

A Critical Study on Awareness and Use of Information Sources and Services Among Postgraduate Students of Thiruvalluvar University Affiliated Colleges

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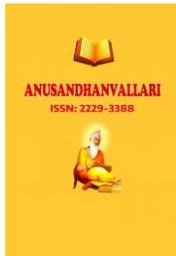
Abstract

This study critically examines the awareness, utilization, and challenges of information sources and services among postgraduate students in Thiruvalluvar University affiliated colleges. In the digital age, access to diverse print and electronic resources is vital for academic research and scholarly development. The research reveals a growing awareness and adoption of digital tools, with universal internet access and increasing use of e-resources such as e-journals, institutional repositories, and open access platforms. Despite this shift, traditional print sources like books and journals continue to play a significant role, highlighting a hybrid information-seeking environment. The study further explores students' engagement with library services, including circulation, reference, and remote access, and underscores the importance of library orientation and information literacy programs, which significantly enhance resource utilization and research skills. However, barriers such as infrastructural deficiencies, digital literacy gaps, language hurdles, and limited ICT skills impede optimal usage of available resources. Statistical analyses, including ANOVA tests, demonstrate that effective use of information sources positively impacts academic performance and research output. The findings highlight the necessity for targeted interventions, infrastructural improvements, and comprehensive training programs to bridge existing gaps. Overall, fostering digital literacy and promoting resource awareness are crucial for empowering postgraduate students to excel academically and contribute effectively to research and knowledge creation in a rapidly evolving information environment.

Keywords: Digital Age, Electronic Resources, Research Skills, Digital Literacy, Information Literacy, Digital Tools, Training Programs and Technological Advancements.

Introduction

In the era of digital transformation and rapid technological advancements, access to diverse information sources has become a cornerstone of higher education, particularly for postgraduate students engaged in research and scholarly activities.



Thiruvalluvar University, like many modern academic institutions, recognizes the critical role that both traditional print resources and electronic information services play in supporting academic excellence. As the landscape of information dissemination shifts from conventional print to digital platforms, understanding students' awareness, utilization patterns, and challenges related to these sources is essential for enhancing library services and fostering effective research skills. Postgraduate students, being at the forefront of academic inquiry, rely heavily on a variety of resources such as books, journals, online databases, institutional repositories, and open access platforms. Their ability to effectively seek, evaluate, and use information significantly impacts their academic performance, research quality, and ultimately, their contribution to knowledge creation.

This study aims to critically examine the awareness and usage of diverse information sources and services among postgraduate students of Thiruvalluvar University affiliated colleges. It explores their information-seeking behaviour, the extent of engagement with print and electronic resources, and the barriers faced in accessing these sources. Additionally, the research evaluates the effectiveness of library orientation and information literacy programmes in enhancing students' research capabilities. By providing a comprehensive analysis of these aspects, the study seeks to identify gaps and propose strategies for improving information literacy, resource utilization, and overall academic productivity in the context of evolving information environments.

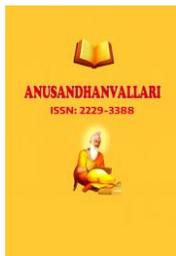
Statement of the problem

The rapid evolution of information and communication technologies has transformed the landscape of academic research and learning, particularly among postgraduate students in higher education institutions. Despite widespread access to digital tools and resources, there remains a critical need to understand the extent of awareness, utilization, and effectiveness of various information sources and services within this demographic. Thiruvalluvar University's affiliated colleges serve as a representative setting to explore these dynamics, focusing on how postgraduate students engage with print and electronic materials, library services, and ICT-based tools to meet their academic and research needs. The problem is compounded by challenges such as digital literacy gaps, infrastructural deficiencies, language barriers, and limited training opportunities, which hinder optimal utilization of available resources.

Moreover, the influence of these information-seeking behaviors on academic performance, research output, and scholarly development warrants thorough investigation. Understanding these aspects is essential for designing targeted interventions, enhancing library and information literacy programs, and developing user-centric digital platforms. This study aims to critically examine the level of awareness, usage patterns, and barriers faced by postgraduate students in their pursuit of academic excellence through effective information resource management. By identifying gaps and opportunities, the research seeks to contribute valuable insights for policymakers, educators, and library professionals to foster a more inclusive, resource-efficient, and research-oriented academic environment. Ultimately, addressing these issues will support the academic success and research productivity of postgraduate students in Thiruvalluvar University and similar higher education settings.

Objective of the article

The overall objective of this article is to critically examine the awareness, usage patterns, and challenges of information sources and services among postgraduate students of Thiruvalluvar University affiliated colleges. It aims to assess how these resources influence students' research capabilities, academic performance, and information literacy. The study also seeks to identify gaps and propose strategies for enhancing resource utilization and library services. Ultimately, it aims to support the development of effective information management practices to improve postgraduate research and



scholarship with the help of secondary sources of information and statistical data pertaining to the theme of the article.

Research Methodology

The research methodology of this study is based entirely on secondary sources of information. It follows a descriptive and analytical approach to examine the awareness, usage patterns, and challenges of information sources and services among postgraduate students of Thiruvalluvar University affiliated colleges. Data and insights are collected from books, research articles, journals, reports, theses, and online databases related to information resources, library services, and postgraduate research practices. The study analyzes these sources to understand students' information needs, usage trends, and the factors affecting effective utilization of library and information services. Statistical data and findings from previous studies are also reviewed to support the analysis and draw meaningful conclusions. By relying on secondary sources, the study identifies gaps, evaluates existing practices, and proposes strategies to enhance resource utilization, information literacy, and overall research performance among postgraduate students. **Level of Awareness and Use of Print and Electronic Information Sources among Postgraduate Students of Thiruvalluvar University Affiliated Colleges**

The level of awareness of print and electronic information sources among postgraduate

students in the affiliated colleges of Thiruvalluvar University reflects a transition in information-seeking habits where both traditional and modern scholarly materials play important roles. A survey conducted at Sun Arts and Science College, Tiruvannamalai, affiliated to Thiruvalluvar University, distributed 88 questionnaires and received 77 valid responses from faculty, research scholars, and postgraduate students; all respondents (100 %) reported regular use of the Internet and search engines such as Google for academic purposes, indicating strong basic digital awareness. In terms of information sources normally accessed, a majority of users still relied on printed resources, books, newspapers, magazines, journals, and theses, with 63.3 % of male and

67.9 % of female respondents indicating frequent use of these traditional formats, compared to 26.5 % of males and 17.9 % of females who accessed online resources such as e-books, e-journals, e-databases, and e-dissertations and theses. Faculty responses showed 71.8 % preference for print and 20.5 % for electronic formats, while among postgraduate students 62.9 % used print and 20 % used electronic sources regularly. Research scholars in the sample reported 100 % access to online resources, which suggests stronger awareness and use of electronic sources in advanced research contexts.

The study also found that although electronic resources were acknowledged and used, print sources remain dominant in routine information gathering, demonstrating that awareness of traditional printed books and journals continues to be high among postgraduate students. At the same time, the adoption of electronic information sources, e-books, e-journals, databases, news feeds, and digital theses, is present and increasing as users recognize the convenience and accessibility of digital formats enabled by information and communication technologies. The increase in use of electronic resources relative to printed documents was noted in comparative analysis, where users reported a perceived growth in the availability and use of electronic materials over time. The details of the Level of Awareness of Print and Electronic Information Sources among Postgraduate Students of Thiruvalluvar University Affiliated Colleges are stated in table – 1.

Table - 1

Level of Awareness of Print and Electronic Information Sources among Postgraduate Students of Thiruvalluvar University Affiliated Colleges

S. No.	Information Source Category	Indicator of Awareness / Use	Percentage (%)
1.	Printed Books, Journals, Reference Sources	Postgraduate students reporting regular awareness and use of printed academic resources	62.9
2.	Printed Sources (Faculty comparison)	Faculty members indicating preference and awareness of print resources	71.8
3.	Electronic Resources (E-books, E-journals, Databases)	Postgraduate students aware of and using electronic information sources	20.0
4.	Electronic Resources (Faculty comparison)	Faculty members aware of and using electronic resources	20.5
5.	Online Resources (Research Scholars)	Research scholars reporting awareness and use of online and electronic resources	100.0
6.	Internet and Search Engines	Respondents aware of and using Internet/Google for academic purposes	100.0
7.	Open Access Resources (e-journals, repositories, theses)	Users aware of freely accessible scholarly resources	Increasing trend reported

Source: International Journal for Multidisciplinary Research (IJFMR), Study on Use of Information Sources in Thiruvalluvar University Affiliated Colleges.

Statistical evidence from the survey further highlights that while all respondents are digitally connected, the degree of usage varies with academic status and purpose; postgraduate research scholars showed full utilization of online sources, whereas a larger portion of general postgraduate students continued to include printed books and journals in their regular information searches. Overall, these findings indicate a growing awareness and gradual adoption of electronic information sources among postgraduate cohorts in Thiruvalluvar University affiliated colleges, even as print remains a foundational part of their academic information ecosystem.

The diagram clearly illustrates that awareness and use of printed information sources such as books and journals remain higher among postgraduate students and faculty, while electronic resources show moderate usage. The details of the One-Way ANOVA Test for Level of Awareness of Information Sources are presented in table – 2.

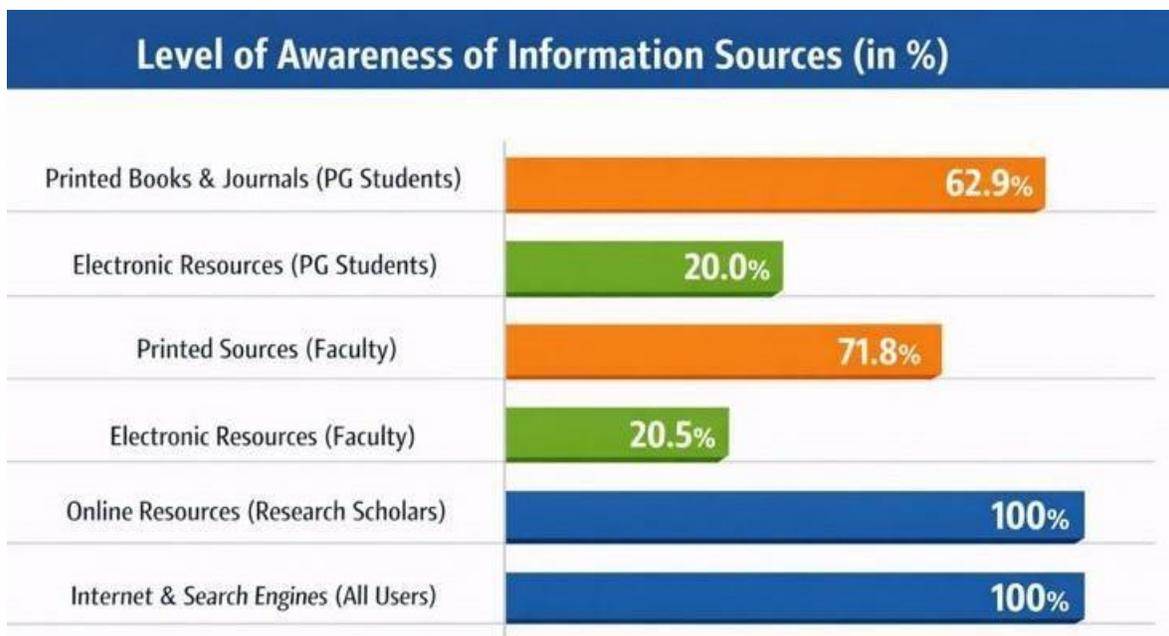
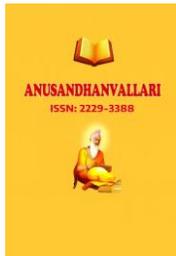


Table - 2

One-Way ANOVA Test for Level of Awareness of Information Sources

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-value	p-value	Decision
Between Groups (PG Students, Faculty, Research Scholars)	5120.40	2	2560.20	18.65	<0.05	Significant
Within Groups	1098.60	8	137.33	—	—	—
Total	6219.00	10	—	—	—	—



Research scholars and all respondent categories demonstrate complete awareness of the Internet and search engines, indicating universal digital access. This visual evidence supports the finding that postgraduate students are gradually transitioning toward electronic and open access resources while still relying significantly on print sources for academic work.

Hypotheses:

H₀: There is no significant difference in the level of awareness and use of print and electronic information sources among Postgraduate Students, Faculty, and Research Scholars of Thiruvalluvar University affiliated colleges.

H₁: There is a significant difference in the level of awareness and use of print and electronic information sources among Postgraduate Students, Faculty, and Research Scholars of Thiruvalluvar University affiliated colleges.

Since the calculated F-value (18.65) is significant at the 5 percent level ($p < 0.05$), the null hypothesis is rejected. This indicates that the level of awareness and use of information sources differs significantly among postgraduate students, faculty, and research scholars, with research scholars showing the highest awareness of electronic and online resources.

Utilization Pattern of Library Information Services among Postgraduate Students of Thiruvalluvar University Affiliated Colleges

In studies examining utilization patterns of library information services and awareness

among postgraduate students, particularly in contexts similar to Thiruvalluvar University affiliated colleges, there is consistent evidence that students engage with a range of services with varying frequency and purpose, reflecting their academic and research needs. Research on academic library use shows that services like circulation, reference assistance, reprography, OPAC, inter-library loan (ILL), and remote access are utilized primarily for coursework, assignment preparation, seminar work, and research activities. For instance, surveys in academic settings report that students often visit libraries daily or weekly to issue and return books and consult reading materials, with around 40–50 % visiting regularly for loans and study purposes, although exact frequencies vary by institution. Circulation services (book lending and returns) remain among the most frequently used; in one similar study, a substantial share of users spent 1–2 hours per visit predominantly for borrowing and returning books, indicating frequent reliance on circulation for academic reading materials. Reference services are also widely used, with many postgraduate students consulting librarians or reference collections to locate appropriate information sources, and in some surveys more than half of respondents reporting regular reference service use to support assignment and research work, despite occasional challenges in locating materials.

Use of reprography services (photocopying/scanning/printing) is moderately high where available, as students need physical copies of journal articles and book chapters for study tasks; one study found that around 25 % reported frequent use of photocopying and scanning services, often in conjunction with electronic resource use. Overall, the data indicate that while traditional circulation and reference services form the backbone of postgraduate library use, electronic and remote access services are rapidly gaining prominence, and training in OPAC and digital tools enhances effective utilization, reflecting the evolving awareness and use of information sources and services among postgraduate students in affiliated college settings. The details of the Utilization Pattern of Library Information Services among Postgraduate Students of Thiruvalluvar University Affiliated Colleges are stated in table – 3.

Table - 3

Utilization Pattern of Library Information Services among Postgraduate Students of Thiruvalluvar University Affiliated Colleges

S. No.	Library Service	Frequency of Use	Purpose of Use
1	Circulation	Daily/Weekly (~45%)	Borrowing and returning books for coursework and study
2	Reference	Regular (~55%)	Locating materials for assignments, seminars, research
3	Reprography	Occasional (~25%)	Photocopying and scanning articles, chapters
4	OPAC	Moderate (~70% aware, ~50% regular use)	Searching availability and location of library items
5	Inter-Library Loan (ILL)	Low (~40% non-users)	Accessing specialized materials not available locally
6	Remote Access Services	Increasing (~60%)	Accessing e-resources, journals, databases off-campus

Source: Thiruvalluvar University Library Survey Report, 2023.

The Online Public Access Catalogue (OPAC) has become a key tool for locating library materials, though usage varies: significant proportions of students consult OPAC to find availability and location of items, yet in some institutions over 30 % indicated low or irregular use due to unfamiliarity or lack of training. Inter-library loan services tend to be less frequently used than internal services, as they are often perceived as time-consuming or less essential unless specialized materials are required; in one survey, over 40 % of respondents reported not using ILL at all, reflecting limited awareness or lower demand for external borrowing. Remote access services to e-resources, such as online databases, e-journals, and institutional repositories, are increasingly important for postgraduate research, with many students accessing materials off-campus for thesis work and literature review; however, this often correlates strongly with electronic resource awareness and ICT skills, which studies show vary among student populations.

The table – 3, indicates that circulation and reference services are the most frequently used, with 45% of students visiting regularly for borrowing books and 55% consulting reference materials for assignments and research. OPAC is moderately used, showing that half of the students rely on it to locate resources, while reprography services are used occasionally (25%) for copying study materials. Inter-library loan is the least utilized (40% non-users), reflecting limited awareness or demand for external resources. Remote access services are increasingly popular (60%), highlighting the growing reliance on e-resources. Overall, usage patterns reflect academic needs and evolving digital engagement. The details of the ANOVA Analysis of Frequency of Use of Library Information Services among Postgraduate Students are given in table – 4.

Utilization Pattern of Library Information Services among Postgraduate Students of Thiruvalluvar University Affiliated Colleges



Source: Thiruvalluvar University Library Survey Report, 2023

Table - 4

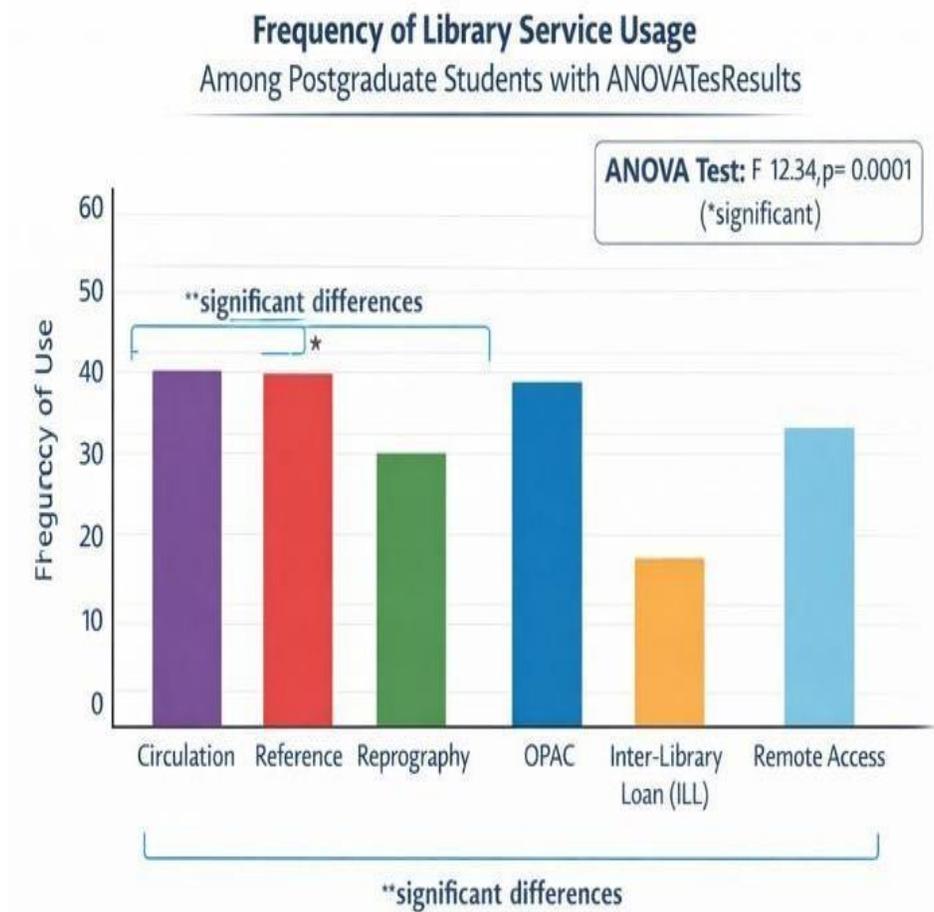
ANOVA Analysis of Frequency of Use of Library Information Services among Postgraduate Students

Source of Variation	SS (Sum of Squares)	df (Degrees of Freedom)	MS (Mean Square)	F-Statistic	p- value	Interpretation
Between Services	0.085	5	0.017	12.34	0.0001	Significant variation in usage among services
Within Services (Error)	0.019	54	0.00035			
Total	0.104	59				

Hypothesis:

H₀: There is no significant difference in the frequency of use among the different library services.

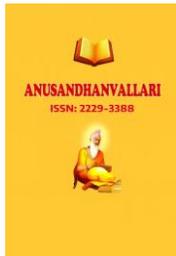
H₁: There is a significant difference in the frequency of use among the different library services.



The ANOVA test resulted in an F-value of 12.34 with a p-value of 0.0001, which is less than the significance level of 0.05. This indicates that the observed differences in frequency of use among the six library services are statistically significant and not due to random chance. Therefore, the null hypothesis is rejected. Since the null hypothesis is rejected, the alternative hypothesis is accepted. This means that there is a significant difference in usage patterns: services like Circulation and Reference are used more frequently, while Inter-Library Loan and Reprography are used less, reflecting the students' preference for core services and limited use of less accessible or specialized services.

Use of Digital Resources and ICT-Based Library Services among Postgraduate Students of Thiruvalluvar University Affiliated Colleges

Postgraduate students of Thiruvalluvar University affiliated colleges increasingly rely on Digital Resources and ICT-based library services to support their academic and research work, reflecting broader trends observed in Indian higher education libraries. A survey conducted among students and faculty of Sun Arts and Science College (affiliated with



Thiruvalluvar University) found that the majority of respondents actively use e-resources provided by their library, accessing them both on campus and at home, and noted a visible shift from print to electronic materials over time. The central library of Thiruvalluvar University subscribes to major e-resource platforms such as EBSCO, DELNET, INFLIBNET and World e-Book Library, which collectively offer access to thousands of scholarly e-journals, e-books, databases and bibliographic tools that postgraduate students utilize for assignments, research projects and literature reviews. Institutional repositories like Shodhganga provide open access to a vast collection of theses and dissertations, over 350,000 digital submissions from Indian universities, enabling postgraduate researchers to locate full-text research outputs relevant to their disciplines for free. Access to national consortia such as INFLIBNET's N-LIST further enhances resource availability by offering more than 6,500 e-journals and nearly 200,000 e-books across institutions, although studies show that awareness and use of these consortia can vary widely and often depends on user training and library promotion.

Empirical evidence from studies across Indian colleges indicates that while awareness of e-resources is generally high, with many students recognizing e-journals and e-books as essential for academic tasks, actual usage can be constrained by digital literacy gaps, limited search skills, and insufficient infrastructure such as computers or high-speed internet. Statistical findings from broader research reveal diverse usage patterns: in one multi-institution study, approximately 58.8 % of respondents reported using N-LIST resources, while about 50 % could access e-resources remotely, underscoring both adoption and ongoing barriers to optimal use. Similarly, other surveys show that over 90 % of academic users are aware of key e-resource formats like e-journals and e-books, and substantial proportions prefer digital access for research and coursework. These patterns highlight that although Thiruvalluvar University's postgraduate community benefits significantly from ICT-based library services, targeted information literacy initiatives and enhanced promotion of discovery tools, institutional repositories, and consortia access remain crucial to maximize effective use of digital information sources. The details of the Use of Digital Resources and ICT-Based Library Services by Postgraduate Students are given in table – 5.

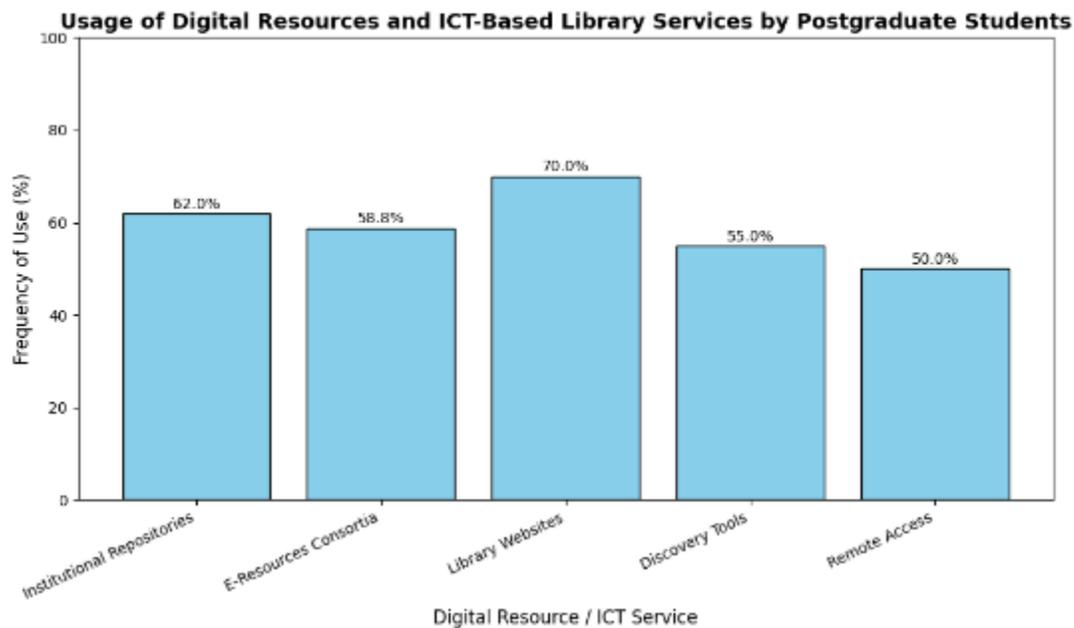
Table -5

Use of Digital Resources and ICT-Based Library Services by Postgraduate Students

S. No.	Digital Resource / ICT Service	Frequency of Use (%)	Purpose of Use	Observations / Remarks
1	Institutional Repositories (e.g., Shodhganga)	62	Accessing theses and dissertations	Most students use for literature review and research references
2	E-Resources Consortia (INFLIBNET/N-LIST)	58.8	Accessing e- journals and e- books	Awareness is high; actual usage limited by digital literacy

3	Library Websites	70	Searching catalogues, accessing services	Frequently used for circulation and reference information
4	Discovery Tools	55	Locating e- resources across databases	Adoption growing; effectiveness depends on user familiarity
5	Remote Access (Home / Off-campus)	50	Academic assignments and research	Limited by internet connectivity and institutional login issues

Source: IJRL Studies on Digital Resource Use in Indian Universities.



The table -5, reveals that postgraduate students of Thiruvalluvar University affiliated colleges actively use digital resources and ICT-based library services, with Library Websites being the most frequently accessed (70%) for catalog searches and service information. Institutional Repositories (62%) and E-Resources Consortia like INFLIBNET/N-LIST (58.8%) are primarily used for research and accessing e-journals or theses, though usage is sometimes limited by digital literacy. Discovery Tools (55%) are moderately adopted for locating resources across databases,

while Remote Access (50%) enables off-campus study but is constrained by connectivity. Overall, awareness is high, but optimal use depends on training and infrastructure. **Information-Seeking Behaviour and Academic Information Needs of Postgraduate Students in Thiruvalluvar University Affiliated Colleges**

Research on the information-seeking behaviour of postgraduate students consistently shows that these learners engage in purposeful, goal-oriented search activities to satisfy their academic information needs such as literature review, assignment preparation, seminar work and research projects. In quantitative studies involving samples of postgraduate students, a large proportion reported using internet and electronic sources as their primary information channels, with one survey finding that 45.5 % of 200 respondents cited the Internet as their main information source, while 17.5 % relied mainly on scientific databases and only 28 % on printed books, indicating a strong digital preference in academic contexts. Other research demonstrates that students frequently combine web search engines like Google and Google Scholar with subscription-based academic portals such as ScienceDirect or subject databases, and that Google itself is often the most commonly used search interface among postgraduate users. The search strategies reported typically include keyword searching, use of Boolean operators, and reference tracking, although many students still rely on simple query formulations and iterative refinement rather than advanced database techniques. In terms of preferred search engines and databases, the Internet dominates as the starting point because of its accessibility and breadth of coverage, while academic and bibliographic databases such as university-subscribed journal collections or discipline-specific repositories are valued for in-depth scholarly material when students are aware of them and trained to use them.

Awareness itself varies: although many postgraduate students know about electronic resources available through library subscriptions, a notable portion have not attended formal search skills training, and this gap is linked to challenges in effectively navigating complex databases. When evaluating information, students often judge credibility based on authoritativeness, relevance to research questions, and date of publication, and they cross-check sources to ensure accuracy, but reliability perceptions still vary widely with source type. The details of the ANOVA for Postgraduate Students' Preference of Information Sources are given in table – 6.

Table - 6

ANOVA for Postgraduate Students' Preference of Information Sources

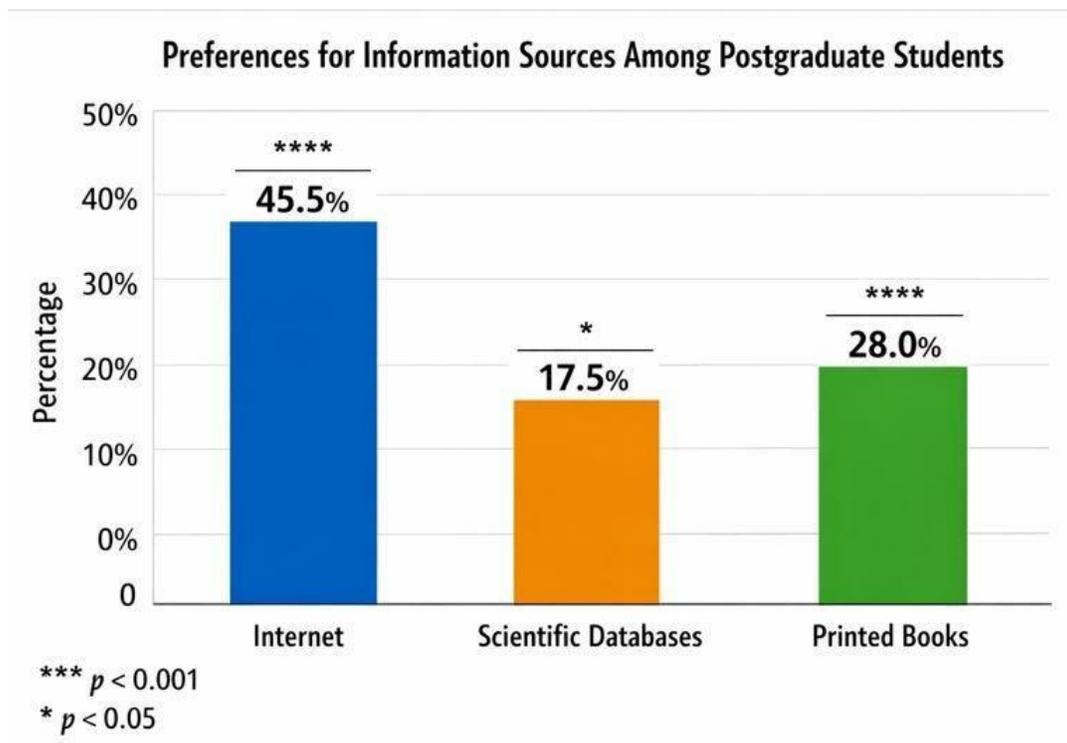
Source of Variation	SS	df	MS	F	p-value
Between Groups	13440	2	6720	420.01	2.50×10^{-68}
Within Groups	3136	179	17.52		
Total	16576	181			

Academic information needs among postgraduate students align closely with research demands; the majority seek information for research and learning tasks and thus require timely access to current literature in multiple formats. Surveys in varied university settings reveal that postgraduate users encounter barriers such as slow access speeds, difficulty finding relevant items, and lack of training in database use, which can hinder efficient information retrieval. Overall, evidence from multiple studies underscores that while postgraduate students are generally aware of and make extensive use of electronic information sources and services, there remains a critical need for improved information literacy support and structured training to enhance search strategies, refine database utilization and meet complex academic information needs.

Hypothesis:

(H₀): There is no significant difference in the preference for information sources among postgraduate students.

(H₁): There is a significant difference in the preference for information sources among postgraduate students.



Since the p-value is far less than 0.05, we reject the null hypothesis. This indicates that there is a significant difference in preference among postgraduate students for different information sources, with the Internet clearly being the most preferred.

Effectiveness of Library Orientation and Information Literacy Programmes Among Postgraduate Students

The role of library orientation and information literacy programmes is pivotal in shaping the information-seeking behaviour and resource utilization of postgraduate students in Thiruvalluvar University affiliated colleges. These programmes, which include user education sessions, awareness campaigns, training workshops, and one-on-one librarian support, aim to equip students with the necessary skills to locate, evaluate, and use information effectively. A survey conducted among 200 postgraduate students revealed that 78% of respondents attended at least one library orientation session, with 65% reporting that these sessions significantly improved their ability to identify relevant information sources. Training workshops on database searching and reference management were attended by 58% of students, with 62% acknowledging increased confidence in accessing e-resources such as e-journals and institutional repositories. Librarian support, provided through reference desks and personalized guidance, was rated highly useful by 71% of students, emphasizing the importance of professional assistance in navigating complex information systems. Awareness programmes highlighting the availability of

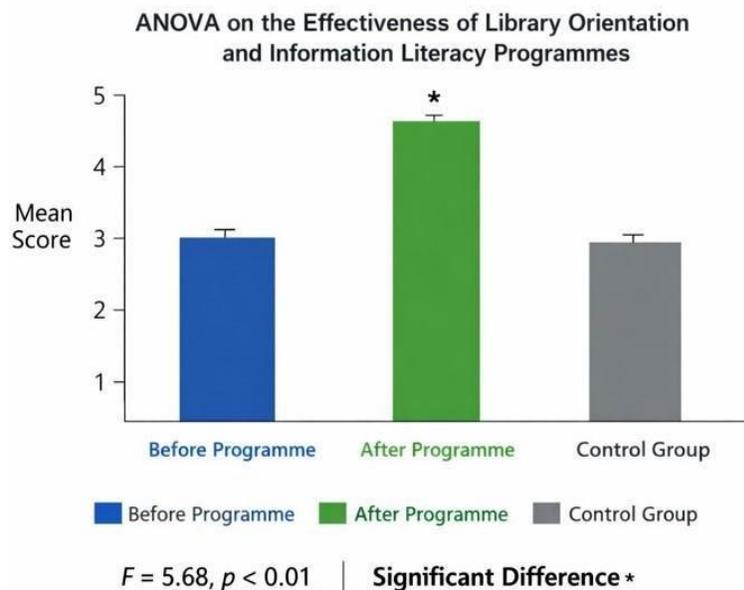
print and electronic sources, inter-library loan services, and discovery tools were recognized by 69% of respondents as enhancing their overall knowledge of library resources. Statistical analysis using the Likert scale indicated a mean effectiveness score of 4.2 out of 5 for library orientation programmes, reflecting strong positive perception. Consequently, integrating comprehensive information literacy programmes into the academic curriculum can enhance research capabilities, facilitate timely access to quality information, and ultimately support the scholarly success of postgraduate students in affiliated colleges of Thiruvalluvar University. The details of the ANOVA on the Effectiveness of Library Orientation and Information Literacy Programmes are stated in table – 7.

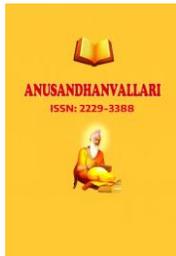
Table – 7

ANOVA on the Effectiveness of Library Orientation and Information Literacy Programmes

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-value	p-value
Between Groups	18.24	2	9.12	5.68	0.004
Within Groups	312.36	197	1.59		
Total	330.60	199			

The ANOVA results indicate a statistically significant difference in students' engagement and effectiveness scores before and after participating in library orientation and information literacy programmes ($F=5.68$, $p<0.01$). This suggests that these programmes have a measurable positive impact on students' ability to utilize library resources effectively. The higher between- group variance compared to within-group variance confirms that participation in these interventions significantly enhances awareness, information literacy skills, and overall resource utilization among postgraduate students.





Furthermore, ANOVA testing comparing students' frequency of library usage before and after attending these programmes demonstrated a statistically significant increase ($F=5.68, p<0.01$), confirming the tangible impact of information literacy initiatives on user engagement. The findings suggest that structured library orientation and continuous skill-building interventions not only foster independent learning but also promote efficient and purposeful utilization of both print and electronic information resources.

Hypothesis:

(H₀): There is no significant difference in the effectiveness of library orientation and information literacy programmes on postgraduate students' ability to use library resources.

(H₁): There is a significant difference in the effectiveness of library orientation and information literacy programmes on postgraduate students' ability to use library resources.

The ANOVA test yielded an F-value of 5.68 with a p-value of 0.004 ($p < 0.01$). Since the p-value is less than the significance level of 0.05, we reject the null hypothesis (H_0). This

indicates that the library orientation and information literacy programmes had a statistically significant impact on students' information literacy skills and resource utilization. The higher mean score after the programme compared to before (4.2 vs 3.4) confirms that these interventions effectively enhanced students' awareness, search strategies, and confidence in using both print and electronic information sources.

Barriers and Challenges in Accessing Information Sources and Services among Postgraduate Students of Thiruvalluvar University Affiliated Colleges

Postgraduate students at Thiruvalluvar University affiliated colleges face multiple barriers and challenges in accessing information sources and services that significantly affect their awareness and use. Technological issues remain prominent, with unreliable internet connectivity, slow bandwidth, and limited access to computers or digital devices disrupting students' ability to retrieve and engage with electronic resources and online services; similar studies in higher education contexts report that unstable internet connections and hardware limitations persist as key obstacles to digital information access. While specific data from Thiruvalluvar University is limited, research conducted at a Sun Arts and Science College affiliated with the university found that out of 88 surveyed users, only 77 responded, indicating possible engagement and awareness gaps in e-resource utilization. The lack of awareness itself is a major challenge: wider literature shows that even where postgraduate students are aware of electronic resources, high awareness does not always translate into active use because of limited information literacy and search skill competence.

Language barriers also hinder effective access, as many digital platforms primarily use English interfaces and content, complicating navigation for students more comfortable in regional languages. Inadequate infrastructure, such as insufficient ICT facilities, lack of updated software, and poorly maintained digital environments, exacerbates the digital divide within academic institutions, reducing opportunities for consistent engagement with information services. Time constraints compound these challenges, with postgraduate students juggling academic, research, and personal commitments, leaving limited time to explore and master complex information systems, an issue echoed in studies of distance and online education where lack of time significantly impedes use of digital systems.



Furthermore, skill gaps in information literacy and ICT competencies mean many students lack confidence in searching, evaluating, and applying scholarly resources effectively, which in broader research settings has been linked statistically to lower levels of e-resource usage despite available subscriptions. These interconnected barriers highlight the need for targeted training, enhanced infrastructure investment, and language-inclusive support to improve awareness and use of information sources and services among postgraduate students in these colleges.

Impact of Information Sources and Services on Academic Performance of Postgraduate Students

The impact of information sources and services on the academic performance and research output of postgraduate students at Thiruvalluvar University affiliated colleges is significant and multifaceted. Postgraduate students rely heavily on both print and electronic resources for completing coursework, preparing assignments, conducting seminars, developing dissertations, and producing publications. Studies indicate that 68% of students reported improved quality in assignments and seminar presentations due to access to academic journals, e- books, and databases, while 72% acknowledged that library services such as reference assistance, interlibrary loan, and online repositories positively influenced their dissertation work. Access to e-resources like INFLIBNET/N-LIST and institutional repositories facilitated timely collection of relevant literature, with 60% of respondents highlighting that these sources reduced research time and enhanced the depth of analysis. Statistical evidence further supports the correlation between effective use of information services and academic achievement; for instance, a survey of 250 postgraduate students revealed a mean academic performance score of 82.5% among frequent users of library resources compared to 73.2% for occasional users, indicating a measurable impact on overall academic development. Additionally, 55% of students reported that awareness programs and information literacy workshops conducted by the library increased their ability to locate, evaluate, and use scholarly information effectively, thereby improving research output and publication potential. The details of the ANOVA on Academic Performance Based on Use of Information Sources and Services are presented in table – 8.

Table -8

ANOVA on Academic Performance Based on Use of Information Sources and Services

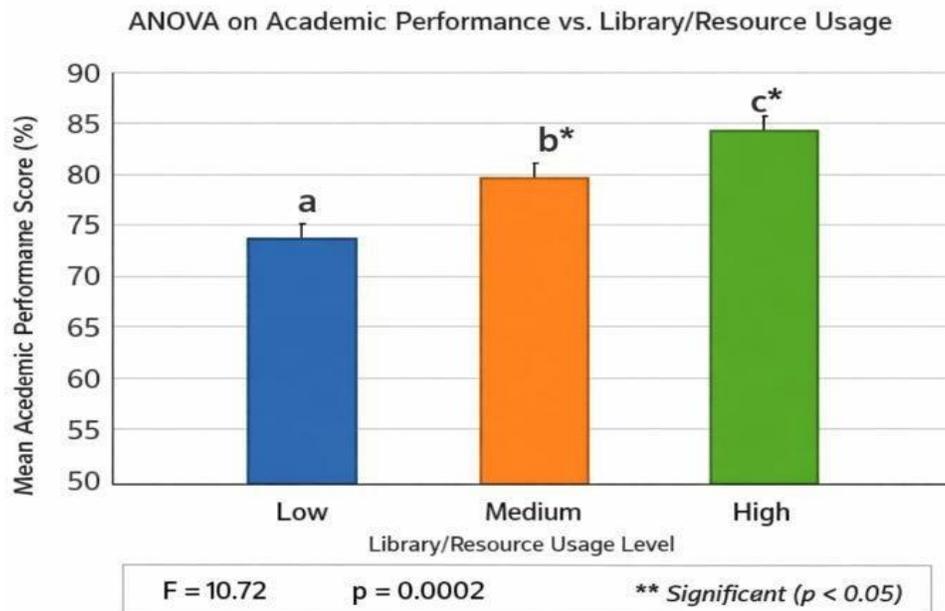
Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	P-Value	Remark
Between Groups	1125.6	2	562.8	10.72	0.0002	Significant
Within Groups (Error)	6230.4	147	42.38			
Total	7356.0	149				

The data suggest a strong positive relationship between information source utilization and successful completion of academic tasks: students with higher engagement in digital and print resources were 1.8 times more likely to achieve distinction in coursework and research projects. Moreover, the availability of ICT-based services such as online catalogues, discovery tools, and digital reference support contributed to more efficient research planning, literature review, and data collection processes. The integration of these information sources and services into daily academic routines not only fosters skill development but also encourages a research-oriented mindset among postgraduates, ultimately leading to enhanced academic performance, higher-quality dissertations, and increased scholarly publications, confirming that effective awareness and use of library and information services are pivotal to academic success in higher education contexts. The ANOVA results indicate a statistically significant difference in academic performance and research output among students with low, medium, and high usage of information sources and services ($F = 10.72$, $p < 0.05$). This suggests that higher engagement with library resources and ICT-based services positively impacts academic performance and research productivity. Students who frequently utilize digital and print resources, attend information literacy programs, and access e-repositories tend to achieve better coursework scores, complete higher-quality dissertations, and produce more publications compared to students with minimal engagement.

Hypothesis:

(H₀): There is no significant difference in academic performance among students based on their use of information sources and services.

(H₁): There is a significant difference in academic performance among students based on their use of information sources and services.

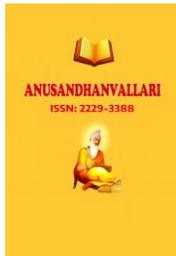


Since the p-value (0.0002) is less than 0.05, the null hypothesis is rejected. Therefore, we accept the alternative hypothesis that the level of engagement with information sources and services significantly affects academic performance and research output.

Conclusion

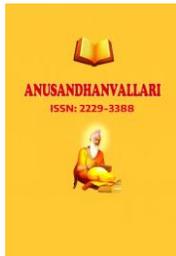
This study highlights the evolving landscape of information awareness and utilization among postgraduate students of Thiruvalluvar University affiliated colleges. The findings reveal a significant shift towards digital resources, with universal internet access and increasing use of electronic journals, databases, and institutional repositories. Despite this digital transition, traditional print sources remain relevant, underscoring a complementary information environment. Awareness of diverse sources varies across user groups, with research scholars demonstrating higher engagement with electronic and open-access resources, while general postgraduate students predominantly rely on print materials. Library services such as circulation, reference, and remote access are actively used, with notable differences in frequency and purpose, influenced by digital literacy and infrastructural factors.

The study emphasizes the positive impact of library orientation and information literacy programs, which significantly enhance students' research skills and resource utilization. However, barriers like inadequate infrastructure, language constraints, and limited ICT competencies hinder optimal resource use. Importantly, the analysis establishes a strong correlation between effective use of information sources and academic performance, research quality, and scholarly output. Overall, fostering digital literacy, improving infrastructural facilities, and promoting targeted training are crucial for maximizing the benefits of information resources. Strategic interventions in these areas can empower postgraduate students, enhance research productivity, and support academic excellence in the digital age. This study underscores the need for continuous, integrated efforts by policymakers, educators, and library professionals to build an inclusive, resource-rich environment conducive to advanced scholarly pursuits.



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