



Impact of Information and Communication technology on Library services

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Abstract

This study examines the impact of information and communication technology on library services of Prime Minister College of Excellence, Shri Atal Bihari Vajpayee Government Arts and Commerce College Indore, India. The research, conducted through a survey of 400 students, aims to assess students' awareness, usage, and perceptions of the library's ICT offerings. The findings indicate that a significant majority of students 92.2% are aware of the ICT services, with a strong preference for electronic resources over a print materials. The study also reveals high levels of satisfaction among students, with over 90% feeling that ICT has improved the quality of library services. Frequency of visiting to the library reveal that 37.4% of student visit the e-library everyday, 43.3% visit weekly, 16% visit monthly. Study about ICT applied services reveal that highest awareness with 149 respondents indicate that the e-resources is a central access point for getting their desired information followed by awareness of 61 respondents implies that the library's social media presence has room for growth in engaging the community followed by 62 respondents are aware of library website. suggesting a need for better promotion of library website.



Keywords : Impact of Information and Communication Technology; Library Services; Prime Minister College of Excellence, Governments Arts and Commerce College

Introduction

Information and Communication Technology (ICT) has emerged as a transformative force in virtually every aspect of contemporary society, revolutionizing the way we access, manage, and disseminate information. Libraries, as venerable institutions committed to knowledge preservation and dissemination, have not been immune to this seismic shift. In fact, the impact of ICT on library and information services has been nothing short of revolutionary, reshaping the very essence of these institutions and how they serve their communities.

The history of libraries is one of adaptation and evolution. From the ancient scrolls and manuscripts of Alexandria to the printed volumes of the Gutenberg era, libraries have continuously evolved to meet the information needs of their patrons. However, it is the digital age that has ushered in the most profound and rapid transformation. ICT, encompassing computers, the internet, software, and digital storage, has not only affected the way libraries operate but has also redefined their role in the modern information landscape.

One of the most striking effects of ICT on libraries is the digitization of vast collections of books, journals, and other resources. Digital libraries, online databases, and e-books have made it possible for library patrons to access a wealth of information from the comfort of their own homes or anywhere with an internet connection. This has democratized knowledge, breaking down geographical barriers and ensuring that information is accessible to a global audience 24/7. Gone are the days of painstakingly searching through card catalogs and dusty stacks; today's library users can access and search for information with just a few keystrokes.

Moreover, the role of librarians has transformed as well. In the past, librarians were predominantly custodians of physical collections, guiding patrons through stacks and assisting with reference queries. Today, librarians are digital curators and information navigators. They not only assist users in finding relevant digital resources but also provide guidance on evaluating the credibility of online sources and utilizing digital research tools effectively.



The advent of ICT has also revolutionized how libraries engage with their communities. Online library catalogs, social media, and virtual programming have enabled libraries to reach a wider and more diverse audience. The library has become a hub for not just accessing information but also for lifelong learning, community engagement, and cultural enrichment.

In this evolving landscape, it is crucial to explore the multifaceted impact of ICT on library and information services. This exploration encompasses both the opportunities and challenges that come with this digital transformation. It delves into questions of digital preservation, intellectual property rights, privacy, and the digital divide, among others. In this discussion, we will examine how libraries have adapted to the digital age and continue to evolve, remaining relevant and essential in the ever-changing world of information and communication technology.

Background of the study

In the contemporary educational landscape, Information and Communication Technology (ICT) has become increasingly integrated with library services to enhance the learning process and improve the efficiency of various resources. This study explores the impact and relevance of ICT within academic libraries and focuses on Prime Minister College of Excellence, Shri Atal Bihari Vajpayee Govt. Arts and Commerce college, Indore, India. The integration of ICT library services has gained significance due to the transition from predominantly print-based resources to hybrid collections that include both print and electronic materials.

The digital transformation has had far-reaching implications for libraries, resulting in changes in library workflows, competencies, and user expectations. The benefits of ICT integration are well-documented, such as providing easy and remote access to a wide range of disciplines, enhancing searching and navigation capabilities, and expanding the availability of full-text resources. However, the effective implementation of ICT in libraries is crucial for meeting the evolving needs of library users, particularly in the context of a diverse and technologically connected world.



Statement of Problem

While the advantages of ICT integration in libraries are widely acknowledged, challenges persist in ensuring that ICT resources are effectively utilized to serve the needs of students and faculty at Prime Minister College of Excellence, Shri Atal Bihari Vajpayee Govt. Arts and Commerce College Indore. These challenges include issues of awareness, accessibility, and user perception. Despite significant investments in ICT, libraries in developing nations, including Indore, may still not fully meet patrons' information needs, potentially leading users to seek alternative sources of information outside the library.

Additionally, stress and technological skill gaps among library professionals in the User Services Division may hinder the seamless implementation and adoption of ICT. Addressing these challenges is essential to optimize the potential of ICT in supporting the academic community and advancing the role of the library as a vital resource for research and learning.

Need and Significance of study

This study addresses the pressing need to evaluate the impact of ICT integration with a specific focus on Prime Minister College of Excellence, Shri Atal Bihari Vajpayee Govt. Arts and Commerce college Indore. Understanding the level of awareness, the perceived impact, and the ease of use of ICT offerings within the library is critical for improving services, user satisfaction, and the library's role in supporting academic endeavors.

Furthermore, the findings of this study may offer valuable insights into how to bridge the gap between ICT availability and effective utilization, enhance training and awareness programs, and empower library users and staff to leverage ICT resources to their fullest potential.

Review of literature

The literature underscores the clear advantages of integrating technology with library services to support the learning process, enhancing efficiency and user-friendliness across various service offerings and resources. Notably, Premchand-Mohammed (2011) highlights the shift in Caribbean libraries, especially at UWI, St. Augustine, from primarily print-based resources to hybrid collections, encompassing both print and electronic materials. Informal interviews with



students revealed their pressing ICT needs for effective research, including ease of access, remote accessibility, coverage across various disciplines, in-depth content, improved searching and navigation features, and the availability of full-text resources. Addressing these needs necessitated ongoing staff training, library workflow reorganization, and the development of IT skills not only among IT specialists but also among librarians and library assistants who engage with online platforms and technologies.

Ayre (2016) emphasizes that most libraries, as part of global tertiary education support, now offer some form of basic ICT services, whether it be Wi-Fi access or email subscriptions to online reference services. This integration of ICT into library services has resulted in the computerization of many traditional roles, transitioning them into the virtual realm. Furthermore, Chow and Backnall (2011) outline emerging technology trends applicable to libraries, including integrated library systems, new metadata schemas, meta-searching and discovery tools, Web 2.0 applications, e-book readers, pay-per-view access, consortia arrangements, media resources, meeting spaces, circulating devices, mobile technology, digitization, cloud computing, virtual environments, and instructional literacy and technology initiatives.

Krubu and Osawaru (2011) provide insights into the ICT offerings within the User Services Divisions at the Benson Idahosa University Library and John Harris Library, enumerating services such as OPAC, reference services, bibliographic support, current awareness services, document delivery, interlibrary loans, audiovisual resources, and customer services. Furthermore, in the twenty-first century, library users increasingly demand virtual accessibility through interactive software and greater availability of materials.

In the context of Nigeria, Adebayo et al. (2018) affirm that ICT has not only enhanced the quality of information provided by libraries but has also broadened the library's reach to cater to a diverse audience. Research conducted by Boateng and Ameyaw (2019) at the Presbyterian University College Library in Ghana reveals that ICT availability in academic environments positively motivates students to succeed in their learning and research endeavors, ultimately providing faster and better services to end-users. However, despite substantial investments in ICT, its utilization in academic libraries of developing nations, including the Caribbean region, often falls below expectations. This may compel patrons to seek information and assistance from



Internet cafes and alternative information centers, despite the library having readily available resources to fulfill their needs.

Deans and Durrant's (2016) study conducted at five Jamaican community colleges underscores the underutilization of online resources, particularly online databases, despite the libraries' efforts to acquire these resources through consortia arrangements. This limited usage can be attributed to a lack of awareness regarding the content available on these databases and a perceived lack of the information's usefulness. Importantly, the study reveals that most students view the library as an additional information source, and their awareness of the library's potential often comes from friends or orientation programs.

Additionally, research has pointed out that ICT implementation in academic libraries has presented challenges for professionals in the User Services Division. These challenges include stress due to extended computer usage, adapting to rapidly changing technologies, and rising expectations. Moreover, the literature underscores that the mere introduction of new technology does not guarantee its immediate adoption. Therefore, recommendations have been made for greater training, marketing, and awareness initiatives across Caribbean campuses to empower students and faculty with the knowledge and skills needed to effectively utilize ICT and research facilities.

Objectives of the study

1. Assess student awareness of ICT offerings in the college User Services Division.
2. Evaluate how ICT resources affect student research and learning, especially through the Reference and Instruction Unit.
3. Gauge student perceptions of the utility and user-friendliness of the colleges ICT services.
4. Identify the type of information resources used by the students in the library.



Scope and limitations of study

Scope

- This study is focused on Prime Minister College of Excellence, Shri Atal Bihari Vajpayee Govt. Arts and Commerce college Indore India.
- The study concentrates on ICT offerings available within the User Services Division of the college library.
- Data collection are conducted through Google form a questionnaire shared to the student population of the college.

Limitations

- The study's findings may be specific to the college and geographic location in question.
- The research methodology, based on a questionnaire, may have limitations in providing in-depth insights into user perceptions.

Methodology

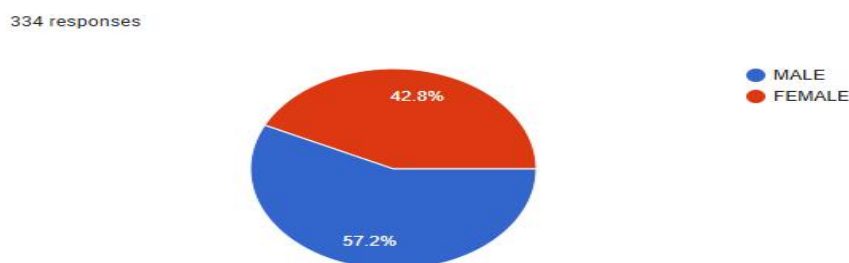
The present study was conducting using survey method. Data collected by using questionnaires designed through Google form and Google form has been share with respondent of Prime Minister College of Excellence,. Shri Atal Bihari Vajpayee Govt. Arts And Commerce College Indore M.P. (Prime Minister College of Excellence) from 23/08/2025 to 04/09/2025. Questionnaires were shared with 400 students, out of which 340 students responded. on the basis of filled up questionnaire the data has been analyzed and tabulated. All the result have been present in the form of tables and chart. For the data analysis percentage technique has been adopted. The analysis aimed to understand the awareness, impact, and perceptions of students regarding ICT offerings in the library.

Analysis and Interepration of study

Table 1
Analysis of Gender

Gender	Number of respondents	Percentage
Male	191	57.2
female	143	42.8
Total	334	100

Fig. 1 : Analysis of Gender

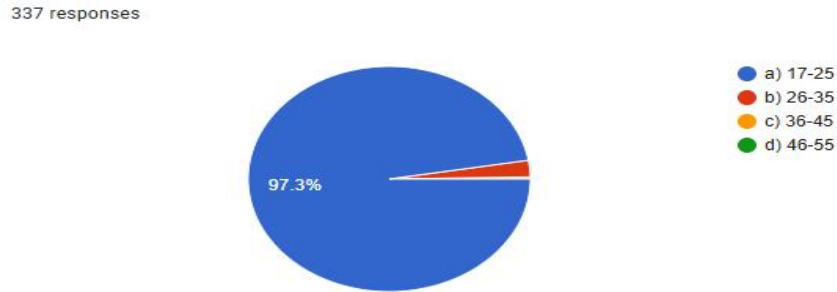


Data interpretation:- Male respondent made up 57.2% of all respondents identified for the survey while female respondents made up the remaining 42.8%. The conclusion that can be drawn is that male users make up the majority of responders.

Table 2
Analysis of Age

Age	Number of respondents	Percentage
17-25	328	97.3
26-35	08	2.4
36-45	01	0.3
Total	337	100

Fig. 2 : Age

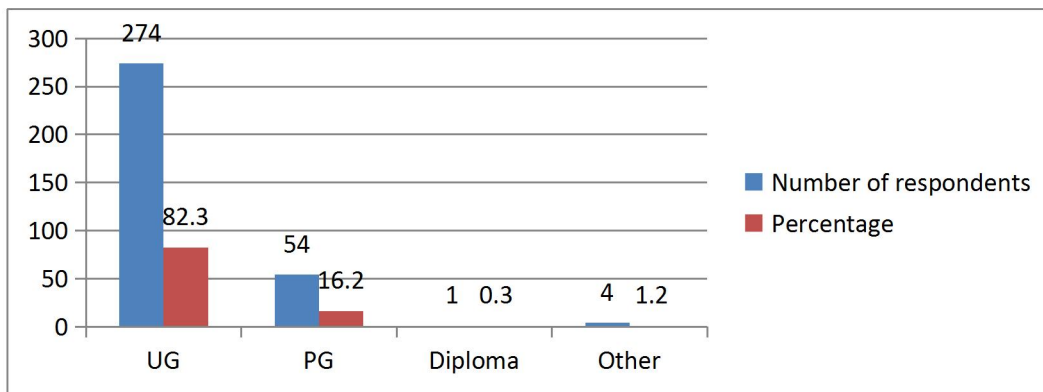


Data interpretation:- The majority of respondents are in the 17-25 age group, indicative of a younger demographic, likely undergraduates. The 26-35 age group represents young professionals and graduate students, while the other age group are minimally represented.

Table 3
Study of Qualification of the respondents

Qualification	Number of respondents	Percentage
UG	274	82.3
PG	54	16.2
Diploma	01	0.3
Other	04	1.2
Total	333	100

Figure 3 : Study of Qualification of the respondents

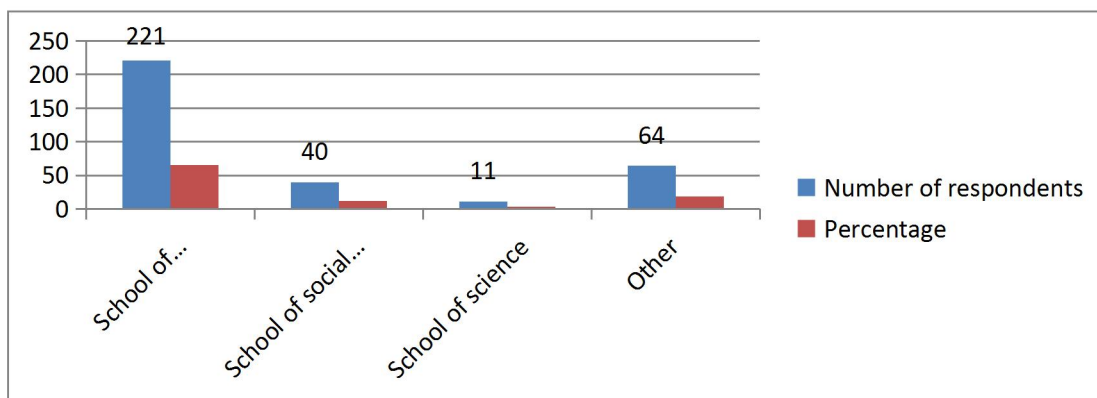


Data interpretation:- The largest segment of the sample is prospective graduates, which suggests that the respondents are mostly students nearing the completion of their degree or those considering graduate level education.

Table 4
Academic departments

Academic departments	Number of respondents	Percentage
School of Humanities	221	65.8
School of social science	40	11.9
School of Science	11	3.3
Other	64	19
Total	336	100

Fig. 4 : Academic departments



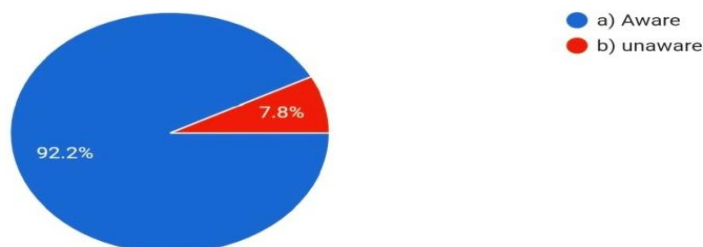
Data interpretation:- the school of humanities has the highest representation, and the school of social science and the school of science and other department have lower representation among the respondents.

Table 5
Student awareness of ICT offering in library services

Student awareness of ict offering in library services	Number of respondents	Percentage
Aware	308	92.2
Unaware	26	7.8
Total	334	100

Fig. 5 : Student awareness of ICT offering in library services

334 responses



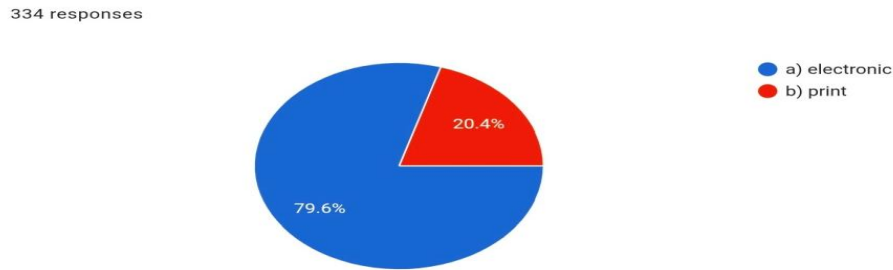
Data interpretation:-

- **Aware:-** 308 respondents are aware of the ict offering. This is significant majority of aware students
- The respondents proved that the library’s efforts to promote ict resources have been sufficiently effective across the student body.
- **Unaware:-** 26 respondents are not aware of any ict offering. This is lower representation among the respondents

Table 6
Preference to access of information resources

preferences to access of information resources	Number of respondents	Percentage
Electronic	266	79.6
Print	68	20.4
Total	334	100

Fig. 6 : Preference to access of information resources

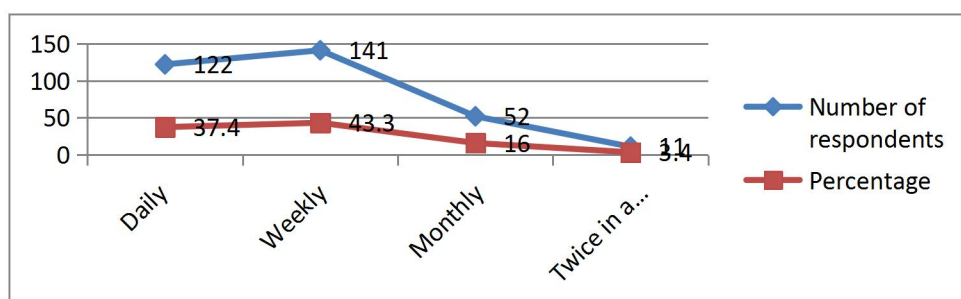


Data interpretation:- A maximum of 266 users prefer electronic while 68 prefer printed in all formats. Therefore, the majority of respondents prefer to see electronic information resources. User may easily carry it around with them thanks to the usage of a soft format, which is also quick to handle and easy to print, copy, and paste, additionally, end user, electronic, and soft copying facilities are very useful to the library.

Table 7
Frequency of visiting e- library

Frequency of visiting e-library	Number of respondents	Percentage
Daily	122	37.4
Weekly	141	43.3
Monthly	52	16
Twice in a week	11	3.4
Total	326	100

Fig. 7 : Frequency of visiting e- library



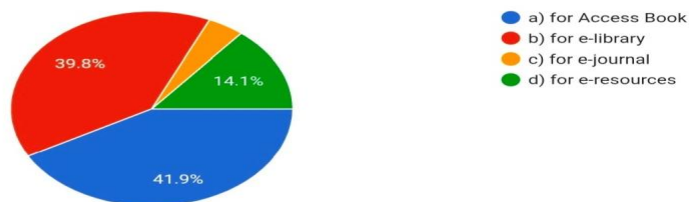
Data interpretation:- Frequency of visiting e- library study reveals that 37.4% of student visit the e-library everyday, 43.3% visit weekly, 16% visit monthly. Frequency of visiting e-library daily and weekly is nearly equal, which suggest s that there is a balanced representation. Monthly and twice in a week visitors is lower representation.

Table 8
Purpose to visit in Library

Purpose to visit in Library	Number of respondents	Percentage
For access book	140	41.9
for e-library	133	39.8
For e-journal	14	4.2
For e-resources	47	14.1
Total	334	100

Fig. 8 : Purpose to visit in Library

334 responses

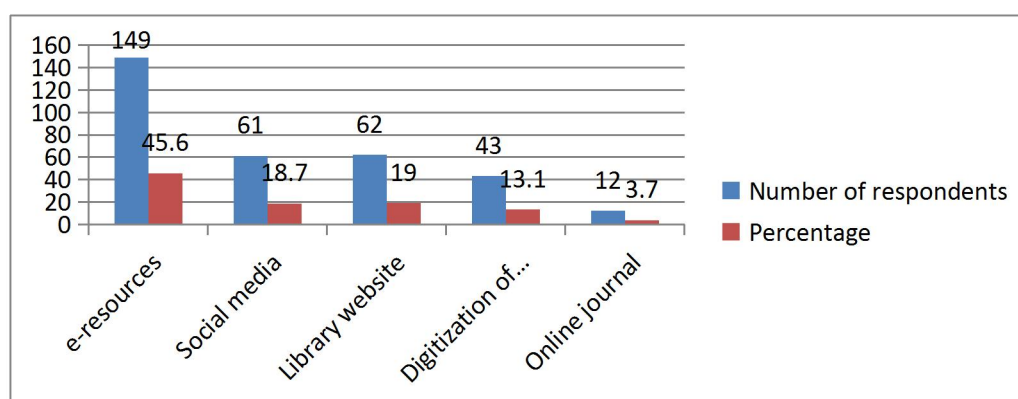


Data interpretation:- Various information channel preferred by the respondents to get their desired information. It is found that 41.9% of the respondents were given the preference to the for access book preferred book as their main information channel. 39.8% of the respondents were given the preference to the e-library for getting their desired information. 14.1% respondents preferred e-resources.

Table 9
Awareness of ICT applied services

Awareness of ict applied services	Number of respondents	Percentage
e-resources	149	45.6
Social media	61	18.7
Library website	62	19
Digitization of information	43	13.1
Online journal	12	3.7
Total	327	100

Fig. 9: Awareness of ICT applied services



E-resource:- the highest awareness with 149 respondents indicate that the e-resources is a central access point for getting their desired information.

Social media:- awareness of 61 respondents implies that the library's social media presence has room for growth in engaging the community.

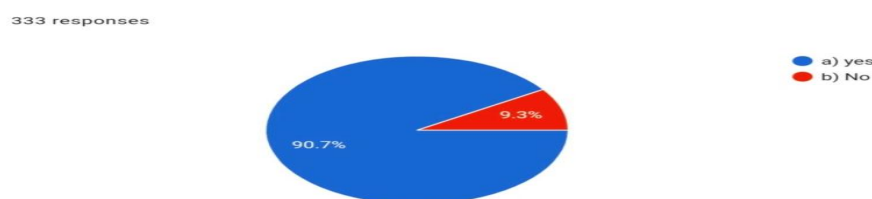
Library website:- 62 respondents are aware of library website. Suggesting a need for better promotion of library website

Digitization of information:- 43 respondents are aware of digitization information.

Table 10
Impact and satisfaction with ict services

Impact and satisfaction with ict services (do you feel that ict has improved the quality of library services)	Number of respondents	Percentage
Yes	302	90.7
No	31	9.3
Total	333	100

Fig. 10 : Impact and satisfaction with ict services

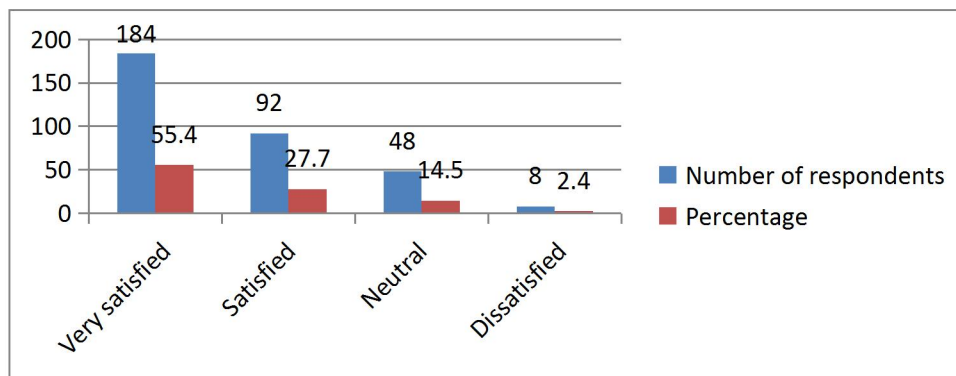


Data interpretation:- the satisfaction with the implementation of ict at the Shri Atal Bihari Vajpayee arts and commerce college majority of respondents is 90% expressing satisfaction. 31 respondents are no satisfaction with impact of ict.

Table 11
Rate your satisfaction with the following aspects of the library ICT services

Rate your satisfaction with the following aspects of the library ict services.	Number of respondents	Percentage
Very satisfied	184	55.4
Satisfied	92	27.7
Neutral	48	14.5
Dissatisfied	08	2.4
Total	332	100

Fig. 11 : Rate your satisfaction with the following aspects of the library ICT services.

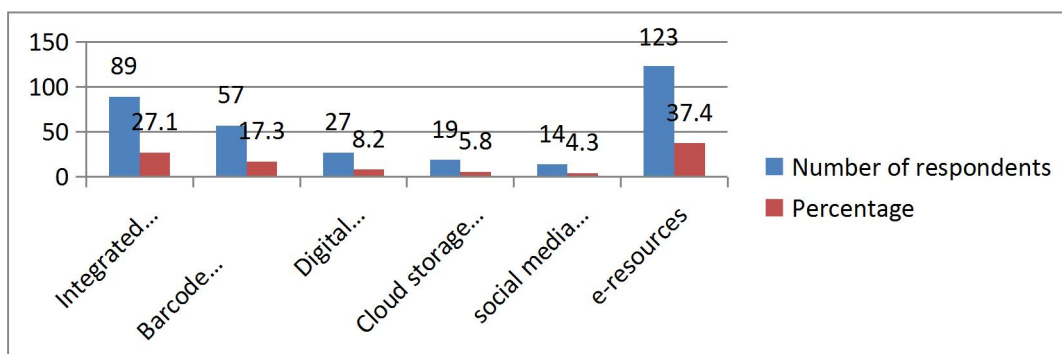


Data interpretation:- The Rate your satisfaction with the following aspects of the library ICT services reveals that overall satisfaction level with the library ICT services, 55.4% respondents were very satisfied and 27.7% were to satisfied with the library ict service. 14.5% of the respondents were neutral satisfied and 4.5% of the respondents were shown their dissatisfied.

Table 12
Preferences to use ICT tools in the library

Preferences to use ICT tools in the library	Number of respondents	Percentage
Integrated library management system (ILMS)	89	27.1
Barcode reader/ RFID technology	57	17.3
Digital repository software	27	8.2
Cloud storage device	19	5.8
social media platforms	14	4.3
e-resources	123	37.4
Total	329	100

Fig. 12: Preferences to use ICT tools in the library



Data interpretation:- Analysis of Preferences to use ICT tools in the library reveals that 37.4% of the respondents are currently used e-resources in library for getting their desired information. 27.1% of the respondents are used ILMS in library. And 17.3% of the respondents are used barcode reader/RFID technology in library services. And 8.2% of the respondents digital repository software used in library and 4.3% of the respondents are used social media platforms.

Findings and conclusion of study

Students at the library of Shri Atal Bihari Vajpayee Government Arts and Commerce College Indore were mostly familiar with the library's ICT offering, i.e. e-library e-granthalaya services. The findings indicate that a significant majority of students 92.2% are aware of the ICT services, with a strong preference for electronic resources over a print materials. The study also reveals high levels of satisfaction among students, with over 90% feeling that ICT has improved the quality of library services. Frequency of visiting e- library study reveals that 37.4% of student visit the e-library everyday, 43.3% visit weekly, 16% visit monthly. Frequency of visiting e-library daily and weekly is nearly equal, which suggest s that there is a balanced representation. Monthly and twice in a week visitors is lower representation.

Study about ICT applied services reveals that highest awareness with 149 respondents indicate that the e-resources is a central access point for getting their desired information followed by awareness of 61 respondents implies that the library's social media presence has room for growth in engaging the community followed by 62 respondents are aware of library website. Analysis of Preferences to use ICT tools in the library reveals that 37.4% of the respondents are currently



used e-resources in library for getting their desired information followed by 27.1% of the respondents are used ILMS in library and 17.3% of the respondents are used barcode reader/RFID technology in library services. Study found that students considered the library's web page, e resources and the overall ICT offerings as user-friendly and pertinent to their academic programs. It was also revealed that the students were aware and they fully utilize the various enhancements and upgrades implemented by the User Services Division of the Library of Shri Atal Bihari Vajpayee Government Arts and Commerce College Indore in the circulation, accounts, and reference and instruction units.

Suggestions

Based on these findings, the following suggestions are offered :

1. To undertake targeted marketing and promotional activities directed at all stakeholders across the campus.
2. To conduct more ICT workshops, seminars, or tutorials at the undergraduate level, enabling students to acquire not only basic but also practical skills for navigating the modern technological landscape. This should be a focal area for the library, as highlighted in various parts of the study.
3. To motivate teachers and lecturers to integrate research into their teaching and assessment methods, thereby increasing student engagement with the library's research platforms.
4. Given the low usage of many instructional technologies and research databases, which have the potential to significantly enhance academic papers and the learning experience, there is a need for increased collaboration between the library and faculty members.

References

- Adebayo, O. A., Ahmed, Y.O., & Adeniran, R.T. (2018). The role of ICT in provision of library services: Apanacea or sustainable development in Nigeria. *Library Philosophy & Practice*, 7, 1-12. <https://digitalcommons.unl.edu/libphilprac/1951/>
- Ayre, L.B. (2016). The impact of information technology on public libraries. *Public Library Quarterly*, 35(4), 355–361. <https://doi.org/10.1080/01616846.2016.1245009>



- Boateng, F. A., & Ameyaw, S. (2019). Gender inequality in the usage of ICT facilities in academic libraries: A case study of Presbyterian University College Library (PUCL), Ghana. *Journal of Education and Practice*, 10(2), 33-44. <https://doi.org/10.7176/JEP/10-2-05>
- Chow, A. W., & Bucknall, T. (2011). *Library technology and user services: Planning, Integration, and usability engineering*. Chandos..
- Christensson, P. (2019). ICT. In *TechTerms.com*. Retrieved August 9, 2022, from <https://techterms.com/definition/ict>.
- Chu, W. (2012). Implementation as ongoing and incremental: Case study of Web 2.0 use for staff communication. *Journal of Access Services*, 9(3), 134–153. <https://doi.org/10.1080/15367967.2012.684579>.
- Deans, M. O., & Durrant, C.F. (2016). An investigation into the knowledge and use of electronic library resources in Jamaican community colleges. *Journal of Web Librarianship*, 10(4), 239–266. <https://doi.org/10.1080/19322909.2016.1231601>.
- The Forde Library. (2020). About us! Retrieved August 9, 2022, from <http://library.usc.edu.tt/about-us/>.
- Heaton, S., & Brown, J. M. (1995). Staff perceptions of incentives and hurdles to the use of technology. *Computers in Libraries*, 15(2), 28-31.
- Krubu, D. E., & Osawaru, K.E. (2011). The impact of information and communication technology (ICT) In Nigerian university libraries. *Library Philosophy & Practice*, 32–49. <https://digitalcommons.unl.edu/libphilprac/583/>
- Mahwasane, N.P. (2019). *An over view of the roles and benefits of libraries*. Cambridge Scholars.
- Osuchukwu, N. P., & Obuezie, A.C. (2017). Availability and utilization of information communication technology facilities in a private university library in Nigeria. *Journal of Information and Knowledge Management*, 8(3), 16-25. <https://doi.org/10.4314/ijikm.v8i3.2>