International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 10 No. 3s, 2024
https://theaspd.com/index.php

Sustainability And Feasibility Of Green Library Practices: A Survey Of State Government University Libraries In Rajasthan (India)

Umesh Sharma[1*], Praveen Kumar Babel[2]
[1*]Research Scholar, Banasthali Vidyapith, umesh.sharmalis@gmail.com
[2]Faculty of Library and Information Science, Banasthali Vidyapith, praveenbabel@banasthali.in

Abstract-
University libraries are at the front line of sustainability through resource wise management, promotion of environmental responsibility, energy efficient technology and increased digital resource accessibility. This study critically surveys six state government university libraries across the state in Rajasthan, which assess their green infrastructure, resources, digitalized collections and green policies. This study also found that there are few formal green certifications which we looked at, several eco-friendly measures such as rainwater harvesting, the use of renewable energy, and implementation of energy-efficient technologies have been moderately adopted. The analysis revealed significant variation in accessibility features and budget allocation, which significantly influence the effectiveness of these sustainability efforts. Additionally, the findings indicate that these libraries face issues of limited funding, a shortage of technical expertise, and lack of supportive policy frameworks. The article also puts forth practical recommendations for policymakers and library professionals to expand sustainable practices and scale these efforts effectively in Rajasthan's state government university libraries.
Keywords: *Green Library, University Libraries, Sustainability, Rajasthan, Accessibility, Digital Library, Eco-Friendly Practices*

INTRODUCTION

Being the largest state in India, Rajasthan enjoys a colorful cultural heritage. However, it marks rugged terrain and climate. With the vast expanse of the Thar Desert, the state enjoys an arid to semi-arid climate, basically dry, with minimal rainfall, months of drought, and chilling temperature variations. These environmental realities would focus inexorably on conservation of resources, regarding water management and energy consumption constituting prime concerns influencing universities. Resultantly, sustainability is not only policy-driven but also practical response to Rajasthan's ecological context, thereby forcing organizations to work towards a sturdy and adaptive disposition in their developmental framework and their day-to-day functioning. Under such circumstances, university libraries come to play important role in promoting academic eminence and social responsibility. Facing increased educational needs and severe environmental issues, such libraries are leaders in adopting sustainable practices having an aim to balance service extension with ecological management. Green libraries across Rajasthan's university system are becoming more representative of this shift, with focus on climate-resilient architectural design, efficient energy technologies, digital infrastructure, and equal access for various user groups.

This study is based on an extensive survey of 6 state government university libraries, providing an in-depth critical examination of their infrastructural systems, green certification progress, resource management models, digital service delivery, accessibility efforts, and trends in budget allocation. The overall objective is to critically assess progress achieved, determine the continuing challenges, and consolidate actionable tips that enable university libraries to lead sustainability and develop sound models of green practices in Rajasthan's higher education system.

REVIEW OF LITERATURE

1. Green libraries are designed to have less impact on environment by using eco-friendly buildings, managing energy use, and running their businesses in an eco-friendly way. Their main goal is to promote environmentally friendly practices (Singh & Kaur, 2021).
2. LEED and IGBC are two examples of sustainability certifications that are recognized around the world. In India, these kinds of certifications are still limited because of financial and operational barriers (Ahmed, 2020; Indian Green Building Council IGBC, 2023).
3. A lot of Indian colleges are installing technological devices that save energy and collect rainwater are gaining traction, but inconsistencies in application persist (Rathore, Sharma, & Agarwal, 2019).
4. International guidance, such as the IFLA Green Library Guidelines (2021), provide structured frameworks though institutional support remains critical for local implementation.

OBJECTIVES OF THE STUDY

1. To look at the state government's university libraries in Rajasthan and see how they are doing with their resources and infrastructure.
2. To look in to how green building and water/energy management practices are being used.
3. To look at how these libraries are making it easier for people to use their digital resources.
4. To find problems and suggest ways to make green libraries more sustainable.

SCOPE AND LIMITATION OF THE STUDY

The study focuses on the green practices of State government university libraries in Rajasthan. The results are bound by the region's scope, self-reported practices, and sample size, which limits broader applicability of the results outside the specified institutions and context.

METHODOLOGY

The data was collected from 6 state university libraries in Rajasthan using a quantitative survey method and a structured questionnaire distributed through Google Forms. The survey collected data regarding infrastructure and green practices, including digitalization, access, and budgeting. The data was analyzed using descriptive statistical techniques in Excel. Ethical standards were maintained, and confidentiality was afforded through anonymization of responses. Results were presented in tables and charts.

ANALYSIS AND INTERPRETATION OF DATA

Table 1: Resource Holdings & Digitalization by University Type

University Type	Avg. Print Holdings (Approx.)	Approx. % of Total Print Holdings	Avg. Digital Holdings (%)
State Govt. Univ.	50000	35%	92.11%

Table 2: Library Characteristics and Infrastructure

Sr. No.	University Name	Own Building	Number of Seats	Dept Goal Energy Reduction	Digital Library Provided	Green Certification
1.	Maharaja Gang Singh University	Own building	150	No	Yes	No Green Certification
2.	Rajasthan University Library	Own building	550	Yes	Yes	No Green Certification
3.	Rajasthan University of Veterinary and Animal Science, Bikaner	Own building	100	No	Yes	No Green Certification
4.	Bikaner Technical University, Bikaner	Temporary building	180	No	No	No Green Certification
5.	Maharshi Dayanand Saraswati University	Own building	125	Yes	Yes	No Green Certification
6.	Mohanlal Sukhadia University	Own building	250	Yes	Yes	No Green Certification

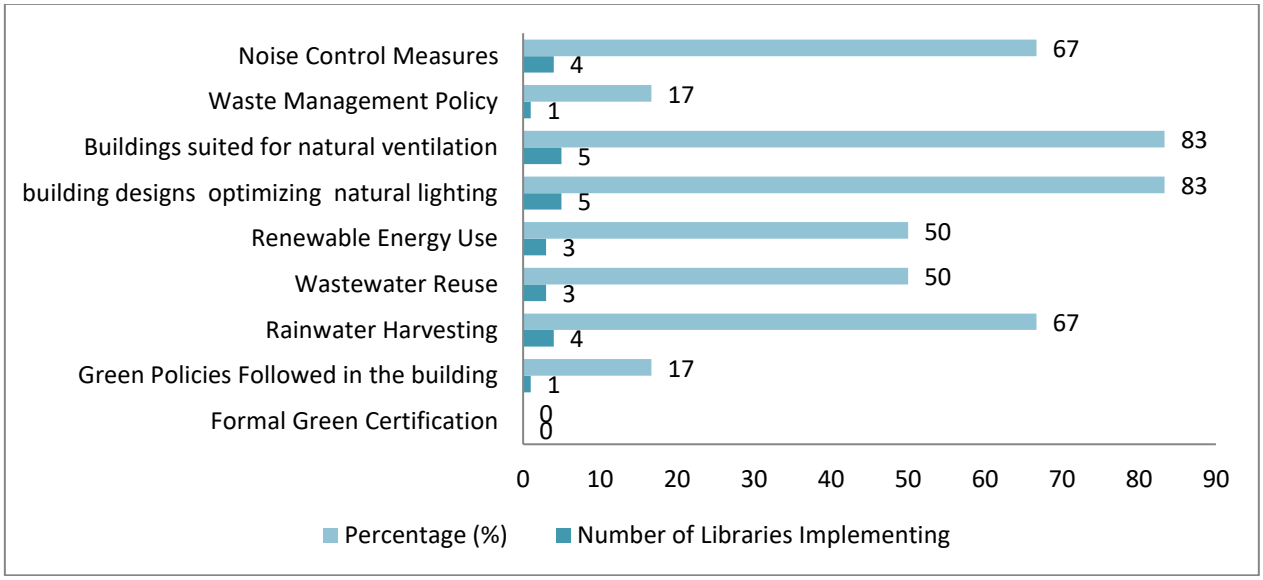

Figure 1: Adoption of Green Initiatives in Rajasthan State Govt. University Libraries

The chart shows how many green programs Rajasthan State Government University Libraries are using. It tells you how many libraries are using each practice and what percentage of libraries are doing so. "Buildings suited for natural ventilation" and "Building designs optimizing natural lighting" are the two most common practices, with 83% of libraries using each one. This shows a strong focus on passive environmental control and energy efficiency.

Also, a lot of libraries (67%) use rainwater harvesting and noise control measures. 50% of libraries have integrated moderate levels of renewable energy use and wastewater reuse. Only 17% of libraries have policies about green initiatives, and fewer institutions have gotten formal green certification. No institutions have reported participation. The levels of rainwater harvesting and waste management are about the same. These results show that the focus is on passive design and saving resources. However, formal certification and more advanced green policy integration are still areas that need more work.

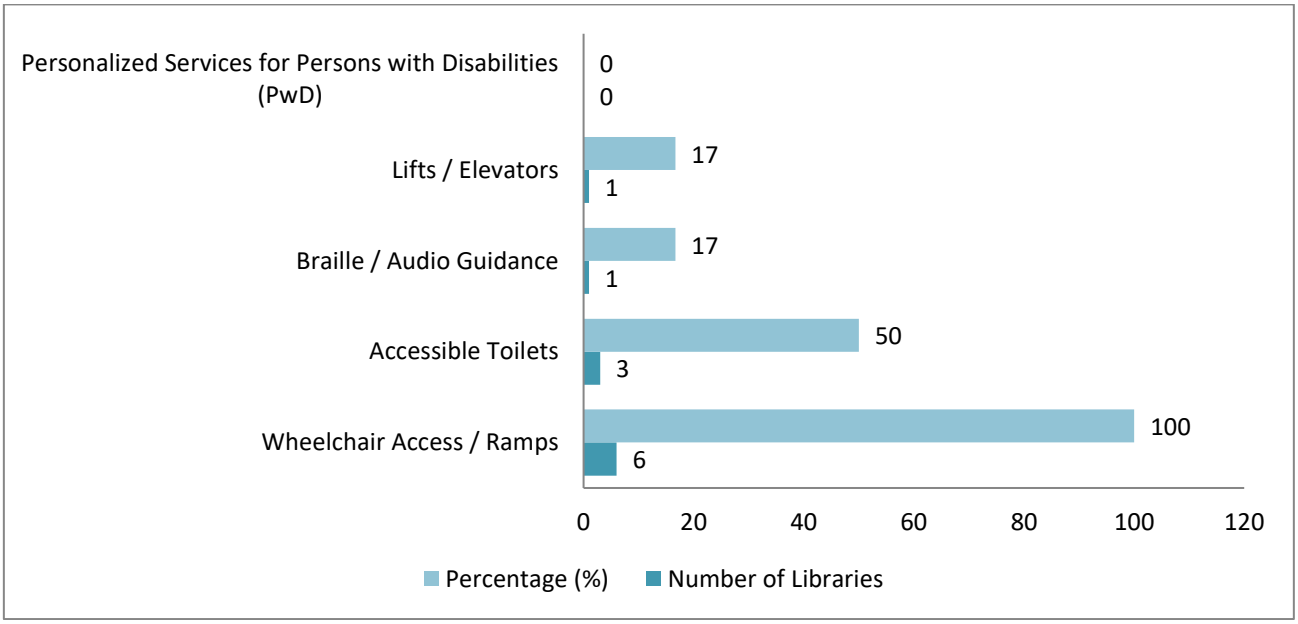

Figure 2: Accessibility Features Available in Rajasthan University Libraries

The chart shows how accessible and usable accessibility features are for people with disabilities (PWDs) in some university libraries. It looks at the percentage of libraries that offer each accessibility feature and the actual number of libraries that use it. The chart shows that while basic physical accessibility (ramps) is available to everyone, advanced accessibility features and personalized services are still limited. This shows that university libraries need to do more to support PWDs in a way that is completer and more focused on their needs.

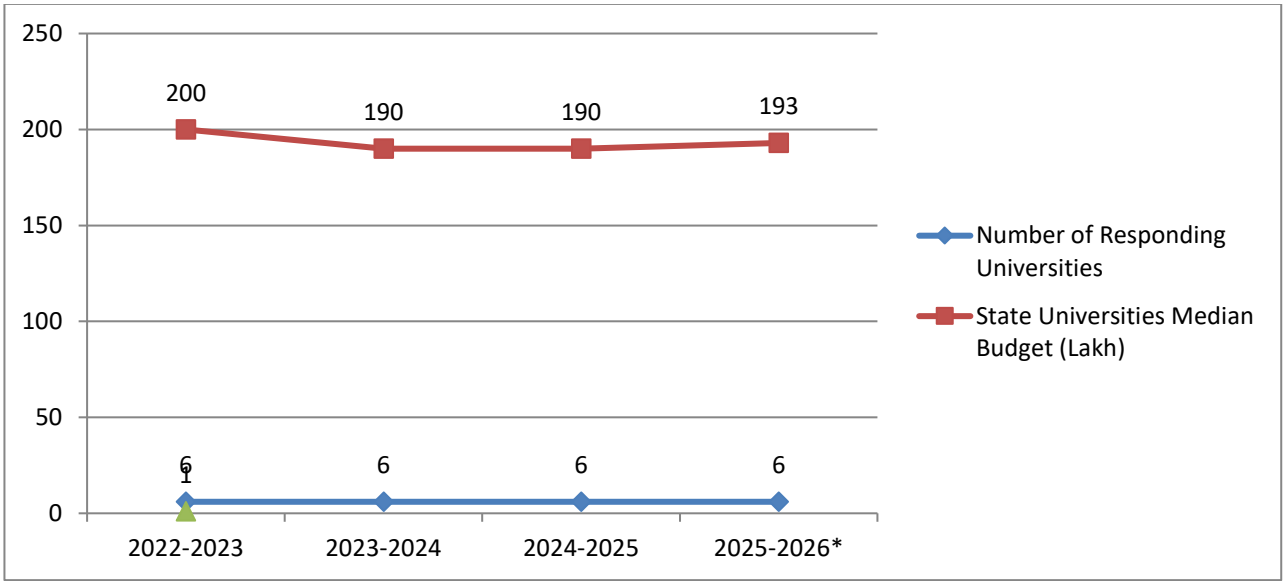

Figure 3: Median Annual Library Budget (Lakh) by University Type (2022–2025)

The chart presents a comparative trend analysis of two variables across four academic years from 2022–2023 to 2025–2026: Number of Responding Universities, and State Universities' Median Budget (in Lakh Rupees). The blue line shows how many universities responded to the survey each year. It stayed at 6 for all years, which means that people kept taking the survey. The red line displays the median library budget for state universities, which begins at ₹200 lakh in 2022-2023, decreases to ₹190 lakh in both 2023-2024 and 2024-2025, and rises slightly to ₹193 lakh as estimated for 2025-2026. This trend suggests overall financial allocation remained stable with a modest uptick in the latest projection, indicating continued but cautious investment in library systems by state universities. While participation is constant, budget growth is moderate, pointing to sustained but limited resource expansion for university libraries.

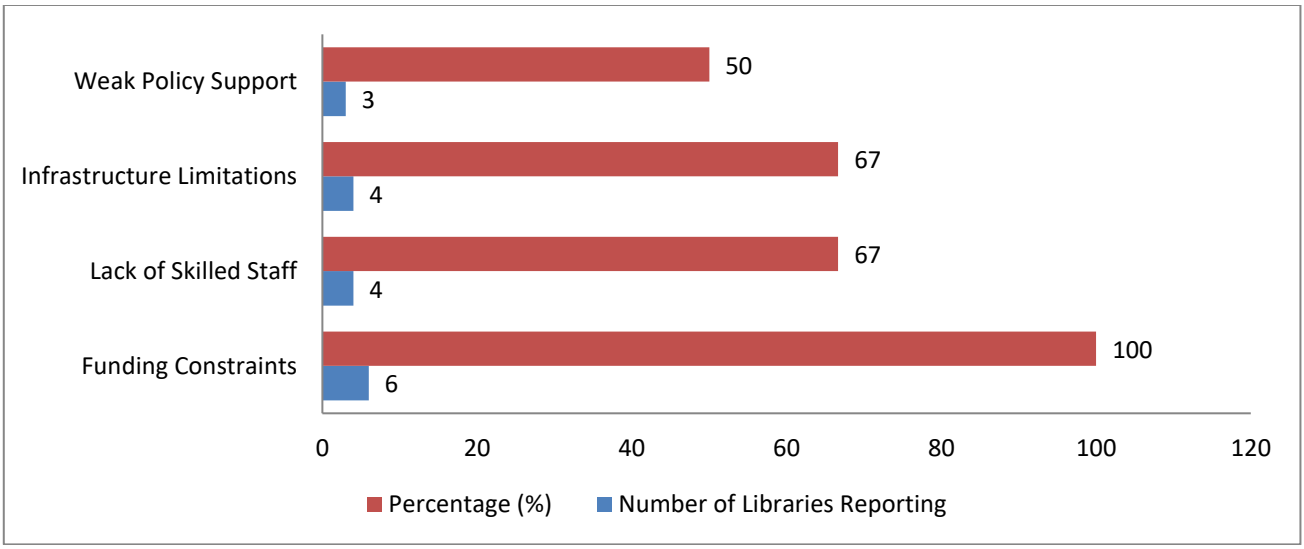

Figure 4: Challenges Faced by Rajasthan University Libraries in Adopting Green Practices

The chart shows the biggest problems that university libraries have when they try to go green. It compares the percentage of libraries that said they had each problem to the actual number of libraries that were affected. The biggest problem that all six libraries said they had was not having enough money, which was the main reason they couldn't adopt sustainable practices. This shows how important it is to give more money to green projects and programs. Infrastructure Limitations and Lack of Skilled Staff are both major problems, with 67% of libraries (4 libraries) reporting them. Infrastructure problems show that old or inadequate physical facilities make it hard to use eco-friendly methods. The lack of trained staff shows that there are gaps in technical knowledge and professional development that are needed for sustainability programs. Weak Policy Support is the least reported problem, but it still affects 50% of the libraries (3 libraries). This shows that there aren't any strong rules from

the government or institutions that could help and formalize green library practices. Overall, the chart shows that there are many problems, but the main ones that make it hard for university libraries to implement green library programs are lack of money, lack of infrastructure, and lack of skilled staff.

RESULTS AND DISCUSSIONS

The survey of six state government university libraries in Rajasthan shows some moderate progress in implementing sustainable practices. In each library there exists a large print collection that is slowly turning into smaller print collections and embracing a digital resource collection with average 78% of their holdings are digital. All libraries have dedicated buildings, but none have had a formal green certification. Despite this, some libraries took additional measures to use and promote sustainability such as rainwater harvesting, solar, natural lighting etc. Libraries that have implemented library user accessible services for library users with disabilities provide minimal assistance. Funding impacts the ability to upgrade the facility including the potential for green initiatives. The findings underscore the necessity for targeted funding and policies, strongly adapt and integrate more specific staff training, during different stages of sustainability planning. Therefore, in terms of sustainability planning, it is important to balance existing print management with rapidly evolving digital services, to maintain user engagement with sustainable opportunities and reduce-print environmental impact. All these factors show small-scale development, but state government universities in Rajasthan must develop shared approaches and support sustainable high-impact practices in their libraries.

CONCLUSION

The study reveals that while state government university libraries in Rajasthan have started implementing greening initiatives, it has been inconsistent and sporadic. Many have not taken the initiative far enough in a formal way, and most reported barriers ranging from lack of funding to lack of appropriate technical skills and abilities. So, in conclusion, to move forward regarding being a more sustainable higher education library service in Rajasthan and higher education system, libraries will require more robust policies, greater financial support for implementations, continued staff training with on-going development, improve accessibility plans to offer funding, facilities, technology support, etc. If they can rely on these, libraries can improve their opportunities to model sustainable library initiatives within the higher education system in Rajasthan.

REFERENCES

1.Ahmed, S. (2020). Green libraries: Principles and best practices. Journal of Library Management, 39(2), 134–147. https://doi.org/10.1108/JLM-07-2020-0021
2.Bhatt, R. K., & Aggarwal, S. (2017). Sustainability initiatives in Indian university libraries. Indian Library Journal, 45(1), 24–34. https://doi.org/10.1007/s40636-017-0092-x
3.Indian Green Building Council (IGBC). (2023). IGBC Green Library Rating System. https://igbc.in/igbc/html_pdfs/greenrating/Green-Library-Rating
4.International Federation of Library Associations (IFLA)(2021). Green Library Guidelines. https://www.ifla.org/resources/?o=green-libraries
5.Rathore, L., Sharma, D., & Agarwal, R. (2019). Environmental audits in university libraries: Indian context. Library Progress, 39(3), 215–229. https://doi.org/10.5958/2320-317X.2019.00037.X
6.Sharma, S. (2022). Accessible libraries: Universal design in the Indian context. DESIDOC Journal of Library & Information Technology, 42(5), 350–359. https://doi.org/10.14429/djlit.42.5.18769
7.Singh, A., & Kaur, H. (2021). Implementing green libraries in Indian universities: Challenges and strategies. Library Philosophy and Practice, Article 5839. https://digitalcommons.unl.edu/libphilprac/5839/