. Libraries can get beyond physical restrictions and provide users with remote access to items by using digital resources. People who are unable to physically visit the library, such as those who are disabled or live in rural places, will particularly benefit from this. Additionally, by reaching a wider audience and offering useful information to a worldwide user base, digital collections allow libraries to go beyond their immediate area. A more inclusive and democratic approach to the transmission of knowledge may result from this enhanced accessibility.

1. **Access to e-books and digital resources:**
   In academic settings, easier access to e-books and other digital resources has had significant advantages. College students have access to huge digital resource collections not only through the library at their university but also through a variety of internet venues. Students research abilities have been substantially improved as a result, enabling them to use a variety of resources and explore various viewpoints on their subjects. As students can quickly exchange digital versions of texts and participate in online conversations, e-books have also enabled

collaborative learning, furthering their educational experience.

2. **Preservation and conservation of rare materials:**
   Rare material preservation and conservation are essential to the digital revolution of libraries. Libraries can guarantee these assets' long-term accessibility and protection from physical deterioration or harm by digitizing them. Additionally, digital preservation eliminates the requirement for physical storage and lowers the danger of loss by enabling wider transmission and reproduction. While digitization has many advantages, it also presents problems with copyright, outdated technology, and a lack of standards. To effectively preserve and conserve rare materials in the digital age, libraries must address these concerns.

3. **Expansion of online databases:**
   Modern libraries are expanding their online databases to accommodate users' changing requirements in addition to digitizing traditional resources. A broad range of digital resources, such as scholarly papers, e-books, audio-visual content, and archive collections, are available in these databases. This extension makes an array of material available to students and researchers anytime, anywhere, enabling them to do in-depth research and explore a variety of subject areas. As consequently, the digitalization of libraries has fundamentally changed how information is accessed because users are no longer constrained by physical boundaries and can make use of online databases for their academic advantage. Information access and distribution have been greatly impacted by libraries' digital revolution. Since the introduction of technology, libraries have expanded to offer digital materials in addition to physical books. This change has not only expanded the selection of resources available to library patrons, but it has also made information more accessible from a distance. Additionally, libraries may now provide interactive learning possibilities thanks to digital platforms, improving the educational potential for both students and scholars. Overall, the digital transition has completely transformed libraries' operations, making them important in the current era.

THE ROLE OF TECHNOLOGY IN ENHANCING LIBRARY SERVICES

By providing users with more access to resources and information, technology is a key factor in improving library services. Users can now search and obtain information from anywhere at any time because of the growth of online databases and digital libraries. Technology also makes it possible for libraries to provide a greater range of services, including online reference aid, electronic document delivery, and interactive learning environments. These developments not only boost productivity and convenience but also provide a more welcoming and accessible environment for individuals from all backgrounds and abilities.

1. **Automated systems for book borrowing and returns:**
   Automated book borrowing and return systems in libraries do present certain difficulties and cause some worry. The potential loss of direct communication between library users and employees is one of the key worries. Customers who are unfamiliar with the technology may also face a learning curve, which could cause irritation and reduced usage. Furthermore, some libraries, particularly smaller ones with tighter budgets, may find the cost of establishing and maintaining these systems to be exorbitant.

2. **Implementation of digital cataloguing and search functions:**
   The advent of digital cataloguing and search capabilities has completely changed how libraries operate, providing users with more accessibility and efficiency. Libraries may now effectively

organize their vast holdings into digital catalogues that users can access, thanks to cutting-edge technologies and processes. Users can also locate certain materials quickly using powerful search features, saving them a lot of time. In addition to enhancing user experience, this digital transformation has enabled libraries to fully utilize the potential of their holdings in the digital age.

3. **Virtual reference services through chatbots and online forums:**
   Continue to be an essential component of libraries' digital transformation, Users can quickly and easily receive information and assistance through these services. Artificial intelligence-powered chatbots can hold engaging conversations and give precise responses to user questions. Users can share expertise, participate in conversations, and look for advice on online forums. Libraries are strengthening user involvement in the digital space and expanding their accessibility in response to the rising popularity of these virtual reference services. The digital transformation of libraries has fundamentally changed how people connect with these organizations while also granting access to large informational and resource collections. Libraries have embraced technology and provided a variety of online services, such as virtual reference help and digital archives, in order to meet the changing demands of their users. Furthermore, advances in technology have made it possible for libraries to reach people who might not have otherwise had access to traditional library services by expanding their reach beyond the boundaries of geography.

DIGITAL LITERACY AND INFORMATION SKILLS

It is crucial for people to understand the huge amount of information readily available in the modern digital age. By offering users direction and resources, librarians play an important part in developing these abilities. They provide seminars and training sessions on subjects like assessing online sources, using the internet effectively, and identifying incorrect information. By promoting digital literacy, libraries enable people to develop their critical thinking skills, enabling them to make wise decisions and effectively contribute to society.

1. **Providing training and resources for digital literacy**:
   The provision of comprehensive instruction and materials for digital literacy is required due to the digital transformation of libraries. Users need to be prepared with the required skills and information in order to successfully navigate the digital world. By providing workshops, online courses, and access to digital tools, libraries play a significant role in facilitating development. Libraries help to the digital divide and make sure everyone in society has an equal opportunity to participate in the digital world by encouraging people to become digitally literate.

2. **Teaching information literacy skills for evaluating online sources:**
   Teaching information literacy has become a crucial part of higher education in order to give students the tools they need to critically analyze internet sources. Teachers can equip students to choose the sources they utilize in their academic work by adding courses that focus on evaluating the reliability, bias, and veracity of internet information. The ability to use these abilities in daily life as digital citizens and confidently traverse the complicated world of online information is another benefit of teaching information literacy to youths.

3. **Promoting lifelong learning through online courses and webinars:**
   The digital transformation of libraries must include the promotion of lifelong learning through online courses and webinars. People can easily and conveniently advance their knowledge and

abilities thanks to these platforms. Students can explore a variety of academic areas through online courses, which cover everything from computer programming to creative writing. Webinars offer a collaborative learning environment that encourages participant interaction. Libraries may successfully meet the varied learning requirements and interests of their users by embracing various digital resources, thereby promoting lifelong learning. The improved accessibility of resources is a key component of libraries' digital transformation. As a result of the development of digital technologies, libraries may now offer remote access to their holdings, enabling patrons to browse, search for, and borrow materials whenever and wherever they choose. This eliminates the requirement for actual library visits and makes information accessible to people who live far away from libraries. Additionally, initiatives to digitize things have made it feasible to preserve and distribute delicate and rare items, preserving their durability and expanding their audience to a worldwide one.

CHALLENGES IN THE DIGITAL TRANSFORMATION OF LIBRARIES

The digital transformation of libraries has been met with an assortment of difficulties and issues. Ensuring digital equity is a top priority because not everyone may have equal access to digital resources. In addition, there is growing concern over the long-term accessibility and preservation of digital resources. Technology is always evolving, therefore there is a chance of depreciation and the loss of important data. Concerns about copyright issues and the protection of intellectual property in the digital sphere are also present. For the digital revolution to be successful and inclusive, libraries must address these issues.

1. **Privacy and security of user data:**
   The security and privacy of user data have grown to be major problems for libraries in the digital age. Libraries must make sure that user data is secure from cyber risks and unlawful access as they migrate to digital platforms. This involves putting in place strong security measures, such as firewalls, and encryption, and upholding stringent privacy regulations. Additionally, libraries must get explicit consent from users before collecting any data and educate consumers about their data protection policies. Libraries may encourage trust and confidence among their users in the digital age by putting privacy and security first.

2. **The digital divide and unequal access to technology:**
   The digital divide, which creates unequal access to technology and exacerbates already-existing inequalities, continues to be a serious problem in society. Libraries, which are attempting to change with the times, are a prime example of this gap. Although some libraries have effectively incorporated technology into their services, giving patrons online access to tools and information, others find it difficult to stay up due to a lack of funds and resources. As a result, those from communities of disadvantage have it harder to take advantage of the opportunities provided by digital technologies. To bridge the digital divide and ensure equitable access to technology in libraries and elsewhere, concerted efforts are essential.

3. **Copyright issues and digital rights management:**
   Problems with copyright and digital rights management provide substantial hurdles for libraries in the digital age. Libraries now have the responsibility of making sure they uphold copyright rules while offering access to resources that are protected due to the broad availability of digital information. Libraries must purchase and maintain rights for a variety of digital materials, which affects the management of digital rights. Due to these issues, libraries' efforts to go digital need to establish efficient policies and mechanisms to manage copyright and digital

rights. Libraries are faced with the difficulty of adapting to and succeeding in the digital era while navigating a fast-changing digital landscape. As a result of the digital transition, libraries are now able to serve people in new ways that go beyond the confines of their physical locations. Libraries may improve information access, collaboration, and individualized learning experiences by using digital platforms and making investments in digital literacy programs. This will increase their relevance in the digital age.

INNOVATIVE INITIATIVES IN DIGITALLY TRANSFORMATION OF LIBRARIES

The acceptance of new initiatives is a notable trend seen in libraries that have undergone digital transformation. With these measures, the user experience will be improved and customers will receive new services. Makerspaces, which are collaborative workspaces outfitted with cutting-edge technological instruments like 3D printers and laser cutters, have been adopted, for instance, by various libraries. Users can engage in practical learning activities and creative exploration in these spaces. Additionally, virtual reality (VR) experiences are becoming more prevalent in libraries, allowing patrons to immerse themselves in digital content and access it in a more engaging way. These programs increase patronage while simultaneously advancing libraries' overall digital transformation.

1. **Makerspaces and creative technology labs**:
   Makerspaces and creative technology research facilities are becoming an essential part of libraries' digital transformation. Students and researchers have access to the tools and resources needed for creative inquiry and creation in these cutting-edge settings. Libraries make sure that users can experiment with cutting-edge technologies and obtain first-hand experience by providing access to modern tools like 3D printers, laser cutters, and virtual reality equipment. Additionally, maker spaces and creative technology laboratories encourage teamwork and interdisciplinary learning, enticing people from many backgrounds to come together and produce new knowledge.

2. **Collaboration with other institutions and organizations:**
   Regarding libraries successfully undergoing their digital transformation, cooperation with other institutions and organizations is essential. By collaborating with colleges, research institutions, and other libraries, the library's digital collection can be made more comprehensive and in-depth by sharing important resources and experiences. Collaborations can also result in the creation of cutting-edge products and services that benefit the library and its users. The collaboration will enable libraries to change into digital institutions and maintain their leadership in the provision of information access in the digital era more quickly.

3. **Embracing emerging technologies such as artificial intelligence and virtual reality**:
   It completely altered how libraries are run. Intelligent cataloging systems made possible by artificial intelligence can offer users precise and effective searches. Additionally, virtual reality can provide students the chance to explore historical sites or take part in virtual workshops while providing them with immersive and interactive learning experiences. Libraries may modernize and enhance their function as community hubs for education and information by embracing these technologies. Libraries are increasingly adopting digital transformation to fulfill the changing demands of their users in the digital era, in addition to offering traditional library services. E-books, online databases, and digital archives are only a few examples of digital resources that will be incorporated into this change. These digital initiatives seek to increase information accessibility, strengthen research capacities, and promote cooperation among li-

brary patrons. Digital transformation is essential to ensure that libraries remain relevant and effective in serving their communities as they continue to adjust to the rapidly changing information and technological landscape.

CONCLUSION

In conclusion, libraries' conversion to digital technology has become a crucial development in the sphere of information distribution. The conventional limitations of library services have been overcome by this change, allowing institutions to reach wider audiences and provide cutting-edge materials. However, issues with preservation, equity, and accessibility still exist. In order to meet the changing requirements of a digital society and ensure the preservation of cultural and historical artifacts, it is crucial that libraries constantly adapt and change.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 44-53

Journal of Management Research
Peer Reviewed Journal

Interdisciplinary Collaboration in the Age of Academic Social Networks

Mr. Ganesh Wani
Librarian
Ashoka International Centre for Educational Studies and Research, Nashik
Corresponding author Email: ganeshwani007@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Wani G. (2023).
Interdisciplinary Collaboration in the Age of Academic Social Networks
Journal of Management Research
XV(2), 44-53 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 44-53

Journal of Management Research
Peer Reviewed Journal

Interdisciplinary Collaboration in the Age of Academic Social Networks

Mr. Ganesh Wani
Librarian
Ashoka International Centre for Educational Studies and Research, Nashik
Email: ganeshwani007@gmail.com

ABSTRACT

In recent years, the emergence of academic social networks has revolutionized the way scholars and researchers collaborate and share knowledge. These platforms provide a virtual space for academics to connect with colleagues from around the world, creating a global network of experts in various fields. One such platform, but with a twist, is the Academic Social Network, which focuses on fostering interdisciplinary collaborations. By encouraging scholars and researchers from different disciplines to come together, this network creates opportunities for innovative thinking and problem-solving. Furthermore, the platform allows users to share their research outputs, such as manuscripts and data sets, increasing the visibility and impact of their work. With the academic community becoming increasingly interconnected, academic social networks provide an essential tool for knowledge dissemination and collaborative research.

Keywords: Social Network, Research, Academic

INTRODUCTION

An academic social network is a platform that provides a virtual space for scholars, researchers, and students to connect, collaborate, and share knowledge. In today's fast-paced digital era, this innovative tool has become increasingly popular and essential in the academic community. It enables users to create profiles, build professional networks, and participate in scholarly discussions. These networks are not limited to any particular field or subject, as they encompass various disciplines ranging from natural sciences to humanities. Moreover, an academic social network offers opportunities for potential collaboration, knowledge exchange, and interdisciplinary research. With its vast user base and diverse resources, an academic social network has revolutionized the way scholars interact, discover new ideas, and advance their academic pursuits.

Objectives:

1. To study the Academic social network is helping to researchers.

2. To know the Benefits of academic social network.

3. To understand the challenges of social networking in academics.

DEFINITION AND SIGNIFICANCE OF ACADEMIC SOCIAL NETWORK

An academic social network can be defined as an online platform that facilitates scholarly communication, collaboration, and networking among researchers and academics. It's significance lies in its ability to connect scholars from different disciplines and geographical locations to share knowledge, resources, and ideas. These networks provide a virtual space for academics to interact, engage in discussions, and seek feedback on their work from peers within their field of study. Through these platforms, researchers can build professional relationships, form collaborations, and discover potential opportunities for joint research projects or publications. Moreover, academic social networks offer various features such as article repositories, citation tracking, and data sharing, making them valuable tools for staying up-to- date with the latest research advancements and enhancing academic output.

In addition to facilitating communication and collaboration among students and professors, academic social networks serve as a valuable platform for research dissemination. Scholars can share their work with a larger audience and receive feedback, opening up opportunities for further development and improvement. For instance, researchers can upload their published articles, conference papers, or preprints to their profiles, making them easily accessible to their peers. This ability to showcase and promote their work significantly enhances researchers' visibility and credibility within their respective fields. Furthermore, academic social networks often provide metrics that allow researchers to track the impact of their publications, such as citation rates and altmetrics. This data can serve as a valuable tool for assessing the reach and influence of one's research, aiding in grant applications, promotions, and tenure evaluations. Therefore, academic social networks play a crucial role in advancing scholarly communication and fostering academic visibility and recognition.

BENEFITS OF ACADEMIC SOCIAL NETWORKS:

In addition to facilitating collaborative research, academic social networks offer several other benefits. Firstly, these platforms provide a unique opportunity for scholars to promote their work and increase its visibility. By sharing research papers, conference presentations, or project updates, researchers can reach a broader audience and receive valuable feedback. Furthermore, academic social networks enable scholars to cultivate professional relationships and connect with experts in their field. These platforms serve as a hub for academic discussions and allow individuals to engage in meaningful conversations with their peers. Additionally, academic social networks often provide personalized recommendation systems that suggest relevant articles, conferences, or researchers based on an individual's interests and network connections. This feature helps scholars stay updated with the latest research trends and enhances their ability to discover new collaborations.

1. Enhanced collaboration and knowledge sharing

Enhanced collaboration and knowledge sharing are crucial aspects of an academic social network. Through the platform, students, researchers, and professors can connect and collaborate on various projects and research papers. The network enables individuals to share their expertise and insights, allowing for a more holistic approach to problem-solving. By utilizing the network's features such as discussion boards, messaging systems, and file sharing capabilities, users can engage in active discussions, exchange ideas, and provide feedback on each other's work. This promotes a sense of community and encourages continuous learning and improvement. Additionally, knowledge sharing becomes more efficient as users can access a vast repository of articles,

papers, and resources uploaded by others, thus enhancing their understanding and broadening their perspectives.

A. Ability to connect with scholars and researchers worldwide

In addition to, providing a platform for sharing research, academic content, and academic social networks offer scholars and researchers the ability to connect with their counterparts from around the globe. By connecting with scholars worldwide, researchers can gain valuable insights, exchange ideas, and collaborate on projects. Moreover, these networks provide a space for scholars to establish professional relationships, creating opportunities for mentorship and collaboration on future research endeavors. Furthermore, the ability to connect with scholars globally enables researchers to stay updated on the latest developments and innovations in their field, fostering a culture of constant learning and advancement. This global network of scholars not only enhances the quality of research but also promotes a sense of community and collaboration among like-minded individuals dedicated to the pursuit of knowledge.

B. Access to a diverse range of academic resources

Access to a diverse range of academic resources is another key advantage of academic social networks. These platforms provide users with access to a vast array of scholarly articles, research papers, and academic journals that might otherwise be difficult to obtain. Users can search for specific topics or keywords and instantly access relevant resources in their field of study. This allows students and researchers to stay up to date with the latest developments, theories, and findings in their respective disciplines. Additionally, academic social networks often provide recommendations based on users' interests and previous interactions, making it easier to discover new and relevant resources. Ultimately, this level of access to academic resources enhances the learning experience and facilitates the acquisition of knowledge in a more comprehensive and efficient manner.

2. Platforms for professional networking

Platforms for professional networking, such as LinkedIn, have become crucial tools in the modern job market. LinkedIn, in particular, has evolved from a simple online resume platform to a comprehensive professional networking site offering a plethora of resources and opportunities. It provides a platform for individuals to showcase their skills and experiences, connect with others in their field, and even find job opportunities. With it's emphasis on professional connections, LinkedIn also serves as a valuable tool for employers and recruiters to identify potential candidates. Furthermore, the platform offers various groups and communities dedicated to specific industries or interests, allowing users to engage in discussions, share knowledge, and expand their professional network. Such platforms have greatly facilitated the process of professional networking and have become an integral part of navigating the ever-changing job market.

A. Opportunities to connect with peers and mentors in one's field

One of the key advantages of an academic social network is the opportunities it provides for students and professionals to connect with their peers and mentors in their respective fields. These connections can be invaluable for several reasons. Firstly, it allows individuals to expand their network and establish meaningful relationships with others who share similar interests and goals. Through these connections, individuals can gain insights, exchange ideas, and collaborate on projects, fostering a sense of community within their field. Additionally, mentors play a crucial role in guiding and inspiring individuals towards their academic and professional aspirations. By connecting with mentors on an academic social network, individuals can benefit from their expertise, wisdom, and guidance. Thereby enhancing their personal and professional growth.

Overall, the opportunities to connect with peers and mentors through an academic social network add immense value to individuals' educational and career journeys.

B. Increased visibility and recognition within the academic community

Increased visibility and recognition within the academic community is another benefit that academic social networks provide. By joining these platforms, researchers and scholars can showcase their work to a wider audience, including other professionals within their field. This increased visibility can lead to collaboration opportunities and the exchange of ideas and feedback, ultimately enhancing the quality of the research being conducted. Additionally, academic social networks often allow users to create profiles that highlight their credentials and publications, contributing to their professional reputation and recognition within their respective fields. As a result, researchers can establish themselves as experts in their areas of study and gain visibility among peers, which can also lead to invitations for speaking engagements, conference presentations, and other scholarly activities.

In conclusion, the emergence of academic social networks has revolutionized the way scholars and researchers communicate, collaborate, and disseminate their work. These platforms promote cross-disciplinary interactions, allowing individuals from different fields to connect, share ideas, and collaborate on innovative projects. Additionally, academic social networks provide a space for researchers to showcase their work, increasing the visibility and impact of their findings. Moreover, these networks facilitate the access to a vast amount of scholarly resources, enabling scholars to stay up-to-date with the latest research developments. However, it is important to acknowledge the challenges associated with academic social networks, such as information overload and the risk of predatory practices. Despite these challenges, academic social networks have undoubtedly transformed the landscape of scholarly communication, fostering a more efficient and collaborative research community.

3. Challenges and criticisms of Academic Social Networks

Despite their numerous benefits, academic social networks also face several challenges and criticisms. One major challenge is the issue of data privacy and security. As academic social networks continue to grow in popularity, the amount of personal and sensitive information being shared on these platforms increases. This raises concerns about data breaches and unauthorized access to user information. Moreover, critics argue that academic social networks may contribute to the isolation of research communities. As scholars increasingly rely on these platforms for collaboration and networking, there is a risk of narrowing their perspectives and inadvertently excluding those who are not part of the network. Additionally, academic social networks have been criticized for promoting self-promotion and vanity publishing instead of fostering rigorous peer-review and quality control in scholarly publishing. These challenges and criticisms highlight the need for careful consideration and ongoing discussion about the future of academic social networks in the scholarly landscape.

A. Privacy and data security concerns

Privacy and data security concerns are significant. When it comes to academic social networks. These platforms primarily function as online communities where researchers and scholars collaborate, it is crucial to ensure that personal information and data are protected. One major concern is the potential for data breaches, where sensitive information could be accessed and exploited by unauthorized individuals. Additionally, the use of data by third-party vendors for targeted advertising or other purposes can raise ethical questions regarding privacy. Given the increasing reliance on technology and the interconnectedness of academic networks, it becomes

imperative for these platforms to prioritize user privacy and data security to foster a trustworthy and secure environment for collaboration and knowledge-sharing.

B. Risks associated with sharing personal and research-related information

One major concern with academic social networks is the risks associated with sharing personal and research-related information. Although these platforms offer a convenient way to network and collaborate with scholars from around the world, they also expose individuals to potential privacy breaches and data misuse. Research-related information such as research findings, experimental data, and unpublished papers can be vulnerable to theft or unauthorized access. Moreover, personal information shared on academic social networks, including contact details and educational history, can be exploited by malicious actors for purposes such as identity theft or targeted advertising. The responsibility lies with both the platforms and users to ensure the security and confidentiality of shared information on these networks to mitigate such risks.

C. Ethical implications of data usage by network providers

The ethical implications of data usage by network providers cannot be overstated. With the increasing amount of personal information being shared and stored on the internet, network providers have access to a vast array of data. This data can be used for various purposes, including targeted advertising, selling to third parties, and even influencing political or social opinions. However, the ethical question arises of whether it is morally acceptable for network providers to exploit this data for their own gain without the explicit consent of the individuals involved. This raises concerns about privacy, consent, and the potential for abuse of power. As such, it is crucial for network providers to establish transparent and ethical practices when it comes to data usage to ensure the protection of individuals' rights and maintain trust in the digital realm.

D. Over-reliance on metrics for academic evaluation

Can have detrimental effects on the overall quality of education. While metrics are useful tools for measuring certain aspects of academic performance, solely relying on them does not take into account the complexity and multifaceted nature of learning. By fixating on quantitative measures such as grades or standardized test scores, education becomes reduced to a simplistic numerical value, disregarding the development of critical thinking, creativity, and problem- solving skills. Furthermore, an excessive emphasis on metrics can lead to a culture of competition and stress among students, where the pursuit of high scores overshadows genuine intellectual curiosity and interest in learning. Therefore, it is important for educators to balance the use of metrics with qualitative assessment methods that assess the holistic development of students.

E. Potential for bias in measuring impact and productivity

Furthermore, one potential concern in utilizing academic social networks to measure impact and productivity is the presence of bias. While these platforms offer a comprehensive and standardized metric system, there is still room for subjective judgment. Researchers who are more active and engaged on these networks may be more likely to receive recognition and endorsements, leading to a potential bias in the measurement of their impact. Additionally, the algorithms used to calculate impact scores may also be subject to biases, favoring certain types of research or disciplines over others. Therefore, it is crucial to acknowledge these potential biases and take them into account when interpreting the impact and productivity metrics provided by academic social networks.

F. Impact on research integrity and quality

Furthermore, the proliferation of academic social networks have raised concerns regarding research integrity and quality. On these platforms, individuals can easily upload and share their work, making it susceptible to plagiarism and fraudulent practices. Without proper monitoring and regulation, the accuracy and reliability of research content on academic social networks may be compromised, ultimately affecting the integrity of the entire academic community. Moreover, the sheer volume of content available on these networks can make it difficult for researchers to discern high-quality research from low-quality or irrelevant work. This can lead to a dilution of resources and a potential decline in the overall quality of research and scholarship in various disciplines. Therefore, it is crucial to establish stringent guidelines and robust mechanisms for verifying the authenticity and validity of research shared on academic social networks.

In conclusion, academic social networking platforms have revolutionized the way researchers and scholars connect and collaborate. These platforms provide a plethora of benefits, such as easy access to a vast pool of knowledge, opportunities for interdisciplinary collaboration, and the ability to engage with experts from around the world. Additionally, academic social networks foster a sense of community and support amongst scholars, enabling them to share their work and receive feedback. Moreover, these platforms offer valuable tools for data visualization, research dissemination, and citation management, streamlining the research process. Despite these advantages, it is essential for users to exercise caution and ensure the privacy and security of their data when using these networks. Overall, academic social networks plays a crucial role in enhancing scholarly communication and facilitating intellectual growth.

4. Future Directions and Implications

In terms of future directions, the academic social network presents several exciting possibilities. First, as researchers become more active on the platform, it is likely that the volume and diversity of scholarly content will increase, potentially leading to new collaborations and research breakthroughs. Additionally, by integrating artificial intelligence and machine learning and algorithms, the network could offer personalized recommendations for relevant articles, conferences, and funding opportunities, enhancing researchers' productivity and efficiency. Furthermore, the platform could serve as a valuable tool for encouraging interdisciplinary collaboration, as it allows scholars from different disciplines to connect and share ideas. Lastly, the academic social network could facilitate the dissemination of research findings to a wider audience, promoting knowledge exchange and contributing to societal progress.

A. Role of academic social networks in shaping the future of research

In conclusion, academic social networks have a crucial role to play in shaping the future of research. By providing a platform for scholars to connect and collaborate, these networks facilitate the exchange of ideas, knowledge, and resources. The ability to easily share research findings and data with a wider audience not only accelerates the dissemination of information but also fosters innovation and advancements in various fields of study. Furthermore, the accessibility and convenience offered by academic social networks have the potential to democratize research by breaking down geographical barriers and providing equal opportunities for participation. As these networks continue to evolve and expand, they will undoubtedly revolutionize the research landscape, transforming the way knowledge is created, shared, and utilized.

B. Opportunities for interdisciplinary collaboration

Furthermore, academic social networks provide numerous opportunities for interdisciplinary collaboration. In traditional academic settings, scholars from different disciplines often face

significant barriers when attempting to collaborate. However, academic social networks remove these obstacles by creating a platform where individuals can easily connect and engage with professionals from diverse fields. These networks foster a sense of community and collaboration that is not limited by geographical boundaries, allowing researchers to exchange ideas, share resources, and work together on projects that span multiple disciplines. As a result, interdisciplinary collaboration becomes more accessible and commonplace, leading to a rich and multidimensional academic environment. Where new insights and perspectives can flourish. This enhanced collaboration has the potential to drive innovation, advance knowledge, and address complex societal challenges through the integration of various fields of study.

C. Potential impact on traditional publishing and peer-review systems

The emergence of academic social networks has the potential to greatly impact traditional publishing and peer-review systems. These networks provide researchers with a platform to easily share and disseminate their work, allowing for increased visibility and accessibility, breaking down the barriers of traditional publishing. By connecting scholars from around the world, these networks encourage collaboration and knowledge sharing, enhancing the research process. However, this shift in publishing practice raises important questions about the traditional peer-review system. With the rapid sharing of research, the quality and reliability of information may come into question. It is crucial for academic social networks to address these concerns by implementing robust peer-review processes and verifiable metrics to ensure the accuracy and legitimacy of the information shared on their platforms.

D. Ethical considerations and guidelines for using academic social networks

Should be at the forefront of researchers' minds. As these platforms facilitate collaboration and information exchange, it is crucial to adhere to ethical principles to avoid potential risks. Firstly, researchers must obtain informed consent from participants before sharing any personal or confidential information. Safeguarding privacy and ensuring data security should also be a priority, requiring researchers to use robust encryption methods and secure networks. Additionally, scholars should refrain from engaging in unethical behavior such as plagiarism or misinformation, which can harm their academic integrity and reputation. Adhering to ethical guidelines will contribute to maintaining trust and credibility within academic social networks, fostering a more conducive environment for scholarly discourse and knowledge dissemination.

E. Ensuring responsible data sharing and usage

Ensuring responsible data sharing and usage is a crucial aspect of academic social networks. With the increasing amount of information being shared and utilized on these platforms, it is imperative to establish strict guidelines to protect the privacy and integrity of the data. A comprehensive data sharing policy should be implemented, outlining the types of data that can be shared and the purposes for which it can be used. Additionally, measures should be in place to obtain informed consent from users before their data is shared or used for research purposes. Regular audits and reviews of data usage practices should also be conducted to ensure compliance with ethical standards. By prioritizing responsible data sharing and usage, academic social networks can foster a trustworthy and secure environment for collaboration and knowledge exchange.

F. Promoting fair evaluation and assessment

Promoting fair evaluation and assessment is crucial in an academic social network. In order for students and researchers to receive proper recognition for their work, the platform should ensure that the evaluation and assessment processes are transparent and unbiased. This can be achieved through the implementation of clear and standardized evaluation criteria, as well as the involvement

of multiple assessors for each submission. Additionally, to ensure fairness, it may be beneficial to adopt a double-blind peer review system, where the identities of both the authors and reviewers are concealed. By promoting fair evaluation and assessment, an academic social network can foster an environment of integrity and excellence, encouraging meaningful collaborations and knowledge sharing among its users.

As the field of academia continues to expand, the need for an efficient academic social network becomes increasingly important. An academic social network serves as a centralized hub for scholars, researchers, and students to connect, collaborate, and share their work. This platform allows for effective networking and communication beyond geographical boundaries, fostering global collaborations and enhancing the dissemination of knowledge. Moreover, an academic social network offers a space for intellectual discussions and forums, enabling users to engage in meaningful exchanges and receive valuable feedback. By leveraging the power of technology, an academic social network can bridge the gap between academia and industry, promoting interdisciplinary research and creating opportunities for innovation. Ultimately, the implementation of an academic social network creates a digital eco-system that empowers the academic community and advances scholarly pursuits.

CONCLUSION

In conclusion, academic social networks have emerged as powerful tools in the digital era, enabling researchers, students, and professionals to connect, collaborate, and share knowledge in ways unimaginable just a few decades ago. These platforms have revolutionized the way scholarly information is disseminated, accelerating the pace of scientific discovery and promoting interdisciplinary collaborations. Through the creation of online profiles, researchers can showcase their work, obtain feedback, and establish collaborations with peers from around the world. Furthermore, the ability to follow specific fields, institutions, or experts ensures that users are constantly updated with the latest research and trends. While there are concerns surrounding issues such as privacy and information credibility, the benefits of using academic social networks far outweigh the risks, making them indispensable tools for the modern knowledge seeker.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 54-63

Journal of Management Research
Peer Reviewed Journal

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[1]Kajalben Prabhudasbhai Vachhani
Research Scholar, Department of Library and Information Science,
Shri Govind Guru University – Godhara.
[2]Dr. Dipti N. Soni
Librarian, Shri S. R. Bhabhor Arts College, Singvad
Corresponding author Email: vachhani28kajal@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Vachhani K., Soni D., (2023).
Awareness of ICT Skills of LIS Professionals Working in the Engineering College Libraries Affiliated With GTU in Gujarat: A Survey
Journal of Management Research
XV(2), 54-63 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 54-63

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[1]Kajalben Prabhudasbhai Vachhani
Research Scholar, Department of Library and Information Science,
Shri Govind Guru University – Godhara.
Email: Vachhani28kajal@gmail.com
[2]Dr. Dipti N. Soni
Librarian, Shri S R Bhabhor Arts College, Singvad
Email: dptsoni1@gmail.com

ABSTRACT

The aim of the study was to evaluate academic librarians' ICT (information and communication technologies) skills, knowledge, and performance in degree engineering institutes that are connected with GTU (Gujarat Technological University). The research is based on a survey of librarians working for GTU-affiliated engineering colleges. The investigation has revealed that the technical institute library system's library professionals have quite high levels of expertise in a range of ICT-related duties for libraries. They are quite skilled in the methodical dissemination of data to the participants using ICT-based information data storage and retrieval systems.

Keywords: Information and Communication Technologies, LIS professionals, Computers, library science, and technical education institute, ICT Skills.

INTRODUCTION

The role of libraries and library workers has been evolving as science and information technology advances rapidly. Prior to this time, opportunities for academic librarians were only available within the walls of specific libraries. However, the term "digital library" has since extended around the world. Along the same idea, in addition to their academic work, library professionals nowadays must perform a variety of jobs and tasks that call for a variety of talents. Practicing library programs and ICT applications requires library professional abilities. Information and communication technologies (ICT) have altered library communities. The library's printed materials have given way to digital and online sources. Which, Information workers have faced challenges.

Objectives

- To identify and analyze the respondents' patterns for using information and communication tools throughout professional processes;
- To comprehend how librarians, feel about degree engineering colleges linked with GTU using ICT expertise;

- To examine respondents' opinions regarding the suitability of various Current Technology Media;
- To determine how well-informed library staff members in degree engineering colleges affiliated with GTU are regarding the use of ICT abilities.

REVIEW OF LITERATURE

S. Thanuskodi (2019), research reveals that the majority of participants with degrees in LIS—PhD, MPhil, and UG—felt that a lack of accessible information was the main obstacle to acquiring information literacy. The majority of respondents who were pursuing their UGC NET/SET and PG in LIS degrees believed that the main obstacle to obtaining information literacy was an absence of technical abilities.

According to G. Stephen (2019), ICT usage in libraries has aided experts, information professionals, and librarians in providing better search results that are more particular in terms of data extraction, requirements, and the use of necessary information that has been generated or retrieved. It is clear that 54.67% of men and 45.33% of women who responded used ICT-based resources and services 1-2 times per week, while 57.43% of men and 42.57% of women used them regularly.

A.K. Rao, M. Rao, & S.K. Bhat (2018). They draw the conclusion from their study's results that the responsibilities of semi-professionals in delivering ICT-enabled services to consumers were most influenced by Easy Lib, the library automation software, and Electronic Public Access Catalogue (EPAC) customers (84.2%). ICT has significantly altered the duties and responsibilities of the quasi, according to more than thirty percent (31.5%) of them.

In his research paper from Seena & Sudhier Pillaiw, (2014) discusses the information and communication technology expertise of librarians. The study's primary objective was to investigate the breadth of skills possessed by Technical Institute, Engineering College, and Polytechnic Library Professionals in the Madurai District of Tamil Nadu. Keyword Index Engineering Colleges, Technical Institutes, Polytechnic Colleges, Librarians, Madurai District.

Shastry, N. G. M., & Gadagin, B. R. (2017). investigated the ICT competency of library professionals in Karnataka to ascertain their capacities for application development, system analysis, and design. The study was carried out using data from a questionnaire given to Karnataka library professionals. The investigation revealed that the level of skill among Karnataka's library workers in various ICT-related tasks is generally average. More libraries are utilizing Koha open-source software, and many experts claim that the largest obstacle to libraries utilizing ICT is a lack of expertise in ICT applications. All of the specialists were in favor of ICT use in libraries.

M. Iqbal and A. Khan (2017). According to their study, 99% of the volunteers were technology proficient and had a solid understanding of digitization and automation in libraries. It's heartening to see that experts are familiar with browser tools like email, OPAC/Web OPAC, chat, search engines for electronic materials, and so on.

Many of the participants, according to Ojedokun A. Ayoku & Victoria Nwamaka Okafor (2015), are familiar with email and word processing operations but are not aware of directories or search engines outside Google and Yahoo. Many of them lack knowledge of topic portals, specialized databases, some open-access library databases, data management, web design skills, and web design programs. The study advises management support for continued career development and IT skill training for librarians in order to enhance them.

METHODOLOGY

The survey method is used where the investigators' accessibility was taken into consideration when choosing the participants. The sampling population is made up of all the respondents who are related to the engineering institutions affiliated with GTU that offer Library Professional Degrees. The engineering college libraries' 100 individual librarians received the surveys. However, the sample size was decreased to 83 due to non-response. For this investigation, both primary and secondary data were employed. Feedback from the study's respondents served as the main source of data. Books, journals, periodicals, newspapers, and various websites are examples of secondary sources. The gathered information has been tallied and sorted. To conduct research with straightforward statistics.

SCOPE AND LIMITATIONS

- The survey solely includes degree engineering colleges connected to GTU.
- The study exclusively addresses ICT skills for library professionals (including librarians, assistant librarians, library assistants, library technical assistants etc.).

Interpretation and Analysis

The study is fact-based; 100 questionnaires were distributed to degree engineering college libraries linked with GTU, and 83 of them were returned. There were 58 male respondents and 25 female respondents who provided responses. The majority of responders fell into the 36-45 age range.

Table: 1 Respondents' categorization by gender

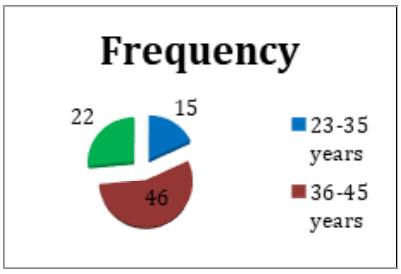
Gender	Frequency	Percentage (%)
Men	58	69.88
Women	25	30.12
Total	83	100

Table 1 shows that 69.88 percent of the respondents in this survey are men, with the remaining 30.12 respondents being women.

Table 2: Categorization of respondents by age

Age	Frequency	Percentage
23-35 years	15	18.07
36-45 years	46	55.42
46-55 years	22	26.51
Total	83	100.00

Figure 1: Categorization of respondents by age



The age distribution of the respondents is depicted in Table 2 and picture 1, 55.42% of the respondents in this study were in the 36- to 45-year-old age group. 26.81% of respondents are in the 46–55 age range. Furthermore, 18.07% of respondents are in the 23–35 age group.

Table 3: Professional qualification of respondents

Sr. No.	Qualification	No. of Respondents	Percentage (%)
1	BLISc	7	8.43
2	MLISc	35	42.17
3	M.Phil	18	21.69
4	Ph.D	14	16.87
5	NET/SET	9	10.84
	Total	83	100.00

Table 3 makes clear that the LIS specialists in higher learning have a relatively high degree of professional training. The basic requirement for employment as a library professional in an engineering institution is a degree in library and information science (BLISc). As it can be seen from the above table, 8.43% of respondents hold a BISc degree, followed by 42.17% of LIS professionals with an MLISc degree, 21.69% of professionals with an M.Phil, 16.87% with a PhD, and 10.84% with NET/SET qualifications.

Table 4: Information Technology Use for Data Storage and Retrieval

Sl. No.	Variable	Rarely	Some Time	Frequently
1	Computer and its facilities	4 (4.82%)	14(16.87%)	65 (78.31%)
2	Telecommunication and its facilities	11(13.25%)	25 (30.12%)	47(56.63%)
3	Photocopying	23(27.71%)	17(20.48%)	43(51.81%)
4	CD-ROM/Hard Discs	4(4.82%)	27(32.53%)	52(62.65%)
5	Internet /Intranet, etc.	2(2.41%)	6(7.23%)	75(90.36%)
6	Multimedia	22(26.51%)	42(50.60%)	19(22.89%)
7	Digital Libraries / Virtual Libraries	12(14.46%)	50(60.24%)	21(25.30%)
8	Video Conferencing/Video text/teletext	59(71.08%)	16(19.28%)	8(9.64%)

Figure 2: Information Technology Use for Data Storage and Retrieval

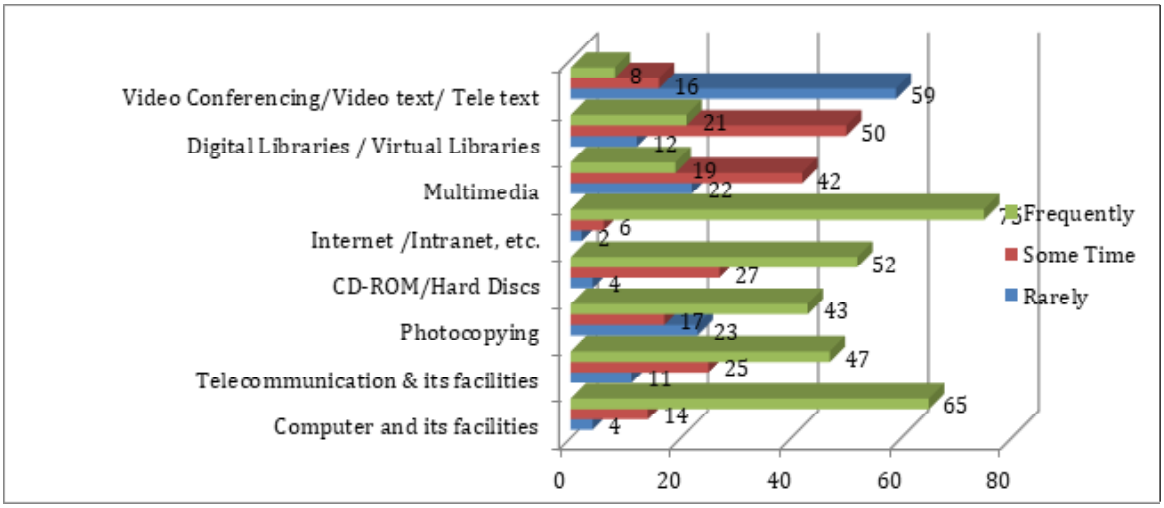


Table 4 and figure 2 show that 56.63% of participants use telecommunications and services for data storage and retrieval, while 78.31% use computers. Photocopy facilities are frequently used, but most of the organizations only provide them to libraries and information centers. Hard discs and CD-ROMs are used, while the internet, intranet, LAN, WAN, and Wi-Fi are used for retrieval. Digital library technologies have only recently gained traction in higher education.

Table 5: ICT Based Services

Sl. No.	Variable	% n= 83	
		Yes	No
1	ICT Based Circulation system	61 (73.49%)	22(26.51%)
2	Access to CDs/DVDs	51(61.45%)	32(38.55%)
3	Web-based Current Awareness service	17(20.48%)	66(79.52%)
4	Access to Online databases	53(63.86%)	30(36.14%)
5	Subscriptions to Web-based electronic resources,	59(71.08%)	24(28.92%)
6	Internet access to free subject-specific information	49(59.04%)	34(40.96%)
7	Services through Barcodes, RFID, QR code etc.	38(45.78%)	45(54.22%)
8	Digital Library services	76(91.57%)	7(8.43%)

Figure 3: ICT Based Services

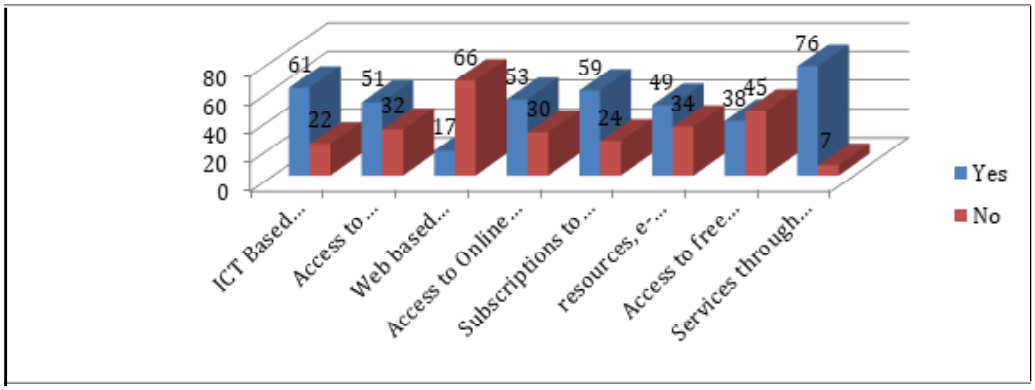


Table 5 and Figure 3 above show that the responding engineering college libraries provide ICT-based services to their patrons. 76 (91.57%) of respondents use online information and library resources then, 53 (63.86%) of the respondents use digital files, 51 (61.45%) use CDs/DVDs, and 38 (45.78%) of the participants provide more services quickly using Barcodes, RFID, Webcams, QR Codes, and other technologies. ICT-based circulation systems are used by 61 (73.49) respondents, and subscriptions to databases, e-books, journals, and other web-based electronic resources are used by 59 (71.08%) respondents.

Figure 4: Level of ICT skill awareness

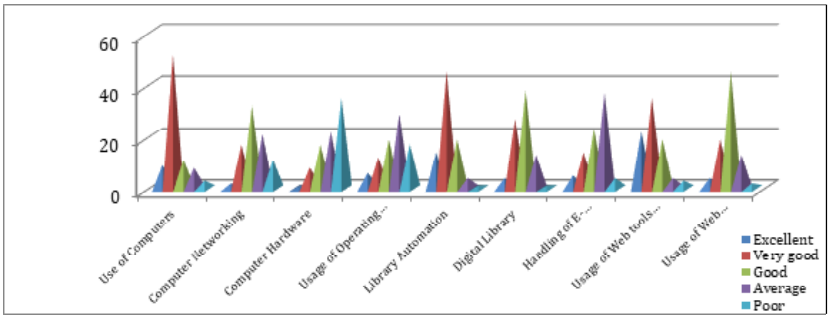


Table 6: Level of ICT skill awareness

(SD = Standard Deviation)

Sl. No.	Skills	Excellent	Very Good	Good	Average	Poor	SD
1	Use of Computers	9(10.84%)	52(62.65%)	11(13.25%)	8(9.64%)	3 (3.61%)	20.01
2	Computer networking	2(2.41%)	17(20.48%)	32(38.55%)	21(25.30%)	11(13.25%)	11.19
3	Computer Hardware	1(1.20%)	8(9.64%)	17(20.48%)	22(26.51%)	35(42.17%)	13.09
4	Usage of Operating systems	6(7.23%)	12(14.46%)	19(22.89%)	29(34.94%)	17(20.48%)	8.56
5	Library Automation	14(16.87%)	45(54.22%)	19(22.89%)	4(4.82%)	1(1.20%)	17.47
6	Digital Library	4(4.82%)	27(32.53%)	38(45.78%)	13(15.66%)	1(1.20%)	15.66
7	Handling of E-Resources	5(6.024%)	14(16.86%)	23(27.71%)	37(44.57%)	4(4.81%)	13.76
8	Usage of Web tools	22(26.51%)	35(42.17%)	19(22.89%)	4(4.82%)	3(3.61%)	13.39
9	Usage of Web services	4(4.82%)	19(22.89%)	45(54.22%)	13(15.66%)	2(2.41%)	17.30

Table 6 above information shows that participants are aware of the ICT skills required to offer stakeholders ICT-based services. In the case of the excellent group, 35 of the respondents (or 42.17%) appear to be extremely proficient users of web technologies, whereas 45 (54.22%) and 35 (or 42.17%) of the respondents claimed they are very proficient users of computers and library automation, respectively. 14 (16.87%) of the respondents are exceptional at automating libraries, whereas 22 (26.51%) of the respondents are excellent users of web tools like Facebook, Wikis, Twitter, etc. On average, 37 (44.57%) of them manage electronic resources, whereas 35 (42.17%) have outdated computer equipment. Academic librarians must therefore receive ICT training.

Table 7: ICT skill areas where training is needed

Sr. No.	ICT skills	Yes	No
1	Software design	57(68.67%)	26(31.33%)
2	Software installation/operations	70(84.34%)	13(15.66%)
3	All areas of skills	65(78.31%)	18(21.69%)
4	Web design	75(90.36%)	8(9.64%)
5	Digitization and imaging technology	61(73.49%)	22(26.51%)
6	Online cataloging (MARC)	43(51.81%)	40(48.19%)
7	Online classification (NLM)	35(42.16%)	48(57.83%)
8	System analysis and design	69(83.13%)	14(16.87%)
9	Networking	70(84.34%)	13(15.66%)
10	MS Office	15(18.07%)	68(81.93%)
11	Database searching technique	38(45.78%)	45(54.22%)
12	Transformation of data	45(54.22%)	38(45.78%)

ICT skill is indeed a general word that includes a variety of talents. A wide question about just the domains in which they need instruction to do their jobs properly was posed to the respondents. Table 7 demonstrates the range of ICT skill levels among the participants. 65 respondents, or 78.31%, said they needed training in all ICT skill areas. Among the respondents, 57 (68.67%) said they needed training in software development, followed by 70 (84.34%) in application

software or processes, 75 (90.36%) in web design, 61 (73.49%) in technology and imaging technology, 43 (51.81%) in online cataloging (MARC) and 35 (42.16%) in online classification (NLM), 69 (83.13%) in analysis and design, 70 (84.34%) networking, and 15 (18.07%) MS Office. The table above demonstrates that most LIS employees need training in all ICT skill areas.

Findings

From the given study, these observations can be made.

- The Internet is widely used among the LIS Professionals however multimedia usage is seldom seen.
- Digital library technologies have only recently gained traction in higher education.
- Many LIS Professionals are seen to have less awareness of computer hardware and have out-dated computer equipment.
- While LIS Professionals have a good knowledge of MS Office, many of them claim to need training skills in Web Design.
- The study shows that training on Software Installation and Operations is needed for respondents.
- It is observed that LIS Professionals are exposed to Digital Library Services through their respective engineering colleges.

Suggestions

Based on the study made above, these suggestions have been found useful for making efficient use of ICT Technology.

- LIS Professionals should be provided the resources through which they can constantly be up to date with the technologies, through means like newsletters and journals.
- Certain measures should be taken to educate the librarians about ICT Means with respect to their knowledge on the subject, these would include forums and support clubs to increase awareness among them.
- LIS Professionals should be made to participate in seminars, webinars, and workshops to educate them about resources.
- Skill development, outside of library duty, should be made available to make place for new innovations.

CONCLUSION

The majority of libraries have Wi-Fi and online access; thus LIS staff should be knowledgeable about ICT-based information for effective material dissemination. When it comes to circulation, e-resources, archives, and online library resources, web technologies, telecommunications, and computers are widely utilized. Although practitioners should make efficient use of their ICT abilities and maintain a constructive attitude toward ICT technology, university libraries are well-versed in ICT.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 64-74

Journal of Management Research
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Mr. Dilip S. Nimbalkar[1]*
Research Scholar, Department of Library and Information Science,
Shivaji University, Kolhapur
Mr. Pravin S. Deshmukh[22]
Librarian,
Clara's College of Commerce, Mumbai, India.
Corresponding author Email: dilipnimbalkar55@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Nimbalkar D., Deshmukh P., (2023).
Content Analysis of Resources and Services through Library Websites of Gujarat State Universities: A Study
Journal of Management Research
XV(2), 64-74 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
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Mr. Dilip S. Nimbalkar[1]*
Research Scholar, Department of Library and Information Science,
Shivaji University, Kolhapur
Email: dilipnimbalkar55@gmail.com
Mr. Pravin S. Deshmukh[2]
Librarian, Clara's College of Commerce, Mumbai, India.
Email: deshmukh.pravin86@gmail.com

ABSTRACT

Information and communication technology (ICT) has influenced every aspect of life, including library collections, acquisitions, and services. Libraries have gone through a tremendous change from an earlier image of a storekeeper of books to disseminating information with the help of Information Technology and emerging as a digital library. The purpose of this research study is to know the university library in terms of the availability of e-resources, access to e-resources, online links to e-resources, online catalogue search facility, value-added services, etc. For the research study, 17 state university library websites from Gujarat state were selected to carry out research based on the content available on the websites. Most of the university libraries 16 are subscribing to e-books, e-journals, and e-databases.

Keywords: Website, State University, Gujarat, Library, Resources and services

INTRODUCTION

The digital revolution and advancements in ICT significantly transformed the way people access and use information from libraries. The growing of e-content and user demand for them place a challenge for library and library professionals today. Furthermore, the new searching and sharing techniques offered on the World Wide Web provide users more power, convenience, and pleasure whenever seeking information, making it very difficult for libraries to satisfy the new generation of technology-savvy users. Library websites should have information about library and library services along with access to OPAC, Web OPAC, e-databases, and online links to various online resources. Users can ask reference queries online, conduct research in databases, submit interlibrary loan requests online, and access academic articles electronically, therefore they must serve as information gateways.

To develop strong connections between the library and its users, library professionals are trying to anticipate the design of an effective library website that will allow users to not only know about the library at a glance but also experience the effectiveness of web-based services (Gupta, 2017).

Analysis of Gujarat State University Library Websites Appropriate use was made to improve the effective use of library websites and to make the information user-friendly. A study of various library websites was conducted to evaluate various criteria such as content, and page design.

STATEMENT OF THE PROBLEM

As stated earlier, the objective of the investigation is to identify and analyze the content of the library resources and services available on the website of Gujarat State University Libraries. In general, library websites play a very important role in effectively reaching users and making optimal use of library resources. It will also help in the maximum utilization of library electronic resources in less time. This study is under the title "Content Analysis of Resources and Services through Library Websites of Gujarat State Universities: A Study".

OBJECTIVE OF THE STUDY

1. To investigate the presence of library websites of state universities in Gujarat.
2. To study the contents of the State University library website in Gujarat.
3. To find out whether the library provides e-resource facilities through websites like e-books, e-journals, e-thesis, etc.
4. To know the library services offered to the users through websites about e-mail alerts, reference, circulation and other information services.
5. To identify whether the librarian provides value-added services on their website.

SCOPE OF THE STUDY

The present study covers the library websites of the State Universities of Gujarat. The investigator has taken a list of Gujarat state universities from the UGC website. There are 28 state universities in Gujarat. Out of 28 state universities, 11 do not provide a library web page on their website. Hence for this study, the researcher has taken 17 universities for study purposes. The content of the websites of the selected university libraries was analyzed.

METHODOLOGY

The researcher examines the structure of the selected state universities in Gujarat. Content on the university's library website has been analyzed. Researchers identified university library web pages using the homepages of state university websites. A data-compiled checklist was created to analyze the content of university library websites. The checklist included the name of the university, year of establishment, location of the district, specialization, link, basic information, periodical information, e-resources, services, and facilities. Researchers have to conduct research, based on the content available on the websites during the period of 10-31 July 2023. The collected data is presented in a tabular and graphic manner using pie charts and bar graphs.

THE LITERATURE REVIEW

Pareek & Gupta's (2013) survey conducted in the Rajasthan state analysed 52 academic library websites covered government, research centers libraries, and deemed self-financed universities. Analysed the features and contents, and comparison with international trends indicates that academic library website development in Rajasthan. 170 million people are not satisfied with the digital divide for library websites.

Pannirselvam (2015) studied about 23 university library websites in Tamil Nadu. The most important segment of information communication technology, which has transformed traditional services into digital systems, has emerged from this study. Eleven universities started building their library websites during the period 1975-2000 and all the libraries are subscribing to e-journals. They conclude that most library websites do not provide adequate services, such as new arrivals, remote access, plagiarism checkpoints, subject entrances, etc.

Kumbhar (2017) analysed the content of the 12 non-agricultural state university library websites in Maharashtra. The study was conducted in March 2017. The study found that 91% of university library websites are provided the availability of books. 75% of university library websites have given information about online databases and e-journals. 83.33% of library websites have given Circulation, Reference, and Internet laboratory services.

Gupta (2017) studied national library websites in the world they are United Nations members which are 180 national libraries but the study covered only 49 national library websites in the English Language. The study found that 75.5% of the national library websites are available for site search options. 51% of websites are in multilingual format only 8.2% of websites don't available of own index.

Wasan and Chakravarty (2018) analyzed the Indian top twenty Indian educational institute library websites. The study found that the highest number of referred Domains is VIT University library 2821 and IIT Guwahati IIT Madras Library website lowest number of referred Domains has only 8. The correlation analysis was a significant relationship between the 20 library websites was inferred, the alternative hypothesis was accepted, and the p-value was less than .01. The study suggested information provided structured way, an improved user interface on the websites, and training of librarians about the content strategy of their library website.

UNIVERSITIES IN GUJARAT

The state universities in Gujarat are split into multiple specializations. The state universities relate education in technical, medical, agriculture, law, and other disciplines. The Maharaja Sayajirao University of Baroda and Gujarat University are one among India's oldest universities. For this study, the researcher has selected seventeen state universities out of twenty-eight universities because eleven universities are not given library web pages on their websites.

ANALYSIS OF THE STUDY

Table 1: List of Gujarat State Universities

Sr. No	Name of the University	Year	Location	Specialization	Website
1	Anand Agricultural University	2004	Anand	Agricultural	http://www.aau.in
2	Dharmsinh Desai University	1968	Nadiad	Medical	https://www.ddu.ac.in/
3	Dr. Babasaheb Ambedkar Open University	1994	Ahmedabad	Multi Special	http://www.baou.edu.in/
4	Gujarat National Law University	2003	Gandhinagar	Law	http://www.gnlu.ac.in
5	Gujarat University	1949	Ahmedabad	Multi Special	https://www.gujaratuniversity.ac.in/
6	Hemchandracharya North Gujarat University	1986	Patan	Multi Special	http://www.ngu.ac.in

Sr. No	Name of the University	Year	Location	Specialization	Website
7	Indian Institute of Teacher Education	2010	Gandhinagar	Teacher Education	https://www.iite.ac.in/
8	Institute of Infrastructure Technology Research and Management	2013	Ahmedabad	Multi Special	http://iitram.ac.in
9	Junagarh Agricultural University	1972	Junagarh	Agricultural	http://www.jau.in/
10	Kamdhenu University	2015	Gandhinagar	Multi Special	https://www.kamdhenuuni.edu.in/
11	Krishnakumarsinhji Bhavnagar University	1978	Bhavnagar	Multi Special	https://www.mkbhavuni.edu.in/
12	Sardar Krushinagar Dantiwada Agricultural University	2004	Banaskantha	Agricultural	http://www.sdau.edu.in/
13	Sardar Patel University	1955	Anand	Multi Special	http://www.spuvvn.edu
14	Saurashtra University	1967	Rajkot	Multi Special	http://www.saurashtrauniversity.edu
15	Shree Somnath Sanskrit University	2005	Junagarh	Sanskrit	https://sssu.ac.in/
16	The Maharaja Sayajirao University of Baroda	1949	Vadodara	Multi Special	https://www.msubaroda.ac.in/
17	Veer Narmad South Gujarat University	1965	Surat	Multi Special	http://www.vnsgu.ac.in

The list of tables has shown that 17 state universities are functioning in Gujarat, among them 17 universities detailed information about the University, District, Year of establishment, Specialization, and URLs. After the independence, the state of Gujarat first started The Maharaja Sayajirao University of Baroda, Sardar Patel University, and Veer Narmada South Gujarat University in Gujarat. The majority of universities 13 are started between 1966-2015. Only 1 university was started after 2016. The majority of universities are located in Gandhinagar and Ahmadabad District, and in other Districts, only two or one university are located. The majority of universities offered courses for Multispecialty, and some of the universities were established to offer specialized subjects such as Agricultural, Children, Medical, Technology, law, and Sanskrit by which focused research and academic activities can be established in those subject areas.

Table 2: Year of Establishment

Sr. No.	Year	Number of University	Frequency
1	Before 1965	3	17.64%
2	Between 1966-2015	13	76.47%
3	After 2016	1	05.88%
Total		17	100%

Table No. 2 indicates that 76.47% of universities were established between 1966 and 2015. It is understood that only 05.88% of universities started after 2016.

Table 3: Area of Specialization

Sr. No.	Area of Specialization	No. of Universities	Frequency
1	Multi specialization	10	58.82%
2	Agriculture	3	17.64%
3	Medical	1	5.88 %
4	Law	1	5.88%
5	Teacher Education	1	5.88%
6	Sanskrit	1	5.88%
Total		17	100%

Table no 3 indicates that 58.82% of universities in Gujarat deal with multi-specialty subjects and the second-highest specialization in Agriculture subjects. The other 23.52% of universities are in different subjects like Medical, Law, Technology, Teacher Education, and Sanskrit. It is also important to know that only one university in the Gujarat. It is also to understand from the above table Gujarat State has in all areas including Medical, Law, Technology, Teacher Education and Sanskrit.

Table 4: Distribution of Universities in District Wise

Sr. No.	District	No. of Universities	Frequency
1	Gandhinagar	3	17.65%
2	Ahmedabad	3	17.65%
3	Anand	2	11.76%
4	Junagarh	2	11.76%
5	Nadiad	1	5.88%
6	Patan	1	5.88%
7	Bhavnagar	1	5.88%
8	Banaskantha	1	5.88%
9	Rajkot	1	5.88%
10	Vadodara	1	5.88%
11	Surat	1	5.88%
Total		17	100%

Table no. 4 indicates that (17.65%) universities are located in Gandhinagar and Ahmedabad. Gandhinagar is the Capital of Gujarat. The second highest district is Anand and Junagarh, which has 2 universities. The remaining 7 universities are functioning in the other 7 districts of Gujarat. It is understood through the study that 8 districts in Gujarat don't have university facilities.

Table 5: Web Domains of Universities

Sr. No.	Web Domain	No. of Universities	Frequency
1	.ac.in	9	52. 94%
2	.edu.in	6	35.29%
3	.in	2	11.76%
Total		17	100%

Table 5 shows that 52.94% web domains are .ac.in Gujarat University Websites. The second place is 35.29% of university websites with .edu.in and the rest of the university websites have

.in domain. It was noticed that universities are educational institutions, and hence most of them have .ac.in the web domain.

Table 6: Basic Information available on website

Sr. No.	Basic Information	No. of Universities	Frequency
1	Library Collections	16	94.12%
2	Contact address	15	88.23%
3	About Library	14	82.35%
4	Facilities available	17	100%
5	Library Timing	13	76.47%
6	Membership	13	76.47%
7	Staff details	09	52.94%
8	Rules & Regulations	07	41.17%

Graph No 1: Basic Information available on website

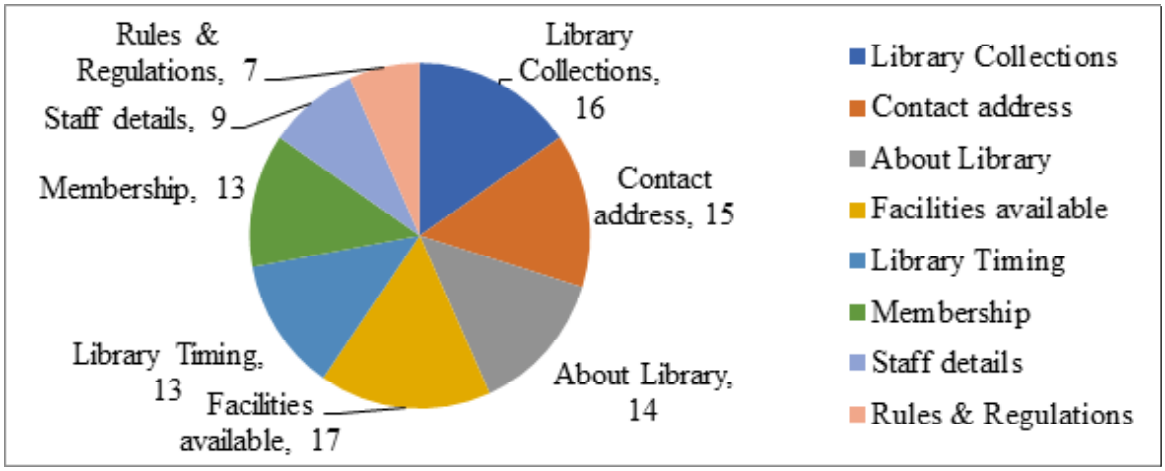

Table no. 6 table and the Pie chart show that most of the library's websites provide basic information about Library, and important information such as library collection and Contact addresses are given on their websites. Only three libraries are needed to provide information about the library, 4 libraries are needed to provide information about library timing, 4 libraries are needed to provide information about library membership, 8 libraries are needed to provide information about staff details and only 7 libraries are given in their library's websites information about Rules and Regulations.

Table 7: Periodicals Information

Sr. No.	Periodicals Information	No. of Universities	Frequency
1	Print Journals	15	88.23%
2	Dailies	14	82.35%
3	Back volumes	10	58.82%

Table no. 7 indicates the Report on the periodical information. 88.23% subscribe to university library printed journals. 58.82% of library volumes upload information back, while 82.35% subscribe to university library dailies. The latest trends and technology magazines are also available. Libraries of 7 universities in Gujarat are required to provide information on back-volume journals information on their websites. This is an important area for strengthening, through which libraries can increase their users.

Table 8: Access to e-Resources

Sr. No.	e-Resources	No. of Universities	Frequency
1	e-books	15	88.23%
2	e-journals	15	88.23%
3	e-databases	16	94.12%
4	Open access Journals	15	88.23%
5	e-theses and dissertations	09	52.94%
6	CD-DVD	07	41.17%

Graph No. 2 Access to e-Resources

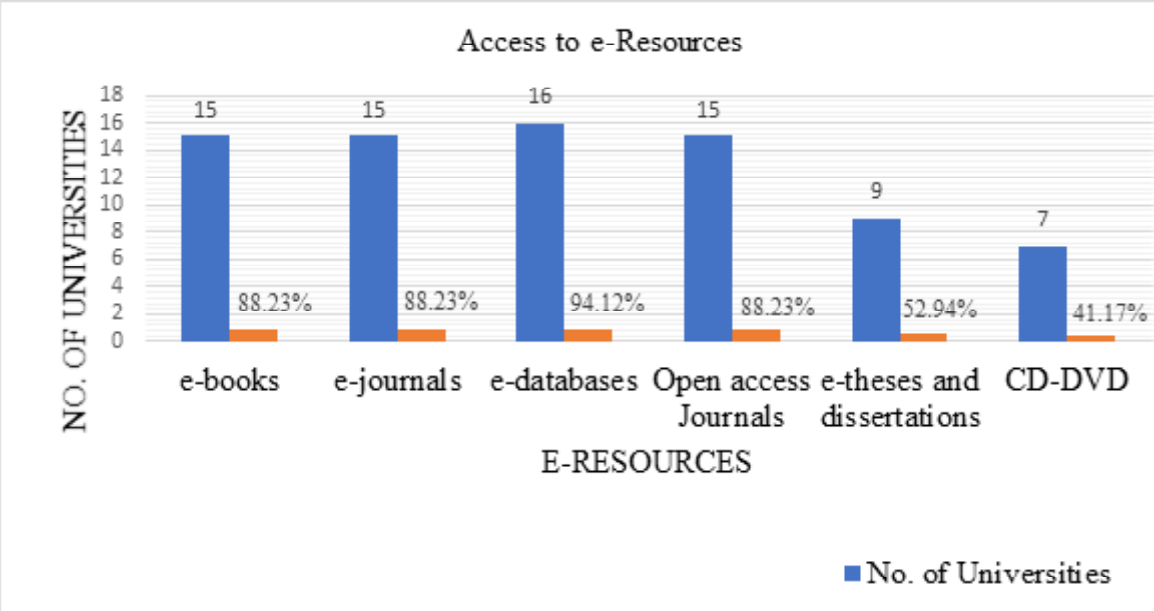

Table no. 8 shows that most of the universities in Gujarat are subscribing to e-books, e-journals, and e-databases. However, the concern of e-dissertation and dissertations is that the traditional method of using hardcopy still exists in most of the state university libraries in Gujarat. Only 41.17% of university libraries seem to have CD-DVDs. & Bar Graph no. 2 indicate that the electronic information sources are modern-day library collections. Electronic resources provide easy access to any purpose for library users.

Table 9: Library Services

Sr. No.	Library Services	No. of Universities	Frequency
1	Reference Service	15	88.23%
2	Circulation	15	88.23%
3	Availability of Catalogue search	15	88.23%
4	Reprography	09	52.94%
5	Selective Dissemination of Inf.	08	47.05%
6	New Arrival Service	08	47.05%
7	Inter Library Loan	06	35.29%
8	Article alert Service/Email Alert Service	05	29.41%
9	Book Bank Scheme	02	11.76%

From table no. 9 above is understood that Reference Service, Circulation and Catalogue Availability Search information is available on the website of 88.23% of university libraries in Gujarat. It was

also found that Selective Dissemination of information and new arrival services are provided in 47.05% of university libraries. 35.29% and 29.41% of university libraries provide Inter-Library Loans and Email Alert Services. Only 11.76% of university libraries are provided a book bank scheme.

Table 10: Value Added Services

Sr. No.	Library Value Added Services	No. of Universities	Frequency
1	Subject gateway	10	58.82%
2	Remote Access	08	47.05%
3	Library Orientation	07	41.17%
4	Organization of Programme	07	41.17%
5	Plagiarism Checking	07	41.17%
6	Wi-Fi Facility	06	35.29%
7	Provision to access another library	06	35.29%
8	Member in Social Networking Site	05	29.41%
9	RSS Feeds	04	23.52%
10	Library Blog	03	17.65%

Graph No. 3 Value Added Services

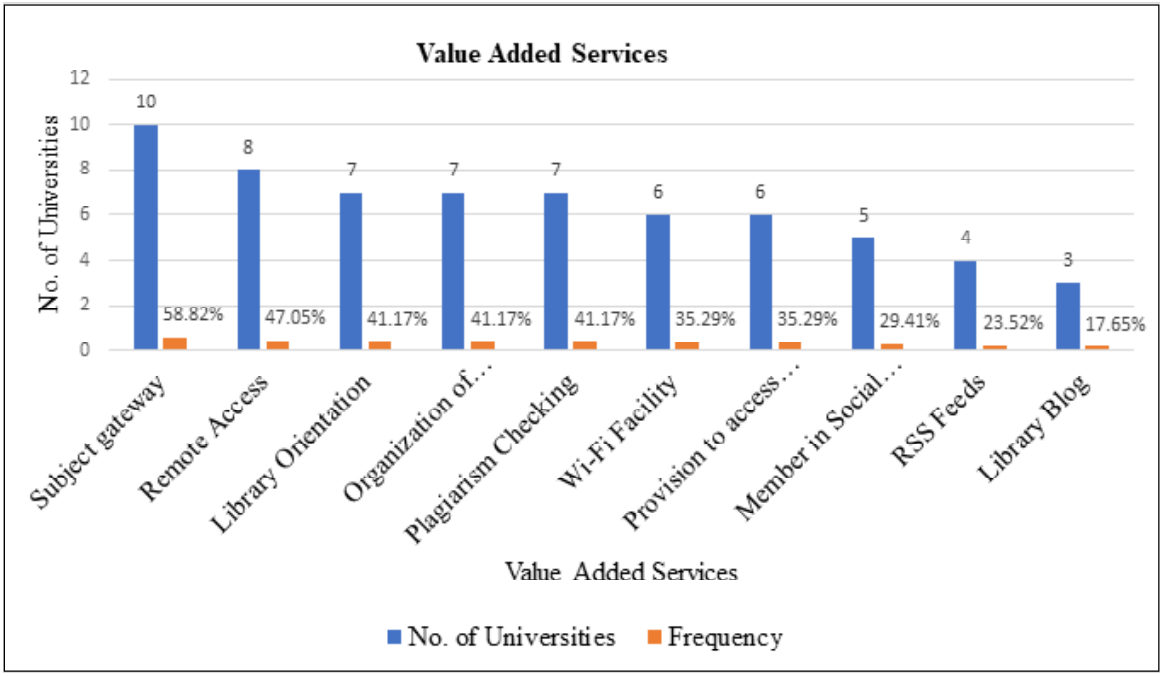

Table no. 10 & Bar Graph depends on current trends, and new services in the library are value-added services, which every library needs to adopt in the competitive world. The above table found that 58.82% of university libraries in Gujarat have a Subject gateway facility. 47.05% of university libraries are provided Remote access facilities. It is also understood that 41.17% of university libraries are given Library Orientation, Organization of programs and Plagiarism Checking. Wi-Fi facilities and Provision to access other libraries are provided in 35.29% of university libraries. 29.41% of university libraries are members of social networking sites, 23.52% of university libraries are RSS Feeds and Only 17.65% of university libraries have Library Blog as a value-added service.

FINDING

- There are 28 state universities in Gujarat state, eleven universities do not provide a library web page on their website therefore 17 universities are taken into consideration for study.
- Most of the universities (13) were started from1966-2015.
- Most of the universities are multi-special subject areas (10).
- Gandhinagar and Ahmadabad district in Gujarat has the greatest number of universities (3).
- Most university (52.94%) websites have .ac.in as web domain.
- Basic information on library collections and contact details are available on all of the university library websites.
- About periodical information, most of the universities (15) are subscribing to print journals and dailies.
- Most of the university libraries (15) are subscribing e-books, e-journals, and Open access journals.
- Circulation, Reference service and Catalogue search Service (88.23%) are available in most of the university libraries in the Gujarat State.
- Library orientation, Plagiarism checking, Wi-Fi facility, provision to access other library, social networking, RSS Feeds and Library blog in the library need to be strengthened.

SUGGESTIONS

The study suggested proper categorization of links on websites will avoid duplication. Essential links should be well sited at the top of the page because when the page is accessed easily the user always looks at the top of the first page. Web pages should have appropriate titles because users can easily understand what type of content is there. Website should be composed in proper html-based text so that search engine simply scrolls the web pages and increase the overall visibility of the website. The library website needs to be tested by a web interpreter at regular intervals. Librarian must get enough training in the content policy and evaluation procedure for their library websites.

FUTURE STUDY

It is suggested that a similar study should be done on the websites of university-affiliated college libraries, especially on Arts, Commerce and Science, Engineering, Medical, Ayurveda etc.

CONCLUSION

University libraries in Gujarat have designed their library websites well maintained. The Higher Education system's most important part is library should have an informative website, by which they can offer various offline and online services to their readers. The study found that the libraries of Gujarat State universities provide basic information about themselves, periodical services, and e-resources but they largely differ in delivering facilitates by ICT which are value-added services. Important to note that various universities lack some of the not-worthy services such as book bank schemes, alert services, interlibrary loan services new arrivals, library blogs, RSS Feeds, social networking, and so on.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 75-80

Journal of Management Research
Peer Reviewed Journal

Digitalization of Higher Education: Utility and Difficulties

Dr. Pankaj P. Kaware
Librarian, Mahatma Jyotiba Fule Mahavidyalaya, Ballarshah
Kartik Vilas Tathe
Research Scholar, Dept. of Mathematics, BITS-Pilani, Hyderabad Campus.
Corresponding author Email: kaware_pankaj1@rediffmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Kaware P., Tathe K., (2023).
Digitalization of Higher Education: Utility and Difficulties
Journal of Management Research
XV(2), 75-80 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 75-80

Journal of Management Research
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Digitalization of Higher Education: Utility and Difficulties

Dr. Pankaj P. Kaware
Librarian, Mahatma Jyotiba Fule Mahavidyalaya, Ballarshah
Email: kaware_pankaj1@rediffmail.com
Kartik Vilas Tathe
Research Scholar, Dept. of Mathematics, BITS-Pilani, Hyderabad Campus.
Email: kartikvtathe@gmail.com

ABSTRACT

The importance of digital education has surged in recent years, garnering significant attention from governments worldwide. In particular, the Indian government has taken notable initiatives to prioritize and promote digital education. Various programs have been started by the government in recent years, such as e-Pathshala, Diksha, Swayam, MOOCs, NPTEL, etc. The COVID-19 pandemic had a significant impact on the educational sector, forcing institutions to shift to online learning. Now, as the pandemic recedes, many educational institutions have embraced a blended mode of education. Despite the numerous benefits of digitalization in education, it is important to acknowledge that there are challenges and difficulties associated with its implementation, particularly for students and the education system as a whole. Educational institutions, library systems are experiencing a number of challenges as a result of digitization. In this article, we will discuss various such aspects.

Keywords: Data authentication, critical thinking, conventional teaching, digital tools, etc.

INTRODUCTION

Digital education is a very hot topic nowadays. Governments around the world have recognized the importance of digital education and have taken various initiatives to promote it. In particular, The Government of India has taken notable initiatives such as MOOCs (Massive Open Online Course), Swayam, and NPTEL, etc. with the aim of making quality education accessible to all. However, despite these efforts, the responses to these initiatives have not been as satisfying as expected. COVID-19 has undoubtedly had a profound impact on various aspects of our lives, causing widespread disruption and adversity. However, amidst the challenges it presented, there emerged a silver lining – the forced acceptance of online education platforms. Despite the many adverse effects of COVID-19, it has undeniably acted as a catalyst for the development and acceptance of online education platforms. The pandemic compelled us to adapt and find alternative ways to continue learning in the face of physical restrictions and social distancing measures. As traditional educational institutions were forced to close their doors temporarily, online education platforms became a necessity rather than an option. Now, as the pandemic recedes and we

gradually transition back to normalcy, many educational institutions have recognized the value of a blended mode of education. This approach combines traditional in person teaching with the convenience and flexibility offered by online platforms.

ADVANTAGES

Online education platforms offer students the opportunity to learn at their own pace, access a wide range of resources, and engage in interactive learning experiences. Educational institutions are now leveraging these advantages by integrating online components into their curriculum even after the pandemic subsides. With this blended mode of education, students can get a holistic learning experience which combines face-to-face interactions with digital resources. This approach prepares students for the increasingly digitizing world and also enhances their access to knowledge and educational opportunities.

With the help of videos and other digital tools, student learning can be accelerated and concept understanding can be made simpler. Videos offer visual and aural stimulation, which can aid students in better understanding difficult concepts. Additionally, videos frequently feature real-life examples and demonstrations that help students relate to and enjoy learning. Using digital resources in the classroom also save a ton of time. By automating routine tasks like attendance tracking and grading, teachers can free up valuable time for teaching. Digital tools also make it simple for students and teachers to collaborate and communicate, which improves the learning process. Additionally, using digital learning resources in the classroom reduces teaching time. Online resources are simple for teachers to access and share, so they don't need to spend time manually creating instructional strategies. Digital tools also allow for instant feedback and assessment, which helps teachers quickly spot areas where students might need more guidance or explanation.

In medical institutions where physical access to actual human or animal bodies for teaching and studying basics is limited or unavailable, AI generated models of human or animal bodies can serve as an invaluable tool. In engineering institutions, where complex machineries are not available for basic study, AI generated models of these machines may prove very useful. Off course, one cannot rely fully on the AI generated models for the study of medical practices, but it can prove of invaluable use[4,5].

Several large educational institutions, including the IITs, NITs, and BITs, have launched a variety of online graduate degree programs for working professionals. Aspiring individuals who want to pursue higher education but are unable to do so for a variety of financial and employment-related reasons have the opportunity to do so without quitting their current positions. These online graduate degree programs allow students to study at their own pace and have flexible schedules, which makes it simpler for them to juggle work and education. Additionally, the accessibility to a wider selection of courses and resources offered by the online format frequently improves the learning environment for these professionals.

NEGATIVE SIDE

The COVID-19 pandemic was the most serious health emergency. The global pandemic-related lockdowns have had a negative impact on several significant industries, including the education sector[3]. Many schools, colleges, and institutions were forced to unexpectedly close because of the pandemic. Millions of students around the world had their learning interrupted by these

unexpected closures of educational institutions. As a result, educators were forced to adopt online teaching techniques quickly in order to maintain educational continuity during these difficult times.

The kids were exposed to online learning in a short amount of time. The learning of youngsters from low-income homes was harmed by the abrupt shift from traditional schooling to digital learning. Since they were unable to afford smartphones, laptops, or computers, wi-fi, and various other gadgets, quickly turned into a problem for them. As a result, these kids encountered considerable barriers when trying to access online learning resources and take part in virtual classes. The educational gap between them and their more privileged peers grew wider due to a lack of access to necessary technology and the internet, highlighting the inequalities already present in our educational system.

To facilitate regular teaching and learning, all schools and institutions developed online curricular structures. The student's overnight requirement to adjust to using technology and internet platforms was also raised. Online education has led to a digital divide between wealthy and poor students. Because they had poor or no internet connectivity, the majority of students from remote locations were unable to explore online learning. The sudden shift caused a number of mental health issues, including feelings of hopelessness, anxiety, and stress, among the students. We cannot deny the fact that while parents who were educated were able to support their children in learning during the pandemic, there were parents who were illiterate and were unable to assist their children in learning [4].

CERTAIN THINGS NEED TO BE HIGHLIGHTED

Data authentication problem:
Selecting authentic content is particularly challenging for a layperson because there is an abundance of content accessible linked to a given topic. It is very challenging to determine whether the chosen course is legitimate or not, and whether the course's content is authentic or not. Furthermore, a layperson may find it challenging to distinguish between trustworthy sources and unreliable ones due to the abundance of information available online. Finding reliable sources is also made more difficult by the fact that new content is being produced and shared quickly, thanks to the internet's and technology's constant evolution.

The decline in library visits by students:
Because libraries have gone digital, fewer students are using them, which has caused a lot of challenges for them. The decline in demand for physical books and materials is one of the key issues that library systems are currently facing as a result of digitization. Because of the arrival of online databases and e-books, students now have access to a wealth of knowledge without having to physically visit the library. Since, it is so simple to access digital materials from anywhere at any time, less students utilize traditional library resources, which is obviously advantageous for students. But the data authentication problem remains unanswered.

However, traditional library systems are also struggling to continue operating because of a variety of issues brought on by declining demand, such as financing shortages. The increasing number of digital resources and internet platforms has been one of the biggest problems for traditional library systems. Users are turning less and less to physical libraries as electronic books, internet databases, and virtual libraries gain popularity. Traditional libraries are finding it challenging to maintain their operations and satisfy the evolving requirements of their

communities as a result of this shift and the resulting decline in financing.

Students' critical thinking process is getting disturbed:
Since everyone has access to the internet, students with questions can simply go there and look up the information they need to know. However, the drawback of this is that the student's investigative and thought processes are not being developed appropriately. The ability to think critically and carry out in-depth research may be hampered by this over-reliance on the internet searches. Furthermore, students might not have the chance to participate in insightful conversations and debates with their teachers or peers, which can enhance their comprehension of a subject [2]. Curiosity is becoming less intense. A lack of motivation and interest in the learning process can also result from a decline in curiosity. Students may become passive learners who only rely on surface-level knowledge learned from internet searches if they are not given the chance to independently explore and discover information. This may limit their capacity for original thought and derail their overall intellectual development.

Digitalization is not a replacement for the conventional teaching:
Certain subjects, like mathematics and physics, require blackboard instruction because not all concepts can be taught through PowerPoint presentations. It has been noted that certain educators are employing PowerPoint presentations as a teaching shortcut, which is not recommended. Teaching can be improved with the use of PowerPoint presentations. Digital tools can be used to improve instruction, but they shouldn't take the place of conventional classroom teaching[1]. As we've mentioned, in higher medical institutions where physical access to real human or animal bodies for teaching and studying the fundamentals is scarce or non-existent, AI-generated models of human or animal bodies can be an incredibly useful tool. But for teaching students about surgeries and such complex procedures, we cannot entirely rely on AI-generated models. While artificial intelligence (AI) generated models can offer a useful visual representation, actual human or animal bodies must be used by students in order for them to fully understand surgeries and other complex procedures. AI models cannot replace the tactile feedback and unpredictable nature of live subjects, necessitating the use of practical training in addition to the use of AI models in medical research.

Additionally, as we previously stated, AI-generated models of these machines may prove to be very helpful for engineering studies where complex machineries are not available for basic study. However, because the complex machinery works, we cannot entirely rely on the AI models in this case. It is crucial to remember that AI models might not always capture the nuanced details and practical complexity of operating complicated machinery. The safe and effective operation of such equipment still depends heavily on human knowledge and experience. As a result, even though AI-generated models can be useful for basic research, they shouldn't be the only source of information for complex machinery operations.

Lack of proper training:
Using online resources and digital teaching and learning tools has become essential in this era of digitization. On the other hand, knowing when and how to use them effectively is crucial. For that, appropriate training is needed. Without the right training, teachers might find it difficult to seamlessly incorporate digital tools and online resources into their lesson plans. In addition to emphasizing technical skills, this training should highlight the pedagogical techniques that maximize the advantages of these resources. Teachers can confidently navigate the digital environment and design fun, interactive learning experiences for their students with the right support.

Lack of infrastructure:
India is still in the development stage, and so many developing areas lack the infrastructure needed for digital education, like high-speed internet connectivity. Students in these areas find it extremely difficult to access online learning resources and engage in remote learning due to the lack of infrastructure. The government and other stakeholders must thus make immediate investments in enhancing digital infrastructure in order to guarantee that every student in the nation has access to equal educational opportunities.

Impact on pupils from lower-income backgrounds:
Many people still live in poverty, so they cannot afford the digital learning resources needed for education in the modern era. That not everyone has access to technology is a sad fact of life. To help these underachieving pupils enter mainstream schooling, governments ought to implement certain policies. No matter their socioeconomic status, these policies should be centred on giving all students equal opportunities. Giving low-income families access to discounted or free digital devices and internet service could be one solution. Governments should also fund the construction of community centres and libraries with computer labs and educational software so that underprivileged students can access these tools for their education.

CONCLUSION

The modern age demands that education be digitalized. However, it is important to remember that digitization is meant to supplement traditional teaching methods, not to replace them. It shouldn't take the place of conventional blackboard teaching; rather, it should be utilized to improve teaching quality. In order to adjust to this new approach to teaching and learning, some training ought to be provided. Also, to help those living in poverty get their kids into the modern, mainstream online education system, governments should implement certain policies.

One of these policies might be to offer low-income families financial aid or subsidies for the purchase of the internet access and digital devices they need. Governments can also work with educational institutions and groups to create initiatives that provide teachers and students with digital literacy training that is free or reasonably priced. With this comprehensive strategy, it will be possible to maintain the value of conventional teaching techniques while ensuring that digitization in education is inclusive and accessible to all.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 81-91

Journal of Management Research
Peer Reviewed Journal

Use of RFID Technology in Libraries

Mr. Vijay Namdas
Assistant Librarian
N.L. Dalmia Institute of Management Studies and Research
Mira Road East, Thane – 401107
Mrs. Mukta Naik
Assistant Librarian
Sheila Raheja School of Business Management and Research
Bandra East, Mumbai – 400051
Corresponding author Email: vijaynamdas379@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Namdas V., Naik M. (2023).
Use of RFID Technology in Libraries
Journal of Management Research
XV(2), 81-91 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 81-91

Journal of Management Research
Peer Reviewed Journal

Use of RFID Technology in Libraries

Mr. Vijay Namdas
Assistant Librarian
N.L. Dalmia Institute of Management Studies and Research
Mira Road East, Thane – 401107
Email: vijaynamdas379@gmail.com
Mrs. Mukta Naik
Assistant Librarian
Sheila Raheja School of Business Management and Research
Bandra East, Mumbai – 400051
Email: muktashankarnaik@gmail.com

ABSTRACT

Libraries are the knowledge hubs that collect, organize, preserve and provide access to a wide range of information resources including books, journals, magazines, databases, e-resources, etc. and this information is accessed by the patrons as and when needed by them.

In the pre-computer era, there were manual cataloging cards to find or locate any books in the library. Manual accession register, punch card equipment for circulation of books, etc. However, as the evolution took place, the libraries started automating. Traditional library activities and services are moving to automation. Libraries can optimize their resource management, streamline operations, and enhance patron experiences. RFID enables libraries to evolve into more efficient and user-centric institutions, empowering librarians to focus on providing value-added services while offering patrons a seamless and enjoyable library experience.

Radio Frequency Identification (RFID) technology has emerged as a transformative solution in the field of library management, revolutionizing traditional systems and procedures. The adoption and impact of RFID technology in libraries, investigating its role in enhancing resource management and patron services.

This research paper covers the Introduction of RFID technology in libraries, application of RFID technology in libraries along with its components, implementation of RFID technology in libraries, advantage and disadvantages of RFID technology in libraries and security concerns related to RFID systems.

Keywords: RFID, Libraries, Data, Security, Technology, Patrons, Tags.

INTRODUCTION OF RFID TECHNOLOGY IN LIBRARIES

Radio Frequency Identification (RFID) technology was traced back to World War II when radar technology was used to identify and track aircrafts. The first patent of the RFID was registered by Mario W. Cardullo in 1973 for an active RFID transponder. This was the formal beginning of RFID technology.

Worldwide, companies and industries like retail, logistics, supply chain management etc. have adopted RFID technology to improve their inventory management system and to prevent theft loss. One of the successful completion of RFID applications is the toll collection where RFID tags are attached to vehicles to enable automated toll payment systems as they pass through toll booths.

Over the past decades, libraries have played a crucial role in the institutions, serving as a warehouse of knowledge and information. In the modern world the technology has brought tremendous change in every field. Libraries are also adapting to the change that is occurring due to the technology. The latest technology that has been developed in the field of libraries is Radio Frequency Identification (RFID). RFID technology has brought a creative and effective way to manage resources and have completely changed how libraries used to work before.

RFID technology helps to reduce the time required for the stock verification process by the staff. It also identifies misplaced books or wrongly shelved books by the patrons. The middleware software of RFID technology can be linked with the library software (ILMS), which will help for the faster circulation of books. It allows library staff to efficiently manage library collection and circulation tasks, tracking usage of patrons and empowers patron with self-checkout options.

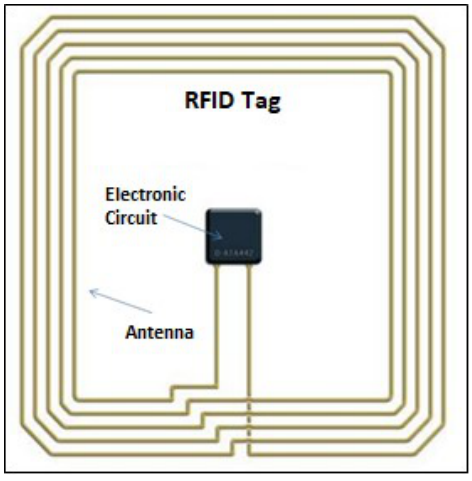
APPLICATIONS OF RFID TECHNOLOGY IN LIBRARIES

RFID technology has electromagnetic fields to identify and track objects that are equipped with RFID tags. There are microchips in every RFID tag which store data in digital form. These chips also contain antennas which help to transmit the data. An item which is RFID tagged is scanned by the RFID reader, then the reader encodes the information stored in the tag and facilitates quick and accurate identification of the item. Below mentioned components are the key applications of the RFID Technology in libraries.

COMPONENTS OF RFID TECHNOLOGY

RFID technology comprises three essential components: RFID tags and a Antennas, RFID readers, and a Backend & Database. There are some other components that are optionally used for functioning of RFID technology.

1. RFID Tags and Antennas:



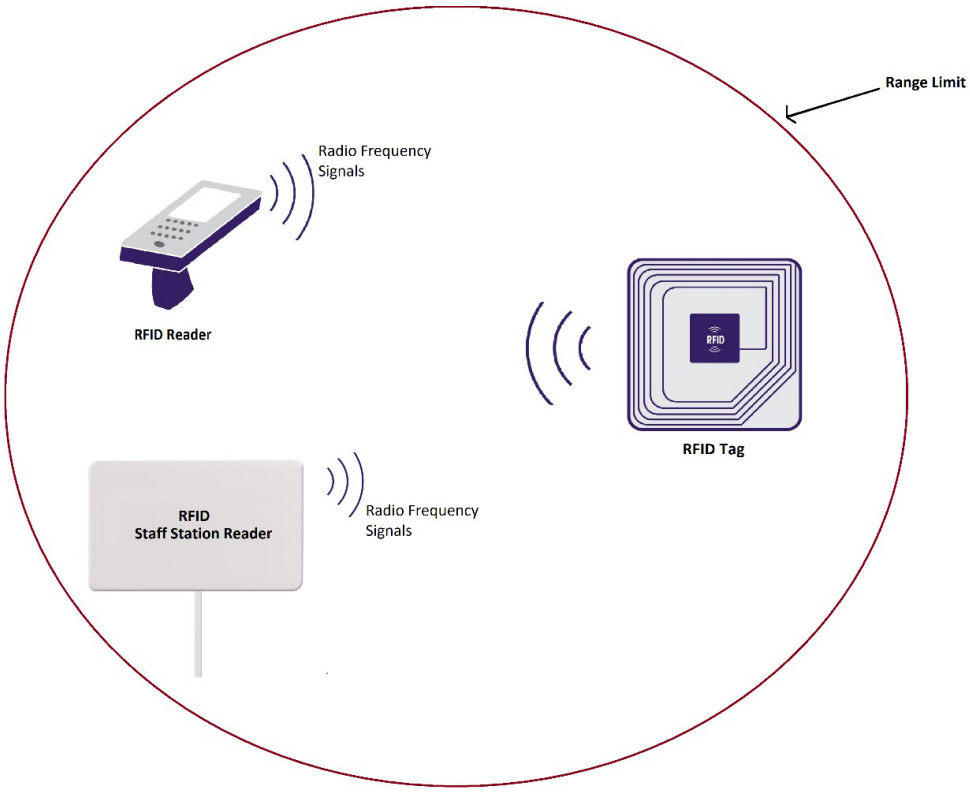
RFID tags consist of small electronic circuits that store data and emit radioactive waves to communicate with tags, capturing the transmitted data and forwarding it to the computer system for processing. The RFID tag holds unique identification data, which could be a serial number, a product code, or other relevant information.

The antenna on the RFID tag is responsible for transmitting and receiving radio frequency signals. It allows the tag to communicate with RFID readers.

Once the RFID tag is activated, the data is stored in its memory. The RFID tags have inbuilt memory that can store additional data beyond the unique identifier. The data written on the memory can be rewritable.

In libraries, RFID tags are attached to library materials like books, journals, DVDs, and other items to streamline various processes and to enhance user experience. RFID-enabled student ID cards will help to prove the identity of the student and also help for quick circulation of library materials.

2. RFID Readers:



RFID readers are devices equipped with antennas that emit radio frequency signals and receive responses from RFID tags in their range. The RFID reader may be in the form of a portable device or permanently attached to a connected network.

When an RFID tag is within the range of an RFID reader, the reader sends out a radio frequency signal that powers the tag.

The powered tag then responds to the reader's signal by transmitting its stored data back to the

reader. The reader captures the information from the tag and forwards it to the backend system for processing and further actions.

3. Backend Database referred as "Middleware Software":

The Backend Database or the middleware software consists of databases that manage the data collected from RFID tags.

When an RFID tag is read by an RFID reader, the data is sent to the middleware software, where it can be stored, analyzed and utilized for various applications.

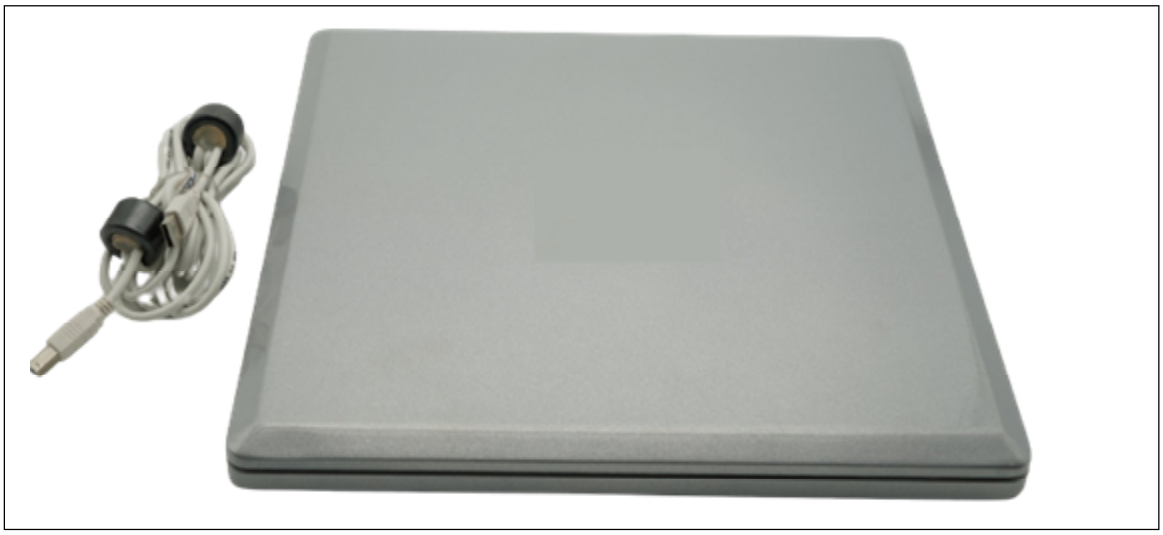
The middleware software can be integrated with other library management systems, allowing for seamless incorporation of RFID data into existing library operations.

There are some other optional components that can be used for RFID technology in libraries.

1. Handheld Reader:

Handheld readers are the portable devices which are used to read RFID tags from a specific distance that are put on the library materials. The handheld reader has antennas that produce radio waves that transmit signals to detect the RFID tag. Once the RFID tag is detected, the tag sends back waves through the antenna where it is generated into data. It is mainly used for quick stock verification of the library material. It also helps to find out any misplaced library books or materials. Handheld readers are optimized with Windows or Android operating systems which are pre-installed. Latest version of the handheld reader has a touch screen that supports android applications with inbuilt Wi-Fi.

2. Staff Station Reader:



Staff Station Reader is like a flat panel device which can be placed at the issue/return counter for quick circulation of library materials. Staff station reader performs various operations such as RFID tagging, reading information from RFID tags like patrons' information or book information, issuing of library materials to the patrons, handling return of large numbers of library materials in one single go. It also performs stock verification tasks. The staff station reader serves as a centralized tool for library staff to carry out tasks more efficiently and effectively.

3. Kiosk System - Self Service:

A kiosk system is a terminal installed outside the library premises where patrons can perform various tasks independently without direct assistance by the library staff. Kiosk system reduces the patrons waiting line process and saves the time to return library materials. The 24/7 accessibility of kiosks can be available outside the regular business hours, providing patrons with access to services and information at any time. This improves the patron's satisfaction.

4. RFID Label Printer:

RFID label printer is a specialized printer designed to create adhesive labels that is used to cover the RFID tags. To safeguard RFID tags, it is advisable to affix protective labels containing printed instructions to the patrons like 'Avoid removing the RFID tag' or 'Do not peel out the RFID tag etc.

5. Anti-Theft detection - RFID Gate:

Anti-Theft gates are basically security gates which are used to prevent theft of the library materials. The theft detection machine detects unauthorized access of library materials to take outside the library premises or which are not issued by the library staff. If any patron takes out

library material without issuing it, an alarm triggers and alerts the library staff. This technology helps in preventing loss of library materials.

IMPLEMENTATION OF RFID IN LIBRARIES

RFID implementation in libraries has proven to be a transformative step towards modernizing and optimizing library operations. The integration of RFID technology involves several key stages and considerations to ensure successful deployment and utilization.

a. Planning and Need Assessment:
Librarians should plan and assess the need for RFID technology in libraries and what all benefits occur after implementing the RFID technology in libraries.

b. Selection of RFID Technology:

Librarians must select appropriate RFID systems according to their requirements and budget constraints.

c. Tagging of Library Materials:

Librarians should decide which library resources should be tagged by the RFID. In the initial stage it can be partially implemented on the books and later it should be implemented on all library materials.

d. System Integration and Compatibility with ILMS (Integrated Library Management System):

It's essential to consider how the RFID components, software, and existing systems will integrate and interact. Working with vendors and experts who understand library system integration and compatibility can help to ensure a successful RFID implementation that aligns with the library's needs and goals.

e. Data Migration:

The current library data needs to migrate into the RFID middleware software including item records, patron information, and circulation history and needs to be synchronized with the existing ILMS.

f. Staff Training:

Library staff should be given proper training on how to use and maintain RFID technology in libraries.

g. Patron Orientation:

Librarians should educate patrons or display steps on the library website page about how to use RFID technology and should get familiar with the self return kiosk system and any other RFID related features.

h. Pilot testing:

Before full scale implementation of RFID technology in libraries, pilot testing should be carried out. Identify any operational challenges, if everything is fine then libraries can move forward to implement RFID.

i. Full Implementation:

Once testing is done, Librarians can start rolling out of RFID Technology across the library environment.

j. Maintenance and Support:
Regular maintenance of RFID should be essential for its smooth functioning. Libraries should take AMC for any software updates or any technical issues that occur.

ADVANTAGE AND DISADVANTAGES OF RFID TECHNOLOGY IN LIBRARIES

RFID technology offers a large number of benefits to libraries, transforming traditional library operations into modernization of library services and significantly enhancing overall efficiency of libraries and patron services.

Some of the advantages of RFID Technology in libraries include:
- Efficient self-service issue/return processes.
- Quick and accurate library stock checks.
- Automation saves staff time for more valuable tasks.
- Reduction in errors from manual data entry.
- Enhanced security with RFID gates and tags.
- Empowerment of patrons through self-service kiosks.
- Improved accessibility services for diverse needs.
- Data analytics insights for informed decision-making.
- Personalized recommendations for patrons.
- Optimized collection management and shelving.
- Efficient returns handling with RFID-enabled book drops.
- Targeted promotions and engagement through kiosks.
- Shorter queues and reduced wait times for patrons.
- Overall enhanced patron experience and modernized operations.

By embracing RFID technology, libraries can revolutionize their operations, enhance patron experiences, and adapt to the evolving needs of their communities, positioning themselves as modern and user-centric information hubs.

DISADVANTAGES OF RFID TECHNOLOGY IN LIBRARIES

Though RFID Technology offers various benefits, there are some disadvantages that are to be considered while implementing RFID technology in libraries.
- High initial investment costs for equipment and installation.
- Complex integration with existing library management systems.
- Privacy concerns due to potential unauthorized access to patron data.
- Security vulnerabilities if not properly protected from hacking.
- Potential for tag failures and reading errors.
- Need for staff training on RFID technology usage.
- Ongoing maintenance costs for updates and repairs.
- Requirement for technical expertise to manage and troubleshoot.
- Possibility of radio frequency interference affecting tag reading.
- Time-consuming tag application process.
- Different tag types required for various materials.

- Incompatibility with certain item types (e.g., metal-covered).
- RFID tag performance affected by environmental conditions.
- Resistance to change from patrons and staff.

SECURITY AND PRIVACY CONCERNS

While RFID technology offers numerous benefits to libraries, it also raises legitimate security and privacy concerns that need to be addressed to ensure the protection of patron data and the integrity of library systems. Some of the key security and privacy concerns associated with RFID implementation in libraries include:

- Unauthorized access to sensitive data on RFID tags.
- Risk of hackers intercepting RFID signals.
- Potential data breaches compromising patron information.
- Possibility of tag cloning leading to impersonation.
- Vulnerability to malware and virus attacks.
- Risk of eavesdropping on tag-reader communication.
- Privacy issues when storing sensitive data on tags.
- Exposure of data to third-party vendors.
- Lack of user consent for data collection.
- Identity theft due to exposed personal data.
- Need for compliance with data protection regulations.

CONCLUSION

RFID technology has emerged as a transformative change in the field of libraries, revolutionizing the way resources are managed, and services are delivered. The implementation of RFID technology has led to significant improvements in circulation efficiency, inventory management (stock verification), and patron experiences. By automating routine tasks and enabling self-service options, RFID has freed up valuable staff time, allowing librarians to focus on more personalized interactions and specialized services.

In addition, RFID technology's ability to track items in real-time has made libraries more secure by reducing theft and unauthorized access to materials. As libraries adapt to using digital resources, the possibility of combining RFID with technologies like IoT, mobile apps, and biometrics brings exciting potential for creating a smooth and connected library experience.

Yet, just like any technology, introducing RFID also brings up worries about security and privacy that need careful attention. Strong protection methods, teaching users, and clear data rules are important to keep patron information safe and maintain patron's confidence in the library.

In the end, RFID technology in libraries represents a promising and powerful tool that empowers librarians, enhances patron experiences, and paves the way for a bright and innovative future for the library ecosystem.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 92-99

Journal of Management Research
Peer Reviewed Journal

Impact of Innovative Library Services on Libraries

Dr. Pramod N. Alone
Librarian
Librarian, Vidya Vikas Arts. Commerce, & Science College, Samudrapur, Dist. Wardha
Dr. Sanjay More
Librarian
Chetana's H.S. College of Commerce and Economic & Smt.Kusumtai Chaudhari College of Arts, Bandra (E) Mumbai 400055
Corresponding author Email: pramodalone31@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Namdas V., Naik M. (2023).
Impact of Innovative Library Services on Libraries
Journal of Management Research
XV(2), 92-99 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 92-99

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Dr. Pramod N. Alone
Librarian
Librarian, Vidya Vikas Arts. Commerce, & Science College, Samudrapur, Dist. Wardha
Email: pramodalone31@gmail.com
Dr. Sanjay More
Librarian
Chetana's H.S. College of Commerce and Economic & Smt.Kusumtai Chaudhari College of Arts, Bandra (E) Mumbai 400055
Email: sanjaymore.more@gmail.com

ABSTRACT

It focuses on innovative library services adopted in libraries. Innovation is the process by which an idea is translated into a good and customers pay for it. The process of innovation involves the use of imagination and initiative to make better use of information and resources. The innovation process plays an important role in the case of libraries. With the continuous implementation of new ideas in libraries, librarians are able to meet the information needs of users. This will definitely help students in develop library services as they train readers, researchers and users.

Keywords: Innovative LIS Services, E-Library Services, Changing Library Service Needs, Qualities Librarian.

INTRODUCTION

In today's modern era due to new technologies researchers, students and professors as well as adopting new educational policies, librarians must be able to meet the needs of the reader, so when librarians do their job properly, they are called torchbearers of knowledge. Librarians are using the latest technology to help patrons. The main role of libraries is to act as an information resource, and they are working very efficiently in the digital information age. Libraries are implementing innovative technologies and services in libraries to set the trend. Librarians are adopting new technologies, digitizing library collections, selecting quality resources, and collaborating with other libraries. This is necessary as technology is becoming more sophisticated day by day. Essential essence focuses on having the right person in the right place at the right time. They collaborate with many other professionals, like content developers and designers, content managers, web site operators and data entry managers, to deliver the services most effectively.

The basic function of a library is to provide quality services to its users (Gopinath et al., 2001). Information and communication technology (ICT) has impacted libraries and information services. Available literature (Sridhar, 1999; Igun, 2006) and observations are proof of this. Internet technology impacts educational achievements for the benefit of all. (Esew and Ikyembe 2013).

This has paved the way for the electronic services and helped in the development of digital libraries (Youngok, 2006). This transformation comes with problems, as electronic and digital libraries are having special characteristics.

STATEMENT OF THE PROBLEM

Libraries in the past are sustaining in many physical structural forms, existing in huge buildings to rooms in parent organizations. Nowadays, libraries are "hybrid", existing in physical forms and collection with virtual library setup with electronic services and resources. Library users need to access accurate, current and appropriate information. With advent of technological developments, it is possible to give information services to patrons in effective way.

NEED FOR THE STUDY

Technological advancements are impacting the way information services are delivered topatrons by libraries.

Kunamadi and Kumbar (2007) has observed a paradigm shift that includes:

1. Change of information resources from paper media to electronic media.
2. Tackling the information needs of highly demanding library patrons.
3. Information quality is increased.

OBJECTIVES OF THE STUDY

This study aims to highlight how innovative technologies are helping in the development and delivery of improved library and information services to users.

1. The old methods of information delivery to patrons are identified.
2. What are the services being offered to patrons by librarians.
3. Identifying information dispersal mediums and technologies.
4. Studying the role of information professionals.
5. Going through the advantages of innovative technologies for effective informationservices.
6. Consideration of the challenges faced with innovative technologies.

REVIEW OF LITERATURE

Omekwu (2006) focused on the importance of delivery of information services to support institutions and for supporting research by facilitating access to information resources. According toDamanpour (1992) innovations are defined as the acceptance of an idea or behavior that is new to the adopting organization.

According to **Dictionary of Science and Technology,** Technology is defined as the new development of ideas required industrial use.

Digital technology is essential for collecting information, storing, retrieving and evaluating **(Kennedy & Davis, 2006)**. According to **Williams Sawyer (2003)** technology that are internet-based and are controlled by remote devices to check the functioning of the libraries.

ERA OF TRANSFORMATION IN LIBRARIES

New ICT technologies are making access to various information resources in a simplified manner. Present libraries are institutions with a huge collection of books and other information resources and are funded by parent institutions.

The traditional library services have evolved, and the innovative technologies as identified by Guruaj and Kunar (n.d.) are:

These services are:

- OPAC and Web OPAC services
- The existence of Virtual Reference Desk (VRD) or Virtual Reference Services (VRS) thatare using E-resources and online databases.
- FAQ, Ask a Librarian to provide answers to user queries.
- Compilation of bibliographies by database search
- CAS based on available internet resources.

APPLICATION OF INNOVATION

ICT was used to manage the library collection since the 1980s. Transformation of library and its activities and services came into existence due to advent of scholarly communication, the databases, internet and web tools usage in library setup. Now libraries are evolved from a center of information to a center of user friendly in different ways.

Libraries have subscribed access to digital resources, e-books, e-journals and other databases. Digitization and repositories are common for modern libraries.

CHALLENGES OF TECHNOLOGIES ON LIBRARIES

The application of innovative technologies in today's time for efficient delivery of library and information services comes with some challenges. Okere & Ekere (2008) noted the increase in the number of published reading materials. This recent development confirms that the Library and Information Science (LIS) curriculum must be strengthened for detecting published materials'authentication. Due to the current trend of increase innovation technologies, libraries are also facing the shortage of skilled library personnel having desired professional requirements (Oduwole, 2005; Adedoyin, 2005, Igun, 2006). Edie Rasmussen Choi, supported this view. Search engines areproviding a significant volume of information very quickly and in an easy way, but the authenticity cannot be verified.

BENEFITS OF ICT BASED PRODUCTS AND SERVICES

- It is important in providing efficient services.

- It helps in saving the time, energy and space.
- This helps to deal with information explosion.
- Also helps in resource sharing.

MOBILE PHONE SERVICES AND LIBRARIES

Mobile technology is a boon for the present day libraries. A library is able to contact and be in touch with the remote users by using mobile apps. Through mobile apps, users are given alerts, records checking can be done, renew of resources is possible, requesting of items, tracking inter library loans and catering to document delivery requests is possible.

Examples of Mobile based Services

- **News and Events updates:** Mobile devices are used for disseminating Information about job openings, competitions, library events like orientations program, stock verification, awards and so on. Intimation about library events/programs can be sent to the users personally.
- **Library Notices:** information regarding latest news and notices can be given to remote users through SMS facilities by the Libraries. Readers can be easily informed regarding the overdue books, library fines, reminder alerts, information about library events, etc.
- I**n-house search:** Through OPAC (online public access catalogue).
- **Library SMS Alert Service:** This service includes e-mail alert services. It updates users about new arrivals, informing users of reserved documents, information regarding overdue books, library circulars, e- journals, important events information through SMS alert.
- **Suggestion regarding purchase:** Suggestions from the library users are received through mobile phones.
- **Location of the library:** Arranging Virtual tours of the library with the help of smart phones.
- **Audio Tour:** Audio tour facility can be provided by libraries.
- **Video Lecture:** Librarians provide educational video clips to readers.
- **Research consultation:** Research scholars are able to contact the library staff and get suggestions via mobile phones.
- **Library Journal finder: F**ull text journals, magazine, newspaper content held in print by Libraries can be accessed.
- **Library Reference services:** Library patrons are able to be in touch with library professionals about anything through the live chat. The librarian can provide reference services through SMS.
- **Internet Access through Wi-Fi:** Libraries are offering wi- fi facilities for electronicinformation resources.

LIBRARY MOBILE APPS

App is basically abbreviation of "application". Computer programs which runs on smart phones, tablet computers and other mobile devices are termed mobile apps. Some useful mobile apps are Google Maps and Drop box etc.

QUICK RESPONSE CODES OR QR CODES

Librarians can install "QR Apps" on smart phones and easily access the QR Codes in libraries. Libraries are using social media for promotion. Librarians are able to share information about upcoming seminars, conferences on social media to aware library professionals.

National Programme on Technology Enhanced Learning (NPTEL)

NPTEL usage by the libraries is helping in improving the knowledge of students. Even thestudents from a backward or rural area can avail such facilities within a reasonable cost. Nowadays,e-learning through online web and video courses changes the face of the education sector andeliminates the distance between the expert faculties and interested scholars in concerned subjects.The adoption of NPTEL by the libraries can improve the students level of knowledge and learning. **Social Media** The exponential use of social media like use of Google, Facebook, Linkedin,

Twitter, Blogs,Mash-up, YouTube, RSS, Tag Cloud is helping for effective delivery of library services. The power of social media is being recognized by librarians.

Social Networking Sites (SNS)

It helps users in creating a public profile in online medium to interact with other users on thewebsite. They help in intimation of information like upcoming conference and seminars throughsocial media and through social sites like LinkedIn, Facebook, LIS links, Twitter and YouTube etc.

E-textbooks

E-readers are allowing students in highlighting text and adding annotations to it.

MP3 players

Library audio or video tours is made possible using MP3 Player.

Tablets

Tablets are used for various activities like searching databases, downloading articles. Tabletscan also be used on-the-spot reference services.

Changes in Library Service Needs

- Access to digital resources through Online/offline medium.
- Online access to library catalogs, library databases and the Internet.
- Searching Database.
- Reference service electronically.
- Library User Services, and patron queries.
- E-publishing.
- Information literacy Programs.
- Library Promotion and Marketing.

Changes faced by Libraries

- ❖ Application of new agendas.
- ❖ Infrastructural Changes.
- ❖ Library Collaboration.
- ❖ Technological expertise.
- ❖ In Reference to Training and Leadership.
- ❖ In reference to Library Education.
- ❖ Major Challenges for present day Librarians
- ❖ Existence of digital, virtual, and hybrid libraries.
- ❖ Enormous growth of web resource and users dependency on them.
- ❖ Advanced Information and Communication Technology(ICT).
- ❖ Existing Information explosion.
- ❖ Present Day Virtual Educational Institutions and Virtual learning environment.
- ❖ Use of digital resources.
- ❖ Increased User's expectations.
- ❖ Emergence of library networking and networks.
- ❖ Increased cost of information materials.
- ❖ Need to create specialized databases.
- ❖ Resource sharing through networking.
- ❖ Library promotion and marketing.
- ❖ The increased cost of information materials.
- ❖ Need to create specialized databases.
- ❖ The new electronic information environment.
- ❖ New roles and responsibilities.
- ❖ New tools and techniques of information handling.
- ❖ Resource sharing through networking.

RECOMMENDATIONS FOR FUTURE

The recommendations are:-

1. Capacity building for librarians is needed to meet modern times needs.
2. Need of adequate researchers to benefit from the best library practices, exposing the professionals to user based studies methods, surveys method, and interactive sessions between professionals.
3. Creating information literacy among library staff and its users for optimal use of library resources through user studies method, orientation program and training based workshops and organizing seminars is the need of the day.
4. Provision of effective and efficient power supply for smooth functioning of ICT enabled services is the need of the day.
5. IT infrastructure which is supported by quality bandwidth and other necessary infrastructureis also needed.
6. The government's intervention is recommended to import equipment with no tax liabilitiesto help in establishing big projects.
7. Education is considered an essential tool for overall development. The International organiza-

tions and other bodies should do more work to reduce poverty and bring about a revolution in the emergence of the information society.

CONCLUSION

Smart Librarians are going to survive with Smart Services. Saying that "Librarians are obsolete now because we have the internet" is like saying "Doctors are obsolete now that we have the telemedicine." It's great time to be a librarian.

The libraries are an integral part of society providing efficient services for their patrons. The main goal of the library is to be able to help library patrons in satisfying their information needs. The libraries are changing in the way they are functioning and their service delivery processes.

Information-driven technology plays a crucial role in this process, raising the user's expectations of newly added services. Innovative information technologies has successfully filled distance and time gap; new demands are being catered to and the need for resource sharing. Technology is changing the librarians image and improving librarians' skills for efficient delivery of library services in the 21st century (Iwe, 2005).

The importance of the librarian has increased in the new education system, and the new educational policy, the information tools in the library, are acquiring new skills.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 100-109

Journal of Management Research
Peer Reviewed Journal

Knowledge Management Systems in Libraries: Strategies, Best Practices, and Challenges

Mr. Sagar Londhe
Library Executive
Tata Management Training Centre, Pune
Mr. Sanjay Nayak
Manager-Knowledge Management
Tata Management Training Centre, Pune
Corresponding author Email: sagar.londhe@tata.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Londhe S., Nayak S. (2023).
Knowledge Management Systems in Libraries: Strategies, Best Practices, and Challenges
Journal of Management Research
XV(2), 100-109 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 100-109

Journal of Management Research
Peer Reviewed Journal

Knowledge Management Systems in Libraries: Strategies, Best Practices, and Challenges

Mr. Sagar Londhe
Library Executive
Tata Management Training Centre, Pune
Email: sagar.londhe@tata.com
Mr. Sanjay Nayak
Manager-Knowledge Management
Tata Management Training Centre, Pune
Email: snayak@tata.com

ABSTRACT

In today's rapidly evolving digital landscape, knowledge management (KM) has become essential, for libraries to achieve their organizational goals. Librarians must adopt knowledge management methods and best practices due to the growing availability of information and the need to efficiently capture, distribute, and use knowledge. In addition to examining the technologies and techniques utilized for knowledge management, this article will also highlight the difficulties encountered while putting knowledge management projects into practice.

Keywords: Knowledge Management Systems for Libraries, technologies, measurement, evaluation

INTRODUCTION

Knowledge management systems have become indispensable tools for libraries in the digital age. Libraries are struggling to efficiently organize, store, and share knowledge considering the exponential growth of information and the rising need for access to a variety of resources. The techniques, best practices, and difficulties relating to knowledge management systems in libraries are examined in this paper. The article intends to shed light on the necessity of implementing efficient knowledge management techniques in libraries by looking at the significance of these systems in facilitating information retrieval and improving user experience.

Definition and importance of knowledge management systems for libraries:

A knowledge management system for libraries is a set of tools, processes, and strategies that enable the effective capture, storage, organization, and retrieval of information within a library setting. It encompasses both digital and physical resources and facilitates the sharing and dissemination of knowledge among library staff and patrons. Knowledge management systems improve the effectiveness and efficiency of library operations, hence their implementation in libraries cannot be exaggerated. These technologies help libraries manage their collections more effectively, increase information availability, enhance decision-making, and encourage cooperation between staff and patrons. Libraries will trust among its users that important information and

resources are readily available, conserved for future generations, and protected by adopting these technologies.

OBJECTIVES

1. To study the strategies of knowledge management systems in libraries.
2. To find out the challenges of knowledge management systems in libraries.
3. To change the continuous improvement of knowledge management practices, encourage libraries to evaluate and improve their services continuously.
4. To enhance access to information by optimizing search mechanisms and digital platforms.
5. To contribute to the dissemination and creation of knowledge within library communities.

Strategies for Knowledge Management Systems in Libraries

Multiple strategies must be used in order to implement knowledge management systems in libraries. Making an extensive content management plan that involves the identification and categorization of all accessible information resources is a typical strategy. The procedures and resources to be employed for gathering, arranging, and accessing the available knowledge should also be described in this strategy. The promotion of a culture of cooperation and knowledge sharing among the staff and patrons should also be a priority for libraries. The creation of knowledge communities and the use of social networking tools can help with this. It takes a variety of ways to establish knowledge management systems in libraries. Making a thorough content management plan that includes cataloging all of the knowledge resources that are accessible is a typical strategy. This strategy should also specify the procedures and equipment to be employed to record, arrange, and access the available knowledge. Libraries should also put a lot of effort into encouraging a culture of cooperation and knowledge sharing among staff and patrons. This can be accomplished by creating knowledge communities and utilizing social networking tools.

1. **Selection and implementation of the right system:**
   Libraries need to be well equipped with technology and infrastructure to organize and disseminate knowledge in the knowledge everywhere era. To ensure compatibility and usability, an in-depth evaluation of the available systems, including user evaluations and demos, and the requirements of the library should be carried out. Libraries also need to think about the implementation process, which includes the **technical prerequisites, personnel training, and potential integration difficulties.**

A. **Identifying library needs and goals:**
   It is essential to first determine the needs and objectives of the library in order to set up knowledge management systems successfully. The library's objectives must also be explicit, particularly those related to enhancing customer happiness and boosting operational effectiveness. Libraries may efficiently customize their knowledge management systems to meet particular problems and provide desired results by defining these needs and goals. The starting point for the creation and use of effective knowledge management strategies in libraries is set in this process of identification.

B. **Conducting thorough research and evaluation of various systems:**
   Knowledge management system deployment in libraries depends on doing in-depth research and evaluating alternative systems. To identify which system best meets their goals and objectives, libraries must carefully evaluate many possibilities. This involves performing an in-depth

evaluation of the systems that are currently on the market, looking at their features, functionality, and suitability for use with the current library architecture. Libraries must also assess the standing and client satisfaction of the system providers. Libraries can then be certain that they have choose a solution that will effectively improve knowledge exchange and cooperation within the organization. The successful adoption of knowledge management systems in libraries therefore requires an exhaustive study and evaluation procedure.

C. Considering factors such as scalability, user-friendliness, and integration:

Scalability refers to the system's ability to accommodate the library's growing needs and adapt to changes in technology and information management practices. Additionally, the system should be user-friendly, allowing library staff to easily navigate and search for information, as well as providing a seamless experience for library users. Integration is crucial, as the system should be able to integrate with existing library systems and other third-party applications to ensure a smooth workflow and maximize efficiency. Overall, the success of a knowledge management system in a library relies heavily on these three factors.

2. Designing information for the organization:

A key component of knowledge management systems in libraries is designing the information architecture and structure. The effectiveness mostly depends on how well the information is arranged and structured to make it simple to access and retrieve. The practice of logically classifying and naming information resources is called information architecture. This guarantees that users may rapidly find the needed information by navigating the system with ease. A library's ability to manage and disseminate its knowledge resources more efficiently and with greater user satisfaction is also made possible by effective information organization. The designing process, however, presents a number of difficulties, such as the need to combine standardization and flexibility, take into account the various demands and preferences of users, and constantly adapt to the changing technological landscape.

A. Categorization and classification of resources:

The organization and classification of resources are an essential parts of knowledge management systems for libraries. This includes systematic resource organization, the use of relevant metadata, and effective indexing methods. Users can quickly find pertinent resources depending on their information needs by categorizing resources into various areas or disciplines. Additionally, classification methods like the Library of Congress Classification or the Dewey Decimal Classification offer a defined framework for organizing resources, making it possible to retrieve information consistently and effectively. However, it might be difficult to develop thorough and understandable classification systems that can handle a wide variety of library resources.

B. Developing metadata standards:

One of the most important components of knowledge management systems in libraries is the creation of metadata standards. Descriptive information about resources, including books, articles, and other digital objects, is called metadata. The effective identification and retrieval of resources is made possible by standards, which guarantee consistency and compatibility across many systems and platforms. Several parties, including librarians, catalogers, and IT experts, are involved in the development of metadata standards. It requires careful consideration of several components, including data elements, limited vocabularies, and metadata formats. Additionally, organizations and communities frequently collaborate to establish best practices that specifically address the needs and expectations of learners while developing metadata standards.

C. **Creating user-friendly interfaces for efficient access:** It is essential to design user-friendly knowledge management system interfaces for libraries to ensure effective information access. The end users of these interfaces should be taken into consideration when creating them so that they can quickly browse and find the information they require. The interface's design and organization, which should be simple and easy to use, are important factors. The user experience can also be improved by giving clear and simple instructions on how to utilize the technology. Strong and accurate search capabilities must be included as well, enabling users to find the needed information quickly and effectively.

Knowledge management system (KMS) integration in libraries has benefits as well as drawbacks. Libraries must efficiently manage and communicate large volumes of information through the knowledge interface. KMS can give libraries the resources they need to boost user and staff collaboration, information access and discovery, and decision-making processes. The installation of KMS, however, also presents difficulties, including the necessity for a sizeable financial commitment, employee adoption, and the requirement for well-defined policies to guarantee the success of these systems. Despite these obstacles, libraries are increasingly seeing the potential advantages of KMS and implementing these systems into their daily operations to better serve their patrons.

BEST PRACTICES FOR KNOWLEDGE MANAGEMENT SYSTEMS IN LIBRARIES

Ensuring a user-friendly interface and navigation is one of the best practice for information management systems in libraries. Libraries should build their systems with a simple, user-friendly interface that makes it simple for users to find and get the information they require. Consistent classification, efficient search capabilities, and logical content arrangement can accomplish this. To help users make the most of the system's features and capabilities, libraries should also concentrate on offering user support and training. Libraries can increase the efficacy and uptake of their knowledge management systems by placing a high priority on usability and accessibility.

1. **Collaboration and engagement with library staff:**
   Implementing and conducting efficient knowledge management systems requires cooperation and engagement from library employees. Staff workers at libraries are essential to the development of these systems since they have specialized knowledge and skills in the relevant fields. Collaboration makes it possible to share best practices, discuss ideas, and spot potential problems. Involving library personnel in the process also encourages a sense of ownership and commitment, which leads to a rise in the adoption and use of knowledge management systems. Building a solid partnership through regular communication and training sessions ensures that library personnel actively participates in the implementation and upkeep of these systems.

A. **Training and educating staff on system usage and maintenance:**
   It is necessary to offer personnel sufficient training and education on system usage and maintenance if knowledge management systems are to be successful in libraries. This includes instruction on how to use the system, upload and update data, and resolve any potential technical problems through training sessions and seminars. Libraries can ensure that their staff is competent and equipped to effectively utilize and maintain the knowledge management system to benefit the organization and its users by investing in ongoing training and education.

B. **Encouraging active participation and contributions from staff members:**
   Knowledge management systems must be implemented in libraries with the active involvement

and contributions of staff members. Participating staff members in the process develops a sense of ownership and dedication for the system as well as knowledge acquisition and sharing. The major users of such systems, library employees, have important knowledge and experience that can improve the system's overall efficacy and efficiency. Regular training sessions, workshops, and rewards can be used to incentivize staff members to embrace the system and actively participate in its upkeep and improvement. This will encourage them to actively contribute to the knowledge management system. Additionally, creating a culture of knowledge sharing and collaboration within the library can further enhance staff participation and contribute to the success of the knowledge management system.

2. User-center design and accessibility:

Accessibility and user-center design are key considerations when creating knowledge management systems for libraries. This involves gathering feedback from users, conducting usability tests, and conducting user research to make sure the system fulfils their needs and expectations. This requires subscribing to accessibility standards, which include providing images with alternative text, utilizing crystal-clear language, and ensuring that assistive technology is compatible. Implementing user-centered design and accessibility principles can help libraries make their information management systems more accessible and usable, ultimately improving the user experience.

A. Conducting user research to understand library patrons' needs:

Conducting user research to understand the needs of library users is an important method on library knowledge management. Libraries can learn about users' preferences, behaviours, and expectations by getting feedback from them. This data is crucial for prioritizing the services and resources that should be used and for enhancing the user experience. Data can be gathered via user research techniques including surveys, interviews, and focus groups to assist libraries in making decisions and customizing their services to better meet the needs of their customers.

B. Improving user experience:

Knowledge management systems in libraries must be successful and effective by incorporating user feedback and continuously enhancing the user experience. Administrators of libraries can make educated choices on system enhancements and improvements according to user feedback, which offers insightful information about the system's strengths and weaknesses. Libraries can identify problem areas and implement essential adjustments by actively seeking user feedback through surveys, focus groups, and user testing. In order to produce a seamless and simple user experience that satisfies the requirements and expectations of its users, libraries can also adopt user-center design concepts. By continuously incorporating user feedback and improving the user experience, libraries can enhance the usability and effectiveness of their knowledge management systems, ultimately leading to greater user satisfaction and engagement.

3. Continuous improvement and innovation:

Knowledge management systems must be successfully implemented and used in libraries, and this requires constant innovation and improvement. Libraries must constantly improve their systems and procedures in order to stay ahead of the times since both technology and user needs change quickly. This includes assessing and updating the system's features on a regular basis to make sure they continue to suit the evolving needs of library customers. Libraries should embrace innovation by investigating cutting-edge developments and technological advances that can improve their knowledge management systems. Libraries can successfully

adapt to and thrive in the constantly shifting information world by embracing continual improvement and innovation and by offering their patrons greater services and resources.

A. **Regularly upgrading the system's functionalities:** The frequent updating and upgrading of the system's features and functionalities is one of the most important tactics for ensuring the efficacy and efficiency of knowledge management systems in libraries. To accommodate the expanding demands of consumers, libraries must keep up with the latest developments as technology develops quickly. Libraries can improve their search functionality, user interface, and add new features that meet the evolving needs of information seekers by routinely updating the system. Additionally, improving the system's functionality enables libraries to make use of cutting-edge technologies to provide their patrons with more customized and interactive services. Hence, through continuous improvement and enhancement, libraries can ensure that their knowledge management systems remain reliable and relevant in the evolving digital landscape.

B. **Keeping up with emerging technologies and trends in the library field:** Keeping up with new technologies and industry developments is essential for properly managing knowledge in libraries. The way libraries are run and how the material is accessible have both been greatly changed by the changing digital landscape. To remain relevant and improve the user experience, libraries must adopt new technologies including cloud computing, mobile apps, social media platforms, and data analytics. Additionally, keeping up with new trends enables libraries to modify their offerings to satisfy patrons' shifting demands and expectations. Libraries may continue to offer helpful knowledge management systems to their communities by continually monitoring and implementing new technology and trends.

In conclusion, the administration and accessibility of huge amounts of information can be substantially improved by the deployment of knowledge management systems in libraries. These systems give librarians the tools and techniques they need to properly organize, store, and retrieve information, which ultimately enhances the user experience. Additionally, these technologies encourage a culture of learning and innovation by facilitating cooperation and knowledge sharing among library personnel and users. However, there are difficulties with their adoption as well, such as the requirement for ongoing maintenance and updates, expenses, and training. Knowledge management systems are vital for libraries in the digital age because the potential advantages exceed the difficulties.

CHALLENGES IN IMPLEMENTING KNOWLEDGE MANAGEMENT SYSTEMS IN LIBRARIES

Knowledge management system deployment in libraries is not without difficulties. The fact that many library organizations are resistant to change is a serious problem. Employees may feel at ease with their current methods of operation and consider the implementation of a new system to be disruptive and unnecessary. Furthermore, financial limitations can hinder libraries from acquiring the hardware and software essential for efficient knowledge management. Last but not least, libraries with limited resources may struggle with the time-consuming and expensive training and teaching needed to operate these systems efficiently. To overcome these obstacles, a well-defined execution strategy, strong leadership, and clear communication are necessary.

1. **Resistance to change and lack of staff buy-in:**
   Major obstacles to knowledge management system implementation in libraries include worker

resistance to change and a lack of support from senior management. Because they are at ease with the status system and are wary of the unexpected, many librarians are refusing to change. The inability of some staff members to use the new system to its full potential, as well as their unhappiness with it may make them reluctant to adopt it. In order to ensure that staff members understand the advantages of the knowledge management system and feel confident in their ability to utilize it, it is necessary to implement efficient change management methods and extensive training programs.

2. Staff reluctance and skepticism:

There can be several obstacles to overcome when implementing a knowledge management system in libraries, such as staff resistance and skepticism. Most of the time, especially when it comes to implementing new technology or systems, library staff members are nervous about change. This resistance could be brought on by apprehension about losing one's job or a dislike of picking up new abilities. Skepticism may also develop as a result of prior failures to deploy similar systems. In order to overcome these challenges, library administration must thoroughly and clearly explain the advantages of the knowledge management system. Addressing employee resistance and skepticism requires involving personnel in decision-making, offering thorough training, and providing continuing support.

3. Communication the benefits of using the system:

In order to gain the support and buy-in of library clients, it is essential to effectively communicate the system's advantages and benefits. The establishment of a knowledge management system can enhance library operations and services if there is effective communication between all parties. This can involve emphasizing advantages including greater information availability, more staff collaboration, an enhanced user experience, and simpler operations. Library administrators can address staff members' worries and skepticism by clearly outlining these benefits, which will motivate them to actively participate in the system's development and use. Additionally, effective communication can help library users accept the system by ensuring that they comprehend how it can improve their research and information-seeking operations.

4. Financial constraints and resource allocation:

Knowledge management system deployment in libraries is significantly influenced by resource allocation and financial restrictions. Budgets are frequently tight; therefore, libraries must carefully utilize their resources to improve their capacity for knowledge management. This necessitates careful budgeting and planning for the installation and upkeep of these systems. Libraries can maximize their knowledge management systems, offer quality resources and services to their users, and successfully manage their financial restrictions by assigning resources and monitoring their budgets.

A. System implementation and maintenance fund:

A key component of successfully adopting knowledge management systems for libraries is securing money for system development and maintenance. Libraries might investigate a variety of funding options, such as applying for grants, working with other organizations, or forming partnerships with suppliers. They can also emphasize the system's potential advantages, such as increased effectiveness, greater information availability, and an improved user experience, to create a compelling argument for investment. To maintain the long-term survival and efficacy of knowledge management systems in libraries, it is ultimately imperative to secure appropriate funding.

B. Resource Allocating sufficient resources for system enhancements and support:
Knowledge management systems in libraries must be implemented and kept up to date successfully, which requires allocating enough resources for system improvements and support. To satisfy the changing demands of library patrons, these systems need constant updating, troubleshooting, and enhancements. A sufficient budget must be set aside to hire qualified personnel and buy the required hardware and software for system support. Resources must also be set aside for teaching library employees how to use and administer these technologies. Lack of customer happiness, system malfunctions, and a library's inability to efficiently manage and distribute information are all consequences of inadequate resource allocation. Libraries must therefore understand how crucial it is to devote enough resources to guarantee the successful deployment and maintenance of knowledge management systems.

5. Data privacy and security concerns:
Concerns about data security and privacy have become key factors in libraries adopting knowledge management systems (KMS). Libraries are faced with the difficulty of protecting the privacy and security of user data as more and more sensitive information is being kept and managed online. This involves guarding against unwanted access to private and confidential data and stopping its misuse or improper handling. To keep the trust of their patrons, libraries must adhere to legal and ethical rules governing data privacy. Encryption and access controls, as well as the adoption of explicit policies and processes for data handling and storage, must be implemented to address these concerns.

A. Ensuring the protection of sensitive library information:
Libraries must take steps to protect user privacy and confidentiality in order to guarantee the security of sensitive library data. Encryption technology, secure information management systems, and strict access controls can all help with this. Additionally, libraries should create policies and procedures that specify how sensitive information should be handled and disseminated. They should also train their personnel on data privacy and protection. To adjust to changing threats and technologies, libraries should also continuously assess and upgrade their security procedures. Libraries can satisfy their moral and legal obligations while also maintaining the confidence of their patrons by placing a high priority on protecting sensitive library information.

B. Complying with relevant data protection regulations and standards:
Knowledge management system implementation by libraries must adhere to all applicable data protection laws and guidelines. For instance, libraries must abide by regulations like the Data Protection Act in the US or the General Data Protection Regulation (GDPR) in the EU. In order to comply, strict security measures must be put in place, data must be encrypted, and customers must be transparently informed about the scope and purpose of data gathering. Additionally, libraries should actively engage in staff training to ensure the responsible management of data and periodically review and update their procedures to conform to growing privacy rules.

CONCLUSION

In order to efficiently organize and share information, libraries now depend on knowledge management systems. They have demonstrated success in boosting user satisfaction and the effectiveness and productivity of library services. The importance of cooperation, training, and appropriate data management have all been covered in this essay, along with other techniques and best practices for adopting knowledge management systems. However, there are many obstacles

that libraries must overcome in order to embrace and use of these systems, including resource constraints, and security issues. Despite these difficulties, libraries' missions are supported by knowledge management systems, which are an essential aspect of their operations.

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Chetana's Institute of Management & Research (CIMR)
ISSN No. 0976-0628 Volume XV(2) pg 110-118

Journal of Management Research
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Trupti A. Tulsankar
Librarian, Pragati College of Arts and Commerce, Mumbai, India
Dr. Priyanka V. Sane
Semi Professional Assistant, Tata Institute of Social Sciences, Mumbai, India
Dr. Veena A. Prakashe
Information Scientist & Professor, RTM Nagpur University, Nagpur, India
Corresponding author Email: trupti.tulsankar@gmail.com

Area of the Paper : Education Management
Type of the Paper : Exploratory Research
Type of Review : Peer Reviewed as per COPE guidelines
Indexed In : Proquest

How to Cite this Paper:
Tulsankar T., Sane P., Prakashe V. (2023).
Trends in Terminological Networks in Stress among Medical College Students: A Scientometric Study
Journal of Management Research
XV(2), 110-117 https://cimr.in/faculty-research.html#research-Journals

Paper Submission : 30/July/2023
Paper Publication : 30/September/2023

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Trends in Terminological Networks in Stress among Medical College Students: A Scientometric Study

Trupti A. Tulsankar
Librarian, Pragati College of Arts and Commerce, Mumbai, India
Email: trupti.tulsankar@gmail.com
Dr. Priyanka V. Sane
Semi Professional Assistant, Tata Institute of Social Sciences, Mumbai, India
Email: priyasane10@gmail.com
Dr. Veena A. Prakashe
Information Scientist & Professor, RTM Nagpur University, Nagpur, India
Email: sh_veena@hotmail.com

ABSTRACT

The main aim of the current study was to assess articles on stress among medical college students using Scientometrics. A scientometrics analysis of works authored in the field of psychology from 1989 to 2022 that appeared in the Web of Science database was carried out. The main finding indicated that the most common author keywords and co-words were found using network visualization techniques and the software VOS Viewer.

Keywords: Stress, Depression, Anxiety, Mental health, Burnout

INTRODUCTION

Any change that causes physical, emotional, or psychological distress is called stress. When something needs your attention, your body reacts with stress. Medical students experience considerable academic and clinical stress, which can be upsetting. Few studies have examined student stress, particularly among medical students.

REVIEW OF LITERATURE

A review of the literature by Dyrbye et al (2005) demonstrated that environmental changes, ethical and moral quandaries, and exposure to human misery, abuse, personal life events, and debt were likely causes. The research shows that as time passes, discomfort worsens, which can lead to poor academic performance, mental health issues, and burnout. Stress is linked to higher levels of depression, drug abuse, relationship problems, anxiety, and suicide. Furthermore, exhausted, agitated, and anxious doctors will not deliver the same level of treatment as those who are not affected by these symptoms. Anxiety, sadness, and stress, which rise during childhood and peak at 25, affect college students more (Kessler et al., 2007). Several studies label these trends as a higher-education "mental illness crisis" (Kadison and DiGeronimo, 2004; Evans et al., 2018). Depression and anxiety in early adulthood are linked to poor academic performance, involvement, and completion (King et al., 2006; Antaramian, 2015), broken relationships (Kerr and Capaldi, 2011), constant mental illness issues; university dropout, fewer jobs, and lower financial security.

STATEMENT OF THE PROBLEM

"Trends in Terminological Networks in Stress among Medical College Students: A Scientometric Study" is centered around The problem acknowledges that stress negatively affects medical students' academic performance. It also highlights the increased risk of substance abuse, feelings of despair, and even the grave concern of suicide among these students due to stress. Additionally, it might motivate psychiatrists and psychologists to actively engage in supporting medical students in managing stress, ultimately enhancing their overall well-being.

SIGNIFICANCE OF THE RESEARCH

Research offers insights into how prevalent and intense stress is among global medical students. It Emphasizes the need to understand how stress relates to substance abuse and academic performance among these students. Stress among medical students has a negative impact on their academic performance and increases their risk of substance abuse, despair, and suicide. The objective of this research was to evaluate global publications on stress among medical college students, which in turn provide an estimate of the frequency and intensity of stress as well as its correlation with substance abuse and academic achievement in medical students. Further research may encourage psychiatrists and psychologists to assist medical students in stress management and improving their overall health.

OBJECTIVES OF THE STUDY

1. To discover new field research areas.
2. To assess the country and language availability of field articles.
3. To locate the relevant author keyword network.
4. To discover the prevalence of certain keywords in the field.

Data Sources: This information came from Clarivate Analytics' Web of Science bibliographic database. Each record contains indexing citations, authors, topics, titles, subject keywords, abstracts, magazine titles, author addresses, and publishing years. The Web of Science (WoS) core bibliographical information was used. It offers multiple subscription databases. The arts, humanities, science, and social science are covered by 256 fields of citation data.

Sample of the Study

The study sample was based on a Web of Science psychology search query. This analysis sampled 865 psychology scholarly publications from 1989 to 2022. Library of Congress Subject Heading List keywords were used to extract data to analyse psychology publishing productivity.

Entry Terms

- **Stress**
- **Stress Management**
- **Stress Management Program**
- **Organizational stress**
- **Employees stress**

Data Analysis

VOS Viewer software was used to list the most popular phrases and build networked visualizations.

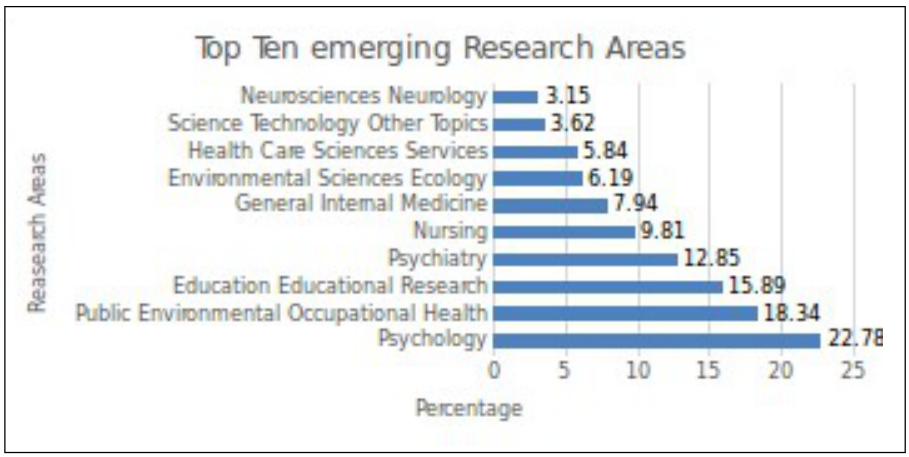

Figure 1: Top Ten emerging Research Areas

Figure 1 shows the top ten growing research areas by publication count from 1989 to 2022. Psychology is a highly popular and growing scientific topic with 22.78 % (195) publications. The second most common field was Public Environmental Occupational Health with 18.31% (157) of publications. Education and Educational Research published 15.888% (136). Fourth, fifth, and sixth most common research areas are psychiatry, nursing, and general internal medicine (12.85%, 9.813%, and 7.944%). Environmental Sciences preceded Ecology, Health Care, Science Technology, Neurosciences, Other Topics Neurology is the least popular new study area with 6.192%, 5.841%, 3.621%, and 3.154% of publications. Developing areas are multidisciplinary subfields of psychology.

Figure No. 2: Country Wise Distribution of Publications

Figure 2 shows the top 10 psychology research countries. Each country's ranking. United States leads with 30.37% of publications from 1989 to 2022. China ranks second with 11.45% of publications, but the US ranks first with a large margin. Australian publications rank third with 5.37 percent, followed by England and Germany with 4.67 percent and Canada and Saudi Arabia with 4.206 percent. With 3.388 percent of publications, India ranks 6th and Spain last. The data show that developed countries rank top.

Table 1: Publications in the subject of psychology, broken down by language, from 1989 to 2022.

Languages	Record Count	% of 856
English	827	96.612
French	8	0.935
Spanish	7	0.818
German	6	0.701
Hungarian	2	0.234
Turkish	2	0.234
Croatian	1	0.117
Dutch	1	0.117
Japanese	1	0.117
Russian	1	0.117

Table 1 shows that out of a total of 856 publications, 827 were written in English. The results indicate a slant towards the English language, which is the main means of publishing for 96.61 percent of the papers. Among the total record counts, 8 were in French, 7 in Spanish, 6 in German, and 2 each in Hungarian and Turkish. The numbers for Croatian, Dutch, Japanese, and Russian are all 1.

Table No. 2: Author Keyword Relationship in the Psychology Field from 1989 to 2022.

Keyword	Occurrences	Link strength
Depression	65	107
Mental health	61	93
Anxiety	52	96
Covid-19	49	68
Medical students	42	34
College students	41	38
Mindfulness	26	50
Adolescents	24	10
Coping	23	34
Burnout	22	22

Table 2 ranks the top 10 keywords and their 65 occurrences out of 856 records. Depression has appeared the most, followed by mental health (61 times). Medical students (42), college students (41), mindfulness (26), adolescents (24), coping (23) and burnout (22) followed by anxiety and covid-19 (52 and 49).

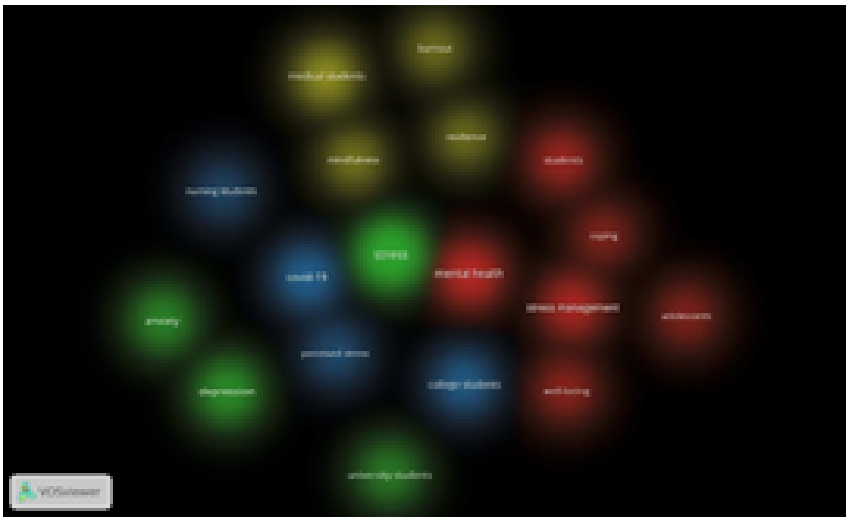

Figure No. 3: A Network of Author Keywords

Figure 3 - cluster map of Psychology author keywords from 1989-2022. The visualisation includes networked lines and keyword weights in color-coded groups based on terminology. Stress management, mental health, wellbeing, etc. are under Group 1 (Red). Blue group 2 includes psychology and related fields like covid 19, college students, etc.Medical students, mindfulness, burnout, etc. are in Yellow Group 3. Green group 4 contains stress, anxiety, sadness, etc. Color-coded clusters show that occured together with phrases.

Table No. 3: The Top 10 Most Commonly Used Keywords in Psychology and the Number of Times They Were Cited Between the Years 1989 and 2022

Keyword	Occurrences	Link strength
Stress	201	248
Depression	132	211
Health	110	136
Management	107	130
Mental-health	102	151
Anxiety	99	195
Prevalence	90	138
Students	88	87
College- students	73	96
Impact	59	81

Table 3 identifies the top 10 psychology keywords from 1989 through 2022. Stress has appeared the most (201), followed by mental health (132). "Health" and 'Management' featured 110 and 107 times, then came 'Mental health' (102), 'Anxiety' (99), 'Prevalence' (90), 'Students' (88), 'College students' (73), and 'Impact' (59).

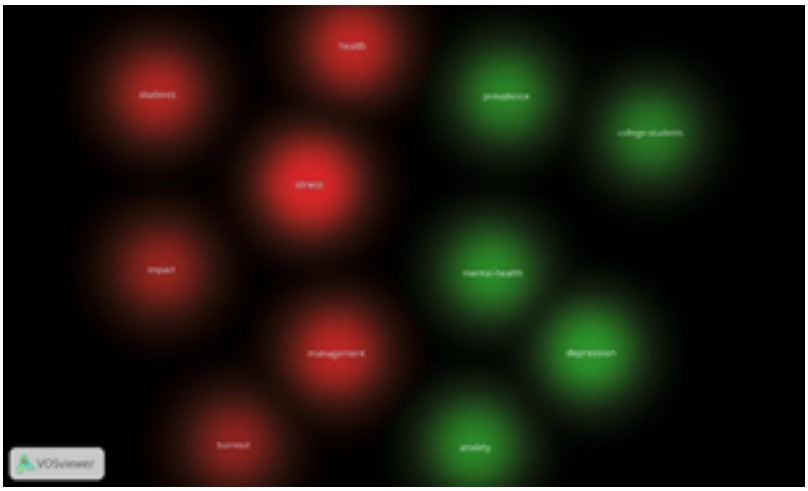

Figure No 4: Occurrences of the Top 10 Most-Used Keywords

Figure No 4 shows Density Visualization of top 10 Keywords and their Occurrences in Public Environmental Occupational Health Category in Psychology domain from 1989-2022.

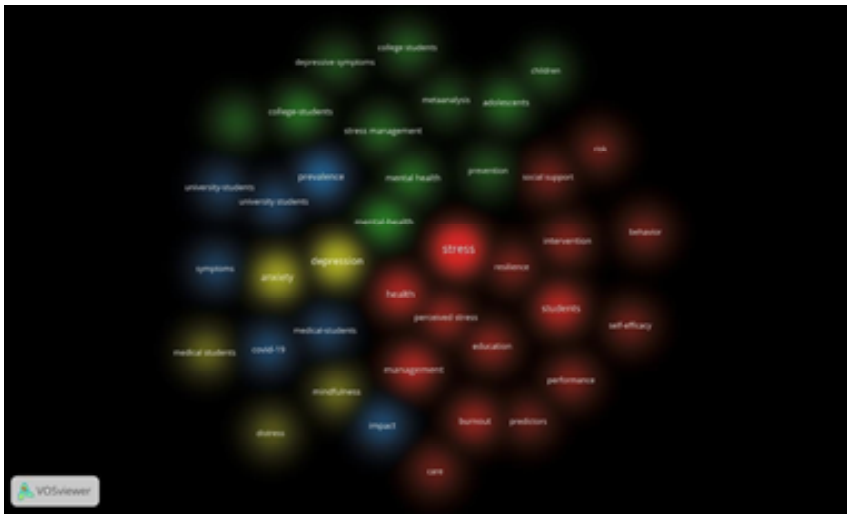

Figure No. 5: Displaying Keyword Density

Figure 4 and 5 show the density of common Psychology keywords from 1989-2022. The visualization's colours show phrase density at each position. The colour of the point is closer to red if there are more things in the vicinity and higher weights. The colour of a point is closer to blue if there are fewer things around and lower weights.

FINDINGS

- In 2022, 15.654% of articles got published.
- Public Environmental Occupational Health Category receives the highest First Ranking, Record Count i.e. 195 (18.341%).
- Users have given Highest Preference to 'Articles' i.e. 802(93.692%) Record Count, for their scholarly publication.

- The most prevalent and developing research area is psychology with 22.78% (195) publications.
- USA is first with 30.374% of papers, followed by Spain with 3.388%. 3.738% of publications came from India, 8th.
- It appears that 96.612% of publications were in English, whereas Croatian, Dutch, Japanese, and Russian were least used.
- The author's keyword is 'Depression' occurs the most. Stress has appeared more frequently.

CONCLUSION

A 1989–2019 data analysis supports the study's findings. Based on phrase frequency, keyword, and co-word analysis, density visualizations and networked clusters were created. The study revealed that 15.654% of the articles published in 2022 were in the Public Environmental Occupational Health Category, which ranked highest overall. Of all the scientific areas, psychology had the highest percentage of publications (22.78%). The leading nations were Spain, India, and the United States. The most widely utilized language was English. This study examines stress among medical students, revealing its prevalence, severity, and relationship with substance abuse and academic achievement. It suggests further research could encourage psychologists and psychiatrists to assist in stress management and overall health improvement.

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Dr. Nandita Mishra
The Director,
Chetana's Institute of Management & Research
Survey No. 341, Bandra East, Mumbai - 400 051. Maharashtra
Tel.: (022) 26513 346 / 26516643
E-mail: director@cimr.in / publication@cimr.in

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