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Green library initiative in Nigeria: Insights and levels of implementation in academic libraries

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Abstract

Evolution is one recurrent phenomenon that affects almost every facet of human endeavour. Libraries have had their own share in many ways. The green library concept, although, a relatively new-sprung initiative, have not been given full attention. The understanding of librarians, and the levels of adoption of the green library concept in Nigeria is reported herein. The descriptive survey approach was used. Results showed that librarians have the right perception about the concept, and have implemented or currently translating their policies, practices, and services in compliance with environmental sustainability objectives. However, much more needs to be done as the libraries also have not sufficiently engaged in climate change sensitization activities with patrons or their immediate community. The libraries do not collect rain water, recycle paper or reduce the use of plastics as stipulated. In implementing the initiative, low awareness, poor funding, lack of collaboration with environmental agencies among others have bedeviled their efforts. The establishment of a Nigerian Green Building Council (NGBC) for building standardisation with the support of the Nigerian Library Association is thus recommended for on-the-spot redesigning of already built antique libraries. It is also pertinent to begin inspiring green architectural projects especially for newly proposed library buildings.

Keywords: Green library, concept implementation, academic libraries, environmental sustainability, librarians' perspectives

Introduction

Climate change and environmental sustainability has always been mundane topics of discourse in the recent times. In the past two or three decades, the world has experienced several significant socio-cultural and behavioural changes. The industrial (technological) revolution which accompanied climatic vicissitudes have prompted the need for building constructions and social interactions to be eco-friendly and sustainable. Libraries as information centers and service providers should not be left out. Compliance to environmental practices must start from the knowledge hubs (-the libraries) cascading down generations and strata of learning from faculty to student users. Invariably, librarians are the custodians of this knowledge as well as its transmission process. Libraries must be part of the campaign that supports climate mitigation by way of attuning their structural units and activities that can promote and uphold environmental sustainability. This should be their contribution to having a better and healthier environment. Three key responsibilities have been placed in the hand of libraries; green buildings, green services and green practices (Sahavirta, 2018; Choudhury, 2019) and fulfilling these responsibilities can be adjudged as libraries contribution to climate action (Antonelli, 2008). The formation of the 'green library movement' in the 1990s (Ingole & Kumari, 2021) was the onset of this attempt.

A green library is a library where spaces within the library are carefully designed to contribute to environmental sustainability, while its technology, services and management are climate friendly with the aim of minimizing the negative impact of climate change on the environment (Daimari 2018). Making a library 'green' is another way of marketing or publicising the library to potential patrons (Sangita, 2014). With the growing concerns on the negative impact of climate change, buildings and managerial practices across the globe are expected to address this challenge by drifting toward 'greenness' (Qutab, Ali and Ullah, 2016). Although it remains an widespread, emerging and evolving concept, a green library is essential to the health of library users and the planet as a whole (Kulkarni, 2018; Pagore & Chalukya, 2022) . The green library is sometimes referred to as eco-library, 'environmentally responsible' and/or climate neutral library where all activities, collections, actions, and programs are green-conscious (Stoss,

2010; Aulisio, 2021). In the words of Parmar and Kamdar (2021), greening an existing library is definitely perfect way of joining the green library movement if its not a new building.

Library users are also important stakeholders in the green library initiative since they play a crucial role in the implementation process (Mwanzu et al. 2022). Libraries must encourage them to participate in conferences, symposiums and workshops on environmental sustainability and also create the awareness. There is already a clamour to move from being green libraries to sustainable libraries (Sahavirta, 2018), it is however no clear if Nigerian libraries have even adopted and implemented the much preached green library initiative since the 1990s. It is the duty of libraries to not only promote environmental sustainability but to implement it starting with the library structure and management process (Pagore & Chalukya, 2022). Compliance and implementation of the green library concept has been ongoing in many libraries in developed and developing countries like India (Daimari 2018, Mohapatra, 2020; Ingole & Kumari, 2021), Asia (Qutab, Ali and Ullah, 2016), USA (Stoss, 2010; Aulisio, 2021), Kenya (Mwanzu, 2022, Mwanzu et al. 2022), United Kingdom, The Netherlands, and Singapore (Vasanthi, 2019). However, there is still dearth of information for Nigeria despite the importance of the initiative. This paper survey librarian and library's position on green library and its level of implementation. Its also tries to elicit information on library services and activities that green-complaint.

Research Questions

- 1: What opinions do librarians hold on the issue of sustainable green libraries?
- 2: What is the extent of implementation of green library agenda in terms of building infrastructure?
- 3: Are the information services, sources and products green-compliant?
- 4: What climate friendly practices have libraries adopted?
- 5: are there any constraints with the green library implementation efforts?

Methodology

In answering all research questions, the following methodology was adopted. The study was made survey of descriptive type using a total of 210 librarians (6 to 12 persons per library) from 18 libraries in 18 tertiary institutions in selected southern states (Imo, Delta, Ekiti, Rivers, Anambra and Lagos) of Nigeria. The librarians and academic libraries (college, polytechnic and university) were randomly selected from each states. A questionnaire was constructed after review of relevant literature from Sahavirta (2016), Daimari (2018); Vasanthi (2019), Vaja & Sharma (2020), Mwanzu (2022), David, Ramachandran, Pillai & Franklin (2022) and Mwanzu, Bosire-Ogechi & Odero (2022). The items also followed the specifications (LEED - Leadership in Energy and Environmental Design) laid out by the U.S. Green Building Council of 1993. In response to the research questions, the questionnaire was sectionalised based on demographic attributes, opinions of librarians on green concept, adopted(-able) green buildings, eco-friendly practices, and implementable environmental conscious service, and lastly challenges faced. Libraries were also observed physically to see if responses corresponded with what is seen on ground with respect to library building. The questionnaire was checked for internal consistency and was validated by experts before been administered to respondents. Data was analysed descriptively. A criterion mean of 2.0 was used to determine the level of acceptance or rejection of an item or all items in a section since a three point Likert scale was used rate responses.

Results

A total of 184 questionnaires were returned making it 88% which statistically suitable for interpretation and generalisation of findings based on the initial sampled size.

Table 1 elicited the demographic information of the respondents (librarians) and it showed that there were more males (57.6%) than females (42.4%), and the sample had more Christians (62%) than Muslims (26%). With respect to working experience, 44.6% already work in the library having between 8 and 11 years while 12% had worked above 12 years. The age ranged showed that only 2.2% were between 18 and 25 years old while 47.2% were between 43 and 50 years of age. The data showed a fairly even distribution and response to the questionnaire making it suitable for a non-biased research in respect of demographic spread.

Table 2 shows the perspective of the respondents on the true meaning of a green library and the results revealed an overall positive disposition and understanding about green libraries to the tune of 77% (mean = 2.31). Among the various perspective, 87% of the respondents believe that the concept of green library entails the use of natural and biodegradable resources for library building, while only 60% sees it as library disseminating environmental sustainability information. Most (61%) of the respondents were from university libraries and only 14% were from polytechnic libraries.

Table 3 shows the areas by compliance to the green library initiative in Nigeria and the results showed that libraries have compiled various ways infrastructure-wise. The compliance was about 68% (mean = 2.05). The most accepted environmentally friendly practice is the use of wooden furniture instead of metals (83%, mean = 2.51) while the least was the inclusion of structural protections from the sun (56%, mean = 1.67).

Information services that compliant with green library movement was elicited in Table 4 and results showed positive (72%) stand-point. Top among the list of green services offered were use of non-prints (90.6%, mean = 2.72), digitisation of print information resources (86%, mean = 2.58), use of energy saver bulbs (mean = 2.35, 78%) and search engines/Internet (81.5%, mean = 2.45). The least offered green services were use of customised library app (48%, mean = 1.44), library websites (51%, mean = 1.53) and development of green collections like information on climate change and environmental sustainability (62.5%, mean = 1.88).

Table 5 elicits responses on climate friendliness of the librarians and results showed a slightly below average (mean = 1.78) practice. The most implemented include switching off of electrical appliances (mean = 2.35, 78%), and reduced paper consumption (mean = 2.18, 73%). Other practices were below criterion mean of 2.0. The data showed that librarians do not engage in climate change sensitization activities with patrons or immediate community, neither do they collect rain water, recycle paper or reduce the use of plastics. They barely encourage the use of bicycles to reduce carbon emission (mean = 1.58, 45.8%).

A wide range of challenges were opined to have frustrated the implementation efforts in Table 6. The most pressing ones include low awareness on green library movement across the globe (mean = 2.47, 82%), lack of collaboration with environmental sustainability organisations (mean = 2.41, 80%) and power supply issues (mean = 2.32, 77%). The least of challenges included low knowledge on local environment (mean = 1.65, 55%), lack of skilled workers (mean = 1.67, 55.8%) and lack of parental institution support (mean = 1.67, 56%).

Tables 1: Demographics of respondents

Demographic information	Frequency	%		Frequency	%
Gender			Library type		
Male	106	57.6	University	112	61
Female	78	42.4	College	46	25
Religion			Polytechnic	26	14
Christian	114	62			
Muslim	48	26			
African Tradition	22	12			
Working experience (years)					
0 - 3	23	12.4			
4 - 7	57	31			
8 - 11	82	44.6			
12 and above	22	12			
Age range (years)					
18 - 25	4	2.2			
26 - 34	31	16.8			
35 - 42	28	15			
43 - 50	87	47.2			
Above 50	34	18.8			
Total	184	100			

Table 2: Perspective of librarians on the green library initiative

Understanding	Agree	Undecided	Disagree	Mean	%
1. Encourage the use of natural and biodegradable resources	136	22	26	2.60	86.6
2. It means been climate friendly compliant	125	34	25	2.54	84.8
3. Minimize the impact of human activities on the environment	126	30	28	2.53	84.4
4. Aiding eco-friendly behaviour in libraries and among librarians	108	57	19	2.48	82.8
5. Green libraries designs include careful selection of building sites	122	28	34	2.48	82.6
6. Planting of papers and trees around the library	101	61	22	2.43	81.0
7. Balancing the human and tech ecosystem in the library	85	73	26	2.32	77.4
8. Adopting recycling	97	32	55	2.23	74.3
9. To provide a green reading environment with natural air and light	93	38	53	2.22	73.9
10. Improve the quality of indoor environments	84	48	52	2.17	72.5
11. Librarians and libraries encouraging upcycling	52	67	65	1.93	64.3
12. Librarians disseminating information about environmental sustainability	41	68	75	1.82	60.5
Weighted mean	97.5	46.5	40	2.31	77.1

Table 3: *Building and infrastructure compliance to the green initiative*

Compliance	Agree	Undecided	Disagree	Mean	%
1. Use of wooden shelves and furniture	127	23	34	2.51	83.5
2. Production and circulation of fresh air inside the library	95	64	25	2.38	79.3
3. Use of energy saver bulbs and lighting points	98	54	32	2.35	78.3
4. Use of solar panels for power supply within the building	89	58	37	2.28	76.1
5. Availability of community gardens	108	15	61	2.26	75.2
6. Use of insulating windows and structural protections from heat waves of the sun	76	43	65	2.06	68.7
7. Some environment friendly elements around found in the building architecture	63	67	54	2.05	68.3
8. Water conservation facilities within the library	64	62	58	2.03	67.8
9. The whole library building is made with natural biodegradable resources	62	46	76	1.92	64.1
10. Replacing steel materials with bamboos and fibre for building maintenance and redesign	36	64	84	1.74	58.0
11. Use of day/sun-light	36	63	85	1.73	57.8
Weighted mean	73.4	49.8	56.8	2.11	68.3

Table 4: *Green information services disseminated in academic libraries*

Green services	Agree	Undecided	Disagree	Mean	%
1. Use of non-print information services and resources	147	22	15	2.72	90.6
2. Digitisation of print information services and sources	128	34	22	2.58	85.9
3. Encouraging the use of search engines and the Internet	122	22	40	2.45	81.5
4. Adoption of e-library concepts	106	53	25	2.44	81.3
5. Promoting and providing e-books to library users	115	27	42	2.40	79.9
6. Automation of important library services	86	40	58	2.15	71.7
7. Environmentally-friendly (i.e. technology based) services	68	37	79	1.94	64.7
8. Development of green collections on climate change and environmental sustainability	63	35	86	1.88	62.5
9. Creation of library website for users to easily peruse	35	27	122	1.53	50.9
10. Use of customised library app	18	45	121	1.44	48.0
Weighted mean	88.8	34.2	61	2.15	71.7

Table 5: *Climate friendliness practices of librarians*

Climate friendly practices of librarians	Agree	Undecided	Disagree	Mean	%
1. Regular switching off of electrical appliance at the close of work	108	32	44	2.35	78.3
2. Reduced paper consumption	82	54	48	2.18	72.8
3. Parent institution sensitization on eco-friendliness	67	46	71	1.98	65.9
4. Collecting rain water over the roof of the library building	58	48	78	1.89	63.0
5. Climate mitigation awareness campaign in immediate community	50	48	86	1.80	60.1
6. Reduced use of plastics by patrons, staff and faculty within the library	45	55	84	1.79	59.6
7. Recycling of papers	28	68	88	1.67	55.8
8. Waste management for refuse generated in the library	24	56	104	1.57	52.2
9. Promote environmental information skill	24	39	121	1.47	49.1
10. Waste disintegration for proper management	18	48	118	1.46	48.6
11. Staff using bicycles instead of carbon emitting automobiles	12	45	127	1.38	45.8
Weighted mean	47	49	88	1.78	59.2

Table 6: *Challenges with implementation of green library*

Challenges	Agree	Undecided	Disagree	Mean	%
1. Lack of awareness on the green library movement and its objectives	97	76	11	2.47	82.2
2. Lack of collaboration with environmental sustainability-based associations	108	43	33	2.41	80.3
3. Power/energy supply issues	77	89	18	2.32	77.4
4. Poor funding of the library to undertake such initiative	86	54	44	2.23	74.3
5. Polarisation of native and indigenous methods of building structures that are not eco-friendly	68	88	28	2.22	73.9
6. Non-climate complaint structural engineers involved in building library structures	59	98	27	2.17	72.5
7. High cost of installation of renewable energy sources like solar	59	88	37	2.12	70.7
8. Problems of exclusive land and space available to libraries	57	41	89	1.86	62.0
9. Lack of knowledge on climate change effects	67	12	105	1.79	59.8
10. Use of non-recyclable materials in library building	54	18	112	1.68	56.2
11. Lack of parent institutional support	46	32	106	1.67	55.8
12. Lack of skilled human resources for regular maintenance of technology equipment	43	38	103	1.67	55.8
13. Low knowledge and research on the local environment and its useful resources	38	44	102	1.65	55.1
Weighted mean	66	55.4	62.7	2.02	67.4

Discussion

The areas of focus in assessing the compliance of a library building and its activities to the specifications of the green library initiatives include the materials and resources used for the building, eco-sustainability of the site where the library is, energy sources and atmosphere conditions within and outside the library, water efficiency and conservation, indoor environmental (air, space and structure) quality, and innovation building design (Antonelli, 2008). The results from this study covered all, although no LEED grading was carried out, responses were analysed based on implementation. Nigerian libraries and librarians have given positive feedback on the possibility of adopting and implementing the green library initiative through the responses on their predisposition in Table 2.

The only areas where implementation is low include replacement of steel with bamboos/fibre, use of natural lights, and building of library with biodegradable materials. These components are recently new in terms of building designs in Nigerian real estate ecosystem hence the probably reason for the non compliance, however, advocacy and collaboration can help surpass this phenomenon. Other areas as shown in Table 3 have been sufficiently compiled with which is encouraging in accordance with library practices in other countries like India, USA, and Kenya (Daimari 2018, Mohapatra, 2020; Ingole & Kumari, 2021, Aulisio, 2021, Mwanzu et al. 2022). Due to the lack of funding of libraries, building a technology reliant and eco-friendly library has become an issue in Nigeria. Libraries over the years have adopted the use of non-prints, disseminated e-books and provided e-library for use, however, the cost of maintaining a library website and app could have been the reason why achieving these green information services have been difficult. Two climate friendly practices were common to librarians and this shows that much is expected of the librarians. Switching off electrical appliances have been an age long safety practice sermonised in many libraries and the subsequent introduction of technology has reduced paper printing. There were opinions that libraries have not properly engaged in waste recycling or upcycling,

paper recycling and proportionate emission of carbon (Table 5). Awareness campaigns have also not been intensive if at all there was any and this may have come from a place of poor understanding on the importance of the green library initiative by library management despite the positive disposition.

Several challenges in Table 6 were pointed by librarians and its triangulated the reasons for non implementation of some of the green library concepts. A wide range of challenges were opined to have frustrated the implementation efforts in Nigerian libraries and they corroborated the study of Qutab, Ali & Ullah, (2016). The implications of these findings are that, librarians have positive mindset about the green library movement which a possible reality and this would encourage its implementation at every level. In addition they have shown some level of conscious or indirect commitment to the green library movement by building libraries that have enough space circulate air, use wooden shelves instead of non-biodegradable materials, install solar power as alternative source of energy, and have beautiful gardens with trees of large canopies cover. However, the green library movement also involves the adoption of green information services and managerial practices. The use of non-print and digital services only indicated low adoption in terms of green services and this needs to be geared up by sensitization and full compliance that may need funding assistance. It is obvious that the librarians and libraries have to be on top of their game in making the green library movement or initiative a success in Nigeria.

Conclusion and Recommendation

It is true that printed books form a large percentage of the major collections, and many library building have been erected for decades. Making 'green' changes may be difficult, however, adopting green practices could help in reducing the destruction of the environment as well enrol libraries as active member of the sustainable environment drive of the United Nations. The present study has shown that librarians from Nigeria have positive disposition towards the green library concept and have also shown evidence of the implementation of some of the recommended green practices, however, much is still required of library management and librarians. The establishment of a Nigerian Green Building Council is highly desired at this point and to compliment this, collaborative efforts from the Nigerian Library Association will be appreciated.

References

- Antonelli, M. (2008). The green library movement: an overview and beyond. *Electronic Green Journal*, 1(27). Retrieved from <https://escholarship.org/uc/item/39d3v236>
- Aulisio, G.J. (2013). Green libraries are more than just buildings. *Electronic Green Journal*, 1(35); Retrieved from <https://escholarship.org/uc/item/3x11862z>
- Choudhury, S. (2019). Green library initiative in India. *Journal of Emerging Technologies and Innovative Research*, 6(1): 384 – 390.
- Daimari, D. (2018). Design and development of green technology in libraries: a proposed model for Central Library of Central Institute of Technology Kokrajhar. *Research Guru: Online Journal of Multidisciplinary Subjects*, 12(3): 232 – 236.
- David, S., Ramachandran, S., Pillai, M., & Franklin, J. (2022). Green Library Initiatives of Academic Colleges in Kerala for Sustainable Eco-Friendly Libraries. *International Journal of Innovative Research in Technology*, 9(3): 844 – 849.
- Ingole, A.R. & Kumari, S. (2021). Green library: concept, sustainable development, features, importance, standards and overview in Indian scenario. *International Journal of Creative Research Thoughts*, 9(12): a373 – a386.
- Kulkarni, P.P. (2018). Green library: concepts, features and elements. *Journal of Emerging Technologies and Innovative Research*, 5(1): 1456 – 1460.
- Mohapatra, N. (2020). Feed green to read green: green library movement for sustainable development, In, Gunjal, B., Pradhan, D.K., Mishra, V.K., Mishra, P. & Das, K. (eds), *Next generation libraries: emerging technologies, community engagement and future librarianship* (pp. 67 – 79). New Delhi, India: Ess Ess Publications.

- Mwanzu, A. (2022). *Green initiatives towards a sustainable future: insights from libraries in Kenya*. Paper presented at IFLA WLIC in Dublin Ireland.
- Mwanzu, A., Bosire-Ogechi, E., & Odero, D. (2022). The emergence of green libraries in Kenya: Insights from academic libraries. *Journal of Academic Librarianship*, <https://doi.org/10.1016/j.acalib.2022.102601>.
- Pagore, R., & Chalukya, B.V. (2022). Green library: An overview. *IP Indian Journal of Library Science and Information Technology*, 7(1):36-39.
- Parmar, R. & Kamdar, N.H. (2021). "Green Libraries" *Library Philosophy and Practice* (e-journal). Paper 6664. Retrieved from <https://digitalcommons.unl.edu/libphilprac/6664>
- Qutab, S., Ali, Z.F. & Ullah, F.S. (2016). Environmentally sustainable library buildings: opportunities and challenges for Asian countries. IFLA WLIC in Columbus.
- Sahavirta, H. (2016). From green to sustainable libraries- widening the concept of green library. Cambridge University Library, DOI 10.1515/9783110481037-009
- Sangita, P. (2014). Green library- a new concept of library. Retrieved from <https://www.mugeakbulut.com/bby721/wp-content/uploads/2017/03/21-09-2013-Prohit.pdf>
- Stoss, F. (2010). Libraries taking the 'LEED': Green libraries leading in energy and environmental design. *Online Magazine* Mar/April Edition: pp 20 – 28. Retrieved from <https://www.onlinemag.net/>
- Vaja, B.L. & Sharma, P.V.K. (2020). The development of concept of green library in the college of education system and its implication: a system review. *International Journal of Advanced Studies*, 2(2): 258 – 261.
- Vasanthi, R. (2019). Green library trends and development in India: a study. *IJARIFE* 5(5); 475 – 479.