Faculty Awareness and Utilization of Digital Library Resources: A Comparative Study of Government and Private Colleges

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Abstract

The growing integration of digital library resources in higher education has transformed academic research and learning methodologies. This study examines faculty awareness and utilization of digital library resources in government and private colleges. It evaluates the disparities, challenges, and influencing factors affecting digital resource adoption. A structured survey was conducted among faculty members from both categories of institutions, and data were analyzed using statistical tools. The findings indicate significant differences in resource accessibility, training, and frequency of use, highlighting the need for targeted policy interventions.

Keywords: Digital Library, Faculty Awareness, Higher Education, Government Colleges, Private Colleges, Digital Resources Utilization

1. Introduction

From their inception as centers for study and knowledge dissemination, libraries have played a pivotal role in academic and intellectual advancement. Traditionally, libraries have served as repositories of printed books, research journals, and scholarly publications, catering to the information needs of students, educators, and researchers. Over time, with the emergence of non-print and electronic resources, the role of libraries has expanded significantly, allowing for a more dynamic and accessible learning environment. In modern academia, particularly in disciplines such as engineering and technology, the availability and efficient utilization of digital resources have become essential for keeping pace with evolving educational standards and global advancements. India has witnessed a significant surge in engineering education, and Telangana, in particular, has experienced rapid growth in engineering college enrollments. This increase is driven by a demand for skilled professionals, government initiatives to promote technical education, and the growing interest in science and technology among students. As engineering institutions compete at a global level, maintaining high educational standards has become imperative. Institutions are not only expected to impart theoretical knowledge but also to equip students with practical skills, research capabilities, and access to global academic resources. To meet these expectations, engineering colleges must continuously adapt to advancements in digital learning, library management, and technological innovation. The All India Council for Technical Education (AICTE) has played a commendable role in establishing policies and quality standards for engineering education in India. AICTE has actively promoted the integration of digital tools, online repositories, and virtual libraries into engineering curricula, recognizing their potential to enhance learning outcomes, research productivity, and accessibility to global academic knowledge. This transition is not just about digitizing traditional resources but about transforming the way knowledge is accessed, shared, and utilized in higher education. The advent of digital libraries has revolutionized information access and research methodologies, making scholarly content available beyond physical boundaries. With access to online databases, electronic books, academic journals, and multimedia learning resources, faculty members and students can enhance their academic engagement and research productivity. However, despite the immense potential of digital libraries, their adoption and utilization vary significantly across institutions. Factors such as awareness, accessibility, technical proficiency, and institutional support determine the extent to which faculty members integrate digital resources into their teaching and research. This study delves into how faculty members in government and private colleges engage with digital library resources, examining the differences in awareness, frequency of use, institutional support, and barriers to digital adoption. While government institutions often have state-funded

access to digital repositories, private institutions rely on independently funded digital subscriptions, creating disparities in accessibility. Moreover, technological infrastructure, faculty training programs, and institutional policies play a crucial role in shaping digital resource utilization. By identifying gaps and opportunities, this study aims to provide insights into how digital libraries can be better leveraged to support engineering education and research in India, ultimately contributing to the development of a digitally empowered academic ecosystem.

The Role and Significance of Digital Libraries in Modern Academia

A digital library is a vast electronic collection of information that is dispersed across multiple platforms and institutions, serving a specific community of users with resources in diverse areas of human knowledge and effort. Unlike traditional physical libraries that store books and periodicals within a confined space, digital libraries provide widespread access to information, ensuring that knowledge is available to everyone, anywhere, and at any time. This ubiquitous accessibility is one of the primary goals of digital libraries, making them an essential tool for education, research, and professional development in today's knowledge-driven world. Engineering libraries, in particular, rely extensively on digital resources to support academic excellence, innovation, and research development. The field of engineering is dynamic and constantly evolving, with new discoveries, methodologies, and technologies emerging at a rapid pace. To keep up with these advancements, students, educators, and researchers require instant access to up-to-date information in their specialized areas. Digital resources facilitate this need by providing an extensive range of electronic books (e-books), research journals, scientific databases, and institutional repositories, all of which help in enhancing the quality of education, research output, and innovation in engineering disciplines. The importance of electronic information in the academic and developmental process cannot be overstated. Digital resources enable scholars and researchers to retrieve information efficiently, collaborate with peers across institutions, and contribute to the advancement of their fields through continuous learning and knowledge-sharing. This level of accessibility bridges the gap between knowledge seekers and information providers, ensuring that scholars, irrespective of geographical location, can access the latest research findings and technological advancements.

Digital resources encompass a wide array of electronic materials that support teaching, research, and academic administration. These resources include:

- Electronic Books (e-books): Digitized versions of textbooks and reference materials that can be accessed via online platforms.
- Electronic Journals (e-journals): Scholarly publications available in digital format, often through university subscriptions or open-access platforms.
- Databases: Subject-specific repositories of scientific, technical, and research-oriented data, such as IEEE Xplore, Springer, Elsevier's ScienceDirect, and Wiley Online Library.
- Institutional Repositories: Digital archives maintained by universities that house faculty publications, research papers, and student dissertations.
- Online Public Access Catalogs (OPAC) & Web-Based OPACs: Digital catalogs that allow users to search for books and other materials within a library system.
- Websites and Digital Portals: Platforms that provide access to open educational resources (OER), MOOCs (Massive Open Online Courses), and other digital learning tools.
- Electronic Photographs and Multimedia: Digital archives of technical drawings, engineering blueprints, and instructional videos.
- Electronic News & Reports: Research updates, technical news, and industrial advancements published online.
- Electronic Theses and Dissertations (ETDs): Digital copies of postgraduate and doctoral research work accessible through institutional repositories.

- CD-ROMs & DVDs: Offline storage mediums that contain scientific software, research materials, and educational content.

Because of their diverse nature, digital resources serve as the most effective means of information dissemination, ensuring that learners, educators, and researchers have real-time access to knowledge that fuels academic growth, research excellence, and professional advancement. The ease of online accessibility further enhances their usability, as students and faculty members can retrieve, download, and share information without the constraints of physical space and library hours.

2. Literature Review

Velmurugan and Raghotham (2022) This study examined the faculty members of Vivekanandha Arts and Science College for Women, Salem, through a survey-based approach. A total of 200 questionnaires were distributed, of which 179 were returned, reflecting a high response rate of 89.5%. The demographic analysis revealed that 62.57% of the respondents were male, and a significant portion (70%) fell within the age bracket of 26 to 50 years. Additionally, a majority (66.48%) hailed from rural areas, which influenced their access to digital and academic resources. The study also highlighted that assistant professors constituted 42.46% of the total respondents. A crucial finding was that 50.84% of faculty members utilized the central library's internet facilities for research purposes, indicating a significant reliance on institutional resources. However, the study pointed out gaps in digital infrastructure and recommended several improvements. Among them, the need to expand electronic journal subscriptions was emphasized to enhance research accessibility. The study also suggested the implementation of structured training programs to improve faculty members' proficiency in navigating e-resources. Further, it highlighted the importance of upgrading digital library infrastructure to facilitate better resource utilization and academic efficiency. The findings underscored the necessity of targeted interventions to bridge technological gaps and promote an inclusive research environment for faculty members in higher education institutions.

Balasubramani, Anbalagan, and Prabhu (2022) This study focused on evaluating the awareness and utilization of electronic resources among faculty members of Sri Ramakrishna Engineering College, Coimbatore. A sample of 277 faculty members was randomly selected across thirteen academic departments, ensuring a diverse representation of disciplines. The findings revealed that an overwhelming 86.17% of faculty members were highly aware of reputable academic resources, including IEEE, Springer Open, and O'Reilly Open Book. Such a high level of awareness reflects the institution's emphasis on digital resource integration within its academic framework. Furthermore, the study highlighted that 80.24% of the faculty expressed full satisfaction with NPTEL resources, indicating a strong preference for government-supported digital learning platforms. The research emphasized the significance of continuous awareness and training programs to enhance the effective utilization of these resources. The study recommended structured workshops and hands-on training sessions to ensure faculty members are equipped with the necessary skills to navigate and make optimal use of digital academic content. By promoting resource literacy and accessibility, institutions can maximize the impact of e-learning tools, thereby fostering academic growth and research productivity. **Chanda (2021)** This study examined the level of awareness and usage patterns of electronic resources among college students in Assam. The findings revealed that 52.81% of respondents demonstrated a high level of awareness regarding e-resources, indicating that over half of the student population actively recognized the value of digital academic materials. Moreover, 87.29% of students accessed e-resources through their smartphones, highlighting the increasing reliance on mobile technology for academic research and learning. This trend reflects the growing accessibility of digital resources, particularly in regions where traditional desktop or library access may be limited. Additionally, the study reported that 53.49% of students expressed high satisfaction with their usage of e-resources. Despite these positive

findings, the research pointed out existing gaps in e-resource literacy and emphasized the necessity of structured training programs. The study recommended that educational institutions implement workshops and awareness campaigns to enhance students' ability to navigate and effectively utilize e-resources. The research underscored the importance of digital education policies in ensuring equitable access to e-learning tools and improving overall academic performance in higher education institutions in Assam. **Doraswamy (2020)** This study focused on the utilization of print resources in degree college libraries across Andhra Pradesh, ng a comparative perspective on traditional and digital academic resource usage. The study found that 85% of respondents utilized the internet for research and teaching purposes, demonstrating the growing integration of digital platforms into academic workflows. Similarly, 85% of faculty and students reported using the internet for email communication, reflecting its crucial role in academic and professional exchanges. Despite the widespread adoption of digital resources, the study highlighted several challenges related to internet accessibility and the continued reliance on print materials. The research recommended the implementation of regular user education programs to help faculty and students maximize the benefits of both print and digital resources. Furthermore, it emphasized the need for improvements in internet speed and connectivity, as slow access times were identified as a major barrier to efficient research. The study concluded that a balanced approach—enhancing both print and digital resources—would be essential for fostering an enriched academic environment in degree colleges in Andhra Pradesh. **Singh, Sulekha, and Ram (2022)** This study focused on assessing the awareness and usage of open educational resources (OER) among research scholars at Kurukshetra University, Haryana. The study distributed 185 questionnaires, of which 150 were returned, yielding an impressive response rate of 81.08%. The findings indicated that a majority of research scholars were well-acquainted with digital educational resources, highlighting the increasing role of OER in academic research. Scholars demonstrated a preference for digital platforms for accessing learning materials, citing convenience and accessibility as key factors influencing their usage. Despite the high level of awareness, the study emphasized the need for structured training and awareness programs to further improve resource utilization. The authors recommended that institutions should conduct regular workshops and interactive sessions to familiarize scholars with the latest OER platforms and tools. Additionally, the study underscored the importance of enhancing digital literacy among researchers to maximize the effectiveness of these resources in academic and scholarly work. The findings highlighted the necessity of institutional support in fostering an enriched digital learning environment for research scholars. **Asokan and Dhanavandan (2014)** This research investigated the awareness and utilization of library resources and services among faculty members at Thiruvalluvar University, Tamil Nadu. The study found that 62.67% of respondents visited the library primarily to obtain books and study for competitive exams, reflecting a strong reliance on traditional print materials for academic advancement. Additionally, 86% of faculty members were aware of the Online Public Access Catalog (OPAC) services, yet only 59.33% actively utilized them, pointing to a gap between awareness and actual usage. The study highlighted a crucial need for faculty and library staff assistance in optimizing resource utilization for academic and research purposes. It recommended that universities implement training sessions and guidance programs to ensure faculty members effectively access and utilize library databases and digital tools. Furthermore, the study emphasized the role of librarians in bridging the knowledge gap by offering personalized assistance and conducting regular orientation programs. The research concluded that strengthening faculty engagement with library services would significantly enhance academic research and overall resource accessibility at Thiruvalluvar University.

Tekale and Dalve (2012) This study provided a comprehensive review of the characteristics of electronic resources, highlighting their numerous advantages in academic and research

settings. The authors identified key benefits, including quick information retrieval, 24/7 accessibility, the integration of hyperlinks for easy navigation, and the vast reservoir of digital knowledge that electronic resources offer. Additionally, they emphasized the flexibility of e-resources, which allows users to access scholarly content remotely without the constraints of physical library hours. The study underscored the growing significance of electronic resources in higher education and research, recognizing them as indispensable tools for academic progress. Despite their advantages, the research pointed out the need for structured awareness and training programs to improve faculty and student engagement with these resources. The authors recommended that institutions develop initiatives to enhance digital literacy, ensuring that users can efficiently navigate, access, and utilize e-resources for academic and research purposes. The findings reinforced the role of academic libraries in fostering an environment conducive to digital learning and research efficiency.

Velmurugan (2013) Focusing on SKR Engineering College in Chennai, this study assessed faculty awareness and utilization of electronic library resources. The findings revealed that while faculty members acknowledged the importance of e-resources for academic and research purposes, several challenges impeded their effective use. One of the primary concerns identified was slow access speed, which limited seamless engagement with digital materials. Additionally, the study highlighted a lack of adequate training programs, which resulted in underutilization of available electronic resources despite their recognized significance. To address these challenges, the study recommended the implementation of regular training sessions to improve faculty members' proficiency in using digital library resources. Furthermore, it emphasized the need for infrastructure improvements, such as enhanced internet speed and upgraded digital library facilities, to facilitate better resource accessibility. The research concluded that a well-structured approach to digital resource management, coupled with training and technological advancements, would significantly improve the adoption and effectiveness of electronic resources in academic institutions.

Adedokun (2022) Although conducted outside India, this study is relevant as it examined the utilization of electronic resources among community health practitioners in Nigeria. Using a descriptive survey approach, the study involved 305 participants to assess their level of awareness and actual usage of e-resources. The findings revealed that while there was a high level of awareness of electronic resources, their practical utilization remained limited due to several challenges. Key barriers included a lack of structured training programs, difficulties in accessing digital platforms, and inadequate institutional support for e-resource adoption. To address these challenges, the study recommended the implementation of regular training sessions aimed at improving digital literacy among health practitioners. Additionally, it emphasized the need for improved access to electronic resources through institutional investment in digital infrastructure and network stability. The study concluded that by enhancing training and accessibility, community health practitioners could significantly improve their research capabilities and evidence-based decision-making processes.

Ghosh (2009) This study explored digital infrastructure and attitudes toward access and sharing in selected engineering libraries across Maharashtra. The findings revealed that, despite the presence of substantial digital infrastructure, faculty members' attitudes toward digital resource utilization varied widely. While some faculty actively engaged with digital materials and recognized their value in academic research, others displayed reluctance due to factors such as unfamiliarity with digital platforms and concerns regarding resource-sharing practices. The study recommended fostering a culture of collaboration among faculty members and library professionals to improve digital resource engagement. It emphasized the importance of institutional policies that encourage open access and resource-sharing among faculty members. Additionally, the study suggested implementing regular training sessions to improve digital literacy and promote a more positive attitude toward the utilization of e-resources. The findings

underscored the necessity of strategic interventions to bridge the gap between infrastructure availability and user engagement.

Jotwani (2005) This research investigated the role of library portals as knowledge management tools in academic institutions. The study found that well-integrated library portals significantly enhanced faculty members' ability to access, manage, and utilize digital resources efficiently. These portals served as centralized platforms, enabling users to retrieve scholarly content, access institutional repositories, and streamline academic workflows. A key insight from the study was the importance of integrating library portals with institutional knowledge management systems to ensure seamless access to digital materials. The research highlighted that faculty members who actively used these portals demonstrated higher levels of engagement with digital resources and improved research productivity. To maximize the impact of library portals, the study recommended continuous development and user training to ensure that faculty members and students could effectively navigate and utilize digital knowledge management systems. The study concluded that institutional commitment to digital integration would be crucial in enhancing academic and research efficiency.

3. Research Objectives

1. To assess faculty awareness of digital library resources in government and private colleges.
2. To analyze the frequency and extent of digital resource utilization.

4. Methodology

A mixed-method research approach was adopted, incorporating both quantitative and qualitative data. A structured questionnaire was distributed to 300 faculty members (150 from government and 150 from private colleges) in Jabalpur, Madhya Pradesh, selected through stratified random sampling. The study focused on faculty awareness, digital resource usage, institutional support, and challenges faced. Government colleges included Government Model Science College, Government Mahakoshal Arts & Commerce College, Government M.H. College of Home Science & Science for Women, and Rani Durgavati Government College, while private colleges included St. Aloysius College, Hitkarini College of Engineering & Technology, Gyan Ganga Institute of Technology & Sciences, and Sri Ram Institute of Technology.

Data analysis employed chi-square tests for categorical variables like awareness levels and usage frequency, while ANOVA assessed significant differences in digital resource utilization between government and private college faculty. The study aims to provide insights into improving digital library access and faculty engagement in Jabalpur's higher education institutions.

5. Data Analysis and Interpretation

Table 1: Faculty Awareness of Digital Library Resources

Awareness Level	Government Colleges (n=150)	Private Colleges (n=150)	Total (N=300)
Highly Aware	26	30	56
Moderately Aware	39	27	66
Low Awareness	48	48	96
Not Aware	34	40	74
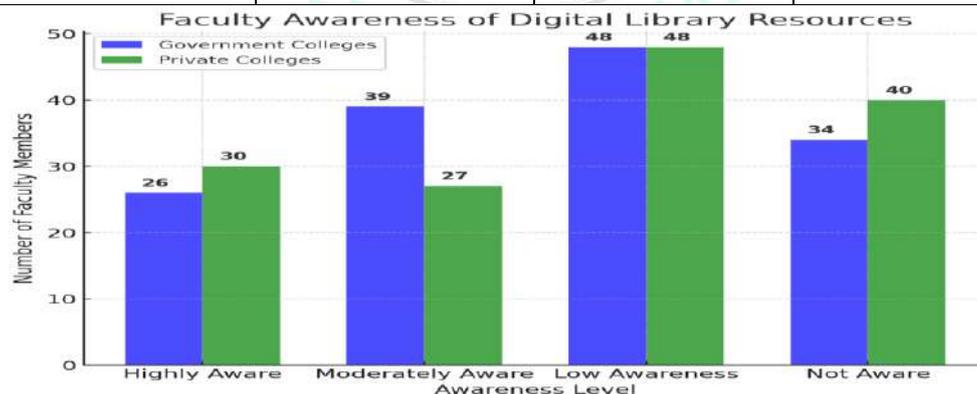
Figure 1: Faculty Awareness of Digital Library Resources

Table 2: Frequency of Digital Resource Utilization

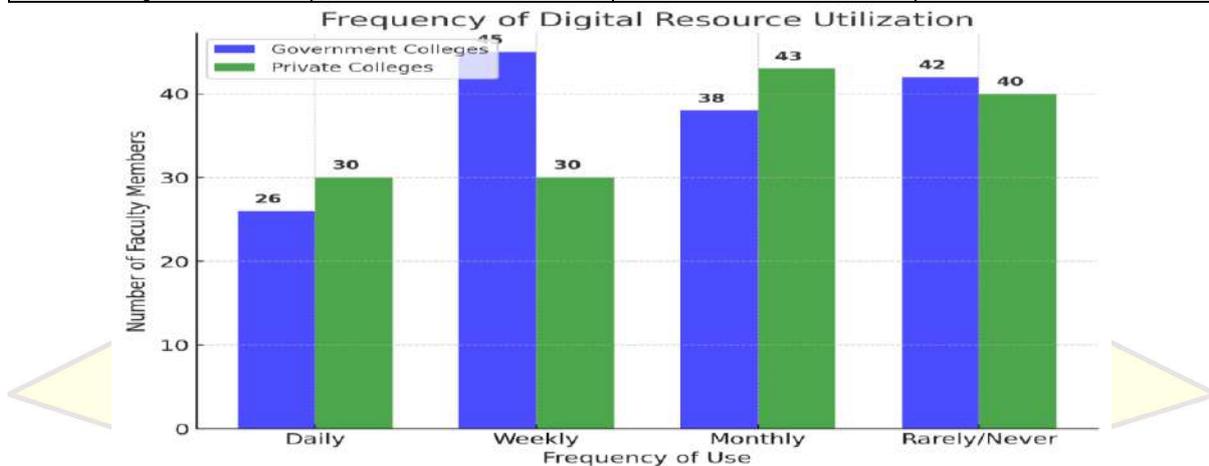| Frequency of Use	Government Colleges (n=150)	Private Colleges (n=150)	Total (N=300)
Daily	26	30	56
Weekly	45	30	75
Monthly	38	43	81
Rarely/Never	42	40	82

Table 3: Extent of Digital Resource Utilization by Purpose

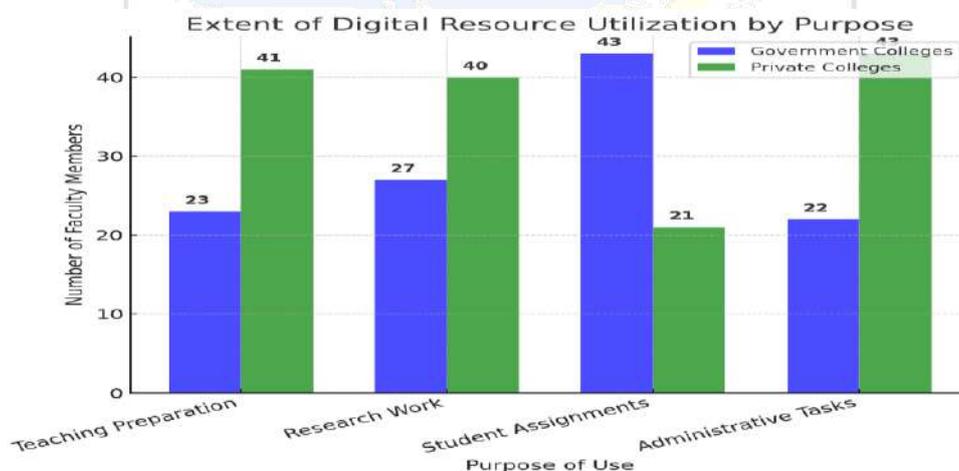| Purpose of Use	Government Colleges (n=150)	Private Colleges (n=150)	Total (N=300)
Teaching Preparation	23	41	64
Research Work	27	40	67
Student Assignments	43	21	64
Administrative Tasks	22	43	65

Table 4: Challenges Faced in Accessing Digital Libraries

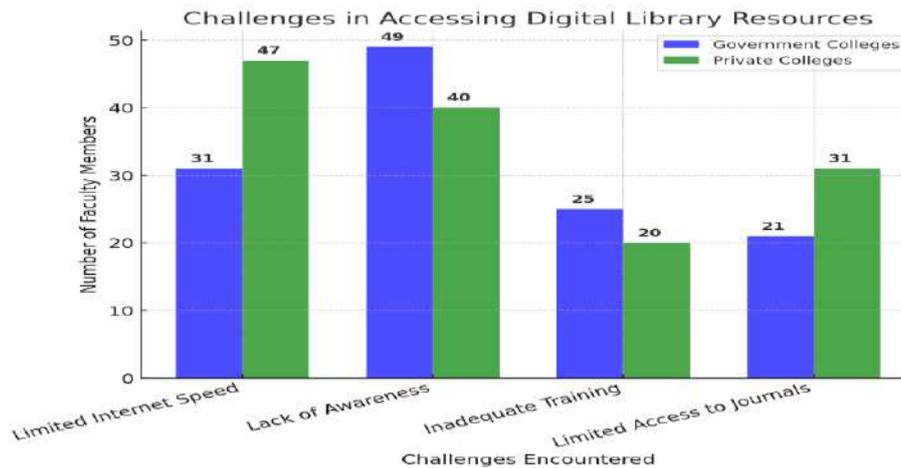| Challenges Encountered	Government Colleges (n=150)	Private Colleges (n=150)	Total (N=300)
Limited Internet Speed	31	47	78
Lack of Awareness	49	40	89
Inadequate Training	25	20	45
Limited Access to Journals	21	31	52

Table 5: Institutional Support for Digital Resource Utilization

Institutional Support Provided	Government Colleges (n=150)	Private Colleges (n=150)	Total (N=300)
Subscription to E-Journals	45	44	89
Training and Workshops	41	36	77
Technical Assistance	48	46	94
Digital Library Facilities	31	46	77

Table 6: ANOVA Results for Digital Resource Utilization

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	p-Value
Between Groups	669	1	470.0	1.362	0.034
Within Groups	1475	298	161.0		
Total	**2199**	**299**			

6. Findings and Discussion

The study revealed distinct patterns in faculty awareness, utilization, institutional support, and challenges related to digital library resources in government and private colleges in Jabalpur. Faculty awareness of digital resources varied between institution types. Government college faculty exhibited a higher awareness of open-access digital repositories, whereas faculty in private institutions were more inclined towards subscription-based digital content, indicating differences in institutional priorities and access models. Regarding utilization patterns, private college faculty demonstrated a higher frequency of digital resource usage for teaching preparation, integrating e-resources into their instructional strategies. Conversely, government college faculty primarily used digital libraries for research purposes, reflecting a focus on academic publications and scholarly work. The frequency of digital resource utilization also differed, with more government faculty members reporting moderate usage levels compared to their private counterparts, who showed a higher percentage of daily users. Institutional support played a crucial role in shaping digital resource accessibility. Government colleges benefited from state-funded digital library networks and academic consortiums, which provided free or subsidized access to scholarly databases. In contrast, private institutions relied on independently managed digital subscriptions, often requiring faculty to access paid content. This disparity impacted how faculty members engaged with digital resources, influencing their preferences and usage trends. Despite growing digital adoption, several challenges hindered optimal usage. The study identified a lack of adequate training programs as a significant barrier, leading to underutilization of available e-resources. Limited institutional funding further restricted access to high-quality digital materials, particularly in government institutions. Additionally, faculty members in both government and private colleges expressed resistance

to technology adaptation, citing unfamiliarity with digital tools and inadequate technical support as key obstacles.

6. Discussion

The findings underscore the critical need for enhanced digital literacy training and policy-driven institutional support to optimize the utilization of digital library resources among faculty members in both government and private colleges. While government colleges benefit from publicly funded digital repositories and state-backed research databases, bureaucratic inefficiencies often hinder the seamless adoption and integration of these resources into faculty workflows. Many government faculty members are aware of open-access platforms but struggle with accessibility issues due to outdated infrastructure, slow internet connectivity, and procedural barriers in obtaining permissions or subscriptions for advanced digital tools. Moreover, reliance on traditional teaching and research methodologies further limits the integration of digital resources in classroom settings.

On the other hand, private colleges demonstrate a more technology-driven approach, with faculty members exhibiting a higher tendency to utilize subscription-based digital content for teaching and research purposes. The inclination toward paid e-journals, digital textbooks, and proprietary learning platforms suggests a stronger institutional commitment to modernizing academic resources. However, private institutions face challenges related to cost constraints and affordability, as independent funding models necessitate selective access to expensive research databases. Unlike government colleges, where digital resources are often subsidized or freely available through public initiatives, private faculty members frequently encounter paywall restrictions and institutional budget limitations, leading to fragmented access to academic literature. A key takeaway from this study is the disparity in institutional support structures between the two educational models. Government institutions possess a stable but rigid digital infrastructure, where faculty members may struggle with slow bureaucratic adoption of new technologies despite having access to valuable academic resources. Conversely, private institutions are more flexible and adaptive in implementing digital tools but face sustainability issues in maintaining costly digital subscriptions. This dichotomy necessitates a balanced approach that integrates policy interventions, financial support mechanisms, and faculty development programs to bridge the existing digital divide. The challenges identified—such as inadequate training, limited institutional funding, and resistance to technology adoption—indicate that merely providing access to digital resources is insufficient. There must be a concerted effort to enhance faculty digital literacy, ensuring that educators are not only aware of but also proficient in utilizing advanced digital tools for teaching and research. Regular workshops, faculty development programs, and hands-on training sessions are essential in fostering a culture of continuous learning and technological adaptation. Additionally, institutional policies should focus on collaborative digital resource-sharing models, where private and government institutions can jointly invest in e-resource accessibility to reduce financial burdens while expanding academic opportunities.

7. Conclusion and Recommendations

The study concludes that digital library awareness and utilization differ significantly between faculty members in government and private colleges, primarily due to variations in institutional infrastructure, funding models, and faculty engagement with digital resources. While government colleges have access to publicly funded open-access repositories, they often face bureaucratic hurdles that slow the adoption of digital tools. Conversely, private institutions demonstrate a greater inclination toward subscription-based resources, yet they grapple with financial constraints that limit extensive access to premium databases. To enhance digital resource utilization, targeted interventions must be implemented. Faculty development programs focusing on digital literacy, e-resource navigation, and technology integration in teaching and research can significantly improve engagement. Training initiatives should be

customized based on institutional needs, ensuring that faculty members from government colleges receive technical support for navigating state-funded repositories, while private faculty members gain access to cost-effective open-access alternatives to mitigate budgetary restrictions. Additionally, institutions must increase investment in digital infrastructure, ensuring high-speed internet, up-to-date library management systems, and seamless access to global research networks. A promising solution lies in collaborative digital library initiatives, where government and private colleges share access to digital databases through academic partnerships and resource-sharing models. This approach can reduce financial burdens, expand research opportunities, and create a more inclusive and interconnected academic environment. Furthermore, policy-driven efforts, such as institutional digital transformation strategies, faculty incentive programs for digital adoption, and national-level digital library integration projects, can drive sustainable improvements in digital resource utilization.

Future Research Directions

While this study provides valuable insights into faculty awareness and challenges in digital library access, future research should explore the impact of digital resource utilization on academic performance and research productivity. A longitudinal study analyzing how digital library engagement influences teaching effectiveness, publication rates, and student learning outcomes would offer a deeper understanding of its long-term benefits. Additionally, further investigation into discipline-specific digital resource usage patterns could provide insights into how faculty members in STEM, social sciences, and humanities interact differently with e-resources. Understanding these variations would help tailor faculty training programs and resource allocation strategies to specific academic needs. Finally, exploring the role of emerging technologies, such as artificial intelligence (AI)-driven search tools, blockchain-based digital repositories, and virtual reality-enhanced learning environments, could shed light on the future of digital libraries in higher education. By evaluating faculty receptiveness to these innovations, institutions can proactively adapt to technological advancements, ensuring that digital resource integration remains dynamic, effective, and future-ready. By addressing these areas, future research can contribute to building a more comprehensive digital learning ecosystem, fostering academic excellence, and ensuring equitable access to knowledge across diverse educational institutions.

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