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A STUDY OF E-LIBRARIES: CHALLENGES AND OPPORTUNITIES FOR HIGHER EDUCATIONAL INSTITUTIONS

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Abstract:
The present state of chosen digital libraries for higher education institutions is examined in this research, along with their prospects and problems. To gather significant information from library faculty and clients of the computerized library, purposive and accommodation testing procedures were used, separately. Due to their dynamic UIs, complete text availability, and simplicity of establishment necessities, D-space and Green Stone are used computerized library frameworks in most of advanced education foundations. According to the study's findings, rare books, theses, and dissertations were the materials most often digitized for scholarly and research use. Copyright issues with protected innovation, an absence of financing to help computerized libraries, the incongruence of computerized library stages with neighborhood dialects, and an absence of advanced library plans, strategies, and methodology were viewed as the significant difficulties for advanced education foundations when it came to utilizing computerized libraries. Users have difficulties accessing digital libraries due to slow Internet connections and poor digital collections. The primary possibilities for computerized libraries were placed in report protection for instructive, social, authentic, and administrative purposes as well with respect to broad archive openness for foundations of advanced education. Subsequently, a public computerized library system, plan, principles, and methods should be in place for the country's effective growth of digital libraries in higher education institutions.

Keywords: Challenges, Digital Library, Digital Library Staffs, Digital Library Users, Ethiopia, Opportunities, Trends

1. INTRODUCTION

Digital libraries have been a concept since the 20th century. Building these digital libraries into the robust and comprehensive collections of documents that have been envisioned for them from a very long time in the past will take many years of the twenty-first century. The abundance of knowledge has changed how each stakeholder may access important learning and important information. During the last several years, digital libraries have undergone considerable changes. They participate in networking systems in addition to being the conventional (physical) library' digital equivalent. They may now coordinate cooperation and communication across various user groups and communities that are present everywhere (Senapati et al 2022).

Digital libraries provide many of the same services as conventional libraries. The digital format used by digital libraries to manage the collection is the sole essential difference. These services are technologically focused, needless storage space, and are easily accessible to consumers as we go forward

for more information about differentiation then because of the digital format (Pradhan & Madihally 2022). With the basic necessities of power and an active Internet network, digital library contents are available from any place in the globe. Unlike traditional physical libraries, which need human interaction for everyday operations, digital services are now delivered to customers through computers (Dos et al 2022).

A variety of studies have been conducted to understand how users perceive utilizing digital libraries, and they have also identified a few obstacles to their widespread adoption. The university-level students, professors, and researchers who support the growth of academic libraries with digital documents are among the essential audiences for digital records (Krishnamurthy 2021). Theoretically, academic libraries should provide various educational resources and other services available. Also, it offers guidance on where to discover, how to utilize, how to evaluate, and how to choose content effectively for each user. Advanced education organizations these days are further developing understudies' growth opportunities by eliminating actual obstructions and giving classes and scholarly projects on the web. The web based learning climate offers a one of a kind stage for dispersing and giving admittance to the scholastic information accumulated for instructive guidance to everybody, constantly, and all over the place. Higher education institutions are seeing an increase in the shift from conventional in-person education to online and remote education as a result of the development of the Internet and the emergence of the capacity for online communiqués (Phattanawasin et al 2021).

This mix of data and consumer needs is being transformed via the construction of creative models and architectures, resulting in better-informed choices and an enhanced customer experience (Rana 2020). The enormous amount of information in the networks that communicate presents significant difficulties for ensuring fundamental security in a distributed environment. Block chain has developed beyond Satoshi Nakamoto's initial debut of it as a Bit coin cryptocurrency. With a dispersed network, it enables a trustworthy platform for service and transaction exchange. As a result, it is changing the current generation's digital financial system by adding new dimensions to system security and efficacy. Block chain has emerged as a more effective solution for the many issues that the academic community faces and might be used for a number of jobs. They suggested using block chain as an additional instrument for digital rights management. The San Jose State University block chain project identifies the technologies required to create a better metadata framework for libraries, safeguard computerized first deal privileges, and host advanced shared dissemination. Instead of copying, digital data may now be distributed thanks to block chain technology (Huang 2022).

The ongoing age of clients continually requests that regular libraries be fabricated and exceptional with interconnectivity as advanced libraries since they require information for learning and looking for data. The customary instructive foundation's openness to scholarly library administrations for far off learning is lacking and troublesome for tending to the data needs of distance students. By explicitly focusing on the manner in which scholarly libraries and custodians give far off learning library administrations to the understudies and educators; this study plans to carry worth to the corpus of exploration in schooling inside the setting of remote learning settings (Wang 2022). The review's outcomes might furnish scholarly bookkeepers and organization directors with data on latest things and practices as well as suggestions for upcoming enhancements aimed at assisting distant learning students. Initiatives to provide library services for distant learning may benefit greatly from this research (Deng et al 2021).

By evaluating earlier research and presenting information on the digital library, its resources, and its development with recent advancements, this study gives an overview of digital libraries. The conceptual understanding and practical application of the digital library are presented in this chapter, along with several definitions offered by various research academics. Along with highlighting the difficulties of this

kind of learning, it also emphasizes the value of digital libraries. Finally, it describes the traits, advantages, primary goals, and creation of digital libraries (Mahapatra 2021).

A contemporary platform for quick and efficient access to library materials is the digital library. Consequently, a digital library is also taken into account to be a fully paperless library, demonstrating the extensive use of digital resources (Stephen 2020).

A digital library takes into account every component of a traditional library. The implementation of digital library differs from person to person or organization to organization or nation to country but the main core concepts for digital library installations are identical. These guidelines might be regarded as the digital library's absolute minimum (Van Hong et al 2021).

The digital library may also make use of digital resources including computers, the internet, software, RFID, GPS, barcode scanners, printers, and other multipurpose devices like smartphones. Computer literacy is another crucial component of this sort of digital library (Panda 2020). A periodic training session may be held to improve handling abilities for digital libraries. It is true that the creation of a digital library would hasten the process of research and development, but it is crucial that the goal of its creation is really fulfilled (Winata et al 2021). In order to prevent situations where digital libraries become worthless, it is crucial to examine the existing difficulties and problems that they are facing.

1.1.Challenges for Digital Library

Harilal (2018) emphasized that the issues the digital library faces are:

1. **Inability To Absorb Frequent Expenses -**Ingestion costing, frequently known as "full retention costing" or "full costing," is a bookkeeping strategy made to record all cost related with delivering a specific item (Savec 2020). To submit burdens and distribute other conventional records, retention costing is required. Whether or not an item is sold, all production costs are divided among all goods. In other words, all expenditures associated with the business are covered by the goods.
2. **Lack of Qualified Personnel or Personnel with the Necessary Skills-**In emerging nations, it is common and crucial for their economic and political growth that there are not enough people with the necessary skills, education, and experience. There are several types of workforce shortages in emerging nations (Torres et al 2020).
3. **The Library Staff Is Not Interested in Starting Digital Projects-**Today's librarians still play a big part in helping libraries provide better services to their patrons and boost research productivity (Gómez 2020). The way libraries operate and how professionals do ordinary work have both altered as a result of new technology. These technologies are now being utilized by library professionals to collect, store, and provide reference services to its users.
4. **Security Concerns Such Virus Effect, HD Format, and Hacking -**A weak PC resembles an opened entry for online hunters and programmers. Making it a stride further, defend your PC from programmers by examining approaching email or texting utilizing a spam channel or passage. Items like Web-root Internet Security and Anti-Virus Completely block harmful malware from accessing your System, keep watch at all points of entry, and ward software available, they simply cannot keep up with the constant influx of new malware strains. It's crucial to have current, assured security since previously uncovered malware generally does the greatest harm.

1.2.Objectives

- To examine the present status of e-libraries in higher instructive organizations and the degree to which they are being used by understudies and workforce
- To identify the major challenges faced by higher educational institutions in implementing e-libraries and strategies to overcome these challenges
- To analyze the effect of e-libraries on understudy learning results and scholastic accomplishment in higher instructive organizations

1.3.Research Hypothesis

H0A: libraries do not have a significant impact on student learning outcomes and academic achievement in higher educational institutions and their implementation does not present any significant challenges or opportunities.
H1A: E-libraries have a significant impact on student learning outcomes and academic achievement in higher educational institutions and their implementation presents significant challenges and opportunities.
H0B: E-libraries do not have any impact on student learning outcomes and academic achievement, and there are no significant challenges or opportunities associated with their implementation.
H1B: E-libraries have a significant impact on student learning outcomes and academic achievement, and their implementation presents significant challenges and opportunities.

2. REVIEW OF LITERATURE

Digital libraries have the potential to provide poor countries great chances for participation in international affairs and to raise the quality of life of people, according to Owusu-Ansah et al. (2019). Digital libraries are important in distant learning and education from this standpoint.
According to Indiramma and Sugunavathi (2019), society is moving towards a point when a vast quantity of knowledge that is accessible based on printed and published resources may replace digital information. As a result, the library's initiatives must be connected to both the past and the present in order to assist shape the future via the collection, preservation, and display of materials pertaining to human civilization. These resources sometimes need to be integrated with developing technology in their design (Asid 2022). The future library must be digital and include the following features: hosting all recorded knowledge online, disseminating and maintaining these records globally online, and making the records available to anybody, anywhere, at any time, in any language, over the internet. The idea of a digital library is essential, and current attempts to digitize libraries are focused on building standalone collections that can take the place of the overcrowded physical libraries that are already in existence owing to both financial and physical space constraints.
According to Xie and Matusiak (2016), the emergence of digital libraries with remote access to academic information resources was made possible by advances in digital computing and the growing use of computing networks. It has made it possible to access a wide range of information, including anything from books to three-dimensional objects. This switch from a traditional setup to a digital one has yielded enormous advantages (Yaylak, 2019).
According to Rane (2015), digitizing the papers requires a significant investment in terms of time, labour, and money. Before switching to digitization, there are a number of reasons and considerations that must be made.

1. The value of digitizing the papers that are being done must be taken into account. The value of the information-rich documents justifies the investment of money in their digitization. The hefty, already-outdated materials shouldn't be converted to digital format. Additionally, since they are

prone to damage, bulky documents that are valuable because they are old and unique should be digitalized. Without handling the original format, anybody may utilize them.

2. In digitizing the papers, the audience must be determined. If there aren't many people using the library, or even if there are many people who could use it but don't have access to computers to utilize digital libraries, then printed copies may be used to serve those people instead of a digital setup.
3. The papers which are picked should form a collection. For the papers to be exhibited as a collection in digital format, it is important that they be authenticated and should have specific characteristics.
4. The simplicity and comfort of digitizing the papers should also be taken into account. This is a crucial factor that has to be taken into consideration. It's likely that certain printed items will be difficult to convert to electronic format. Thus, it is necessary to confirm the physical characteristics of the papers to ascertain if it is simple to digitize them.

While libraries and librarians worldwide are moving towards a digital setup, Bandi et al. (2015) noted that there are several limits with the techniques and their upkeep. The following are the concerns with digitization:

1. *Data Size*: A lot of the material that has been preserved and praised by people all around the world may not be as useful if it is become unreadable. As a result, when information or records are translated to digital format and stored in such forms, they usually become obsolete over time and are far more difficult to manage than printed media owing to data volumes.

2. *Document Type* - Librarians are perplexed about the types of records that should be in digital form and those that shouldn't be in digital form in the current day when information is exploding everywhere and generating a crowd. Due to the fact that the printing and publishing industries are experiencing tremendous improvements in their fields, even today's highly sought-after publications may become outdated tomorrow.

3. *Support for Multilingual Text* - It is anticipated that the digital library system would provide support for multilingual information within the various library operations. This is necessary to support operations including collection acquisition, preservation, management, and access to the digital collection. Another problem is keeping such information and papers digitally up to date.

4. *Technological Obsolescence* - The innovations in technology that enable digitalization are continually undergoing significant changes. Hardware, software, storage, and data formats for computer systems are all experiencing massive changes all the time. The loss of digital information occurs when supporting equipment in the backend become dated over time, rendering the digitized resources illegible.

5. *Copyrights* - When going through digitalization, copyright issues become more important issues for libraries to manage. Normally, the researchers use illustrations and data from books and journals without first getting permission from the appropriate party. Customers of digital libraries often request periodical issues and hardly accessible historical archives that do not fall within the library's copyright. Consumers are very dissatisfied with digitalization as a result of this worry.

3. METHODOLOGY

3.1.Research Method

The necessary data was gathered using a quantitative cross-sectional survey research approach to meet the study's goals.

3.2.Population

The population of this research was made up of staff members and patrons of specifically chosen digital libraries at higher education institutions.

3.3.Sampling and Information Gathering Techniques

120 participants were chosen using a stratified selection procedure among 300 staff members of chosen digital libraries. On the basis of a non-probability, convenience selection approach, 278 users of digital libraries were chosen. A well-structured survey was created for completion by users and employees of digital libraries.

3.4.Data Analysis Methods

The Statistical Package for Social Sciences (SPSS) variant 20 application programming program was utilized to assess the information whenever it had been assembled. Concerning the specific points we have examined, this exploration utilized enlightening information investigation methods, including tables, outlines, and diagrams, other essentially grasped configurations of reports, rates, and recurrence dispersion.

4. RESULTS AND DISCUSSIONS

4.1.Platforms for Digital Libraries

To lie out internet based computerized libraries, the Advanced Library the board programming (DLMS) offers an easy to use, configurable engineering. With the assistance of these foundations/associations, specialists might share their exploration, papers, or some other computerized material for advanced thing conservation and worldwide conveyance.

D-Space is joint effort between the MIT Libraries and HP Labs, claims. A computerized resource the board framework empowers associations like libraries to assemble, safeguard, record, and offer the local area's scholar and scholarly undertakings. It was made by MIT utilizing different advances, and its principal intention is to gather bibliographic information with respect to books, articles, theories, and expositions. D-Space might be changed to meet different local area necessities. There is implicit framework interoperability, and the metadata design conforms to worldwide norms. D-Space is an open source innovation stage that might have its elements extended.

D-space and Green Stone stages are used in a couple of computerized libraries, as displayed in Table 1 beneath tending to the sorts of advanced library stages utilized in the library. In any case, most advanced libraries at specific colleges utilize the D-space open source structure. The UNECA (Joined Countries Monetary Commission of Africa) and African Association advanced libraries, individually, utilize the E-Print and Be-press computerized library frameworks.

Table 1:several platforms for digital libraries

Platforms	Institutions
D-Space	AAU, JU, BDU, UOG, UNECA, AU
Greenstone	AAU, HU, ENALE, ASTU, HRU
Be-press	AU
E-print	UNECA

As per, these organizations additionally incorporate programming prominence pointers, which help purchasers in picking the best candidate As indicated by the review, open source licenses, practical modules, stable deliveries, high designer and client local area joint effort, intuitive UIs, having point by point and exceptional documentation, and simplicity of establishment and support of the product are the determination rules for open source library programming.

As per the outcomes in Figure 1 underneath, intelligent UI was referred to by 22% of respondents as a

rule for picking the previously mentioned computerized library stage, which was trailed by full text openness of the product by 18% of respondents, and simplicity of establishment and upkeep by 17% of respondents.

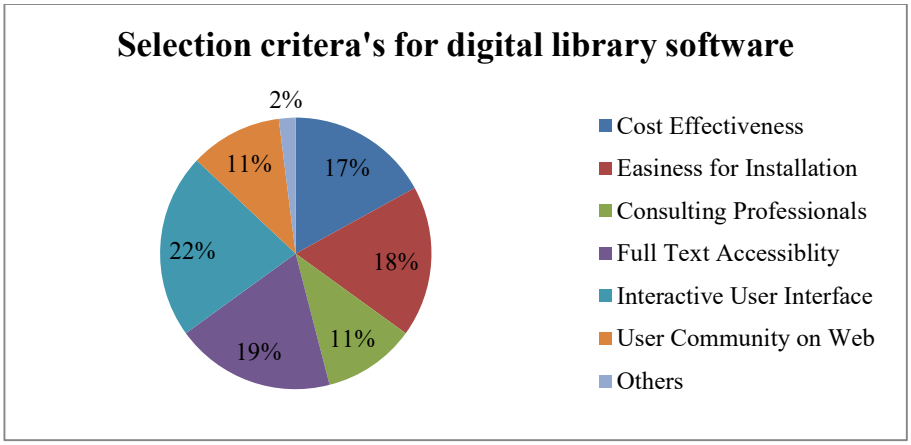

Figure 1: selection standards for the software platform for digital libraries

4.2.Kind of Digital Materials

As per the outcomes displayed in Figure 2 beneath, the most often digitized things were propositions and papers (64.94%), uncommon books (41.55%), diaries and different serials (40.25%), course materials (29.87%), verifiable records/files (19.88%), reports/government distributions (14.28%), varying media (14.14%), original copies (12.98%), photos (11.69%), fine art/ancient rarities (10.38%), and maps/old papers (7.79%).

As indicated by a concentrate by, scholastic organizations put an extremely high worth on computerized institutional assets such postulations, original copies, extraordinary monographs, research papers, and photos. The fundamental powers that will characterize libraries' aggregate fate as data suppliers to the scholarly world are joint effort, robotization, and the improvement of the advanced library, for further developing help conveyance on the side of educating and research.

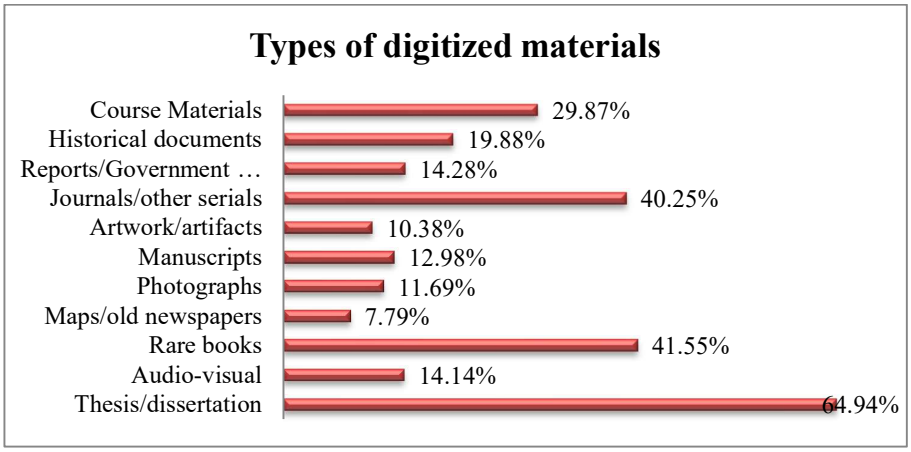

Figure 2: Types of digitized materials

The criteria for selecting items for digitization of collections, as outlined in a study [13], were admittance, backing of protection endeavors, assortment advancement, institutional and procedure benefits, exploration, and instruction. According to responses from the staff of a digital library, the most crucial factors in deciding which materials to digitize were academic and research purposes (70.12) and increasing accessibility (68.83%), followed by high user demand (57.14%), conservation of the materials (37.66%), and authentic and social worth (16.88%). The most un-significant component was the potential

for business or income age (11.68%).

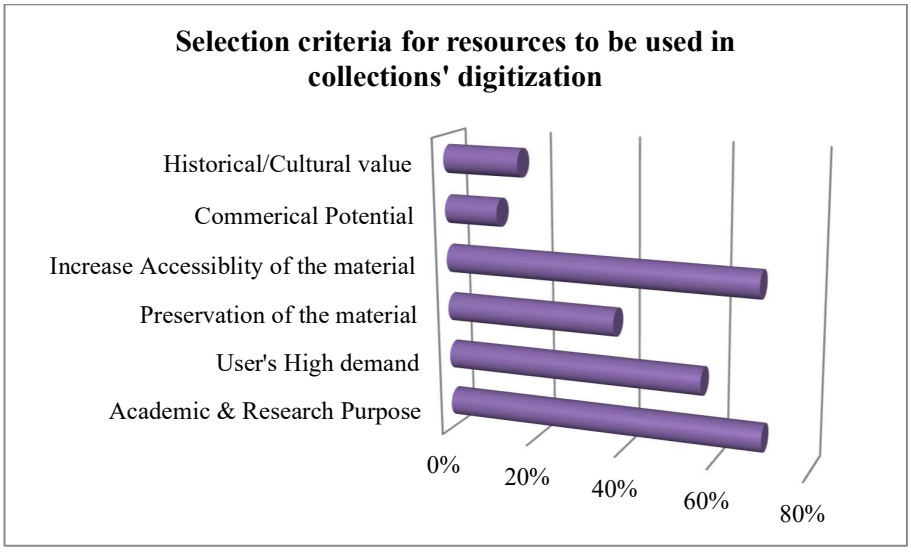

Figure 3: Selection criteria for resources to be used in collections' digitization

4.3.Digital Collections' Sources

Figure 4 below illustrates how various digital collections are distributed across a few chosen digital libraries for higher education institutions. Donations (24%) were the top source for the digital collections, followed by researchers or teachers (21%), the Internet (21%), purchases (18%), and from other institutions (16%).

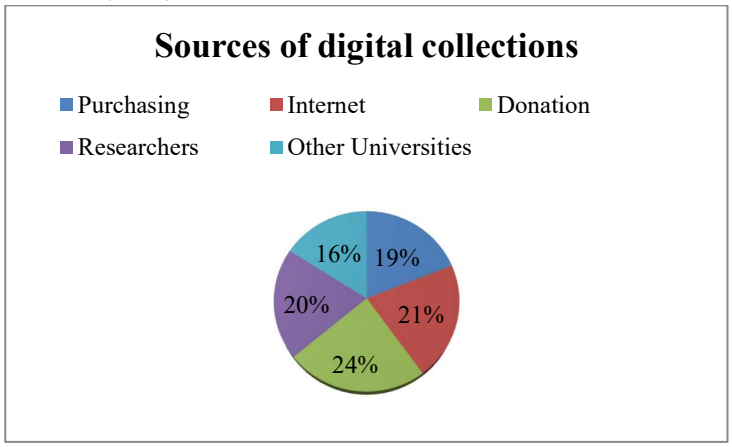

Figure 4: Digital Collections' Sources

Table 2: financing source for digitalization projects

Funding Organization	**Percentage (%)**
Ministry of Education	59.3%
Governmental & NGO's	37.0%
Others	3.0%
Total	**100.0%**

According to the data in Table 2, the Ministry of Education accounts for 59.3% of the funding for digital library activities at higher education institutions, while government organizations and non-profits (NGO's) account for 37.0%.

4.4.Partnership

A variety of internal collaboration-related topics are taken into consideration, such as cooperation inside the library administration, collaboration of scholastic libraries with resources, other help divisions, and understudies, combination and super assembly, the capability of contact/subject administrators, implanted librarianship, data proficiency, research backing, and participation on library designs and learning spaces. Inclusion of outer participation incorporates commitment with the local area, public and worldwide cooperation, joint obtainment, shared capacity, cooperative utilization of libraries, and local and regional collaboration.

According to Table 3 below, the majority of the digital libraries that were chosen (33.3%) collaborated with academic libraries for their digital library operations, which was followed by the International Network for the Availability of Scientific Publications (INASP). Unfortunately, there was no collaboration for digital library operations with private organizations.

Table 3: Partnership with other organization

Partner Organization	**Percentage (%)**
Ministry of Education	4.2%
Public Libraries	8.3%
Academic Libraries	29.2%
Special Libraries	4.2%
Voluntary Organization	4.2%
INASP	33.3%
Governmental & NGO's	12.5%
Others	4.2%
Total	**100.0%**

4.5.Considerations Regarding Intellectual Property and Copyright

The legitimate acknowledgment and security of lawful freedoms, like copyright, exposure, protection, vulgarity, and maligning issues, as well as less formal however similarly significant worries connected with the morals of sharing or conceding admittance to society or ethnographic materials is a critical part of computerized libraries.

Comparable examination for higher instructive establishments advanced libraries shows that, by and large, 18 (66.6%) of the foundations showed technicality in their thought of protected innovation/copyright issues, 3 (11%) of them communicated how they were pondering the issue, and the leftover 3 (11%) of the organizations believed that licensed innovation and copyright ought to have a place with the actual foundations for those records/chronicles in their possessions.

Most digital libraries in our research were treated as intellectual assets and copyright management throughout digitalization. The majority, 18 (66.6%) of institutions, showed levity in their consideration of intellectual property/copyright issues, and 3 (11%) of them made their considerations known.

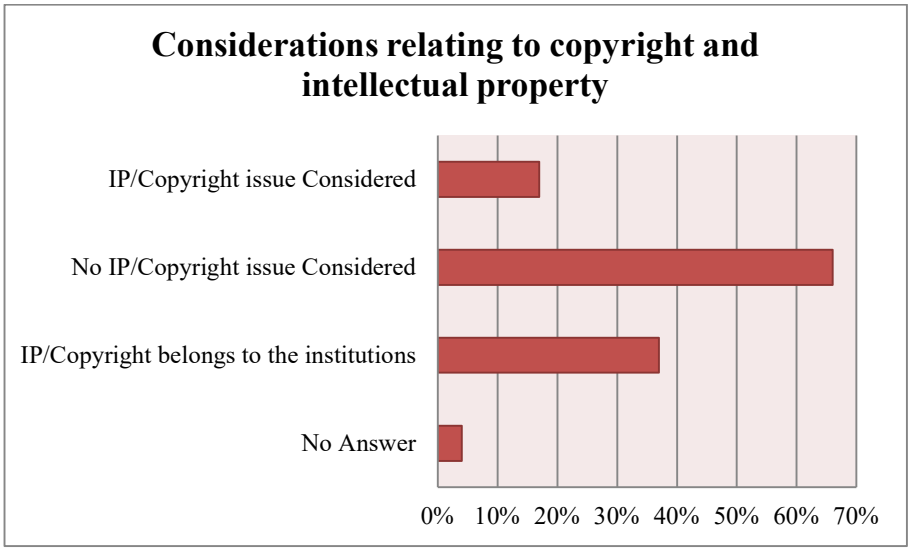

Figure 5: Considerations relating to copyright and intellectual property

4.6.Digital library users' response rate

The recurrence and extent of responders by instructive status are displayed in table 4 beneath. As per the outcomes, 109 respondents (65.5%) were graduate degree understudies, trailed by 23 (12.8%) clients with graduate degrees in artistic expression and 16 (8.9%) respondents who were PhD up-and-comers. The answers show that postgraduate understudies, scholastics, scientists, and college understudies are among the shoppers of internet providers and assets.

Table 4: Response rates for users of digital libraries by educational level

Education Status	Frequency	Percentage (%)
BA Degree	5	2.8%
BSC Degree	13	7.2%
MA Degree	23	12.8%
MSC Student	109	60.5%
MD Degree	3	1.7%
MPH Degree	3	1.7%
PHD	6	3.3%
PHD Student	16	8.9 %
Resident	6	3.3%
Total	**180**	**100.0%**

Figure 6 shows the recurrence and extent of responders per work type. As indicated by the outcomes, 125 (69.5%) of the respondents were understudies, trailed by 49 (27.5%) scholastic work force and 6 (3%), authoritative representatives.

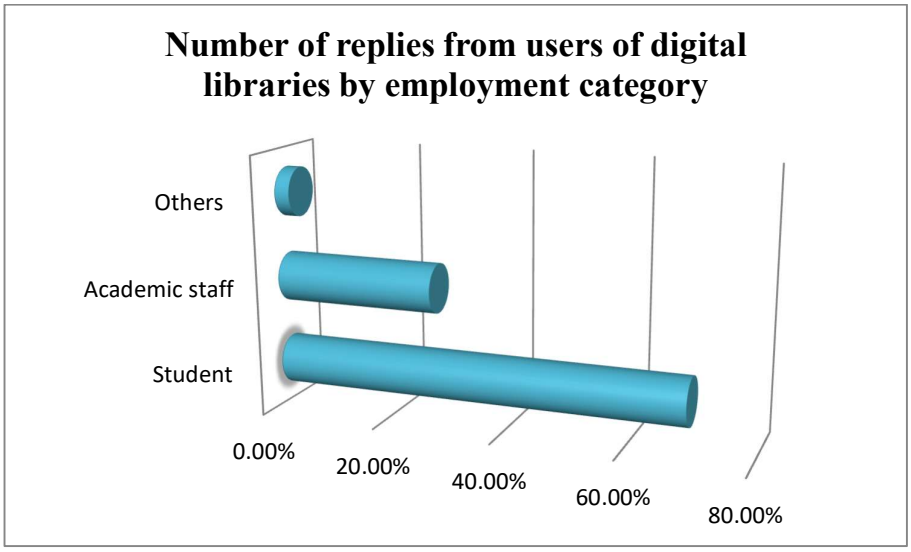

Figure 6: Number of replies from users of digital libraries by employment category

4.7.Advantages of online libraries

As per the outcomes in Figure 7 beneath, (52%) of respondents involved advanced libraries for the upsides of openness anyplace and whenever, trailed by (27%) of respondents for the benefits of getting to uncommon and costly assortments, and (17%) of respondents for the advantages of saving money on printing. The remaining respondents (4%) used digital libraries for various advantages.

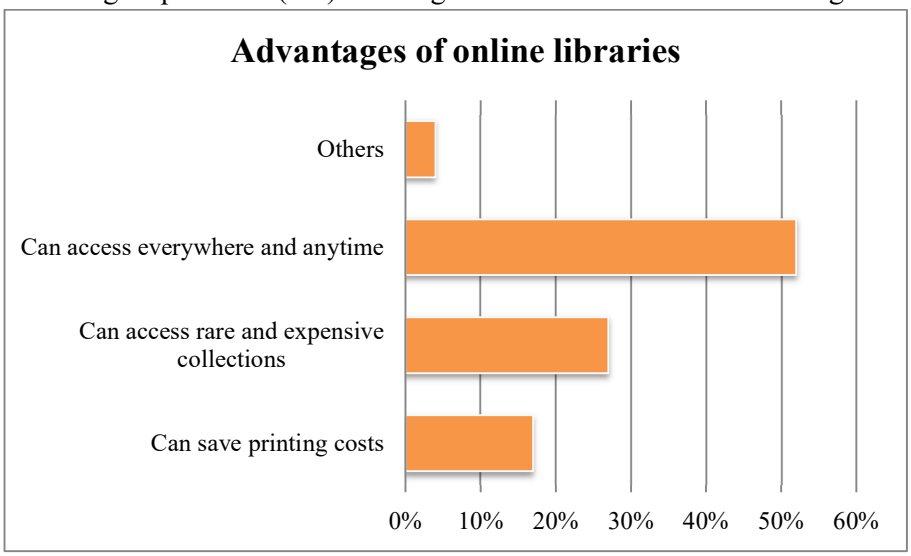

Figure 7: Advantages of online libraries

4.8.Issues With Accessing Digital Libraries

As per the outcomes in Table 5 beneath, joins not working was an issue for gaining admittance to advanced libraries for 85 (42.7%) of the respondents, trailed by 27 (15.0%) for awful nature of computerized assortments and 53 (29.4%) for low speed of web association. The excess 15 (8.3%) respondents stumbled into additional issues while attempting to get to the advanced library.

Table 5:types of issues that people experience while using digital libraries

Type of problems	Frequency	Percentage (%)

Low speed of internet connection	85	47.2%
Low quality of digital collections	27	15.0%
Links are not working	53	29.4%
Others	15	8.3%
Total	**180**	**100.0%**

Table 6: Hypothesis Testing

Statement	R-Value	Sign value	Accept/Reject
H0A: libraries do not have a significant impact on student learning outcomes and academic achievement in higher educational institutions and their implementation does not present any significant challenges or opportunities.	0.785	0.006	Reject
H1A: E-libraries have a significant impact on student learning outcomes and academic achievement in higher educational institutions and their implementation presents significant challenges and opportunities.	0.855	0.002	Accept
H0B: e-libraries do not have any impact on student learning outcomes and academic achievement, and there are no significant challenges or opportunities associated with their implementation.	0.712	0.008	Reject
H1B: E-libraries have a significant impact on student learning outcomes and academic achievement, and their implementation presents significant challenges and opportunities	0.963	0.001	Accept

Both the null hypothesis (H0A and H0B) and the alternative hypothesis (H1A and H1B) seem to be rejected based on the supplied statement and statistical results.

Thus, the research is consistent with the assumption that e-libraries significantly affect students' learning outcomes and academic success and that putting them into practice poses both considerable problems and potential. The statistical results indicate a strong and substantial correlation between e-libraries and student learning outcomes.

The results of this research therefore support the usage of e-libraries in higher educational institutions as a useful tool for raising academic success and learning outcomes for students. To fully realize the advantages of e-libraries in higher education, the difficulties connected with their implementation need also be addressed.

5. CONCLUSION

The outcomes showed that this study's investigation of latest things, issues, and prospects for computerized libraries in for institutions of higher education several digital libraries at higher education institutions utilize the D-space and Green Stone platforms. Nonetheless, the majority of digital libraries at certain chosen higher education institutions employ the open source platform D-space. The vast

majority of the picked computerized libraries in the review utilized stages with intelligent UIs, complete text openness, and simplicity of establishment and upkeep as their essential choice measure for organizations of advanced education the sort of assets being digitized and the determination rules that were utilized to pursue those choices was one more late improvement in specific computerized libraries. As per this, the recently digitized things in specific advanced libraries were, in dropping request, postulations and expositions, uncommon books, diaries and different serials, and course materials. The essential directing variables for the determination of the kind of assets being digitized in picked computerized libraries for higher instructive foundations were the scholar and exploration purposes, expansive openness of the substance, appeal of clients, and conservation of the materials. Gifts, scientists/educators, the web, and buys were the fundamental hotspots for the digitized assortments. The Service of Instruction, as well as state and confidential gatherings, offered help for computerized library drives. Most of the picked advanced libraries worked together on projects for computerized libraries with INASP and college libraries. Regardless of the numerous troubles experienced, the central concerns for computerized libraries were an absence of copyright and licensed innovation strategies, an absence of subsidizing to help advanced libraries, the contrariness of the product for computerized libraries with nearby dialects, and an absence of an arrangement, strategy, and systems for computerized libraries. The essential advantages of advanced libraries for advanced education organizations were record protection, broad report openness, support for e-learning frameworks, and worked on institutional participation.

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