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A Study on Use of Digital Resources by Library Users at The Postgraduate Institute of Management (PIM), University of Sri Jayewardenepura

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Abstract

This study explores the use of digital resources by library users at the Postgraduate Institute of Management **(**PIM), examines the use of digital resources and devices, reasons for accessing resources, and identifies the challenges faced in accessing and using digital resources. Over the past five years from 2018–2022, the library of the PIM experienced a significant decline in physical library visits and book borrowings while the demand for electronic resources has steadily increased. This trend demonstrates a significant shift toward the use of digital resources among postgraduate students. A quantitative research approach was adopted, using a descriptive survey design to collect data from a sample of 100 postgraduate students selected through a non-probabilistic, convenient sampling technique from the 500 students registered in 2023. A semi-structured survey questionnaire served as the primary data collection instrument. The findings revealed that (51%) of respondents belong to the 25–35 years age group, and (86%) frequently used e-journals for academic purposes. Additionally, the primary reasons for accessing digital resources at the PIM Library include completing assignments (97%). This indicates that students primarily use digital resources for academic requirements rather than for self-improvement or skill development. The laptop was identified as the most commonly used device, with (74%) of students relying on it for academic activities. E-journals and e-books have become essential resources for academic work and research. 43% of respondents use the library's digital resources 2-3 days a week, showing consistent engagement. However, barriers like device access, digital literacy, and technical issues hinder usage. The study suggests increasing device availability, expanding digital resources, offering training, and setting up a virtual helpdesk.

Keywords: Academic library, Digital resource utilization, Digital resource preferences, Digital resources, Postgraduate students

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Introduction

Reading is a necessary concept for everyone in the world. It is one of the important activities of students and professionals during their teaching, learning, and research activities. There is a folk quote called 'reading makes a man perfect', and it is a very essential component to university students. University students engage in reading daily during their academic activities, being an important part of the core of academic life, with the purpose of accessing the required information to meet various needs. Reading not only enhances knowledge acquisition but also improves critical thinking, analytical skills, and comprehension abilities. For university students, it serves as the foundation for academic success, enabling them to grasp complex concepts, develop well-informed arguments, and engage in meaningful discussions. Beyond academic requirements, reading also fosters creativity, broadens perspectives, and encourages lifelong learning.

The library serves as the central hub of any educational institution, responsible for organizing both printed and digital information resources essential for effective teaching, learning, and research. The primary goal of academic libraries is to support the academic community by providing access to information resources for students, faculty members, and researchers. These libraries curate vast collections of books, journals, research papers, and electronic databases to ensure that users have access to up-to-date and relevant materials across various disciplines. In addition to housing physical and digital collections, academic libraries offer a range of services, including research assistance, interlibrary loans, study spaces, special collections and archives, support for scholarly publishing, conduct workshops and training, and technology support. Many institutions also incorporate modern digital tools, such as online catalogues and academic search engines, to facilitate efficient information retrieval. Furthermore, libraries play a significant role in promoting information literacy by conducting workshops and training sessions that equip users with critical research skills. As educational needs evolve, academic libraries continuously adapt by integrating emerging technologies and innovative strategies to enhance accessibility and user engagement.

In the digital age, academic libraries have evolved beyond traditional repositories of printed materials to become dynamic centers for information access and knowledge dissemination. With the rapid growth of digital resources, libraries now offer electronic books, online journals, research databases, and institutional repositories, enabling users to retrieve information

efficiently from anywhere at any time. These technological advancements have not only transformed how information is stored and accessed but have also redefined the role of librarians as facilitators of digital literacy and research support. By integrating innovative technologies such as artificial intelligence, cloud computing, and data analytics, academic libraries continue to enhance user experience and meet the evolving needs of the academic community.

Undoubtedly, the present technological revolution has been accelerated with the COVID pandemic, which began in late 2019. Deja et al. (2021) have investigated that it has made significant changes to the area of academic work of various universities around the world. Many universities of the world, which are affected by the COVID-19, have shifted their academic work to online teaching and learning. Meanwhile, the digital transformation of information materials has shifted reading behaviour from traditional paper media to digital media. Chang et al. (2023) viewed that digital academic reading has become the main reading method of university students during the COVID-19 pandemic. The COVID-19 pandemic has significantly impacted higher education, prompting universities to adopt hybrid learning systems that combine elements of both in-person and online instruction. By adopting the same, more than 90% of higher education institutions (state and nonstate) carried out remote learning (mostly online) in Sri Lanka (Hayashi et al., 2020).

As postgraduate education increasingly shifts towards digital learning platforms, students are progressively relying on electronic resources to support their academic and research activities. The accessibility and convenience of using digital materials allow them to conduct literature reviews, reference scholarly works, and analyze data without the constraints of time and physical location. However, despite the widespread availability of digital resources, challenges such as inadequate digital literacy skills, restricted access to subscription-based databases, and varying levels of technological infrastructure among institutions can hinder effective utilization. These disparities highlight the need for academic libraries to implement strategic interventions to ensure that all students, regardless of their digital proficiency, can maximize the benefits of digital resources.

Moreover, the shift toward digital learning environments has intensified the demand for electronic resources, particularly among postgraduate students who rely heavily on online

databases and digital archives for research. Academic libraries play a crucial role in bridging the digital divide by ensuring equitable access to high-quality information and fostering an inclusive learning environment. They provide training on information literacy, research methodologies, and the ethical use of digital content, empowering students and researchers to navigate vast digital landscapes effectively. As education continues to transition into hybrid and fully online models, academic libraries remain indispensable in supporting knowledge acquisition and academic success in higher education institutions.

Statement of the problem

The library system of state universities in Sri Lanka comprises 17 main libraries and 19 institutional libraries under the University Grants Commission (UGC), serving students and faculty by providing essential academic resources. The Postgraduate Institute of Management (PIM) Library, affiliated with the University of Sri Jayewardenepura, is one of the leading management libraries in Sri Lanka, catering to approximately 750 postgraduate students annually with a collection of over 18,000 volumes. However, despite its significant role in academic support, there has been a noticeable decline in physical visits to the library and a decrease in book borrowings over recent years recorded in the students' attendance record book and the PIM Online Library Catalogue (2018–2022). This shift is attributed to the growing use of digital resources, as evidenced by an increasing number of requests for e-books, online articles, and research databases (*PIM Library Website (2018–2022).*

These data indicate that the use of digital resources by the library users at the PIM has changed over time. Although global studies have highlighted the impact of digital resources on reading preferences, research on this trend within Sri Lanka, particularly at PIM, remains limited. Given the critical role of university education in adapting to technological advancements, this study explored the use of digital resources by the library users at PIM.

The following are the objectives of the study.

Objectives

1. To examine the use of digital resources and devices for academic readings by the library users of the PIM.
2. To explore the reasons for accessing digital resources at the PIM Library.
3. To identify the problems faced by the library users of PIM in referring to digital resources.

Literature Review

Picciano (2017) emphasized the growth of blended learning, where digital resources complement face-to-face instruction, improving accessibility and engagement. Modern academic libraries encompass collections of printed books and periodicals alongside electronic resources (e-resources), facilitating the storage, retrieval, and dissemination of information in both formats. While postgraduate students extensively use certain digital resources, their engagement with all available options remains limited (Ashaver et al., 2024). According to Abang Yusof (2021), advancements in information technology have transformed students' reading preferences, leading to a transition from print materials to digital sources.

A transformative shift from traditional to digital reading practices, especially among university postgraduate students, is influenced by factors such as technological advancements, ease of access to digital resources, convenience, and changing learning preferences (Bogdandy et al., 2020; Abang Yusof, 2021). The impact of this transition on postgraduate students' research, learning, and academic reading was emphasized, with a focus on the use of digital resources. E-resources have become essential tools in academic libraries for obtaining current and up-to-date information. Their widespread use underscores their critical role in research and academic settings (Francis, 2023). The various aspects of digital reading, such as access, attitudes, motivation, skills, behavior, and support in higher education, play a significant role in shaping students' reading experiences (Kuhn et al., 2024).

The increasing reliance on digital resources has also led to changes in reading strategies among postgraduate students. According to Mangen et al. (2019), digital reading often encourages skimming behaviors rather than deep reading, which may impact comprehension and critical analysis. This shift is particularly evident in disciplines requiring extensive engagement with textual materials, where students must adapt their reading techniques to maximize learning efficiency. As a result, there is a growing need for academic institutions to provide training on effective digital reading strategies to help students navigate large volumes of information without sacrificing depth of understanding (Kretzschmar et al., 2020).

Moreover, digital reading environments present both opportunities and challenges for students in terms of cognitive load and information retention. Studies by Delgado et al. (2018) indicate that while digital texts offer interactive features such as hyperlinks and search functions, they can also contribute to cognitive overload, making it harder for students to retain information effectively. This phenomenon highlights the importance of designing digital learning materials

that balance interactivity with cognitive manageability. In response, some universities have begun to implement digital annotation tools and adaptive learning technologies to enhance students' engagement and comprehension in academic reading (Rockinson-Szapkiw et al., 2021).

Several studies highlight the evolving role of academic libraries in supporting digital reading practices and research. According to Tenopir et al. (2019), the increasing availability of e-resources has significantly influenced students' reading habits, with the use of digital formats for research due to their accessibility and searchability. Similarly, Nicholas et al., (2020) found that postgraduate students tend to engage in "power browsing" behavior, skimming through e-resources rather than reading in-depth, which impacts their comprehension and retention.

Moreover, research by Liu (2005) suggests that digital reading differs from traditional reading, as it often involves multitasking, nonlinear navigation, and reduced concentration. This shift necessitates academic libraries to provide digital literacy training to help students maximize their use of e-resources effectively (Holm, 2022; Wadasinghe & Dilhani, 2023). Additionally, the integration of artificial intelligence and personalized recommendations in digital libraries is enhancing students' research experiences by offering more targeted and relevant academic materials (Wang et al., 2023). The role of digital devices in academic reading has also been widely discussed in literature. According to Baron (2021), while students appreciate the convenience of e-resources, they often experience digital fatigue due to prolonged screen exposure. This issue has implications for academic libraries, which need to ensure that their digital collections are designed to optimize readability and user experience. Similarly, Mizrachi et al., (2018) found that although students increasingly use e-books, many still prefer print materials for deep reading and comprehension. These findings highlight the importance of providing a balanced approach to digital and print resources in academic libraries.

Digital resources have become essential tools for academic learning, particularly due to their ease of access and ability to provide up-to-date information (Tenopir et al., 2015). According to Rowlands et al., (2008), university students prefer digital resources because they offer immediate access to a vast range of scholarly materials without the limitations of physical library hours. Similarly, a study by Wu and Chen (2020) found that digital resources enhance research efficiency, allowing students to retrieve relevant academic content quickly. These findings suggest that convenience and time efficiency are major drivers for students opting for digital resources over traditional print materials.

Another key reason for accessing digital resources is their role in fulfilling academic requirements. Research conducted by Nicholas et al., (2011) indicates that students primarily use digital libraries for coursework, research projects, and exam preparation. This aligns with findings by Alzahrani and Salim (2019), who observed that electronic journals and e-books are the most frequently accessed resources due to their relevance in supporting research activities. Additionally, Bhardwaj and Margam (2020) noted that students prefer digital materials for assignments and academic writing, as these resources provide comprehensive, peer-reviewed content that enhances the credibility of their work.

Beyond academic requirements, digital resources support self-directed learning and professional development. However, studies indicate that students tend to prioritize immediate academic tasks over long-term skill development (Thanuskodi, 2019). A study by Deng (2018) revealed that while students recognize the value of digital resources for expanding knowledge beyond coursework, their usage is largely driven by short-term academic goals. Furthermore, digital libraries provide access to specialized databases and research tools that enhance academic productivity, particularly for postgraduate students engaged in advanced research (Kim & Sin, 2017).

One of the most commonly cited challenges is the lack of sufficient searching skills among students when accessing digital resources. Studies indicate that many users struggle with retrieving relevant information due to inadequate knowledge of search techniques, keywords, and database functionalities (Tenopir et al., 2015). According to Wu and Chen (2020), students often face difficulties navigating online databases, leading to frustration and underutilization of available digital resources. Similarly, Bhardwaj and Margam (2020) found that digital literacy gaps hinder students from maximizing the benefits of academic e-resources.

Technical and accessibility issues also pose significant barriers to digital resource usage. Research by Alzahrani and Salim (2019) highlights frequent login difficulties, restricted access to certain e-resources, and compatibility issues with various electronic devices. Additionally, limited access to high-speed internet and inadequate technological infrastructure in libraries can negatively impact students' ability to engage with digital materials effectively (Deng, 2018). Kim and Sin (2017) emphasize that slow internet connections and outdated library systems reduce the efficiency of digital learning, especially in institutions with limited IT resources.

Research Methodology

A quantitative research method was adopted for this study, specifically employing a survey research design to systematically collect data from postgraduate students at the Postgraduate Institute of Management (PIM). This approach enabled the researcher to gather numerical data and analyze trends related to digital resource preferences among library users.

Study Population and Sampling

The study population comprised 500 postgraduate students enrolled at PIM in 2023 (*Recorded in the PIM Academic Progress Information System, APIS*), as they form a well-defined academic group actively involved in higher-level learning and research. This study was conducted in 2023. A non-probabilistic, convenient sampling technique was employed to select a sample size of 100 students, representing 20% of the total population. Convenience sampling was chosen due to its practical applicability in reaching participants who frequently engage with library resources.

Data Collection Methods

Both primary and secondary data were utilized for this study.

Primary Data: Collected through an online semi-structured survey questionnaire, which was designed to assess students' preferences for digital resources, their frequency of library visits, and their reasons for engaging with digital rather than printed materials. The questionnaire was divided into different sections, addressing key research questions and objectives.

Secondary Data: Obtained from PIM's Library Student Attendance Record Book (2018–2022), PIM Online Library Catalogue (2018–2022), and PIM Library Website, which provided insights into trends in library usage, book borrowings, and digital resource requests.

Data Analysis

The collected data were analyzed using Microsoft Excel, employing descriptive statistical techniques such as mean, mode, median, frequency, and percentage distributions to identify patterns in digital resource usage. The findings were then presented in the form of tables, figures, and charts to ensure clarity and ease of interpretation.

The primary data collected from the survey was analyzed using Microsoft Excel. A sample of 100 postgraduate students enrolled at PIM in 2023 was selected, and data collection was

conducted by sending a structured Google Form via email to students who visited the library. The questionnaire captured respondents' perspectives and insights on the use of digital resources.

Results and Discussion

Distribution of age ranges

Figure 1 illustrates the age distribution of respondents, clearly indicating the percentage of participants in each age group.

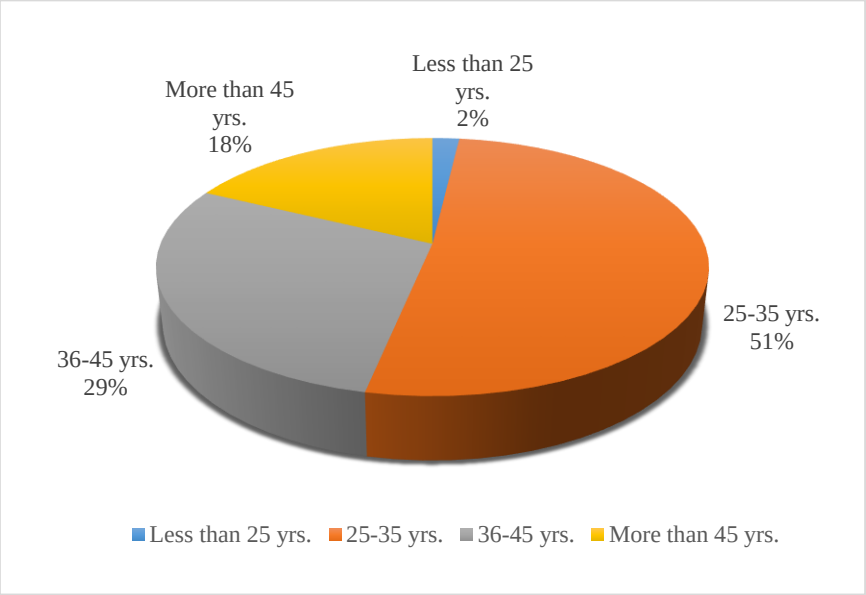

Figure 1: Age distribution of Respondents

The majority of respondents (51%) belong to the 25-35 years age category, making it the largest group. The 36-45 years age group represents 29% of respondents, while 18% fall into the more than 45 years category. The lowest percentage (2%) of respondents is from less than 25 years age group. The findings reveal that a significant proportion of respondents (80%) belong to the 25-35 years and 36-45 years age groups, highlighting a strong presence of mid-career professionals among the participants.

Table 1 - Usage of different types of digital reading resources

Resource Type	Responses count	Percentage (%)	Percent of Cases
e-journals	92	20.9%	92%
e-books	90	20.4%	90%
e-magazines	53	12%	53%
e-reference books	52	11.8%	52%
e-newspapers	47	10.6%	47%
Online databases	44	10%	44%
OPAC (Online Public Access Catalogue)	19	4.3%	19%
e-dictionaries	18	4%	18%
e-repositories	15	3.4%	15%
Audiobooks	10	2.2%	10%

This data was collected through multiple-choice questions, allowing respondents to select multiple options. The “Percent of Cases” for each resource type is calculated by dividing the number of responses by the total number of respondents, 100.

According to Table 1, the most frequently used digital resource is e-journals, with 92% of respondents indicating usage. E-books are also widely utilized, with 90% of respondents reporting usage. The use of e-magazines stands at 53%, indicating a moderate adoption level. E-reference books and e-newspapers follow closely, with response rates of 52% and 47%, respectively. Online databases show a substantial adoption rate of 44%, underscoring their significance in academic research. Less frequently used resources include OPAC (19%), e-dictionaries (18%), e-repositories (15%), and audiobooks (10%). Their lower selection rates suggest that they are not as widely relied upon by the surveyed participants. This distribution highlights the majority of e-journals and e-books in academic resource preferences, while other digital tools see varying levels of engagement based on user needs and accessibility.

This data was collected using a multiple response question. The percent of cases for a device represents the proportion of total responses attributed to that device.

Table 2 - Types of digital reading devices used by respondents

Devices	Responses count	Percentage (%)	Percent of Cases
Laptop	97	41.10%	74.6%
Smart Phone	72	30.5%	55.4%
Desktop Computer	29	12.2%	22.3%
iPad/Tablet	13	5.5%	10%
With an audio/video application	9	3.8%	6.9%
Dedicated E-reader (e.g Kindle)	4	1.7%	3.1%
I never read the course materials through electronic devices	12	5.1%	9.2%

According to the table given above, six (06) types of devices were used by students at different levels. Out of all the responses received, some of them indicated the use of more than one device. As illustrated in Table 5, out of all respondents, the majority (74.6%) of the students reported that they used laptops to access academic reading materials online, indicating the laptop as the most common device. Smartphone was the second most commonly used device (55.4%). Desktops were used by (22.3%) of respondents, showing their rarity of use compared to laptops and smartphones. A dedicated e-reader (Kindle) was the least common device, with only (3.1%) of respondents have used it. (9.2%) of respondents reported that they have never read course materials through electronic devices.

Usage of library online/digital resources

Different types of resources are available in the PIM library to facilitate online access to academic reading materials such as online databases (Emerald, EBSCOhost), e-repositories, online library catalogue, e-book downloading facilities, and video databases. Figure 2 indicates an extensive portion of respondents, 43% use the library's digital resources 2-3 days per week, indicating a frequent and consistent engagement with digital materials. This suggests that a significant number of users rely on online resources as an integral part of their academic or research activities. Fidler (2004) argued that digital media provides the freedom to read and choose annotations which leads to better comprehension. The author affirmed that electronic materials on the web may have the potential to bring students to a higher level of reading comprehension more quickly than traditional printed texts.

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A combined 32% of the respondents have used digital resources every day or once a week. This demonstrates a consistent and regular pattern of participation and highlights the value of digital resources for their academic readings. A combined 19% of respondents use online resources once a month or once a week. While this percentage is relatively lower, it still represents a group that accesses digital resources periodically.

A small percentage (7%) either never or rarely use online resources. This might be based on their preference for traditional resources and limited awareness or facing barriers in accessing digital resources. Empirical data from Liu and Huang (2007) illustrated that people prefer reading on paper where there is a need for reading lengthy documents, in-depth reading, and taking notes.

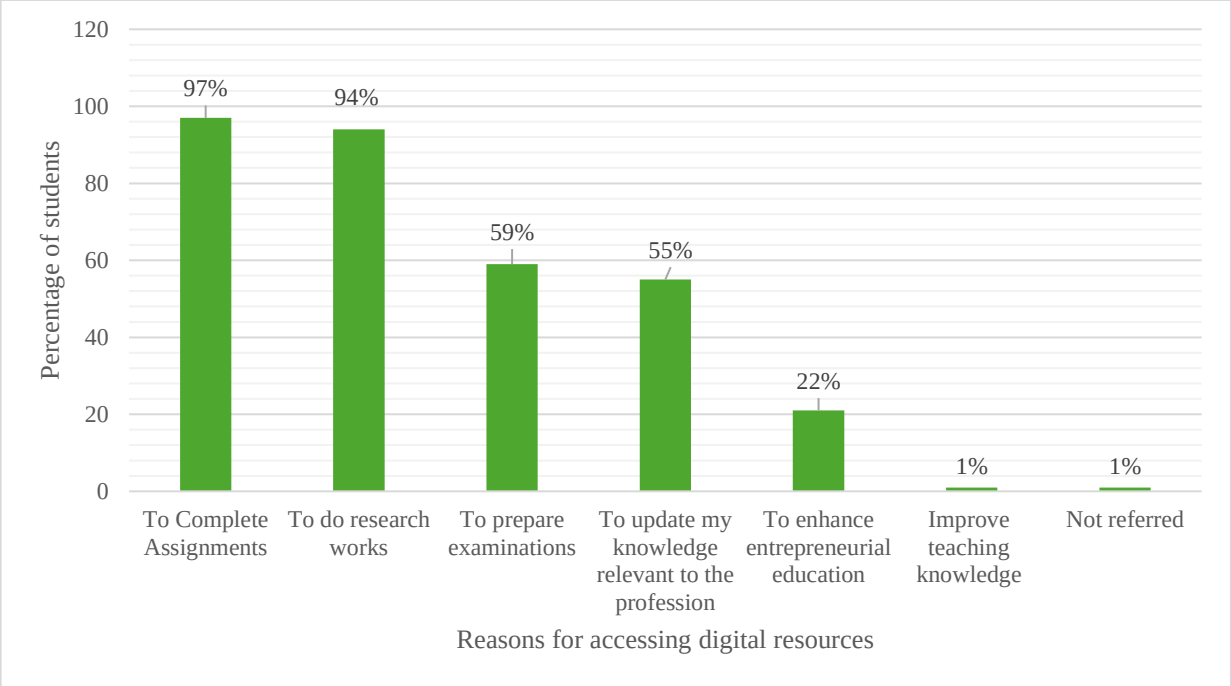

Figure 2: Usage of library digital resources

Reasons for Accessing Digital Resources at the PIM Library

The PIM has each course that has its own scheme of evaluation, including skills and research-based assignments, group work, and final course examinations. Students are expected to spend a number of hours on self-studies for each course, in addition to the class sessions/discussions and group work. etc. According to those institutional requirements, students must visit the library to complete their academic work.

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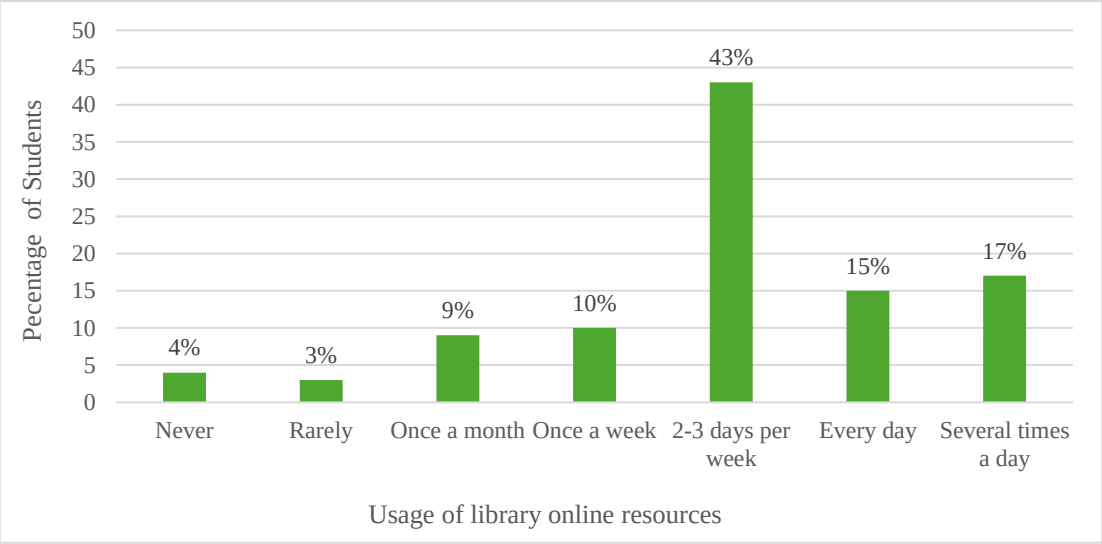

Figure 3 - Reasons for Accessing Digital Resources at the PIM Library

This bar graph illustrates why students access digital resources, with related percentages. The data reveals that the most significant motivators for students are utilizing digital resources to complete assignments (97%) and perform research activities (94%), followed by preparing for examinations (59%). Based on this graph, it is clear that academic requirements primarily drive digital resource usage among students, rather than self-improvement or skill development. The relatively lower percentages for updating relevant knowledge (55%), enhancing entrepreneurial education (22%), and improving teaching knowledge (1%) suggest that students use digital tools mainly for immediate academic tasks rather than long-term learning or professional growth.

Table 3 illustrates that the responses to various challenges faced by users regarding e-reading and library resources, measured using Likert scale ratings in Section E of the questionnaire. The mean values range from 2.17 to 3.32, indicating that most challenges are seen as moderately severe. The highest mean (3.32) represents difficulties related to searching skills, while the lowest mean (2.17) reflects limited support from library staff. The median values are similar to the mean, with the highest median being 3, suggesting a neutral or moderately agree response and the lowest being 2. This shows that many users feel there is insufficient support for their concerns. Overall, the data suggests that common challenges include technical issues, limited access to resources, and inadequate infrastructure, with the severity of these problems generally being moderate.

Table 3 - Problems faced by library users in referring to digital resources

Problems	Mean	Median
I don't have sufficient searching skills	3.32	2
It increased my physical complications (ex. headache, neck pain, visual impairment etc.	2.83	3
I get login and accessibility issues when using e-reading formats & e-devices.	2.71	3
Limited access to e-resources	2.67	3
Lack of e-resources in the library	2.58	3
Less technology & infrastructure facilities are available in the library	2.45	2.5
I don't know how to operate online databases	2.35	2
Less support from the library staff	2.17	2

Conclusions

The study provides valuable insights into the usage, patterns, and challenges associated with digital resources at the PIM Library. It highlights a widespread use of digital resources at the PIM Library for academic purposes. The results indicate that e-journals and e-books are the most commonly utilized digital resources, with usage rates of 92% and 90%. These findings underscore the significant role that these resources play in supporting academic research and learning among postgraduate students. In contrast, resources such as e-dictionaries, e-repositories, and audiobooks were less frequently used, suggesting that these tools are not as essential to students' academic work. Furthermore, the data indicate that laptops and smartphones are the primary devices used for accessing digital resources, with 74.6% and 55.4% of students reporting usage, and these devices are more suitable for the academic needs of students.

Regarding the challenges faced by library users, the survey responses highlight several key issues, with difficulties in searching for resources being the most significant concern, as reflected in the highest mean score (3.32). Physical complications, such as headaches and neck pain, along with login and accessibility issues, were also frequently reported as challenges. In spite of these concerns, the overall difficulty of the issues appears to be moderate, with most respondents indicating neutral or moderately agree responses, as reflected in the median values

(2 or 3). Notably, the lack of support from library staff was identified as a less pressing issue, with a mean score of 2.17, suggesting that while technical and accessibility challenges are more prominent, the need for increased library staff support is not viewed as a significant barrier.

Recommendations

The study recommends several key improvements to enhance the accessibility and effectiveness of digital resources at the PIM Library. Expanding the availability of digital resources, such as e-books, e-journals, and online databases, will ensure that students have a wider range of academic materials to support their studies. Additionally, conducting regular training sessions and workshops on search strategies and online database usage will help improve students' information literacy skills. Upgrading library infrastructure by providing high-speed internet, user-friendly digital platforms, and enhanced accessibility features will further streamline access to resources. To improve user support, a virtual helpdesk can be implemented to offer real-time assistance and ensure a seamless user experience. Lastly, the development of an AI-driven mobile application will allow students to access digital resources remotely, providing 24/7 availability beyond the PIM premises and enhancing the overall convenience of digital learning.

References

Abang Yusof, D. A. (2021). Reading Habits Among Students in the Digital Era. *Journal of Academic Library Management (AcLiM)*, *1*(1), 43–54 https://doi.org/10.24191/aclim.v1i1.5

Alzahrani, S. M., Salim, N., & Abraham, A. (2012). Understanding plagiarism: Linguistic patterns, textual features, and detection methods. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 42(2), 133–149 https://doi.org/10.1109/tsmcc.2011.2134847

Ashaver, D. D., Igyuve, S. M., & Afolabi, O. A. (2024). Awareness and utilisation of digital resources among postgraduate students in selected universities in North-Central, Nigeria. *Journal of Library Services and Technologies*, *6*(1), 49–63 https://doi.org/10.47524/jlst.v6i1.50

Bogdandy, B., Tamas, J., & Toth, Z. (2020). Digital transformation in education during COVID-19: A case study. *11th IEEE International Conference on Cognitive Infocommunications, CogInfoCom 2020 - Proceedings*, 173–178 https://doi.org/10.1109/CogInfoCom50765.2020.9237840

Francis, F. (2023). Usage of E-resources in academic libraries. *Journal of Online Engineering Education*, *14*(2), 13–36. http://onlineengineeringeducation.com

Holm, P. (2024). Impact of digital literacy on academic achievement: Evidence from an online anatomy and physiology course. E-Learning and Digital Media https://doi.org/10.1177/20427530241232489

Kuhn, A., Schwabe, A., Boomgarden, H., Brandl, L., Stocker, G., Lauer, G., Brendel-Kepser, I., & Krause-Wolters, M. (2024). Who gets lost? How digital academic reading impacts equal opportunity in higher education. *New Media and Society*, *26*(2), 1034–1055 https://doi.org/10.1177/14614448211072306

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. Online Learning, 21(3), 166-190 https://doi.org/10.24059/olj.v21i3.1225

Tenopir, C., King, D. W., Edwards, S., & Wu, L. (2009). *Electronic journals and changes in scholarly article seeking and reading patterns*. School of Information Sciences -- Faculty Publications and Other Works. https://trace.tennessee.edu/utk_infosciepubs/7

Wadasinghe, C., & Dilhani, M. P. P. (2023). Attitudes and Perceptions of Postgraduate Medical Trainees towards the Library User Education (LUE) Programme. *Sri Lanka Library Review*, *37*(2), 16-36 https://doi.org/10.4038/sllr.v37i2.62

Wang, F., & Xu, H. (2024). Research on the application and frontier issues of artificial intelligence in library and information science. Voice of the Publisher, 10(4), 357–368 https://doi.org/10.4236/vp.2024.104028