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Original Article

ICT Literacy and Usage Pattern of City Central Library Users in Karnataka

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Abstract

The article examines the proficiency, usage, and challenges associated with Information and Communication Technology (ICT) tools in city central libraries using a survey method. The data was collected from 391 city central library users of Karnataka. Through a comprehensive analysis of user data, the research reveals significant insights into how users engage with digital technologies, highlighting both areas of strong usage and those requiring improvement. The findings indicate that while computers and YouTube are the most frequently and proficiently used tools, a substantial portion of users struggle with less familiar technologies. Challenges such as a lack of software, insufficient training, and inadequate technical support were identified as significant barriers to effective ICT usage. Moreover, the study uncovered a gap in advanced search skills among users, further emphasizing the need for user educational programmes. Based on these findings, the study recommends the implementation of comprehensive training programmes, enhancements in technical support and infrastructure, and the promotion of advanced search skills to improve library usage. The article supports authorities and librarians of city central libraries to increase library usage, reduce barriers to digital access, and ensure that city central libraries continue to serve as vital hubs of learning and information in the digital age.

Keywords: *Information and Communication Technology (ICT), City Central Libraries, ICT tool usage, ICT infrastructure, and Digital Tools.*

Introduction

The integration of Information and Communication Technology (ICT) in libraries has revolutionized the way information is accessed, managed, and disseminated. ICT has transformed traditional libraries into dynamic digital information centers, enhancing their role as pivotal hubs for knowledge and learning. The adoption of ICT tools such as online catalogues, digital databases, e-books, and automated circulation systems has streamlined library operations, making information retrieval faster and more efficient (Bawden & Robinson, 2012). Additionally, ICT has facilitated the creation of virtual libraries and supported users to access vast amounts of information remotely (Chowdhury, 2014).

In the context of developing regions, ICT in libraries plays a critical role in bridging the digital divide. Libraries can help to mitigate the disparities in information access and digital literacy that exist between urban and rural populations (Raju, 2017). This is particularly relevant in Karnataka, where city central libraries serve as vital community resources, offering access to technology and information that might otherwise be unavailable to many residents. In Karnataka, city central libraries have embraced this digital transition, adopting a range of ICT tools and resources to meet the evolving needs of their users. These tools and resources include handheld systems, Wi-Fi connectivity, headsets with microphones, webcams, CD/DVD players, digital catalogues, online databases, e-books, and various digital media resources, which facilitate easier access to a vast array of information through Karnataka Public Digital Library. This shift towards digitalization aligns with the broader trends observed in the Indian library system, particularly after the initiation of the National Mission on Libraries by the Government of India,

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Aimed at modernizing and digitally linking nearly 9,000 libraries across the country (Press Information Bureau, 2014). The adoption of ICT tools in City Central Libraries in Karnataka represents a significant step towards creating a more inclusive, accessible, and efficient library system. This transition is crucial for meeting the contemporary demands of library users and aligns with the broader goals of digital literacy and information democratization in the state. As technology continues to reshape the contours of society, it becomes increasingly imperative to scrutinize how these libraries harness the power of ICT to cater to the diverse information needs of their users. Thus, this study delves into the use of ICT tools and services within city central libraries across Karnataka.

Objectives

- To assess the use of ICT tools and services by Karnataka city central library users
- To identify the challenges in using ICT-based services among Karnataka city central library users

Methodology

This study used a quantitive methodology and adopted a survey research design. The survey was conducted in public libraries of Karnataka state, India. To ensure a representative sample, a random sampling technique was adopted to ensure the sample accurately represents the population, taking into account factors such as respondents' location and the size of the library. A questionnaire tool was used to collect data from respondents. A well-structured questionnaire was distributed to 450 City central libraries in Karnataka, and 391 completely filled questionnaires were received, amounting to an 86.9% response rate. The data gathered was analyzed using the descriptive statistics method.

Review of Literature

The review offers insights into the role of ICT in modern library services, challenges faced by public libraries, and strategies for improvement. (Hoque, 2023) discussed how ICT has transformed traditional libraries into digital hubs, enhancing accessibility, user experience, and operational efficiency through tools like Library Management Systems (LMS) and online public access catalogues (OPACs). He also identified the challenges, such as funding and technical expertise, and proposed strategies for effective ICT implementation. (Adebayo, Ahmed, & Adeniran, 2019) discussed the critical role of ICT in facilitating library services as a catalyst for sustainable development in Nigeria. The authors highlighted how ICT has transformed traditional library operations, enabling faster information access, improved service delivery, and alignment with national development goals.

(Intahchomphoo & Vellino, 2024) indicated the strategies implemented by libraries to continue serving the public, such as offering remote access to resources and digital literacy programmes. They also highlighted the need for libraries to be better prepared for future pandemics by enhancing digital infrastructure and services. Their study concludes by emphasizing the role of libraries in promoting digital inclusion and resilience, emphasizing the importance of digital access and the need for improved digital infrastructure to bridge the digital divide and prepare for future crises. (Hussain & Parveen, 2021) analyzed the resources available in Pakistani public libraries, revealing a reliance on traditional print materials and a need for expanded digital offerings to meet evolving user needs. (Hugar & Bardez, 2023) evaluated the effectiveness of public library websites, finding that while some are user-friendly, many lack essential features like comprehensive digital collections and interactive services. He recommended libraries to invest in improving their websites to enhance user engagement and accessibility.

(Gupta, Sharma, & Gupta, 2023) delved into the innovative practices of public libraries in Rajasthan, highlighting the significant steps made in integrating digital services to enhance user engagement and accessibility. Their study underscores the successful adoption of digital catalogues, online databases, and virtual services, positioning these libraries as modern information hubs. However, the authors also identified challenges, such as limited funding and the digital literacy gap among users. They advocated for continuous innovation and the adoption of emerging technologies to ensure that public libraries remain relevant in the digital age. (Rahmani, 2023) explored the potential of Artificial Intelligence (AI) in transforming public library services. She discussed about various AI applications, including chatbots, recommendation systems, and automated systems, which can significantly enhance user experience and operational efficiency. However, the author also highlighted the ethical considerations and challenges associated with AI integration, such as data privacy concerns and the need for specialized training for library staff. Finally, she indicated the need for careful planning and ethical considerations for its successful implementation in library services. (Majumder, Kumar, & Mahapatra, 2022) focused on the ICT-enabled services provided by the Birchandra State Central Library in Agartala. Their research illustrates how the library has effectively utilized ICT to offer enhanced services, such as digital collections, online access to resources, and remote user assistance. However, the authors indicated the need for ongoing infrastructure development and staff training to fully capitalize on the benefits of ICT. (Rana & Bhatti, 2020) examined the role of ICT in managing collections within public libraries in Punjab, Pakistan. Their study revealed the high impact of ICT tools on cataloguing, acquisition, and circulation processes, enhancing the overall efficiency and accuracy of collection management.

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Data Analysis

This section aims to provide valuable insights of city central library users that help in strategic decision-making and policy formulation within city central libraries. In addition, this section highlights the potential areas for improvement and strategies to enhance user satisfaction.

Frequency of Using the Internet

Internet usage is on the rise, regardless of age, in the current era. However, the degree of usage varies based on location, age, profession etc. Thus, to understand the frequency of internet usage by city central library users, the data was collected and tabulated in Table 1. The analysis indicates that a larger percentage (31.2%) of users use the internet daily, while 19.4% of users use the internet weekly, 7.9% of users use it monthly once, whereas 12.0% of users do not use the internet. Thus, it can be inferred that a small proportion of library users rely heavily on internet resources to fulfill their information needs, while a large proportion of library users use the internet at a moderate level or do not use it, highlighting the need for digital literacy. Initiatives such as digital literacy workshops, personalized assistance, or even promotional campaigns to highlight the benefits of internet access could potentially convert non-users into regular users, thereby enhancing the overall utility of the library's ICT facilities and services. Alternatively, many users may not prefer to access internet in libraries due to low internet speed. Thus, it is essential to provide high speed internet connectivity to equip users to access information resources and gain benefit from information services offered using ICT tools

Table 1: Frequency of Using the Internet in City Central Libraries

Sl. No	Frequency	No. of Users	Percentage
1	Daily	122	31.2
2	Weekly	76	19.4
3	Fortnightly	32	8.2
4	Monthly	31	7.9
5	Do not use	47	12.0
	Total	391	100

Awareness of ICT Tools among City Central Library Users

To identify awareness of ICT tools that help users access e-resources and use library services, the data was collected and showcased in Figure 1. The analysis indicates that 132 users have an expert level of knowledge on the computer, while 22 users have an application level of knowledge on the computer. It also indicates that 61 users do not know how to operate a computer. Ninety-three users have an expert level of knowledge on e-mail, while 29 users have application knowledge of e-mail. It also indicates that 86 users do not know how to use the e-mail facility. Eighty-six users have an expert level of knowledge of browsing, while 30 users have application knowledge of browsing. It also indicates that 88 users do not know how to browse information on the World Wide Web. Seventy-four users have a professional level of knowledge of video conferencing, while 73 users have an expert level of knowledge of video conferencing and 31 users have application knowledge of video conferencing. It also indicates that 93 users do not know how to organize video conferencing. Seventy-two users have an expert level of knowledge on printing documents, while 45 users have application knowledge of printing documents. It also indicates that 92 users do not know how to print a document. Seventy-one users have an expert level of knowledge on social media, while 32 users have application knowledge of social media. It also indicates that 114 users do not have the knowledge of social media. One hundred twenty-seven users have an expert level of knowledge on gathering information on YouTube, while 28 users have minimum knowledge of gathering information on YouTube. It also indicates that 85 users do not know how to use YouTube to gather information.

The findings indicate that while a significant number of users exhibit high level of proficiency in various ICT tools, there are noticeable gaps, particularly in video conferencing,

and social networking, where a considerable number of users are either at a basic level or application level. This suggests that while library users are generally competent with certain technologies, there are areas where further training and support could enhance user experience and engagement. The high level of uncertainty (Don't Know) across several tools indicates that there may be a lack of confidence or understanding of these technologies, which could be addressed through targeted educational programmes or workshops. For instance, increasing user confidence in using video conferencing tools and social networking platforms could be particularly beneficial in digital era. Moreover, the high proficiency in basic tools like computers and email suggests that the foundation of digital literacy is strong. However, to ensure that all users can fully benefit from the range of ICT services offered by the library, it may be necessary to provide more focused training on advanced tools like video conferencing, browsing techniques and social networking. The analysis suggests that a good number of users have a high level of expertise in using various ICT tools, and there are few users who can use ICT tools at a moderate level. However, there are a good number of users who know how to use ICT tools. Thus, it is important to educate users and provide training to make use of ICT tools to gather information and bridge gaps in ICT proficiency.

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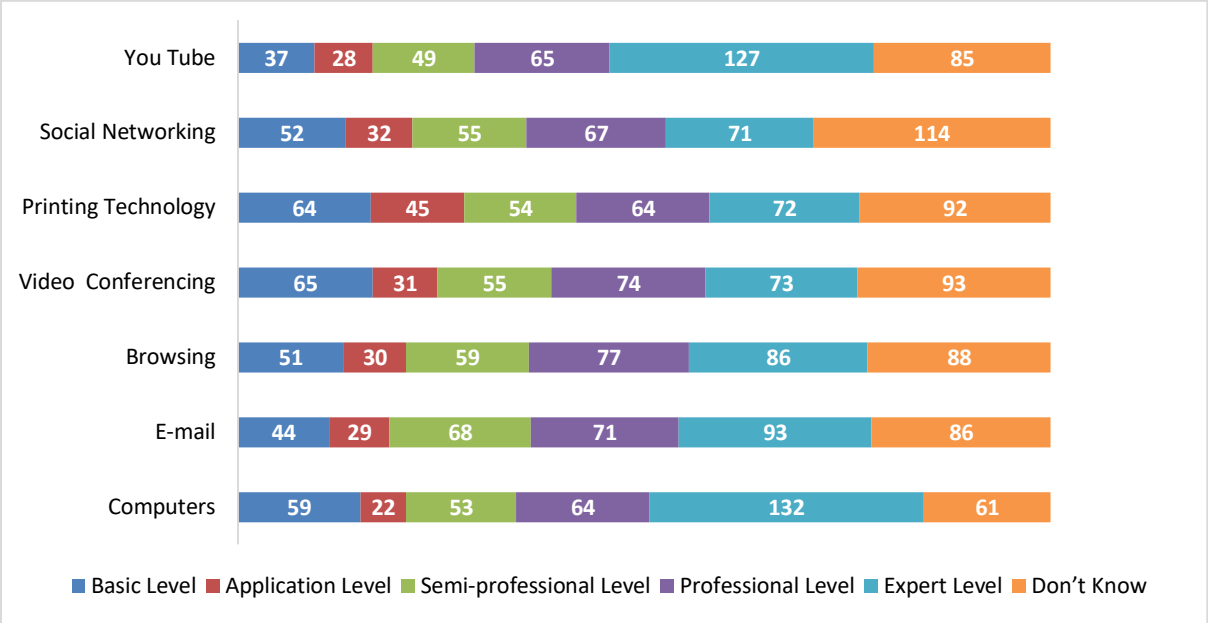
Figure 1: Awareness of ICT Tools among City Central Library Users



Frequency of Using ICT Tools in City Central Libraries

To identify the usage of ICT tools by users in city central libraries the data was collected and tabulated in Table 3. The analysis indicates that 29.7% of users utilize computers regularly, 28.8% use them moderately, 14.5% rarely use them, and 27.0% do not use computers in city central libraries. E-mail is used regularly by 20.3% of users, moderately by 22.0%, rarely by 23.3%, and 34.4% of users do not use e-mail in city central libraries. 28.4% users moderately use browse information in city central libraries, while 19.5% rarely browse information and 25.4% do not browse information. The lowest percentage (6.7%) of users browse information regularly in city central libraries. Most (61.1%) users do not use city central library facilities for video conferencing, while 8.4% of users use regularly, 12.1% use moderately, and 18.5% use rarely. Printing technology is used regularly by 17.7% of users, moderately by 18.7%, rarely by 32.8%, and 30.8% do not use printing technology in city central libraries. 41.5% do not use social networking tools in city central libraries, while 23.5% users used social networking tools regularly and the same percentage of users used social networking tools rarely and 11.6% users used social networking tools moderately. 35.3% users used YouTube moderately, while 24.5% users used YouTube regularly, 21.2% do not use it and 19.0% users used YouTube rarely. Thus, it can be inferred that the usage patterns of ICT tools in City Central Libraries reveal a diverse range of usage level. The analysis reveals that a significant portion of users rarely use or do not use computers and check email in city central libraries as they might prefer other devices such as tablets, laptops, and smartphones. Further, ICT infrastructure is less used for video conferencing and social media, especially in contexts such as remote learning or virtual meetings. Furthermore, users also made use of ICT infrastructure for using wide range of educational, informational, and entertainment information.

Table 2: Frequency of Using ICT Tools in City Central Libraries

ICT Tools		Regularly	Moderately	Rarely	Do Not Use	N=
Computers	F	98	95	48	89	330
	%	29.7	28.8	14.5	27.0	100.0
E-mail	F	62	67	71	105	305
	%	20.3	22.0	23.3	34.4	100.0
Browsing	F	81	86	59	77	303
	%	26.7	28.4	19.5	25.4	100.0
Video Conferencing	F	25	36	55	182	298
	%	8.4	12.1	18.5	61.1	100.0
Printing Technology	F	53	56	98	92	299
	%	17.7	18.7	32.8	30.8	100.0
Social Networking	F	65	32	65	115	277
	%	23.5	11.6	23.5	41.5	100.0
You Tube	F	75	108	58	65	306
	%	24.5	35.3	19.0	21.2	100.0

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Level of Information Searching Skills

Searching skills play an important role in identifying the right information over the internet. So, to understand the level of search skills, the data was collected and tabulated in Table 3. The data collected reveals various levels of proficiency in searching skills among the users. Most (66.8%) of the users had basic searching skills for performing basic searches while 55.2% users could search using keyword. Further, users were able to search for information by, combining search terms, using phrase searching, filters, and proximity words in the range of 46.3% to 41.7%. This indicates a gap in the users' search skills that could impact the accuracy of search results. While a majority of users were comfortable with basic searches, a significant portion are still struggling to learn the fundamental aspects of information search. Though a good number of users were able to use advanced search methods, there is a gap in using advanced methods. This further suggests the need for skill development training programmes to enhance the efficiency and effectiveness of information searching among users.

Table 3: Level of Information Searching Skills

Sl. No	Search Skills	Yes	Percentage	No	Percentage
1	Basic	261	66.8	130	33.2
2	Keyword search	216	55.2	175	44.8
3	Combining search terms	177	45.3	214	54.7
4	Phrase searching	167	42.7	224	57.3
5	Advanced Search	167	42.7	224	57.3
6	Fillers	165	42.2	226	57.8
7	Proximity words	163	41.7	228	58.3

Challenges in Using ICT Tools in City Central Libraries

Evaluating challenges in using ICT is essential to identify the challenges and take measures to improve accessibility, increase user satisfaction, etc. So, the data on challenges in using ICT was collected and tabulated in Table 3. The analysis indicates that a higher percentage (41.9%) of users considered the lack of software as a challenge, while 37.6% of users considered hindrances in learning tools and resources as a challenge. Further, 36.8% of users considered time limitation as a challenge, 35.8% users considered their reluctance to new technology as a challenge, 35.5% users considered lack of sufficient training as a challenge, 34.8% of users considered lack of technical support as a challenge, 33.5% users considered lack of knowledge as a challenge, 32.5% users considered lack of adequate infrastructure as a challenge, and 32.2% users considered poor network as a challenge. A least percentage (27.9%) of users considered lack of confidence to be a challenge.

The analysis indicates that users encounter multiple challenges while using ICT tools. However, there is no clear indication of the major challenge. Few users feel that the available software tools are either inadequate or insufficient for their needs. This issue may be due to outdated or limited software, which could hinder users in fully utilizing ICT resources and services. A substantial portion of the users also struggle with adopting new technologies, possibly due to the complexity of the tools or a lack of adequate instructional support or due to satisfaction with traditional methods. Few users also face challenges due to insufficient hardware, outdated devices, or inadequate internet bandwidth. Thus, it is essential to upgrade infrastructure, expand access to modern equipment, and ensure uninterpreted internet connectivity. A small percentage of users also expressed a lack of confidence as a barrier in using ICT tools. This suggests that users have a fear of making mistakes or had negative experiences with the use of ICT tools. To address these challenges, libraries may update the range of software available in the libraries, provide more comprehensive training programmes, provide user-friendly guides, and assist users in using ICT infrastructure and tools.

Table 3: Challenges in Using ICT Tools

Sl. No	Challenges in Using ICT	Yes	Percentage	No	Percentage
1	Lack of software	164	41.9	227	58.1
2	Hindrance in learning tools and resources	147	37.6	244	62.4
3	Time limitation	144	36.8	247	63.2
4	Users reluctance to new technology	140	35.8	251	64.2
5	Lack of sufficient training	139	35.5	252	64.5
6	Lack of technical support	136	34.8	255	65.2
7	Lack of knowledge	131	33.5	260	66.5
8	Lack of adequate infrastructure	127	32.5	264	67.5
9	Poor Network	126	32.2	265	67.8
10	Lack of confidence	109	27.9	282	72.1

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Recommendations

Based on the analysis and inference drawn from the data, below mentioned recommendations are made for city central libraries to enhance the usage and effectiveness of ICT tools:

- Libraries should offer training programmes focused on increasing proficiency in underutilized ICT tools such as video conferencing, social networking, and advanced search techniques. These programmes should be designed to cater to users at various proficiency levels.
- Libraries should strengthen the technical support services available to users, including real-time assistance, troubleshooting guides, and more accessible help desks.
- Librarians should assess and upgrade the existing ICT infrastructure, particularly in areas where users have reported challenges such as software availability, network stability, and access to updated tools.
- Libraries should conduct trainings and workshops on teaching advanced search techniques, including the use of keyword combinations, phrase searching, and proximity operators.

Conclusion

The realm of information and communication technology (ICT) tools for libraries is continuously evolving to cater to the changing needs of users in the digital era. Users have good knowledge of ICT tools, and some ICT tools are well-utilized in city central libraries. However, there is a need to increase the ICT infrastructure in city central libraries and user education to enhance the effectiveness. Librarians can focus on providing training on improving advanced search skills and increasing the frequency of ICT tool usage among less engaged users. Additionally, there is a need to address the challenges identified, such as the need for better software, more comprehensive training, and improved technical support. While city central libraries are successfully meeting the needs of many users, there is clear room for growth. By strategically addressing the gaps in proficiency, overcoming usage barriers, and enhancing support services, libraries can continue to serve as vital centers of learning.

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