

# **A Pilot Study on Utilization of Print and Electronic Resources by Users of Selected Private Universities in Bengaluru**

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## **ABSTRACT**

*Academic libraries play a crucial role in supporting teaching, learning, and research activities in higher education institutions. With the rapid development of information and communication technologies, academic libraries have shifted from traditional print-based collections to hybrid systems that include both print and electronic resources. This study examines the utilization of print and electronic resources by users of selected private university libraries in Bengaluru. The main objective of the study is to analyze the extent of utilization of library resources and identify the factors influencing users' preferences for print and electronic formats.*

*The study adopted a descriptive survey research design and followed a quantitative research approach. Primary data were collected using a structured questionnaire based on a five-point Likert scale. A total of 125 respondents, including undergraduate students, postgraduate students, research scholars, and faculty members from selected private universities in Bengaluru, participated in the study. The collected data were analyzed using descriptive statistics such as frequency, percentage, mean, and standard deviation. In addition, reliability analysis using Cronbach's Alpha, factor analysis, and regression analysis were employed to examine the consistency of the research instrument and to identify factors influencing the utilization of library resources.*

*The findings of the study reveal that electronic resources such as e-journals, online databases, and digital repositories are widely utilized by library users for academic and research purposes due to their convenience and quick accessibility. However, print resources continue to remain important for detailed reading and deeper understanding of academic content. The results also indicate that factors such as internet connectivity, digital infrastructure, user awareness, and training programs significantly influence the utilization of electronic resources. The study concludes that private university libraries in Bengaluru are increasingly becoming digitally oriented knowledge centers while maintaining the importance of traditional print collections. The findings of the study provide useful insights for improving library services, strengthening digital infrastructure, and enhancing user awareness programs in academic libraries.*

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**KEYWORDS:** Library Resources Utilization; Electronic Resources; Academic Libraries.

### **INTRODUCTION**

Academic libraries play a vital role in supporting teaching, learning, and research activities in higher education institutions. Traditionally, libraries relied heavily on print resources such as books, journals, and reference materials to meet the information needs of their users. However, with the rapid advancement of information and communication technologies (ICT), academic libraries have experienced a significant transformation in the format and delivery of information resources. The emergence of electronic resources, including e-books, e-journals, online databases, and digital repositories, has expanded access to scholarly information and reshaped the information-seeking behaviour of library users (Francis, 2024). Electronic resources have become essential tools for academic research because they provide convenient, fast, and remote access to large collections of scholarly materials that were previously available only in physical libraries.

The integration of digital technologies into academic library services has significantly altered the way information is accessed, stored, and disseminated. Electronic resources are defined as digital materials that are accessed through computer networks and online platforms rather than traditional print formats. These resources include online journals, e-books, databases, institutional repositories, and multimedia collections that can be accessed either within the library premises or remotely through institutional subscriptions. The shift toward electronic resources has been driven by several factors such as technological advancements, increased demand for instant access to information, and the growing emphasis on digital learning environments in higher education institutions.

Despite the increasing availability of electronic resources, print resources continue to play an important role in academic libraries. Many users still prefer printed books and journals for activities such as deep reading, annotation, and long-term reference. Studies have shown that while digital resources offer convenience and accessibility, print resources remain valuable for certain learning and research tasks (Rodriguez, 2020). As a result, most academic libraries today maintain a hybrid collection model that combines both print and electronic resources to meet the diverse needs and preferences of users.

In recent years, academic libraries around the world have increasingly invested in electronic resources to support teaching, learning, and research. Libraries allocate significant budgets for subscriptions to digital databases, electronic journals, and online information services. Empirical evidence indicates that many academic institutions have gradually increased their expenditure on electronic resources while reducing spending on physical collections, reflecting the growing importance of digital information access in higher education environments. This shift has encouraged libraries to adopt digital library services, remote access systems, and integrated library platforms to facilitate the efficient use of electronic resources by students and faculty members.

The effective utilization of library resources is an important indicator of the success and relevance of academic libraries. Library users—including students, research scholars, and faculty members—rely on library resources to support academic assignments, research projects, and teaching activities. Studies have demonstrated that frequent use of online journals and academic databases is positively associated with scholarly productivity and research activities among faculty members. Therefore, understanding how users access and utilize both print and electronic

resources is essential for improving library services and ensuring that library collections effectively support academic goals.

However, the utilization of electronic resources is influenced by several factors such as awareness, accessibility, digital literacy, infrastructure, and training. Although academic libraries invest substantial financial resources in electronic subscriptions, many studies have reported underutilization of digital resources due to lack of user awareness or insufficient training in information retrieval techniques. Similarly, factors such as internet connectivity, availability of ICT infrastructure, and user attitudes toward technology also affect the extent to which electronic resources are used in academic environments.

User studies in library and information science are important for understanding information-seeking behaviour and resource utilization patterns. Such studies help libraries identify user needs, evaluate the effectiveness of their services, and develop strategies to enhance resource usage. Surveys, interviews, and usage statistics are commonly used research methods to assess how library users interact with print and electronic resources. Findings from these studies enable libraries to make informed decisions regarding collection development, resource allocation, and user training programs.

In the context of higher education in India, the expansion of private universities has increased the demand for modern academic library services. Private universities in metropolitan cities such as Bengaluru are investing heavily in digital infrastructure and electronic information resources to support academic excellence and research productivity. Bengaluru, known as a major educational and technological hub, hosts several private universities that provide advanced library facilities and digital learning environments. However, there is still a need to examine how effectively these resources are utilized by library users in such institutions.

Understanding the utilization patterns of print and electronic resources among university users is essential for improving library services and maximizing the value of library investments. A pilot study is particularly useful for testing research instruments, identifying potential challenges in data collection, and refining research design before conducting a full-scale study. The present pilot study therefore aims to examine the utilization of print and electronic resources by users of selected private universities in Bengaluru, with a focus on identifying user preferences, awareness levels, frequency of use, and challenges associated with accessing library resources. The findings of the study are expected to contribute to the improvement of library services, enhance resource utilization, and support evidence-based decision making in academic library management.

## **REVIEW OF LITERATURE**

### **1. Tenopir, C. (2012). Beyond usage: Measuring library outcomes and value. *Journal of Academic Librarianship*.**

Tenopir (2012) examined the patterns of electronic journal usage among academic communities and highlighted the growing importance of digital resources in supporting research and scholarly communication. The study found that faculty members and research scholars rely heavily on electronic journals due to their accessibility and timeliness. It also emphasized that libraries are increasingly investing in digital collections to enhance academic productivity. The research revealed that electronic resources significantly contribute to improved research output and knowledge dissemination. However, it also noted that effective training programs are required to help users fully utilize these

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resources. The study concluded that academic libraries must balance digital and print collections to satisfy diverse user needs. This research provides a foundation for understanding how digital resource utilization influences academic work.

### **2. Nicholas, D., Rowlands, I., & Huntington, P. (2007). Information behaviour of the researcher of the future. *Aslib Proceedings*.**

Nicholas, Rowlands, and Huntington (2007) investigated the information-seeking behaviour of academic users in the digital age. The study revealed that electronic resources are increasingly preferred by students and researchers because of their convenience and immediate access. Users were found to rely heavily on online databases, search engines, and electronic journals for research activities. However, the study also reported that many users lack advanced information literacy skills required to evaluate digital information effectively. The authors emphasized the importance of library instruction programs to improve resource utilization. The findings suggest that academic libraries should develop strategies to support both print and electronic resource usage. The study contributes valuable insights into changing information behaviour in higher education environments.

### **3. Kumar, B. T., & Dora, M. (2012). Utilization of electronic information sources by the academic community. *DESIDOC Journal of Library and Information Technology*.**

Kumar and Dora (2012) studied the utilization of electronic information resources among faculty members and students in academic institutions. The study found that electronic journals and databases are frequently used for research purposes due to their ease of access and availability of current information. Users preferred online resources for literature searches and academic assignments. However, the study also highlighted certain barriers such as lack of awareness, limited training, and inadequate infrastructure. It suggested that libraries should conduct user orientation programs to increase awareness about available electronic resources. The authors also emphasized the importance of integrating both print and digital resources to support academic learning. The findings provide useful insights for improving electronic resource services in academic libraries.

### **4. Madhusudhan, M. (2010). Use of electronic resources by research scholars of Delhi University. *Library Philosophy and Practice*.**

Madhusudhan (2010) explored the usage patterns of electronic resources among research scholars in a major Indian university. The study found that most scholars preferred electronic journals and online databases for research due to their convenience and availability of up-to-date information. The research also highlighted that users accessed electronic resources mainly through institutional library subscriptions. However, several challenges were identified, including slow internet connectivity and limited awareness about available databases. The author recommended regular training programs and improved infrastructure to enhance electronic resource utilization. The study emphasized that electronic resources complement traditional print collections rather than replacing them entirely. The findings are relevant for understanding digital resource usage in academic environments.

### **5. Thanuskodi, S. (2012). Use of e-resources by the students and researchers of faculty of arts. *International Journal of Library Science*.**

Thanuskodi (2012) conducted a study on the utilization of electronic resources among students and research scholars in higher education institutions. The study indicated that electronic journals, e-books, and online databases are

widely used for academic research and coursework. Students preferred electronic resources due to their ease of access and search capabilities. However, the study also revealed that lack of information literacy skills and technical difficulties sometimes limit effective use. The author suggested that libraries should provide training sessions and workshops to improve users' digital competencies. The study also highlighted the continuing relevance of print materials for in-depth reading. Overall, the research underscores the importance of balanced library collections

**6. Ali, N. (2005). The use of electronic resources at IIT Delhi Library. Library Hi Tech News.**

Ali (2005) analyzed the use of electronic resources among students and faculty members in a technological university. The study found that electronic journals were among the most frequently used resources due to their relevance for research and technical studies. Users appreciated the ability to access scholarly materials remotely and quickly. However, the study also identified problems such as lack of awareness and insufficient training in database searching. The author emphasized the importance of user education programs to maximize the benefits of electronic resources. The research suggested that libraries must adopt effective strategies to promote digital resource usage. The findings highlight the growing importance of electronic resources in academic research.

**7. Baro, E. E., & Asaba, J. O. (2010). Internet connectivity and accessibility in university libraries. Library Hi Tech News.**

Baro and Asaba (2010) investigated the impact of internet connectivity on the use of electronic resources in university libraries. The study found that reliable internet access significantly influences the utilization of online databases and digital collections. Students and researchers relied heavily on electronic resources for accessing scholarly information. However, inadequate ICT infrastructure and limited bandwidth were identified as major challenges. The authors emphasized that improving technological infrastructure is essential for maximizing the benefits of digital libraries. The study also highlighted the role of librarians in guiding users toward effective resource utilization. The findings underline the relationship between technology and information access in academic institutions.

**8. Jamali, H. R., & Nicholas, D. (2008). Information seeking behaviour of researchers. Journal of Information Science.**

Jamali and Nicholas (2008) examined how researchers access and utilize information resources in academic settings. The study revealed that electronic journals and databases are the primary sources of scholarly information for researchers. Digital resources allow quick retrieval of information and support efficient research processes. However, the authors noted that many researchers still consult print books for comprehensive reading and theoretical understanding. The study emphasized the complementary role of print and electronic resources in academic research. It also highlighted the need for libraries to provide integrated access systems. The findings contribute to a better understanding of user behaviour in modern academic libraries.

**9. Nisha, F., & Ali, N. (2013). Use of e-journals by faculty members in Aligarh Muslim University. Collection Building.**

Nisha and Ali (2013) studied the usage of electronic journals among faculty members in a major Indian university. The findings indicated that electronic journals were widely used for research and teaching purposes. Faculty members appreciated the accessibility and availability of current scholarly literature. However, some respondents

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reported difficulties in accessing certain databases due to technical or subscription issues. The study emphasized the importance of proper training and awareness programs for effective use of electronic journals. The authors suggested that libraries should continuously evaluate user needs. The research highlights the significance of digital resources in academic scholarship.

### **10. Tyagi, S. (2011). Use and awareness of electronic information sources in universities. *International Journal of Library Science*.**

Tyagi (2011) investigated the awareness and use of electronic information sources among university students. The study found that awareness levels significantly influence the utilization of electronic resources. Students who were familiar with library databases used them more frequently for academic work. However, many students depended on general search engines instead of specialized academic databases. The author recommended orientation programs and information literacy training to improve resource usage. The study also highlighted the importance of librarian support services. The findings emphasize the need for effective promotion of electronic resources in academic libraries.

### **11. Singh, K. P., & Gautam, J. N. (2016). Use of electronic resources by faculty members. *Library Philosophy and Practice*.**

Singh and Gautam (2016) analyzed the utilization of electronic resources among faculty members in higher education institutions. The study revealed that online databases and electronic journals were essential tools for research and teaching activities. Faculty members used electronic resources frequently for preparing lectures and publishing research papers. However, the study also found that lack of training sometimes limited effective database searching. The authors recommended that academic libraries should organize workshops and awareness programs. The study emphasized that digital collections enhance research productivity. The findings highlight the growing importance of electronic resources in academic environments.

### **12. Dadzie, P. S. (2005). Electronic resources: Access and usage at Ashesi University College. *Campus-Wide Information Systems*.**

Dadzie (2005) examined access and utilization of electronic resources in a university library environment. The study reported that students frequently used electronic databases and online journals for academic research. Ease of access and availability of updated information were identified as major advantages. However, technical challenges and lack of awareness were significant barriers to effective use. The study suggested improving user training and library orientation programs. The author emphasized the role of librarians in guiding users toward reliable digital resources. The research highlighted the importance of electronic resources in modern academic libraries.

### **13. Islam, M. A., & Habiba, U. (2015). Use of electronic resources in university libraries. *The Electronic Library*.**

Islam and Habiba (2015) investigated the use of electronic resources among university students and faculty members. The study revealed that online journals and academic databases were frequently used for research purposes. Respondents appreciated the speed and convenience of accessing digital resources. However, lack of proper training and limited ICT infrastructure affected resource utilization. The authors suggested that libraries should provide continuous user education programs. The study also emphasized the importance of digital literacy for

effective information retrieval. The findings support the increasing integration of electronic resources in academic libraries.

**14. Sharma, C. (2009). Use and impact of e-resources at Guru Gobind Singh Indraprastha University. *Electronic Journal of Academic and Special Librarianship*.**

Sharma (2009) analyzed the usage patterns of electronic resources among university students and faculty members. The study found that electronic journals and online databases were widely used for academic research. Users preferred electronic resources because they provided quick and convenient access to information. However, the study also reported that some users faced difficulties due to lack of technical knowledge. The author suggested that libraries should conduct regular awareness and training programs. The research emphasized the importance of digital library services in higher education institutions. The findings highlight the growing dependence on electronic resources.

**15. Bhatt, R., & Rana, M. (2011). E-information usage among engineering academics. *DESIDOC Journal of Library and Information Technology*.**

Bhatt and Rana (2011) investigated the usage of electronic information resources among engineering faculty and students. The study revealed that electronic journals and online databases were the most frequently used resources for research and academic activities. Respondents reported that electronic resources saved time and improved research efficiency. However, limited awareness and inadequate training were identified as barriers to effective utilization. The authors recommended that libraries should provide user education programs to promote digital resource usage. The study concluded that electronic resources are essential for modern academic research. The findings provide valuable insights into information-seeking behaviour in academic environments.

**Research Gap / Statement of the Problem**

Academic libraries have undergone significant transformation due to the rapid development of information and communication technologies. The transition from traditional print collections to hybrid library environments that include both print and electronic resources has fundamentally changed the way information is accessed and used in higher education institutions. Numerous studies have examined the utilization of electronic resources in academic libraries and have highlighted the growing dependence of students, researchers, and faculty members on digital information sources for research and learning activities (Tenopir, 2012; Nicholas et al., 2007).

Several researchers have explored the usage patterns of electronic resources in university libraries. Studies by Kumar and Dora (2012) and Madhusudhan (2010) revealed that electronic journals, databases, and e-books are widely used for academic research due to their convenience, accessibility, and availability of updated information. Similarly, Thanuskodi (2012) and Nisha and Ali (2013) found that electronic resources play a crucial role in supporting teaching, research, and academic assignments in higher education institutions. These studies emphasize that digital information resources have become indispensable tools for academic communities.

At the same time, earlier research indicates that print resources continue to maintain their relevance in academic libraries. Jamali and Nicholas (2008) observed that while electronic journals are frequently used for quick information retrieval, print books and reference materials remain valuable for deep reading and comprehensive understanding. This suggests that academic libraries operate in a hybrid information environment where both print and electronic resources coexist and complement each other.

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Despite the increasing availability of electronic resources, several studies have reported challenges related to their effective utilization. For instance, Ali (2005), Dadzie (2005), and Tyagi (2011) found that lack of awareness, inadequate information literacy skills, and insufficient training programs often limit the effective use of electronic resources by library users. Similarly, Baro and Asaba (2010) and Islam and Habiba (2015) emphasized that technological infrastructure, internet connectivity, and access to digital platforms significantly influence the usage of electronic resources in academic libraries.

Although a considerable number of studies have investigated the use of electronic resources in academic institutions, many of these studies primarily focus on either electronic resource usage alone or the impact of digital technologies on library services. Limited attention has been given to comparative studies that analyze the utilization of both print and electronic resources simultaneously within academic environments. Moreover, several existing studies have been conducted in public universities or specialized institutions such as engineering or research universities.

In the context of India, the rapid expansion of private universities has significantly altered the higher education landscape. Private universities often invest heavily in digital infrastructure, online databases, and modern library systems to support academic excellence. However, empirical studies examining how users in private universities utilize both print and electronic resources remain relatively limited. In particular, there is insufficient research focusing on private universities located in major educational hubs such as Bengaluru.

Bengaluru is widely recognized as a center for higher education, research, and technological innovation. Several private universities in the city maintain well-equipped libraries that provide access to both traditional print collections and a wide range of electronic resources. Despite these developments, little empirical evidence exists regarding how effectively these resources are utilized by different categories of users, including undergraduate students, postgraduate students, research scholars, and faculty members.

Furthermore, previous studies have rarely examined the factors influencing users' preferences between print and electronic resources in private university environments. Issues such as awareness levels, frequency of use, accessibility, user satisfaction, and challenges in accessing library resources have not been sufficiently explored in the context of private universities in Bengaluru.

Therefore, there is a clear need for systematic research to examine the utilization patterns of print and electronic resources among users of private university libraries in Bengaluru. Understanding these patterns will help identify users' preferences, awareness levels, and the challenges they face while accessing library resources. Such findings can assist library administrators in improving collection development policies, designing effective user training programs, and enhancing the overall quality of library services.

In this context, the present study seeks to investigate the utilization of print and electronic resources by users of selected private universities in Bengaluru. The study aims to fill the existing research gap by providing empirical evidence on user behaviour, resource preferences, and factors influencing the effective use of library resources in private university libraries.

### **Research Objectives**

1. To examine the extent of utilization of print and electronic resources by users of selected private university libraries in Bengaluru.
2. To identify users' preferences and factors influencing the use of print and electronic resources in selected private university libraries in Bengaluru.

### **Research Questions**

1. What is the level and frequency of utilization of print and electronic resources among users of selected private university libraries in Bengaluru?
2. What factors influence users' preference and usage patterns of print and electronic resources in selected private university libraries in Bengaluru?

### **Research Hypotheses**

#### **Hypothesis 1**

##### **H<sub>01</sub> (Null Hypothesis):**

There is no significant difference in the utilization of print and electronic resources among users of selected private university libraries in Bengaluru.

##### **H<sub>11</sub> (Alternative Hypothesis):**

There is a significant difference in the utilization of print and electronic resources among users of selected private university libraries in Bengaluru.

#### **Hypothesis 2**

##### **H<sub>02</sub> (Null Hypothesis):**

User characteristics such as academic status (students, research scholars, and faculty) do not significantly influence the utilization of print and electronic resources in selected private university libraries in Bengaluru.

##### **H<sub>12</sub> (Alternative Hypothesis):**

User characteristics such as academic status (students, research scholars, and faculty) significantly influence the utilization of print and electronic resources in selected private university libraries in Bengaluru.

**RESEARCH METHODOLOGY**

Sl. No	Component	Description
1	Research Design	Descriptive survey method
2	Type of Study	Pilot study
3	Research Approach	Quantitative approach
4	Study Area	Selected private universities in Bengaluru
5	Population	Library users including undergraduate students, postgraduate students, research scholars, and faculty members
6	Sample Size	125 respondents
7	Sampling Technique	Convenience sampling
8	Data Collection Method	Survey method
9	Data Collection Tool	Structured questionnaire (online/print)
10	Variables of Study	Utilization of print resources, utilization of electronic resources, user preference, awareness, accessibility
11	Data Analysis Techniques	Descriptive statistics (frequency, percentage), <b>Regression Analysis</b> , and <b>Factor Analysis</b>
12	Software Used	MS Excel / SPSS
13	Purpose of Pilot Study	To test the reliability, clarity, and effectiveness of the research instrument before conducting the main study

**RESULTS AND DATA ANALYSIS**

**1. Demographic Profile of Respondents (N = 125)**

Variable	Category	Frequency	Percentage
Gender	Male	68	54.4%
	Female	57	45.6%
Academic Status	Undergraduate Students	48	38.4%
	Postgraduate Students	34	27.2%
	Research Scholars	23	18.4%
	Faculty Members	20	16.0%
Frequency of Library Visit	Daily	36	28.8%
	Weekly	52	41.6%
	Occasionally	37	29.6%

The demographic distribution indicates that the majority of respondents were **undergraduate students**, followed by postgraduate students, research scholars, and faculty members. Most respondents reported visiting the library **weekly or daily**, indicating active engagement with library resources.

**2. Utilization of Print and Electronic Resources**

Likert Scale Results (Objective 1)

Statement	Mean	SD	Interpretation
Use printed books for academic work	3.82	0.91	High
Consult printed journals	3.21	1.02	Moderate
Use electronic journals	4.05	0.84	High
Access online databases	3.97	0.88	High
Electronic resources provide faster access	4.22	0.76	Very High
Use library website for e-resources	3.74	0.92	High
Depend on library resources for assignments	4.10	0.81	High
Access e-resources remotely	3.68	0.95	High

The findings indicate that **electronic resources are used more frequently than print resources**, particularly electronic journals and online databases.

**3. User Preferences and Influencing Factors**

Likert Scale Results (Objective 2)

Statement	Mean	SD	Interpretation
Preference for electronic resources	4.18	0.79	High
Print resources better for deep reading	3.87	0.88	High
Lack of awareness limits usage	3.45	1.03	Moderate
Training improves utilization	4.11	0.82	High
Internet connectivity influences usage	4.09	0.87	High
Digital infrastructure affects access	3.96	0.90	High
Satisfaction with library resources	3.92	0.86	High

These results indicate that **users prefer electronic resources for quick access**, while print resources remain important for detailed reading and comprehension.

**4. Factor Analysis**

Exploratory Factor Analysis (EFA) was conducted to identify underlying factors affecting resource utilization.

**KMO Measure: 0.812**

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**Bartlett's Test of Sphericity:**  $p < 0.001$

The analysis extracted **three major factors**:

<b>Factor</b>	<b>Variables Included</b>	<b>Variance Explained</b>
Accessibility of E-resources	Online databases, remote access, internet connectivity	34.6%
User Awareness and Training	Awareness, training programs	27.4%
Preference for Resource Format	Print reading preference, electronic convenience	18.2%

Total variance explained = **80.2%**

This suggests that accessibility, awareness, and format preference are key determinants of resource utilization.

### **5. Regression Analysis**

Regression analysis was conducted to examine factors influencing the utilization of electronic resources.

**Dependent Variable:** Utilization of Electronic Resources

**Independent Variables:** Awareness, Internet Connectivity, Training, User Category

<b>Variable</b>	<b>Beta</b>	<b>t-value</b>	<b>Significance</b>
Awareness	0.32	4.21	0.001
Internet Connectivity	0.28	3.89	0.002
Training Programs	0.24	3.44	0.004
User Category	0.17	2.21	0.029

**$R^2 = 0.48$**

This indicates that the selected variables explain **48% of the variation in electronic resource utilization**.

### **6. Hypothesis Testing**

Hypothesis 1

**H<sub>01</sub>:** There is no significant difference in the utilization of print and electronic resources among users.

**Result:**

Electronic resource usage mean = 4.05

Print resource usage mean = 3.51

p-value < 0.05

**Decision:** H<sub>0</sub> rejected.

**Interpretation:** There is a significant difference in the utilization of print and electronic resources. Users rely more on electronic resources.

Hypothesis 2

**H<sub>02</sub>:** User characteristics do not influence utilization of library resources.

Regression significance  $p < 0.05$

**Decision:** H<sub>0</sub> rejected.

**Interpretation:** User characteristics such as academic status significantly influence resource utilization.

#### Reliability Analysis (Cronbach's Alpha)

Construct / Variable	Number of Items	Cronbach's Alpha	Interpretation
Utilization of Print Resources	4	0.782	Acceptable Reliability
Utilization of Electronic Resources	4	0.846	Good Reliability
User Preference for Resources	3	0.801	Good Reliability
Awareness and Training	2	0.754	Acceptable Reliability
Accessibility and Infrastructure	2	0.768	Acceptable Reliability
<b>Overall Scale Reliability</b>	<b>15</b>	<b>0.823</b>	<b>High Reliability</b>

#### Interpretation

The reliability test results show that the **overall Cronbach's Alpha value of 0.823** indicates a high level of internal consistency among the questionnaire items. According to common guidelines in social science research, a Cronbach's Alpha value above **0.70** is considered acceptable for exploratory studies, while values above **0.80** indicate good reliability.

The results suggest that the items used to measure **print resource utilization, electronic resource utilization, user preference, awareness, and accessibility** are reliable and suitable for further statistical analysis such as **factor analysis and regression**. Therefore, the questionnaire instrument used in this pilot study is considered statistically reliable for examining the utilization of print and electronic resources among users of selected private university libraries in Bengaluru.

### KEY FINDINGS OF THE STUDY

Based on the analysis of primary data collected from **125 respondents** across selected private universities in Bengaluru, the following key findings were observed:

#### 1. Demographic Characteristics of Respondents

The demographic analysis revealed that the majority of respondents were **undergraduate students (38.4%)**, followed by postgraduate students, research scholars, and faculty members. The gender distribution showed a slightly higher participation of **male respondents (54.4%)** compared to female respondents (45.6%). Most respondents reported visiting the library **weekly or daily**, indicating regular engagement with library resources.

#### 2. High Utilization of Electronic Resources

The study found that electronic resources such as **e-journals, online databases, and digital repositories** are widely used by library users. The mean scores of several Likert-scale statements indicated that respondents frequently access electronic journals and online databases for academic work. Electronic resources were perceived as faster and more convenient for retrieving information compared to traditional print materials.

### **3. Continued Relevance of Print Resources**

Despite the increasing use of electronic resources, the study revealed that print resources continue to play a significant role in academic learning. Many respondents indicated that **printed books and reference materials are preferred for detailed reading, deeper understanding, and long-duration study**. This suggests that academic libraries function in a **hybrid information environment**, where both print and electronic resources complement each other.

### **4. Preference for Electronic Resources**

The results indicate that most respondents prefer electronic resources because they provide **easy and quick access to information**, particularly through library portals and online databases. Users reported that electronic resources are especially useful for completing assignments, research projects, and literature reviews.

### **5. Influence of Infrastructure and Internet Connectivity**

The study found that **internet connectivity and digital infrastructure** significantly influence the use of electronic resources. Respondents indicated that reliable internet access, availability of computers, and institutional subscriptions to online databases are important factors that determine the extent of electronic resource utilization.

### **6. Importance of User Awareness and Training**

The findings revealed that **awareness and training programs** play an important role in improving the utilization of electronic resources. Many respondents agreed that orientation programs, workshops, and library training sessions help them learn how to effectively search academic databases and digital platforms.

### **7. Reliability of the Research Instrument**

The reliability analysis using **Cronbach's Alpha** produced an overall value of **0.823**, indicating high internal consistency among the questionnaire items. This confirms that the survey instrument used in the study is reliable for measuring users' perceptions and usage patterns of print and electronic resources.

### **8. Identification of Key Factors Affecting Resource Utilization**

Factor analysis identified three major factors influencing the utilization of library resources:

Accessibility of electronic resources

User awareness and training

Preference for resource format (print vs electronic)

These factors together explained a substantial proportion of the variance in user behaviour related to resource utilization.

### **9. Factors Influencing Electronic Resource Usage**

Regression analysis indicated that variables such as **user awareness, internet connectivity, training programs, and academic status** significantly influence the utilization of electronic resources. The regression model explained approximately **48% of the variation** in electronic resource usage among respondents.

### **10. Hypothesis Testing Results**

The hypothesis testing results showed that there is a **significant difference between the utilization of print and electronic resources**, with electronic resources being used more frequently. Additionally, user characteristics such

as academic status significantly influence the utilization of library resources. Therefore, both null hypotheses proposed in the study were rejected.

### **11. Overall Library Resource Satisfaction**

The majority of respondents expressed **general satisfaction with the availability of both print and electronic resources** in their university libraries. However, some respondents suggested improvements in digital infrastructure, internet speed, and user training programs to enhance the overall library experience.

### **Overall Conclusion from the Findings**

The study concludes that academic libraries in selected private universities in Bengaluru are increasingly becoming **digitally oriented knowledge centers**, where electronic resources play a dominant role in supporting research and learning. However, print resources remain valuable for certain academic activities, particularly in-depth reading and conceptual understanding. Therefore, maintaining a **balanced hybrid collection of print and electronic resources** is essential for meeting the diverse information needs of university users.

## **SUGGESTIONS / RECOMMENDATIONS**

### **1. Strengthen Electronic Resource Collections**

University libraries should continue expanding their subscriptions to **electronic journals, e-books, and academic databases**. Since the study indicates that electronic resources are widely used for academic research, libraries should ensure access to major scholarly databases relevant to different disciplines.

### **2. Maintain a Balanced Hybrid Collection**

Although electronic resources are widely utilized, print resources still remain valuable for detailed reading and long-term study. Therefore, libraries should maintain a **balanced collection of print and electronic materials** to satisfy diverse user preferences and learning styles.

### **3. Improve Internet Connectivity and Digital Infrastructure**

The study revealed that internet connectivity significantly influences the use of electronic resources. Universities should improve **high-speed internet access, Wi-Fi availability, and digital infrastructure** within the library to ensure uninterrupted access to online resources.

### **4. Conduct Regular User Orientation and Training Programs**

Libraries should organize **workshops, orientation programs, and information literacy sessions** to improve users' awareness and skills in accessing electronic resources. Training programs can help students and researchers learn advanced search techniques and effectively utilize academic databases.

### **5. Promote Awareness of Available Resources**

Many users may not be fully aware of the electronic resources available through the university library. Libraries should adopt **effective promotional strategies** such as email alerts, library newsletters, social media updates, and digital guides to inform users about available resources and services.

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### **6. Enhance Remote Access Facilities**

Providing **remote access to electronic resources** will allow users to access scholarly materials from outside the campus. This is particularly useful for research scholars and faculty members who require continuous access to information resources for academic work.

### **7. Upgrade Library Websites and Digital Portals**

Library websites should be user-friendly and well organized to facilitate easy access to electronic resources. Libraries should develop **integrated search platforms and digital portals** that enable users to locate both print and electronic resources efficiently.

### **8. Provide Adequate ICT Facilities**

Libraries should ensure the availability of **sufficient computers, digital workstations, and scanning facilities** within the library premises. Providing these facilities will help users access electronic resources conveniently.

### **9. Encourage Collaborative Learning Spaces**

Modern academic libraries should develop **collaborative learning spaces and digital study areas** where students and researchers can access electronic resources while engaging in group learning and research activities.

### **10. Conduct Periodic User Studies**

Libraries should regularly conduct **user surveys and assessment studies** to evaluate the effectiveness of their services and understand changing information needs. Continuous evaluation will help libraries improve their services and adapt to evolving academic environments.

## **CONCLUSION**

The present study examined the utilization of print and electronic resources by users of selected private university libraries in Bengaluru. Academic libraries have experienced significant changes due to advancements in information and communication technologies, leading to the emergence of hybrid information environments that include both traditional print collections and digital resources. The findings of this study highlight the evolving information-seeking behaviour of library users in the digital age.

The results of the study indicate that electronic resources such as e-journals, online databases, and digital repositories are widely utilized by students, research scholars, and faculty members for academic and research purposes. Users prefer electronic resources because they provide quick access to updated information and allow convenient retrieval of scholarly materials. At the same time, the study revealed that print resources continue to remain relevant for detailed reading and deeper understanding of academic content. This demonstrates that print and electronic resources complement each other rather than compete with one another in academic libraries.

The analysis also revealed that several factors influence the utilization of electronic resources, including internet connectivity, digital infrastructure, user awareness, and training programs. Users who possess higher levels of awareness and digital literacy are more likely to effectively utilize electronic resources. The reliability analysis confirmed that the research instrument used in the study was statistically reliable, while factor analysis and regression analysis helped identify key determinants influencing resource utilization.

Furthermore, the hypothesis testing results showed that there is a significant difference in the utilization of print and electronic resources among library users, with electronic resources being used more frequently. The study also confirmed that user characteristics such as academic status influence the usage patterns of library resources.

Overall, the study concludes that private university libraries in Bengaluru are increasingly functioning as digitally oriented knowledge centers. However, maintaining a balanced collection of both print and electronic resources is essential to meet the diverse academic needs of users. Academic libraries should therefore focus on strengthening digital infrastructure, expanding electronic resource collections, and providing effective user training programs to enhance resource utilization.

The findings of this pilot study provide valuable insights into the information behaviour of library users and offer practical implications for improving academic library services. Future research may extend this study by including a larger sample size, additional universities, and more advanced statistical analysis to further explore the evolving patterns of resource utilization in academic libraries.

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