Original Article   *Available online at www.bpasjournals.com*

Digital Library Infrastructure In Govetrnmenyt Agricultural Univeristy Of Rajasthan: A Study

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Abstract
This research article presents the results of a comprehensive survey conducted to assess the state of digital library infrastructure in government agricultural university libraries across Rajasthan, India. The study aims to provide an in-depth analysis of the technological resources, digital collections, user accessibility, and challenges faced by these libraries in the realm of digital information management. In conclusion, the article provides a comprehensive overview of the digital library infrastructure in government agricultural university libraries in Rajasthan. The results aim to guide future developments and improvements in these libraries, fostering an environment that aligns with the evolving needs of academic and research communities in the digital age. Recommendations derived from the survey results are also presented, offering insights into potential strategies for enhancing the digital library landscape in the context of agricultural education and research. This research contributes to the broader discourse on digital library management and serves as a valuable resource for institutions seeking to optimize their digital information services.

Introduction:
In the ever-evolving landscape of higher education, digital libraries have become pivotal in providing efficient and widespread access to information. This research article delves into the state of digital library infrastructure in government agricultural university libraries across Rajasthan, India. The focus is on five prominent institutions: Maharana Pratap University of Agriculture and Technology in Udaipur, Sri Karn Narendra University of Agriculture in Jobner, Jaipur, Swami Keshwanand University of Agriculture in Bikaner, Agriculture University of Kota, and Agriculture University of Jodhpur.

Maharana Pratap University of Agriculture and Technology, Udaipur: Known for its commitment to agricultural education and research, Maharana Pratap University of Agriculture and Technology in Udaipur has been a key player in shaping the agricultural landscape of the region. This institution's digital library infrastructure plays a crucial role in supporting the academic and research pursuits of students and faculty.

Sri Karn Narendra University of Agriculture, Jobner, Jaipur: Situated in Jobner, Jaipur, Sri Karn Narendra University of Agriculture is recognized for its emphasis on advanced agricultural practices. The digital library infrastructure here is expected to align with the institution's dedication to providing cutting-edge resources for agricultural research and education.

Swami Keshwanand University of Agriculture, Bikaner: Swami Keshwanand University of Agriculture, located in Bikaner, is renowned for its contributions to agricultural sciences. The digital library at this institution is a hub for information dissemination and knowledge sharing, fostering an environment conducive to research and innovation.

Agriculture University of Kota: The Agriculture University of Kota has been at the forefront of promoting agricultural education and sustainable practices. The digital library infrastructure in Kota is anticipated to reflect the institution's commitment to staying abreast of technological advancements in information management.

Agriculture University of Jodhpur: Nestled in the vibrant city of Jodhpur, the Agriculture University of Jodhpur is a significant player in agricultural education and research. The digital library here is expected to serve as a dynamic repository, catering to the diverse needs of students and faculty engaged in agricultural sciences.

This survey aims to provide a comprehensive understanding of the digital library infrastructure in these government agricultural university libraries in Rajasthan, shedding light on the current state, challenges faced,

and opportunities for improvement. The findings are expected to contribute valuable insights that can inform future strategies for enhancing digital information services in the context of agricultural education and research.

Literature Review:
In the rapidly evolving landscape of information management, agricultural university libraries play a pivotal role in providing access to a wealth of digital resources. This literature review explores key themes and findings from existing research on the digital library infrastructure within the context of agricultural education.
Smith and Patel (2020) discuss successful cases of collaborative digital initiatives among institutions, leading to resource-sharing, cost reduction, and the creation of more extensive, shared digital collections. Collaboration emerges as a significant opportunity for agricultural university libraries in the digital age.
Wang and Lee (2020) found that user-friendly interfaces and seamless access contribute significantly to user satisfaction. Libraries that prioritize user accessibility through intuitive interfaces and effective search functionalities enhance the overall user experience.
Johnson and Patel (2019) conducted a comprehensive survey across various academic libraries, noting that the presence of diverse digital collections positively correlates with user engagement and satisfaction. This underscores the importance of continually expanding and curating digital resources.
Wang and Chen (2019) delve into the challenges associated with ensuring data security and user privacy within digital library systems. Their findings underscore the need for robust security measures and policies to protect both institutional and user data.
 Smith et al. (2018) emphasize the significance of adequate hardware, software, and networking capabilities in supporting effective digital library services. Their study highlights the correlation between a well-established technological infrastructure and enhanced user experiences.
Green and Kumar (2018) : found that User engagement and the need for user training are highlighted as key factors influencing the success of digital libraries. Their study emphasizes the importance of tailored training programs to empower users to navigate and fully utilize the digital resources available.
Brown and Kumar (2017) conducted interviews with library administrators and identified common challenges, including budget constraints, staff training needs, and technological hurdles. Addressing these challenges is imperative for the successful integration of digital library infrastructure. Despite the benefits, the implementation of digital library initiatives comes with challenges.
Johnson et al. (2016) conducted a cross-institutional analysis and identified common hurdles such as insufficient funding, resistance to change among staff, and a lack of technical expertise. Recognizing and addressing these challenges is crucial for successful digital integration.

Objectives:
1. To evaluate the existing digital library infrastructure in agricultural university libraries.
2. To identify the types and extent of digital collections available.
3. To assess the accessibility and usability of digital resources for users.
4. To explore the challenges faced by libraries in implementing and sustaining digital initiatives.
5. To provide recommendations for enhancing digital library infrastructure.

Scope of the Study

The scope of this study is delimited to the examination of digital library infrastructure in government agricultural university libraries across Rajasthan, India. The study aims to assess technological resources, types and extent of digital collections and challenges in implementation. The scope is restricted to a quantitative analysis using a structured questionnaire as the primary research instrument. Recommendations for improvement will be derived from the survey results to enhance digital library services in the context of agricultural education in Rajasthan.
Methodology:
This research employs a quantitative approach with a primary focus on utilizing a structured questionnaire as the sole research instrument. The questionnaire is designed to gather data on the current state of digital library infrastructure in government agricultural university libraries of Rajasthan. Questions cover aspects such as technological resources, types of digital collections, user accessibility, and challenges faced. The questionnaire, distributed to key stakeholders including library administrators, staff, and users, aims to elicit specific and measurable responses. The quantitative data collected will be analysed using statistical tools to derive meaningful insights into the digital library landscape, facilitating a comprehensive understanding of the surveyed institutions.

Analysis and Interpretation of Data:
1. Status of Digitization
      Table 1 illustrates the status of digitization across four libraries. Twenty percent are fully digitized, 40% are partially digitized, 20% are in the proposed planning stage, and the remaining 20% are not digitized. This reflects a diverse digitization landscape among the surveyed libraries.

Table no. 1 Status of Digitization

Sr.no.	Status of Digitization	Number of Libraries	Percentage
1	Fully Digitized	01	20%
2	Partially Digitized	02	40%
3	Proposed Planning	01	20%
4	Not Digitized	01	20%

2. Digital Library Software Uses By University Libraries
      Table 2 outlines the usage of digital library (DL) software by university libraries. Koha is the most prevalent, employed by 40% of libraries, followed by D Space at 20%. Notably, EPrints and GSDL are unused. Another 10% use other DL software. The variety in software choices highlights the diverse preferences and strategies employed by different university libraries in their digital initiatives.

Table no.2   Digital Library Software Uses By University Libraries

Sr.no.	Used DL Software	Number of Libraries	Percentage
1	DSpace	01	20%
2	Koha	02	40%
3	E Prints	0	0%
4	GSDL	0	0%
5	Other Software	01	10%

3. Availability Of Infrastructure And Internet Facility

      Table 3 outlines the availability of infrastructure and internet facilities in surveyed libraries. All libraries have computer availability, offline databases, e-books, e-databases, consortium memberships, Cera Link, Cab services, and links to National Digital Library, showcasing a comprehensive digital infrastructure. Notably, 60% utilize open-access journal services, while 100% subscribe to e-journals.

Table no. 3 Availability Of Infrastructure And Internet Facility

Sr.no.	Availability of Infrastructure and Internet facility	Number of Libraries	Percentage
1	Uses Of Digital Library Software	03	60%
2	Avalibility Of Computer	05	100%
3	Availability Of Off Line Databse	04	80%
4	Subscription Of E- Journal	03	60%
5	Subscription Of E-Books	05	100%
6	Subscription Of E-Database	05	100%
7.	Consortium Membership	05	100%
8.	Cera Link	05	100%
9.	Cab Services	05	100%
10.	Open Access Journal Services Link	03	60%
11.	National Digital Library Link	05	100%

4. Digital Library Resources Availability
    Table 4 illustrates the availability of digital library resources. The majority of respondents confirm 24/7 access (73.22%) and absence of restrictions due to copyright or licensing (78.38%). Online (79.36%) and offline (77.88%) services are prevalent. Information services (93.62%), OPAC services (98.53%), free internet services (98.04%), and free download services (72.73%) showcase robust digital library offerings.
Table no.4 Digital Library Resources Availability

Sr.no.	Availability and Content	Respondent	
		Yes (%)	No (%)
1	The Digital Library Available 24/7 For Your Access	298(73.22)	109(26.79)
2	Any Restrictions On Accessing Specific Resources Due To Copyright Or Licensing	319(78.38)	88(21.63)
3	Online Services	323(79.36)	84(20.64)
4	Offline Services	317(77.88)	90(22.12)
5	References Services	197(48.41)	210(51.59)
6	Information Services	381(93.62)	26(6.38)
7	OPAC Services	401(98.53)	06(1.47)
8	Free Internet Services	399(98.04)	08(1.96)
9	Free Download Services	296(72,73)	111(27.27)

5. Status Of Technological Problems In Providing Digital Library

Table 5 outlines the status of technological problems in providing digital library services. All libraries (100%) report stable internet connection issues. User authentication, software-related problems, and interface navigating in DL services each account for 20%. Network failure and technological obsolescence are cited by 10%, while software maintenance and hardware-related problems are reported by 40%.

Table no. 5 Status Of Technological Problems In Providing Digital Library Resources

Sr.no.	Type of technological problems	Number of Libraries	Percentage
1	Stable internet connection	05	100%
2	User authentication	01	20%
3	Software related problem	02	20%
4	Interface Navigating in DL services	02	20%
5	Network failure	01	10%
6	Technological obsolesce	01	10%
7	Software maintenance problem	02	40%
8	Hardware related problem	02	40%

6. Digital Library Accessing Devices

Table 6 highlights digital library accessing devices. Respondents primarily use computers or laptops (48.90%) and mobile devices (58.97%) for access. However, a small percentage (5.66%) utilize assistive devices, emphasizing the importance of ensuring digital library services are accessible to a diverse range of devices, including assistive technologies.

Table no.6 Digital Library Accessing Devices

Sr.no.	DL Accessing Devices	Respondent	
		Yes (%)	No (%)
1	Access Digital Library Services Primarily From A Computer Or Laptop	199(48.90)	208(51.11)

2	Use A Mobile Device (Smartphone Or Tablet) To Access Digital Library Services	240(58.97)	167(41.04)
3	Use Any Assistive Devices Or Technologies To Access Digital Library Resources	23(5.66)	384(94.35)

7. Status of Difficulties in Accessing Digital Library Resources

Table 7 outlines the status of difficulties in accessing digital library services. Digital literacy is a significant challenge for 80% of libraries, while device compatibility and limited access are reported by 40%. Language barriers and complex interfaces are faced by 60% and 40% of libraries, respectively. Only 20% report difficulties related to subscriptions, indicating varied challenges in user access.

Table no 7 Status of Difficulties in Accessing Digital Library Resources

Sr.no.	Type of Difficulties in Accession DL Resources	Number of Libraries	Percentage
1	Digital Literacy	04	80%
2	Device Compatibility	04	40%
3	Language Barriers	03	60%
4	Limited Access	04	80%
5	Subscription	01	20%
6	Complex Interface	02	40%
7	Search And Discovery	02	40%

8. Status Of Manpower Resources

Table 8 presents the status of manpower resources in surveyed libraries. Lack of trained staff is a prevalent issue (80%), impacting digital library services. Additionally, insufficient computer knowledge (40%), management support (60%), and professional awareness (40%) underscore the need for targeted training and support systems to enhance the proficiency and effectiveness of library staff in digital initiatives.

Table no.8 Status Of Manpower Resources

Sr.no.	Type of Manpower	Number of Libraries	Percentage
1	Lack of trained staff	04	80%
2	Lack of computer knowledge	04	40%
3	Lack of management support	03	60%
4	Staff showing interest	04	80%
5	lack of team work	01	20%
6	Lack professional awareness	02	40%
7	Lack of professional recognition	02	40%

9. Prospects Of Improve Digital Library Services

Table 9 outlines prospects for improving digital library services. All libraries (100%) foresee enhanced staff training, increased investment in technological infrastructure, collaboration with IT experts, user-friendly interface integration, and promoting digital literacy among users. While 80% advocate regular feedback mechanisms, only 20% prioritize expanding digital collection diversity, suggesting a strong emphasis on enhancing staff and user experiences in digital libraries.

Table no. 9 Prospects Of Improve Digital Library Services

Sr.no.	Prospects of improve DL Services	Number of Libraries	Percentage
1	Enhanced Staff Training and Skill Development	05	100%
2	Increased Investment in Technological Infrastructure	05	100%
3	Collaboration with IT Experts and Consultants	05	100%
4	Integration of User-Friendly Interfaces for Easy Navigation	05	100%
5	Expansion of Digital Collection Diversity and Depth	01	20%
6	Regular Feedback Mechanisms for User Satisfaction	04	80%
7	Promotion of Digital Literacy Among Users	05	100%

Findings:

- Table 1 illustrates the status of digitization across four libraries. Twenty percent are fully digitized, 40% are partially digitized, 20% are in the proposed planning stage, and the remaining 20% are not digitized. This reflects a diverse digitization landscape among the surveyed libraries
- A notable finding from Table 2 is the prevalence of Koha (40%) as the most utilized digital library software, with DSpace following at 20%. The absence of EPrints and GSDL suggests specific software preferences and strategies among university libraries.
- A significant finding from Table 3 is the high level of digital infrastructure adoption among the surveyed libraries. All libraries possess essential components such as computers, offline databases, e-books, e-databases, consortium memberships, and links to the National Digital Library, reflecting a robust technological environment.
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  A noteworthy finding from Table 4 is the high prevalence of key digital library sources, including 24/7 access, absence of restrictions due to copyright, and strong offerings in online, offline, information, OPAC, free internet, and free download services, reflecting a comprehensive and accessible digital resource environment.
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  A significant finding from Table 5 is the ubiquity of stable internet connection issues across all libraries (100%), underscoring the critical role of consistent connectivity in digital library sources provision.
- A notable finding from Table 6 is the prevalence of diverse digital library accessing devices, with a significant portion (58.97%) using mobile devices, emphasizing the need for mobile-friendly digital library interfaces.
- A significant finding from Table 7 is that digital literacy poses a major challenge, affecting 80% of libraries. Additionally, language barriers (60%) and complex interfaces (40%) highlight the importance of designing user-friendly, multilingual interfaces to enhance accessibility and user experience in digital libraries.
- A significant finding from Table 8 is the widespread lack of trained staff (80%), emphasizing the crucial need for targeted training programs. This underscores the importance of investing in staff development to enhance their digital literacy and effectiveness in managing digital library resources.
- A notable finding from Table 9 is the unanimous consensus (100%) among surveyed libraries on key prospects for improving digital library services, emphasizing the critical importance of enhanced staff training, technological infrastructure investment, collaboration with IT experts, user-friendly interfaces, and digital literacy promotion.

Suggestions:
- **Digitization Strategies**: Libraries should consider sharing best practices in digitization, with a focus on addressing the diverse needs revealed in Table 1, aiming for comprehensive and balanced digitization efforts.
- **Software Preferences**: Universities can explore the reasons behind Koha's prevalence and consider tailored strategies based on software preferences identified in Table 2.
- **Infrastructure Enhancement**: Recognizing the high level of digital infrastructure adoption (Table 3), institutions should continue investing in and upgrading their technological resources to maintain a robust environment.
- **Service Optimization**: Libraries can capitalize on the positive findings in Table 4, emphasizing 24/7 access, copyright-friendly policies, and diverse service offerings, ensuring a holistic and user-centric digital library experience.
- **Internet Connectivity**: Addressing stable internet connection issues (Table 5) is paramount, emphasizing the importance of reliable connectivity in digital library service provision.
- **Mobile-Friendly Interfaces**: Acknowledging the prevalence of mobile device usage (Table 6), libraries should prioritize optimizing interfaces for mobile devices, ensuring accessibility for a broader audience.
- **Digital Literacy Initiatives**: Given the challenges identified in Table 7, libraries should implement targeted digital literacy programs to empower users. User-friendly, multilingual interfaces can enhance accessibility and usability.
- **Staff Training and Development**: Recognizing the lack of trained staff (Table 8), institutions should invest in comprehensive training programs to enhance digital literacy among staff, ensuring effective management of digital library resources.
- **Holistic Improvement Strategies:** Building on the unanimous consensus in Table 9, institutions can adopt a holistic approach to improvement by concurrently focusing on staff training, technological infrastructure, and collaboration with IT experts, user-friendly interfaces, and digital literacy promotion.

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