

EVALUATING THE UTILIZATION AND IMPACT OF ELECTRONIC RESOURCES IN UNIVERSITY LIBRARIES OF ISLAMABAD

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ABSTRACT

Background

The growing use of electronic resources in university libraries has made itself an identity of the contemporary education. E-resources including e-books, e-journals and digital databases allow students and faculty to have instant access to a plethora of academic material, making research and learning easier. Nevertheless, even with the increasing use of these tools, there are concerns on how well they have been used, whether they are readily available and how they have influenced academic performance, especially within the setting of university libraries in Islamabad.

Objectives

This research seeks to examine the use and the effect of the electronic resources on the university libraries of Islamabad. The study particularly aims at the available accessibility, awareness, and training of e-resources and the frequency of usage and its impact on the academic performance of students. Moreover, the paper delves into the difficulties that learners encounter when accessing such materials, and evaluates their general satisfaction with the library services.

Methodology

The research utilized a descriptive survey design, where the data were collected by the administration of 400 students belonging to different disciplines and different levels of study at Islamic universities in Islamabad by means of structured questionnaires. The survey questionnaire contained both quantitative and qualitative variables, which were aimed at determining the level of awareness among the students, the patterns of their use, as well as the attitudes towards the quality and relevance of electronic resources. Data interpretation was performed through descriptive statistical analysis, and there was a cross-tabulation of variables to determine their relationship.

Results

The results have shown that even though electronic resources are not hard to find, there is a lot of problem with their utilization. Most of the students indicated that e-resources have a positive effect on their academic activity whereby there are significant gains in research and assignment work. Nevertheless, internet connectivity was found to be a problem due to low rates of internet connectivity, technical changes, and lack of proper training as an obstacle to maximization. Another major conclusion of the study was that although a significant percentage of students knew that there were e-resources available, they believed that the training programs that were available were not adequate to help them improve their skills of using them. The levels of satisfaction were a positive one, although it was proposed to improve such aspects as database updates, support of the staff, and the interface of the digital platforms.

Conclusion

Electronic resources are also very important concerning improved academic performance and research works. Nevertheless, in order to make the most out of them, universities need to fix the infrastructural problems, have extensive training programs and have resources regularly replaced. The university libraries in the city of Islamabad can be in a better position to help their students succeed academically by enhancing accessibility, technical support and quality of their resources.

Keywords: Electronic Resources, University Libraries, Academic Performance, Accessibility, Training, Utilization, Islamabad, E-Resources Challenges, Student Satisfaction.

INTRODUCTION

The role of electronic resources in academic libraries is getting more and more important in the present age of digital transformation. University libraries have not only grown to have a diverse array of electronic resources but are no longer restricted to physical books, journals, databases, and digital repositories (Tetteh, 2018). These resources give students, faculty, and researchers instant access to huge volumes of academic knowledge, supporting the teaching, learning, and research processes (Onuoha et al., 2020). University libraries have the advantage of allowing electronic access to their facilities to improve the general academic experience by increasing access to information, lessening the time limits inherent in accessing libraries in person, and offering content that is up-to-date and peer-reviewed (Ullah et al., 2024). Electronic resources are instrumental in aiding the higher education institutions in realizing their academic goals (Bhat, 2019). They provide the possibility of more advanced searches, accessing topic-related information as well as the opportunity to work with interactive tools that can improve the learning process (Afthanorhan et al., 2019). Their value is determined by whether they are available, can be used, whether they are accessible, relevant, and of quality. The faculty and students should know about these resources and train about using

them in order to make the most out of them (Delaney and Bates, 2018). Besides, technical support and management of libraries should be quite good such that information users can access, locate the information and use it without facing any major challenges or barriers (Shuling, 2007).

Digital literacy building in students is also achieved through the use of electronic resources (Kundu, 2021). Through engaging with the digital content and databases, learners develop such critical skills as a sense of the credibility of sources, systematic search and processing of information (Nazir, 2015). Moreover, electronic materials promote self-directed study, as students will be able to seek the necessary literature by themselves and develop their research skills. They also have the advantage of closing the gap between the theoretical concepts and the real world application through the provision of up-to-date information on the latest developments, emerging trends, and recent findings in different scholarly fields (Sharma, 2009).

Irrespective of these advantages, use and effects of electronic resources have been affected by a number of variables, among them, is the familiarity of the user to digital technologies, the presence of adequate training and guidelines, quality and relevance of the material, technical infrastructure and overall support given by the library (Ani and

Ahiazu, 2008; Swain, 2010). The users can encounter the obstacles of the inability to find the right resources, the lack of internet connection, technical failures, and the absence of current or specialized sources (Roman et al., 2020). Thus, the evaluation of the use and efficiency of the electronic resources is the critical step to define the strong side, the weak one, and the fields of improvement of the services in the university library (Wu and Chen, 2012; Navalur et al., 2012).

University libraries in the context of Islamabad are now spending much in case of electronic resources to improve academic performance and research activities. Nevertheless, the systematic review of the ways these resources are used by students, their effect on the learning outcomes, and the difficulties in accessing and applying them is necessary. This knowledge will assist the administrators and policymakers of libraries to create strategies that can enhance the availability, access, and quality of electronic resources to maximize their role in the achievement of academic excellence.

This is a research paper aiming at assessing the use and the effects of electronic resources in Islamabad university libraries. It analyzes aspects like accessibility, awareness, training, quality, relevance, use patterns, its effect on academic performance, difficulties and general satisfaction. Investigating the views of students in diverse fields and research stages, the study will bring a full picture of the impact of the electronic-based resources on learning and research and what areas the library services can be improved. The research results of this study will provide a good feedback to the enhancement of library policies, the management of resources, training programs, and digital infrastructure, which would eventually lead to an improvement on the overall academic experience of the students and faculty members.

Literature Review

Accessibility of Electronic Resources

The term accessibility of electronic resources can be understood as the convenience and accessibility of the information stored in digital databases, e-books, and journals by the students and researcher. This can be achieved through user-friendly interfaces, ease of processing a log-in procedure and constant availability of resources (Bavakenthy et al., 2003);

Haridasan et al. (2009). Libraries are crucial in making sure that electronic materials are easy to navigate and search and thus, users can be able to find relevant information easily. The ISBD CF Review Group (Ed.)(1997) suggests that technological infrastructure and access to the internet, library management systems, and compatible devices also are essential elements of accessibility.

Awareness and Training

The efficient use of electronic resources is largely dependent on awareness and training. The users should be informed on the presence of e-resources, the coverage of these resources and how much they can associate with the process of access (Thanuskodi, 2012). The library orientations, workshops, and training programs are designed to empower the users to search, retrieve, and use the digital contents in an effective manner (Tenopir, 2003). The level of awareness and guidance offered by the librarians helps in enhanced usage and confidence in the use of such resources in their academic work (Madhusudhan, 2010).

Utilization of Electronic Resources

Utilization is a measurement of the rate and the efficiency with which students use electronic resources to study, do assignments and research (Rao et al., 1997). High utilization implies the resources are incorporated into the academic process and it is a contributor to the improved knowledge acquisition (Vaishnav et al., 2008). The use is determined by the motivation of the user, the relevance of the resources, their accessibility, as well as the perceived value of the digital content (Nazir, 2015). Monitoring the use patterns assists the libraries in optimal resource distribution and pinpoint where they can do better in service provision (Bajpal et al., 2009).

Quality and Relevance of Resources

The utilization of electronic resources depends on the quality and relevance of such resources. The resources of good quality are of quality, current, and peer revised so that they can give accurate information to be used in academic work. Relevancy makes resources to be in line with the fields of study and research needs of students (Vanik and Gamit's, 2022). Libraries would have to consistently review

their collections as a means of balancing between 1. breadth and depth as well as subject specificity (Dadzie, 2005). Relevance and quality affect the user 2. satisfaction and determine the overall efficiency of electronic resources.

Impact on Academic Performance

The use of electronic resources directly affects 4. academic performance of the student as it enhances research abilities, increases the quality of the assignment and also enables students to learn independently. The skills of using e-resources effectively assist students in effectively performing their academic tasks, enhancing their analytical and critical thinking, and keeping abreast of any current developments in their fields (Hossaini, 2017). Libraries which offer extensive and readily available digital content lead to better learning and general academic achievement.

Challenges in Using Electronic Resources

Despite the advantages, students face a number of 1. challenges in the utilization of electronic resources. The most popular obstacles are insufficient internet 2. connection, technical issues, the lack of digital infrastructure, the inability to find the necessary resources, and the guidance (Duy, 2024). The effective usage may also be impaired by outdated 3. interfaces and poorly organized databases. These issues should be known by library administrators to 4. apply those strategies that will minimize the barriers and enhance the experience of users (Benny, 2015).

Satisfaction with Electronic Resources

User satisfaction is the rate of perceived effectiveness of the library services as well as the 5. quality of the electronic resources (Mirza and Mahmood, 2012). There are various elements that determine satisfaction such as the convenience of access, quality of resources, technical support, relevance, and the training that is offered. The high levels of satisfaction show that the resources satisfy the expectations of the user and has a positive impact on the academic performance (Kadir et al., 2016). Satisfaction data can help libraries to improve their services and manage resources better.

Objectives of the Study

1. To assess the availability of electronic resources of university libraries in Islamabad.
2. To determine the level of awareness among students about the available electronic resources and training offered to utilize them.
3. To understand the patterns of usage of electronic resources among the students.
4. To examine the standard and applicability of electronic resources in facilitating academic and research works.
5. To examine the effects brought about by the electronic resources on the academic performance of the students.
6. To determine the difficulties encountered by students in utilizing and accessing electronic materials.
7. To establish the level of satisfaction of students about electronic resources and library services.
- 8.

Research Questions

1. What is the availability of the electronic sources in Islamabad university libraries?
2. Do students know about the existing electronic resources, and did they get sufficient training?
3. What is the frequency of electronic resources utilization and its effectiveness in students?
4. How relevant and good electronic resources are in academic and research?
5. How do electronic resources affect academic performance of students?
6. What problems do students have when accessing and using electronic resources?
7. To what extent are students satisfied with the electronic resources and library services?
- 8.

Methodology

In this section, the research design, data collection techniques, selection of sample, and data analysis techniques are described to determine the use and effects of the electronic resources in Islamabad university libraries. The objective in the study was to collect the real data on the use, access and effectiveness of electronic resources through the quantitative method. The purpose of the methodology was to determine the perception and experience of the students, the difficulties encountered, and the general effect of the electronic

resources on the students in terms of the academic performance.

Research Design

The study employed a descriptive research survey research design to collect in-depth information on the usage and the effects of electronic resources in university libraries. The choice of this design was made due to the possibility of collecting a large number of respondents and describing the trends of resource utilization, their awareness, training, and satisfaction among students.

Population and Sample

The sample size of this research was comprised of students of different universities in Islamabad that used electronic sources to do their academic and research works. A stratified random sampling method was employed so that, there were a representation of students representing the various academic disciplines and academic level. Undergraduate, graduate, and postgraduate students were included in the sample to ensure the inclusion of different opinions regarding the use of electronic resources. The number of respondents (n=400) was chosen to guarantee a representative sample size comprising of various disciplines such as engineering, social sciences, life sciences and humanities.

Data Collection Methods

A structured questionnaire was used to collect data, which, in turn, was created according to the research objectives. The questionnaire had close ended questions as well as Likert scale questions to quantify diverse dimensions of utilization and contribution of electronic resources including accessibility, training, satisfaction, and academic performance. The questionnaire was segmented into a number of sections such as demographic, accessibility of e-resources, awareness and training, usage patterns, quality and relevancy of the resources, academic performance and the challenges.

The online survey was administered through email and university learning management systems (LMS) in order to target a large sample of participants. In other instances, the questionnaire was availed as

hard copies to allow those students who wanted to use paper surveys.

Data Analysis

The gathered data was summarized with the help of descriptive statistics as well. It was found that frequency distributions, percentages, and means have been computed to define the patterns of e-resource usage, the level of awareness, satisfaction, and perceived impact. Data was entered into and analyzed with the use of the SPSS (Statistical Package of the Social Sciences) software. Besides descriptive analysis, cross-tabulation was used to investigate the relationships between variables, including relationships between academic disciplines and frequency of use of e-resources.

Ethical Considerations

Ethical considerations were strictly adhered to throughout the study. The objectives of the research were explained to the participants and participation was voluntary. All respondents were informed and given consent with the understanding that they had a right to confidentiality and anonymity. The gathered data were utilized only to academic ends and no personal information was shared.

Limitations

Limitations of this study are that the data used in the study is self-reported and therefore it is prone to biases like social desirability or faulty recall. Also, the research targeted the universities of Islamabad, and this could restrict the ability to generalize the results in other localities. To expand the research of the sample in future and to gain a better understanding of the experience of the students with electronic resources, it will be possible to consider those universities, which are located in other parts of Pakistan or implement qualitative methods.

Overall, the methodology was systematic and guided, in the attempt to evaluate the use of electronic resources, their effects, and the problems in university libraries. The results of this study will form a good contribution towards the enhancement of the management of electronic resources, training and library services in higher learning institutions.

Problem Statement

Electronic resources play a critical role in the modern higher education to augment academic performance and research capabilities. The university libraries in Islamabad have invested in digital databases, e-books and e-journals at an attempt to respond to the increasing demand among the students and faculty. Nevertheless, there is doubt in how well these resources are put to use despite such efforts. This can be because students lack awareness, they are poorly trained, there are technical problems or they just do not have access to quality resources that can influence their learning. It is imperative to assess the use, influence, and issues of electronic resources to realize how well they are able to work. This research will seek to present an extensive evaluation of the electronic resources

Demographic Profile of the Respondents

Table No. 1 Demographic Information

Gender		
Male	210	52.5%
Female	190	47.5%
Age Group		
18-22	120	30.0%
23-28	160	40.0%
29-33	70	17.5%
34-40	35	8.8%
Above 40	15	3.8%
Education Level		
Bachelors	180	45.0%
Masters	110	27.5%
MS/M.Phil	80	20.0%

in the university libraries of Islamabad with emphasis on the aspects that affect usage, performance and general satisfaction.

Results and Discussions

The Results and Discussions part of a research study reveals the results of the study and explains the meaning of them. Statistics Data are presented in the Results part in a clear and concise manner and are often presented in the form of tables, figures, or statistical analysis. These results are then interpreted as part of the Discussion, which compares these to other prior studies, the reasons behind unforeseen results, and the implications. This part gives background to the interpretation of the results and their contribution to the overall study.

PhD	30	7.5%
Professional Sector		
Banking	88	29%
Pharmaceutical Supply Chain	74	25%
IT/Technology	76	25%
Government/Regulatory	62	21%
Discipline		
Arts & Social Sciences	70	17.5%
Economics & Management Sciences	85	21.3%
Engineering & Technology	95	23.8%
Islamic & Oriental Learning	20	5.0%
Life Sciences	50	12.5%
Pharmaceutical Sciences	30	7.5%
Physical Sciences	25	6.3%
Medical Sciences	25	6.3%

The statistics show a relatively equal gender distribution, 52.5% of the male participants and 47.5%, female participants. Most of the respondents are aged 23-28 (40%) and 30% at 18-22. The share of the age groups above 28 years becomes smaller and smaller, with the highest number of 3.8% over the age of 40.

Regarding educational levels, majority of them have a Bachelor degree (45%), then there are those having a Masters degree (27.5%) and a MS/M.Phil degree (20%). A low percentage of the sample is a PhD holder (7.5%).

In terms of professional areas, Banking, Pharmaceutical Supply Chain and IT/Technology account to the majority of about 25-29% of respondents whereas Government/Regulatory sector accounts to slightly lower 21%.

The disciplinary emphasis is diverse and the highest percentage of 23.8% is represented by Engineering and technology, 21.3% by Economics and Management Sciences and 17.5% by Arts and social sciences. It is less represented in other fields like Life Sciences (6.3%-12.5%), Pharmaceutical Sciences (6.3%-12.5%) as well as Medical Sciences (6.3%-12.5%).

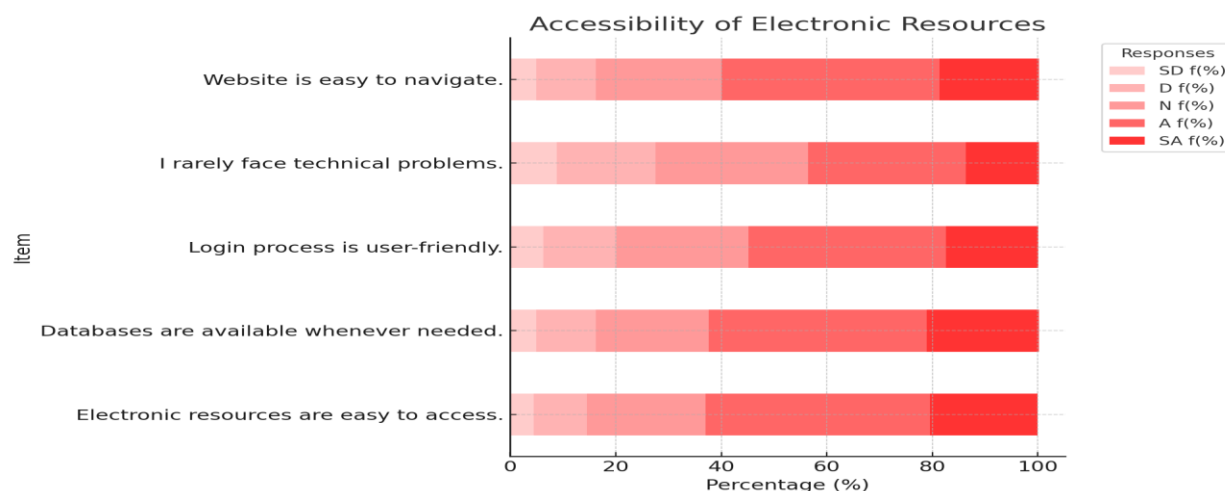


Fig 1: Accessibility of Electronic Resources

The statistics regarding the availability of the electronic resources show that the majority of the users consider accessibility of the resources rather easy, but some areas are still to be improved. Most of the respondents (42.5%) accept that electronic resources are easy to access with another 20.5% strongly agreeing. Nonetheless, 22.5% of the respondents were indifferent, which indicates that there are users who have difficulties in access. On the same note, 41.3% of the respondents view availability of databases positively, but 21.3% were neutral which means that they have some problems with the availability. The 37.5% of the respondents found the login process to be user-friendly with 17.5% strongly agreeing, though, 25% were mixed

on the issue indicating that some users may have a hard time. Regarding technical issues, 30% of the respondents indicate that they rarely experience technical issues, 28.8% are neutral and 18.8% experience regular technical problems, which indicates that the systems need enhancements in reliability. And finally, although 41.3% were able to navigate the website without difficulties, 23.8% were neutral, which means that the interface is not the most intuitive one. All in all, though the availability of electronic resources is relatively good, more can be done to improve the process of accessing them, technical support, and navigation through the web site to improve user experience.

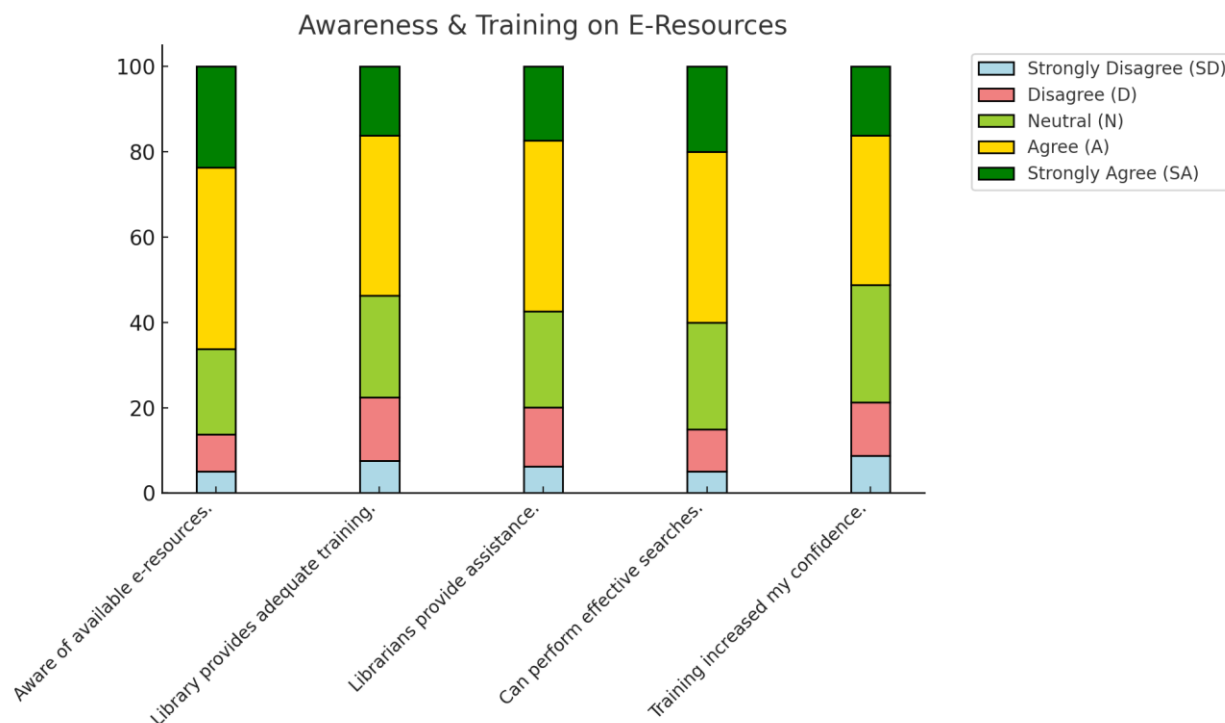


Fig 2: Awareness & Training

The awareness and training data implies that general knowledge about the existing electronic resources exists, but more training and support is needed. Much of the respondents (42.5) are familiar with the existence of the e-resources, and 23.8% of them strongly agree yet 20% stand at the neutral position suggesting that some users might be unaware. Training, 37.5% believe that the library is training adequately but 23.8% are not sure and 15% disagree implying that the existing training programs might not be comprehensive enough to be used by all users. Librarians are also positively perceived, 40% of the respondents reported that they strongly agree with the statement, 17.5% with the statement, and 22.5% were neutral meaning that not every user is

guaranteed to have access to the kind of support he needs. Conducting effective searches is confirmed by 40% of the respondents and 20% strongly confirm, but 25% are indifferent, which points to any possibility of a loophole in search training. Finally, although 35% of all users claim that they feel more confident because of the training, 27.5% were neutral, and 21.3% felt less confident, implying that training is not as effective in all cases. Generally speaking, the level of awareness of e-resources is mostly good but training programs and support offered to the users can be improved to make them more confident and capable of using the resources efficiently.

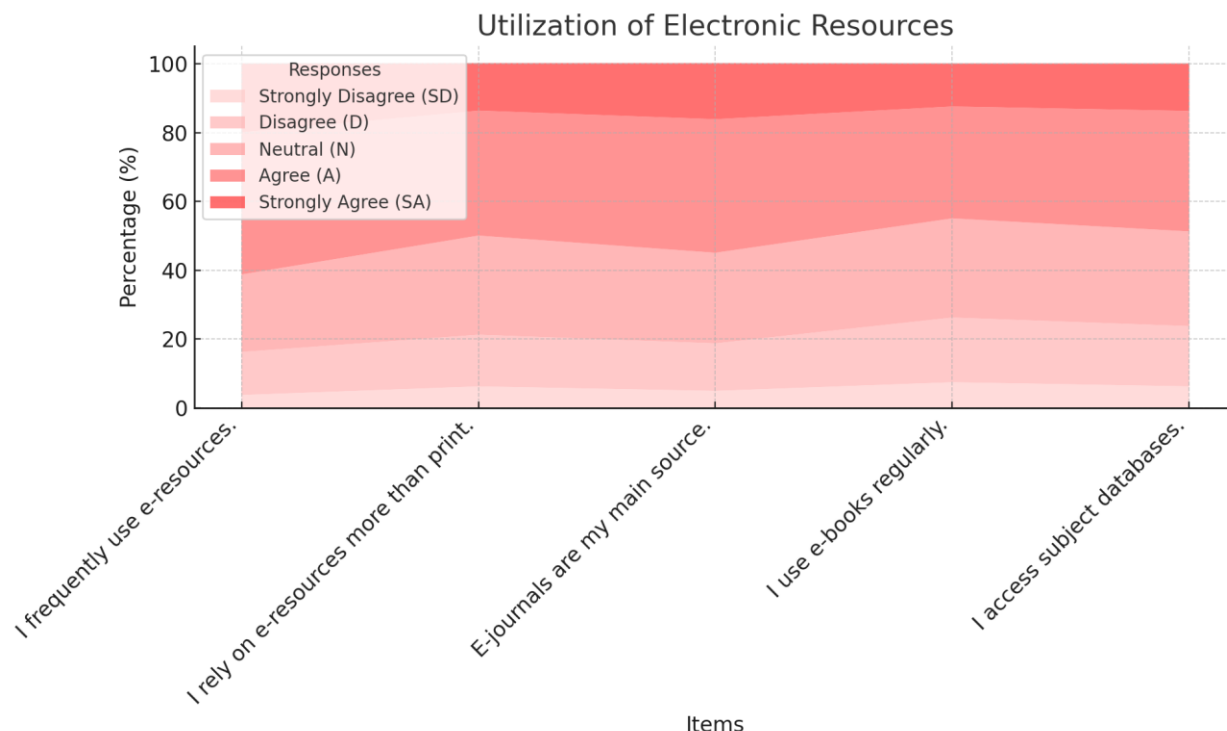


Fig 3: Utilization of Electronic Resources

The statistics of the use of electronic resources reveal that the utilization of e-resources is rather frequent, and its dependence is different. Most of the respondents (41.3%) use e resources frequently with 20% strongly agreeing but 22.5% are neutral indicating that there are still users who do not use these resources regularly. Regarding relying on e-resources as opposed to print, 36.3% of respondents are in agreement with it, 28.8% are neutral and 15% are disagree, meaning that print resources remain relevant to a considerable number of users. The largest source is e-journals, with 38.8% agreeing and 16.3% strongly agreeing, albeit 26.3% are neutral and this indicates that a mixed method of resources

selection is in place. The use of e-books is rather less with 32.5 percent of them regularly using e-books, however, 28.8% are neutral indicating that there is a possibility of hindrance in the adoption of e-books. Finally, the availability of subject databases is indicated to be reported by 35% of the respondents out of which 13.8 percent indicate strongly whereas 27.5% indicate neutrality as there is a room of improvement in promoting the use of specialized databases. In general, despite the common usage of e-resources, the adoption of e-resources differs, and additional initiatives might improve the access to e-books and specially designed databases.

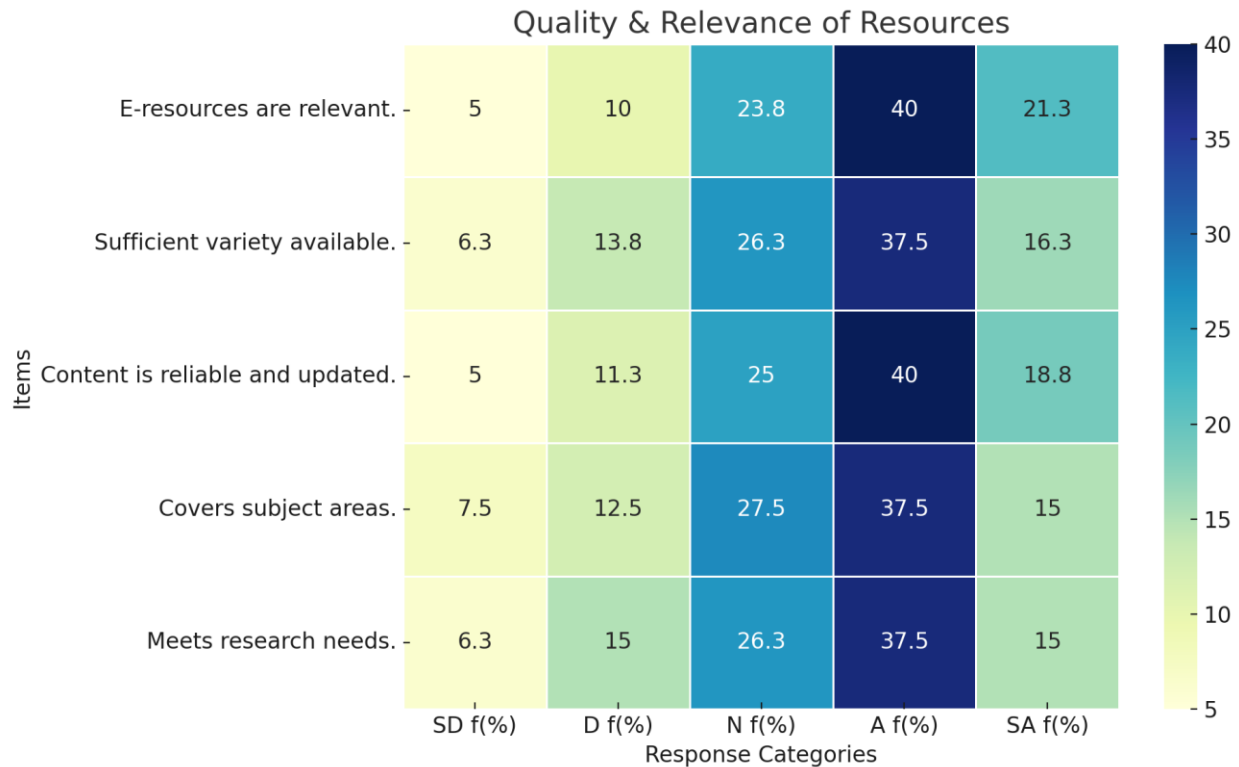


Fig 4: Quality & Relevance of Resources

The information about the quality and relevance of the electronic resources shows that people can find the resources fitting their needs, though there are some areas that can be enhanced. The respondents indicate that a considerable number (40%), strongly agree (21.3) that e-resources are relevant. Nonetheless, 23.8% were neutral which implies that not all resources are always in tandem with the requirements of users. Regarding the variety, 37.5% of the participants say that there is enough variety of resources, yet 26.3% of them are neutral, and 13.8% of participants disagree, which means that some of them might want more resources. On the question of reliability and currency of content, 40% of the respondents agree that the sources are current and dependable and 18.8% strongly agree. Nevertheless, a quarter of them were unconcerned, which

presupposes that users can sometimes suspect that the content is not timely or reliable. Concerning coverage of subject areas, 37.5% of respondents believe that the resources sufficiently cover different subjects despite 27.5% of respondents being neutral implying that there might be voids in subject coverage. Lastly, 37.5% concur that the resources address their research needs with 15 percent of them strongly concurring with that, yet, 26.3% were indifferent, which points to the fact that there are chances that some of the users might not find the resources effective enough with regard to their research needs. All in all, e-resources are relevant, reliable and diverse to most users although it can be enhanced by improving the variety of content, coverage, and the ability to ensure that the resources satisfy the requirements of a research.

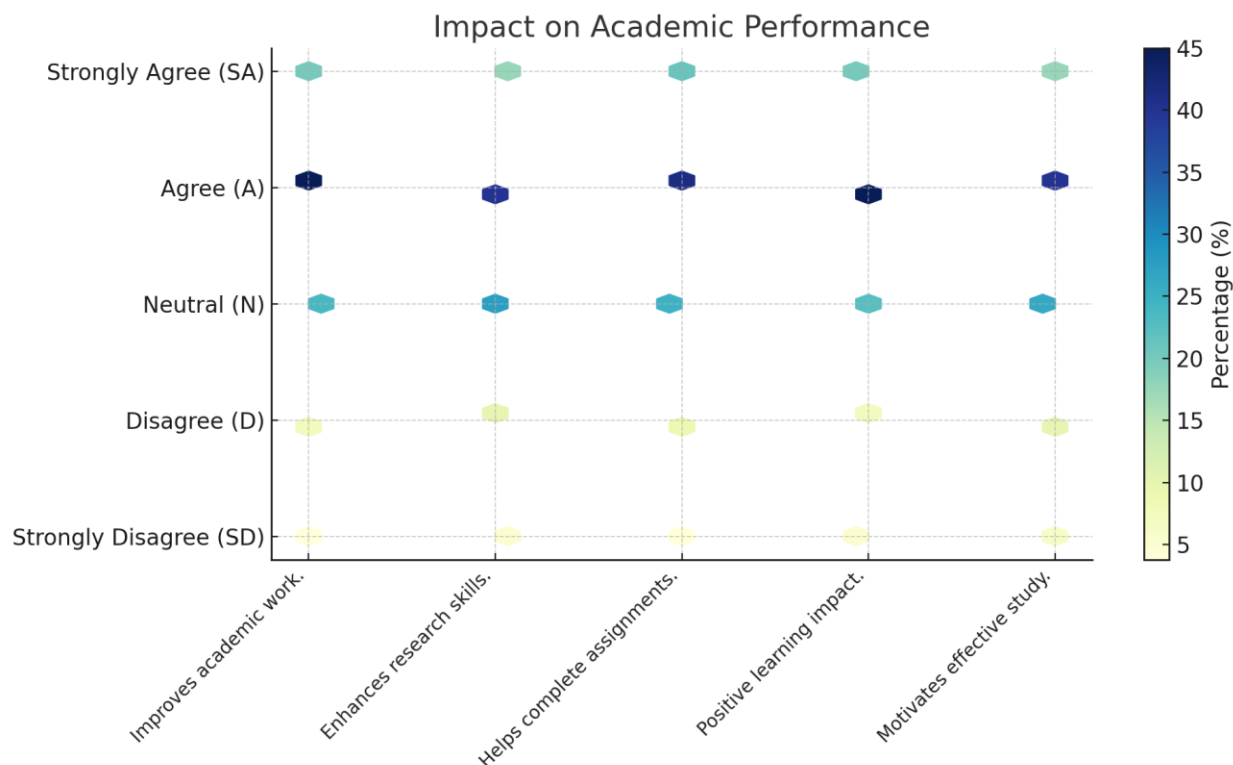


Fig 5: Impact on Academic Performance

The statistics on the impact of electronic resources to the academic performance were more or less positive, as the majority of respondents recognize the advantages of the latter. A high percentage (45%) agree that e-resources enhance academic work with 20% of them strongly agreeing and 23.8% are neutral meaning that not all users may have a significant improvement. Concerning the development of research skills, 40% of the respondents believe that e-resources develop research skills with 17.5% of them strongly agree and 27.5% of them are neutral which implies that e-resources may not have a similar contribution to research skills. In terms of assigning assignments, 41.3% of the participants think that e-resources are helpful and 21.3% highly agree, but 25% of the participants are neutral, which means that not all

users may find them necessary to complete an assignment. There was also a positive learning impact with 45% of the respondents agreeing and 20% strongly agreeing but 22.5% were neutral meaning that most people benefit through these resources but others might not see a direct influence on their learning. Finally, 40% of the respondents believe that e-resources are a source of motivation to study and 17.5% strongly concurred with this view whereas 26.3% are neutral on this point indicating that it is not necessarily motivating to all users. On the whole, though most of the respondents realize the positive impacts that e-resources have on academic work, research skills, assignments, and learning, a considerable number of users might not reap the full benefits.

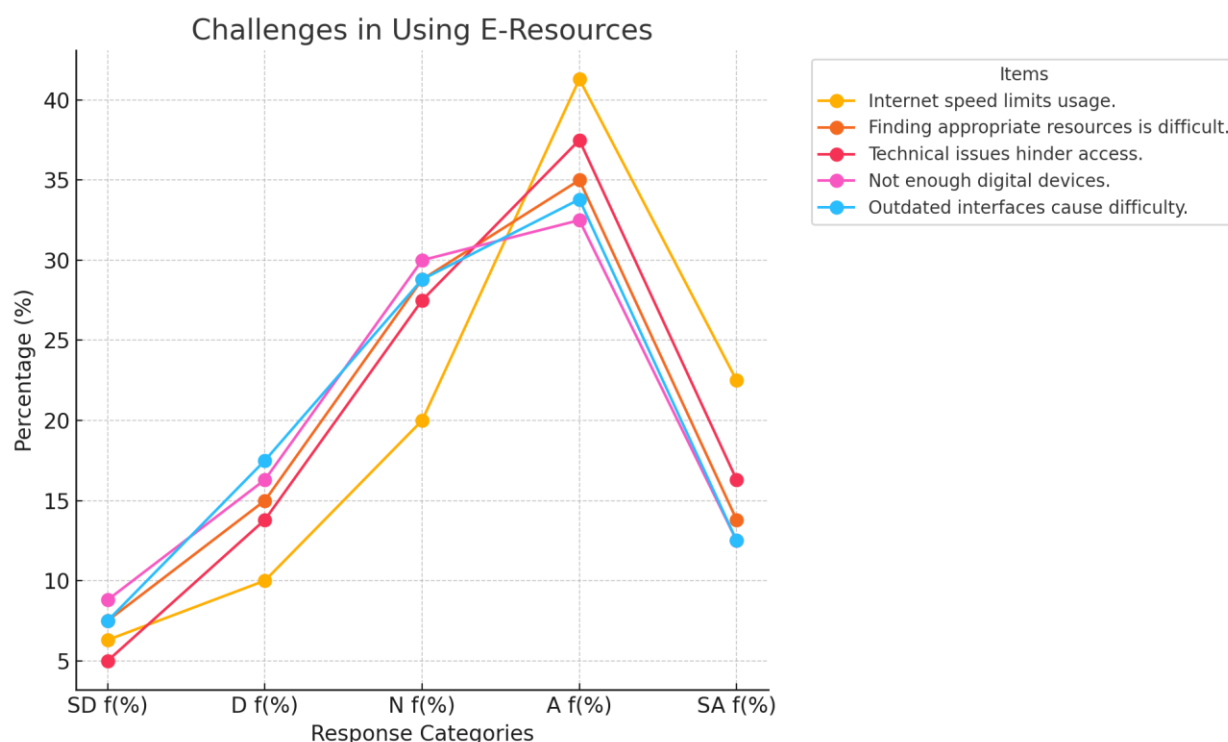


Fig 6: Challenges in Using E-Resources

The data on challenges in using electronic resources highlights several factors that hinder users' experience. According to the respondents, a substantial number (41.3%) of respondents agree that the internet speed diminishes usage, though 22.5% strongly agree, indicating that most users are faced with the barrier of slow internet connections. Regarding the ability to locate relevant resources, 35% of those surveyed have a hard time with it, 13.8% strongly agree, meaning that users are not able to find the suitable contents. There is also the factor of technical problems, 37.5% of respondents indicate that they are impaired into using e-resources by technical problems whereas 16.3% strongly agree that they should improve the

technical problems. Another problem is the absence of digital devices, and 32.5% of respondents said that the lack of devices restricts their use of e-resources, and 12.5% strongly agreed with this opinion, which could indicate that the possibility to get necessary technology is a constraining factor. Finally, obsolete interfaces also become a problem to 33.8% of the respondents, with 12.5% strongly agreeing on the necessity of the updated and friendly interfaces. In general, although e-resources have a number of positive advantages, the problems of internet speed, technical difficulties, absence of devices, and old-fashioned interface still pose a serious challenge to a lot of users.

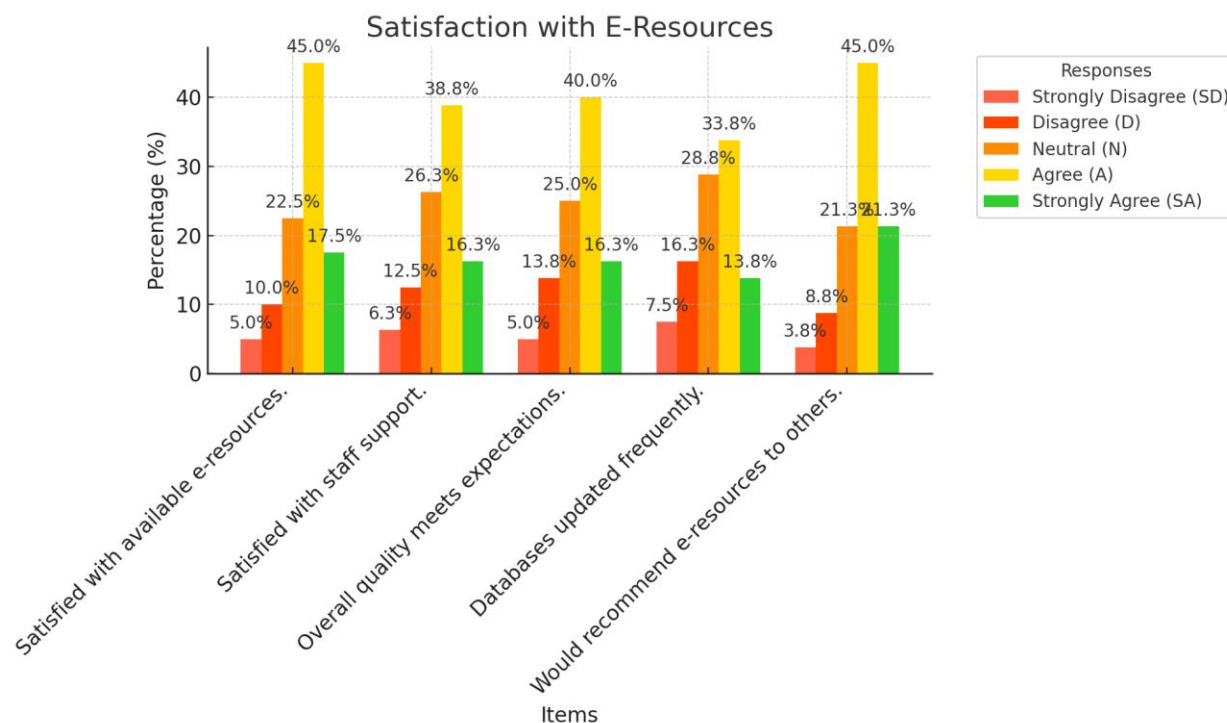


Fig 7: Satisfaction with E-Resources

The electronic resource satisfaction data show the overall positive perspective with some factors to be enhanced. Most of the respondents (45) are satisfied with the existing e-resources, 17.5% are very satisfied, 22.5% are neutral implying that some users may not be fully receiving or utilizing the resources. Regarding the support of the staff, 38.8% of the respondents are satisfied, and 16.3% strongly consent, but 26.3% of them were neutral indicating occasional failures of assistance. The general quality of the e-resources is expected to leave 40% of the respondents, 16.3 of these highly, however, 25% of them are indifferent, implying that certain users are dissatisfied with the quality as not being up to their expectations. With regards to the frequency of updates of the database, 33.8% are satisfied, 13.8% strongly agree but 28.8% were still neutral that is to say that there is no regularity or consistency with which the database is updated as the users may want. Lastly, of the 80% whose names were requested on whether they will recommend e-resources to others 45% said that they would and 21.3% strongly said so although 21.3% was neutral implying that most users would highly recommend the resources, but there is a section of users who may not be convinced. In general, the levels of satisfaction are high, but

such aspects of user experience as the support provided by the staff, the updates to the database, and matching quality and expectations can be enhanced.

Discussions

The results of this research are useful in understanding the use and influence of electronic resources in university libraries in Islamabad. The findings indicate that electronic resources are highly available but various factors influence their potential such as awareness, training and technical challenges.

Firstly, the availability of electronic sources, which is mostly good, can be slightly improved. A substantial number (42.5) of the respondents were able to access electronic resources with ease and 20.5% strongly agreed to it showing a positive perception of the availability of resources. Nonetheless, 22.5% was neutral, which implies that there are still certain difficulties experienced by the users in accessing these resources, potentially because of various problems related to login issues or unstable databases (Bavakenthy et al., 2003). This presents the necessity to have better infrastructure and user friendly interfaces which will guarantee smooth

access among all users. In the same way though most of the respondents say that the resources are relevant, some students are neutral meaning that they need more focused resources that are more specific to the academic discipline (Dadzie, 2005). With regards to awareness and training, the study establishes that even though a substantial proportion of students (42.5%) are conversant with the available e-resources, merely 37.5% percent of these students believe that they have undergone sufficient training. This gap can be used to indicate that though the awareness campaigns can be effective, there is a need to have more extensive training programs to equip the students with the skills that do not allow them to maximize the use of electronic resources. Past researches have highlighted the significance of training in the optimization of the benefits of e-resources (Madhusudhan, 2010), and the present research study ascertains that insufficiency of training could pose a problem in the utilization of these resources by students. The role of librarians who can help is also important as 40 percent of the students reported having received appropriate assistance, although some users believe that they need to be assisted more regularly.

Use of electronic resources gives a two-sided image. Although the percentage of people who use e-resources frequently (41.3%) is high, the preference of using e-resources in comparison with print materials is not that strong, as 36.3% of people confirm that they use digital resources more. This indicates that although the availability of electronic resources is on the increase, print resources remain of great importance in the academic undertakings. Also it is important to mention that the use of e-journals is significantly more common than e-books which points to the fact that although journals are vital in conducting research, it is a fact that students may be faced with certain constraints like unavailability or unfamiliarity with e-books (Sharma, 2009).

Concerning effect on academic performance, the findings indicate a positive relationship between e-resource use and better academic work, the findings indicate a positive relationship between e-resource use and better academic work as 45% of respondents agree that e-resources assist in the improvement of academic work. These results are

consistent with the existing studies that highlight the importance of e-resources in increasing the researcher skills and the quality of assignments done by students (Hossaini, 2017). Nevertheless, some students still do not hear such drastic improvements, meaning that the contribution of e-resources can be different regarding training, quality of the resources, and the engagement of the users (Bhat, 2019).

Lastly, the internet speed, technical problems, and lack of digital devices were also found to be a highly critical obstacle to the effective usage of e-resources. All these issues are in line with the previous research, which points to the necessity of better technical infrastructure to provide a more convenient access and use of it (Duy, 2024). Also, the problem of obsolete interfaces was reported to be a challenge to certain users, indicating that constant up-to-date and user-focused design is crucial to the updating of the topicality and utility of digital platforms.

In conclusion, although the research demonstrates that electronic resources positively affect academic performance and are popular among students at the universities of Islamabad, it remains possible to enhance the situation with their use in terms of accessibility, training and addressing technical barriers. The use of electronic resources should be improved by better infrastructure, more effective training programs, and easy to use systems that will be better in the overall experience and impact of libraries.

Conclusion and Recommendations

The analysis of the use and effectiveness of electronic resources within the university libraries in the city of Islamabad throws some significant light on how these resources are utilized by students, their contribution to the academic performance, and the experiences of using and accessing these resources. The results indicate that although electronic resources are highly perceived and adopted by the students, there were areas that require the improvement such as access, awareness, training and technical support.

The beneficial effects of the use of e-resources in terms of academic performance which includes but is not limited to improvement in research performance, assistance in completion of

assignments and overall learning experience is evident. Another important percentage of students mention that these materials can assist them in enhancing their scholarly activity and encourage them to study efficiently. Nevertheless, it does not mean that all students do not struggle with such problems as the inability to get resources, limited or unconnected internet access, and technical problems. These issues tend to show the necessity of universities to combine the gaps in the infrastructure and offer constant technical assistance in order to make sure that every student can acquire and use these precious resources.

Although most of the respondents know about the available electronic resources, most students have complained of lack of training, which could hamper their capability to maximize on the potential of such resources. Although there are some training programs, the part lacking is the full-scale training on the student side, which is very essential in equipping the student with the talent of using and navigating through electronic resources effectively. Furthermore, even though the range and applicability of resources available is almost universally satisfactory, certain students had their concerns about the competence of the sources to address their particular requirements, in particular, on the aspects of subject-specific databases and content appropriateness.

The results also reveal that although e-resources are widely used, students still depend on print resources, to some degree, particularly in the case of materials such as books. This does not mean that print materials are yet to be eliminated in the academic experience and should strive to make the use of both print and electronic resources as smooth as possible, so that learners can avail themselves of the most suitable resources in their studies.

Based on these findings, some recommendations are possible. To begin with, university libraries must aim at enhancing the technical infrastructure by providing higher internet connections, more stable access to any resources and frequent changes in library systems and digital platforms. This would help solve the technical complications that are common among the students like slow internet and old-fashioned interfaces. Also, libraries must invest in extensive training that is beyond mere orientation on e-resources. The training programs are to be

aimed at shaping the digital literacy of the students, educating them about the ways to succeed in searching and evaluating online materials and meeting them with the entire variety of available resources. These programs can be provided in form of workshops, tutorials on the internet, or even provided as part of the university curriculum.

In addition, the awareness campaigns must be enhanced to make sure that every student is well informed about the accessible electronic resources. The libraries can use email newsletters, social media, and face-to-face orientations to distribute information about the resources and training opportunities. Also, the relevance and quality of electronic resources should be evaluated on a regular basis. The libraries must ensure that their collections are regularly updated so as to ensure that they are relevant to the needs of the students and also in line with current trends in different fields of study. Finally, print-based resources are another aspect that should be considered by universities, where they must find a more efficient method of using print and electronic sources so that students can find it easy to use either or both forms of contents depending on their preferences and needs. To sum up, although the application of electronic resources in the libraries of universities in Islamabad positively affects academic performance, the issues of access, training, and technical assistance will be the primary aspects to be addressed to achieve the full potential of e-resources. Universities can better facilitate the academic experience of their students, and meet their needs in research and learning by improving infrastructure, improving training and ensuring that resources are relevant and available.

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