

# Green Practices in Public University Libraries in Oyo State: Challenges and Prospects

Comfort Seun Atanda\* & Olalekan Abiola Awujoola†

## **Abstract**

*The role of university libraries in actualising sustainable development goals (SDGs) cannot be over-emphasised. It is not out of point to say that the achievement of most of the SDGs could be facilitated by library and its practices. In the area of sustainable environment, libraries that observe green practices can enhance and facilitate the achievement of the 13<sup>th</sup> goal of the SDGs. The extent at which university library incorporates green culture can determine or aid library work environment, information service delivery and the university environmental sustainability in general. The paper investigates green practices in university libraries. It adopted descriptive research design. Three research questions guided the study, while all four public universities in Oyo State were enumerated. The entire 128 library staff were enumerated. The instrument used was titled “‘Green Practices, Challenges and Prospects’ Questionnaire (GPCPQ)” with 0.75 reliability coefficient. The data collected was analysed using descriptive statistics. The study revealed that the extent of green practices in public university libraries is high ( $x= 3.51$ ). Similarly, the prevailing challenges militating against effective green practices is high ( $x= 3.56$ ). Nevertheless, the prospects for green practices is high ( $x= 3.52$ ) in public university libraries in Oyo State. Based on the findings, the study recommended that university libraries should work on the challenges, which militate green practices. These include: adequate funding, continuously training and awareness creation on green, formulation of policy and guidelines on green implementation, provision of incentives to library staff and encouragement of collaboration with environmental organisations.*

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\* Department of Library Information Science, Faculty of Specialised and Professional Education, Emmanuel Alayande University of Education, Oyo  
Correspondence: [comfotatanda@gmail.com](mailto:comfotatanda@gmail.com)

† Department of Library, Archival and Information Studies, Faculty of Education  
University of Ibadan, Ibadan

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### **Introduction**

Libraries have an important and often underutilised role to play in advancing the Sustainable Development Goals (SDGs), particularly in the context of promoting green practices. In line with SDG 4, libraries should offer programmes and resources that enable individuals to understand and adopt green practices. Green practices refer to all the related activities with a specific aim of helping businesses to reduce the environmental impacts of their business operations as well as also helping them to save money (Chukwuka, 2016). Green practices bother on actions undertaken with the consideration of environmental safety, and are actions with less negative environmental impact. Green practices go far beyond environmental protection, but even to waste management, energy conservation and recycling. Green practices can include: recycling of firm and societal waste, going paperless, producing products that can be recycled, production of hybrid cars and engines with less carbon emission. Others are using alternative sources of energy (geothermal, solar, coal, among others.), planting and the replanting of tree programme and the use of energy bulbs for less energy consumption.

According to Bounford, Houghton and Tan (2020), libraries' role in promoting environmental education is multifaceted, as they offer a platform for learning on issues ranging from climate change to waste reduction. This implies that libraries have vital role to play in actualizing SDGs related to green practices. Libraries are also increasingly seen as centers for promoting environmental literacy, with programmes designed to teach sustainable practices to children and adults alike (Bounford et al., 2020). It is not only university libraries that promote sustainability practices. For instance, the Toronto Public Library offers a variety of workshops on sustainability, including "Zero Waste Living" and "Climate Change and Its Impact" (Toronto Public Library, 2021).

Institutions that manage large physical spaces, libraries can model green practices by reducing their environmental impact.

Implementing sustainable practices in library design and operations is crucial in supporting SDG 12 (Responsible Consumption and Production). Libraries have adopted eco-friendly construction techniques, energy-efficient lighting, and waste management practices, demonstrating how institutional operations can align with environmental goals. Thompson (2019) notes that libraries across the world are incorporating green technologies into their infrastructure, such as solar panels, rainwater harvesting systems, and energy-efficient HVAC systems. This not only helps libraries lower their carbon footprint but also serves as a model for sustainable building practices in communities. The New York Public Library's Bronx Library Center is designed with sustainability in mind, featuring energy-efficient HVAC systems, natural day lighting, and green roofing technologies (New York Public Library, 2020).

Similarly, by embracing digital technologies, libraries would facilitate reduction in their physical and carbon footprint. Through the promotion of e-books, online journals, and virtual workshops, libraries contribute to reducing paper consumption and lowering transportation emissions. This promotes more responsible use of resources. In a study by Anderson et al. (2018), it was found that libraries' shift to digital services, including virtual consultations, e-resources, and webinars, significantly decreases their operational environmental impact. Furthermore, these services increase access to knowledge on sustainable practices for those who may not be able to attend in-person programmes. The University of Edinburgh's Main Library offers a fully digital collection, promoting access to over 300,000 e-books, research papers, and journals without the environmental cost of printing (University of Edinburgh, 2021).

In addition, university libraries could facilitate green practices through advocacy and research on Climate Change and Sustainability (SDG 13: Climate Action). Libraries are also well-positioned to provide access to research on climate change, climate adaptation and other environmental issues. Green practice vary across the world. Libraries around the world have increasingly recognised the importance of engaging in green practices as part of their commitment to sustainability. Green libraries not only promote environmental awareness but also serve as models for responsible

resource use, reduced carbon footprints, and fostering community engagement around sustainability. It is necessary to explore the extent to which libraries in Nigeria and other countries engage in green practices, drawing on case studies, research findings, and comparative analyses. In Nigeria, libraries are beginning to explore green practices, but the level of implementation varies significantly. Libraries in urban areas tend to adopt more advanced green initiatives, while rural libraries often face challenges due to limited resources, infrastructure, and awareness. Nigerian libraries are still in the early stages of adopting green practices, focusing mainly on raising environmental awareness and reducing paper use. According to Onuoha (2018), Nigerian libraries, especially in academic and public sectors, are beginning to understand the significance of sustainability. Some libraries have started promoting digital resources and e-books to reduce paper consumption. However, infrastructure developments that integrate energy-efficient technologies or sustainable architecture are not yet widespread. A case study of the National Library of Nigeria (NLN) by Aina and Dike (2017) highlights that while there are minimal efforts toward sustainable practices, the need for more comprehensive green strategies remains. The NLN has yet to fully integrate energy-efficient lighting or promote environmentally friendly building materials, but it has introduced some digital library services to reduce resource use. In contrast, libraries in developed countries such as the United States, the United Kingdom, Canada, and Australia have been more proactive in adopting green practices, particularly in their infrastructure and operations. Many libraries in these regions have adopted green building certifications, implemented sustainable energy solutions, and have set ambitious sustainability goals. In the U.S., libraries have been pioneers in adopting green technologies, and many public libraries have sought Leadership in Energy and Environmental Design (LEED) certification. For example, the San Francisco Public Library and the Portland Public Library are recognised for their sustainable design and operations, incorporating solar panels, energy-efficient HVAC systems, and environmentally friendly building materials (Keane and Brigham, 2019). These

libraries are also involved in outreach programmes, providing environmental education to the public.

The University of Oxford Libraries in the UK have made significant strides in reducing energy consumption. The Oxford libraries' initiatives, which include reducing energy waste through automated lighting systems and the adoption of energy-efficient heating solutions, are part of a larger institutional push to meet sustainability goals (James, 2020). Additionally, public libraries in the UK, such as those in London, have promoted the use of sustainable transport by providing bicycle racks, encouraging staff and visitors to use public transportation, and implementing waste-reduction programmes. In Canada, libraries such as the Vancouver Public Library (VPL) have embraced sustainability through green architecture. The central library of VPL, designed by architect Bing Thom, incorporates passive solar energy, energy-efficient lighting, and a green roof (Miller and Johnston, 2017).

While libraries in developed countries have advanced in their engagement with green practices, Nigerian libraries face several barriers, including lack of financial resources, inadequate infrastructure, and insufficient awareness of sustainability. As highlighted by Onuoha (2018), libraries in Nigeria tend to focus more on promoting environmental education rather than implementing infrastructural green practices like energy-efficient lighting or eco-friendly materials.

However, as the global environmental conversation gains momentum, there is increasing pressure on libraries in developing countries like Nigeria to adopt sustainable practices. Public and academic libraries in Nigeria are gradually adopting digital solutions to reduce paper consumption, as this is often seen as a practical first step toward sustainability. However, they still lag behind developed countries in terms of adopting green buildings, renewable energy sources, and waste management initiatives. Despite these challenges, several Nigerian libraries are beginning to engage with global trends and show potential for greater involvement in green practices. Aina and Dike (2017) emphasise that collaborations with international organisations and governmental bodies may help accelerate the integration of sustainable practices in Nigerian libraries.

The slow rate of adoption of green culture and practices in developing countries including Nigeria have been blamed on some constraints and challenges. Among the challenges are financial constraints, lack of awareness and training, limited infrastructure, lack of budgetary allocations for infrastructure upgrades, digital resource development, and eco-friendly materials (Onuoha, 2018, Aina and Dike, 2017). In developed countries, while infrastructure is generally more modern, challenges persist, particularly in retrofitting older buildings to meet green standards. Libraries at institutions like Harvard University have faced difficulties in adapting historic buildings to meet the standards of sustainability, which can lead to high retrofitting costs (Keane and Brigham, 2019). James (2020) notes that even in advanced academic libraries, staff may lack proper training on sustainability practices, leading to underutilization of available green technologies.

Institutional resistance and lack of support from university management are significant challenges faced by libraries trying to implement green practices. In many universities, sustainability is often not a priority, and green initiatives are considered non-essential compared to other academic and research priorities. As discussed by Keane and Brigham (2019), university libraries in developed countries sometimes encounter resistance from administration, who may perceive green initiatives as an additional burden rather than an investment. Without support from top administration, libraries struggle to gain the approval or funding required for green projects. In Nigeria, university management often prioritizes immediate academic concerns, such as accreditation and program development, over long-term investments in sustainability. As Onuoha (2018) points out, the lack of strategic planning for sustainability within university systems contributes to this resistance.

In spite of challenges and barriers militating against effective green practices among university libraries especially in Nigeria, there are still prospects that guarantee promising future. Solar energy adoption can lower the operational costs for libraries and contribute to the overall sustainability of university campuses. In addition, Nigeria's vast solar potential makes this a viable green practice (Akinbile, and Akinyemi, 2018). Okafor and Ezech (2021) explained

that the incorporation of green building techniques in library construction can significantly reduce energy consumption and improve indoor air quality, leading to a healthier environment for students and staff. A shift towards digital resources reduces deforestation, paper waste, and the carbon footprint associated with printing and transportation. Moreover, it enhances access to information and reduces cost (Eze and Nwachukwu 2022). Similarly, Adeniran and Akinlolu (2019) asserted that recycling and waste reduction initiatives can help university libraries reduce their environmental footprint while promoting sustainability awareness among students and staff. Water-saving initiatives can reduce the operational costs of libraries while contributing to sustainable water management practices within the university (Iloh, 2020). In addition, green certifications enhance the university's reputation, attract funding, and demonstrate commitment to sustainability. This can encourage other institutions to adopt similar practices. (Oluwadare and Olatunji, 2017).

However, studies reveal that university librarians have suboptimal awareness and adoption of green computing practices, crucial for environmental sustainability in libraries (Tariq and Khalid, 2023). Nigerian university libraries, in particular, lack necessary manpower and tools to implement green library requirements, hindering their ability to reduce carbon footprints (Dada, 2021). Furthermore, Okpide-Urhibo Emo's (2023) found that university libraries' buildings are not green initiative compliant. Thus, the extent of green practices in university libraries in Nigeria, especially Oyo State still leave much to be desired. There is dearth of literature on the extent of green practices, challenges militating against the green practices and prospects of green practices in public universities in Oyo State. This is the gap this study filled.

### **Statement of the Problem**

From the forgoing, it appears green practices are low in public university libraries especially in Nigeria. This trend has implications on achievement of sustainable development goal in Nigeria. This has implications on the physical environment of libraries, library staff health, library patrons' healthy living and achievement of SDGs on

environment suitability and healthy living. Though previous studies have investigated green practices in industries and universities with little attention to public universities in Oyo State as well as challenges militating effective green practices. This study therefore, investigated extent of green culture practices in public university libraries, challenges militating against green practices and its prospects in these university libraries.

### **Research Questions**

The following research questions were answered:

- i. What is the extent of green practices in public university libraries in Oyo State, Nigeria?
- ii. What are the prevailing challenges militating against effective green practices in public university libraries in Oyo State, Nigeria?
- iii. What are the prospects for green practices in public university libraries in Oyo State, Nigeria?

### **Methodology**

The study adopted descriptive research design, while the population of the study covered the entire 128 staff in the 4 public university libraries in Oyo State. These universities are; University of Ibadan, Ibadan, Emmanuel Alayande University of Education, Oyo, Ladoké Akintola University of Technology, Ogbomosho and Abiola Ajimobi Technical University, Ibadan. All 128 public librarians were enumerated as respondents in this study. This was due to the minimal size of library staff in the 4 universities.

The instrument used was a questionnaire titled 'Green Practices, Challenges and Prospects' Questionnaire (GPCPQ). The Green Practices, Challenges and Prospects' Questionnaire (GPCPQ) comprised four sub-sections, which are Section A – Demographic Information' Section B – Extent of Green Practices; Section C-Challenges of Green Practices and Section D- Prospects of Green Practices. The total items on the questionnaire was 25. The instrument was content and face validated by experts in Library Archival and Information Studies,



University of Ibadan, Ibadan. The reliability of the questionnaire was established by using 20 library staff from Olabisi Onabanjo University, Ago-Iwoye, Ogun State. The data collected were analysed using Cronbach's Alpha method. The reliability coefficient yielded 0.75, which was adjudged high.

The instruments were personally administered by researchers with the assistance of two colleagues who are library staff in the two of the enumerated universities. A total of 94 copies of the instrument administered was retrieved representing 73% return rate. The data collected were analysed using descriptive statistics, which include percentages, mean and standard deviation. The threshold for decision is 2.5.

## Results

**Table 1: Demographic Information of Respondents**

Variables		Frequency	Percentage
Name of University	UI	43	45.7%
	LAUTECH	28	29.8%
	EAUED	21	22.3%
	AATU	2	2.1%
	<b>Total</b>	<b>94</b>	<b>100%</b>
Gender	Male	38	40.4%
	Female	56	59.6%
	<b>Total</b>	<b>94</b>	<b>100%</b>
Highest Academic Qualification	Diploma/HND	8	8.5%
	Bachelors	23	24.5%
	Masters	46	48.9%
	M.Phil/M.Phil PhD	10	10.6%
	PhD	7	7.4%
<b>Total</b>	<b>94</b>	<b>100%</b>	

Table 1 presents the distribution of sampled librarian by name of universities, gender, highest academic qualification, job status, and section. The table shows that out of 94 librarians sampled for the study, 45.7% works at University of Ibadan, 29.8% works at Ladole Akintola University, 22.3% works at Emmanuel Alayande University of Education, while 2.1% works at Abiola Ajimobi Technical University. The gender distribution of sampled librarians revealed

that 40.4% were male, 59.6% were female. The table further revealed the highest academic qualification of the sampled librarians for the study, it was revealed that 8.5% were diploma/HND holders, 24.5% were bachelor's degree holders, 48.9% were master degree holders, 10.6% were M.Phil./M.Phil. Ph.D. holders while 7.4% were Ph.D. holders.

**Research Question 1:** What is the extent of green practices in public university libraries in Oyo State, Nigeria?

**Table 2: Extent of Green Practices in Public University Libraries in Oyo State, Nigeria**

Items	SA	A	D	SD	Mean	Std.D
Use of recycled material in production process in business organisations	50 53.2%	35 37.2%	9 9.6%	0 0%	3.44	0.665
Total reduction in paper use (sending of mails, digital meeting agenda)	50 53.2%	41 43.6%	3 3.2%	0 0%	3.50	0.563
Use of biodegradable products as much as possible in business organisation	39 41.5%	50 53.2%	5 5.3%	0 0%	3.36	0.584
Recycling of used paper to make new paper.	48 51.1%	37 39.4%	8 8.5%	1 1.1%	3.40	0.693
Use of green packets in the packaging of business products	41 43.6%	45 47.9%	4 4.3%	4 4.3%	3.38	0.628
Use of reusable products like bottles, crates, gallons among others in business organisations	44 46.8%	46 48.9%	3 3.2%	1 1.1%	3.41	0.612
Discouraging the use of plastic bottles that are not reusable for products packaging	43 45.7%	32 34%	16 17%	3 3.2%	3.27	0.786
Encouraging the use of green plastic that is usually made from plants- a renewable resources	55 58.5%	38 40.4%	1 1.1%	0 0%	3.57	0.518

Discouraging the use of hazardous chemicals in the preservation of the library and its' resources	49 52.1%	43 45.7%	2 2.2%	0 0%	3.52	0.524
Using of solar to generators	57 60.6%	34 36.2%	2 2.1%	1 1.1%	3.56	0.567
Encouraging the proper waste management habits in every organisation.	55 58.5%	38 40.4%	0 0%	1 1.1%	3.56	0.560
Encouraging the use of energy saving equipment in library business operations	62 66%	30 31.9%	2 2.1%	0 0%	3.66	0.500
Encouraging the use of the right bulbs in business organization	59 62.8%	34 36.2%	1 1.1%	0 0%	3.63	0.484
Encouraging the repair of tools, equipment, rather than replacement	35 37.2%	35 37.2%	4 4.3%	0 0%	3.54	0.580
Encouraging of staff to make use of soft information than hard printed information	61 64.9%	28 29.8%	5 5.4%	0 0%	3.61	0.572
Encouraging the use of clean energy like solar, biogas as the main source of energy in business	56 59.6%	35 37.2%	2 2.1%	1 1.1%	3.55	0.598
Discouraging the use of carbon emitting sources of energy in business operation /organisation	51 54.3%	33 35.1%	9 9.6%	1 1.1%	3.43	0.711
Encouraging staff to switch off all appliances, equipment at the end of every working day	69 73.4%	24 25.5%	0 0%	1 1.1%	3.71	0.521
Teleconferencing are used to conduct business meetings and conferences wherever possible to reduce business travel	58 61.7%	35 37.2%	1 1.1%	0 0%	3.61	0.513
Encouraging virtual interviews to reduce the use of papers	52 55.3%	39 41.5%	1 1.1%	2 2.1%	3.49	0.636

**N= 94: Weighted Mean= 3.51**

**Note: Mean Value ranges from 00-1.49 = Strongly Disagree; 1.50-2.49 = Disagree; 2.50-3.49 = Agree; 3.50-4.00 = Strongly Disagree**

Answer to research question 1 on the extent of green practices in public university libraries in Oyo State, Nigeria is presented in table 2. It revealed that the extent of green practices in public university libraries in Oyo State, Nigeria is high with the weighted mean of 3.51, which is greater than 2.50 threshold.

**Research Question 2:** What are the prevailing challenges militating against effective green practices in public university libraries in Oyo State, Nigeria?

**Table 3: Prevailing Challenges Militating Against Effective Green Practices in Public University Libraries in Oyo State, Nigeria**

Items	SA	A	D	SD	Mean	Std.D
Lack of sufficient funding limits the implementation of green culture practices in the library	62 66%	31 33%	1 1.1%	0 0%	3.65	0.502
Inadequate awareness and understanding of green culture practices among library staff hinder their adoption	57 60.6%	35 37.2%	2 2.1%	0 0%	3.59	0.537
Absence of clear policies and guidelines for implementing green practices is a significant challenge	52 55.3%	41 43.6%	0 0%	1 1.1%	3.53	0.563
Insufficient training programmes on green culture practices for library personnel create obstacles	57 60.6%	35 37.2%	2 2.1%	0 0%	3.62	0.488
High costs associated with green technologies	56 59.6%	31 33%	4 4.3%	3 3.2%	3.57	0.580

discourage their adoption in libraries							
Resistance to change among library staff affects the successful implementation of green practices	55 58.5%	33 35.1%	5 5.3%	1 1.1%	3.54	0.600	
Limited access to environmentally friendly resources poses a challenge to green practices	50 53.2%	41 43.6%	3 3.2%	0 0%	3.55	0.500	
Lack of institutional support affects the library's ability to implement green culture practices	57 60.6%	37 39.4%	0 0%	0 0%	3.61	0.491	
Poor infrastructure and outdated facilities hinder green culture initiatives	53 56.4%	38 40.4%	2 2.1%	1 1.1%	3.55	0.542	
Inadequate power supply discourages the use of energy-efficient technologies in libraries	63 67%	28 29.8%	2 2.1%	1 1.1%	3.63	0.586	
Insufficient incentives for library staff to engage in green practices contribute to their low adoption	60 63.8%	29 30.9%	4 4.3%	1 1.1%	3.57	0.631	
Limited awareness programmes for users and staff on green practices hinder their success	59 62.8%	32 34%	3 3.2%	0 0%	3.60	0.555	
Difficulty in acquiring green certified materials impacts green initiatives	53 56.4%	38 40.4%	3 3.2%	0 0%	3.53	0.562	
Lack of proper waste management systems in libraries poses a challenge to sustainability	93 98.9%	48 51.1%	42 44.7%	3 3.2%	3.48	0.564	
Absence of collaboration with environmental organisations limits the effectiveness of green practices	63 67.1%	27 28.7%	4 4.3%	0 0%	3.62	0.569	

Limited availability of solar and other renewable energy solutions creates barriers	53 56.4%	39 41.5%	1 1.1%	1 1.1%	3.56	0.521
Over-reliance on non-renewable resources prevents the library from adopting greener alternatives	55 58.5%	35 37.2%	4 4.3%	0 0%	3.54	0.580
Environmental sustainability is not prioritized in the library's overall goals and objectives	49 52.1%	37 39.4%	6 6.4%	2 2.1%	3.47	0.619
Zero policies on sustainability within the university affect green initiatives in the library	52 55.3%	38 40.4%	4 4.3%	0 0%	3.51	0.582
Inconsistent enforcement and monitoring of green policies hinder long-term sustainability efforts	51 54.3%	39 41.5%	3 3.2%	1 1.1%	3.53	0.502
<b>N= 94: Weighted Mean= 3.56</b>						

**Note: Mean Value ranges from 00-1.49 = Strongly Disagree; 1.50-2.49 = Disagree; 2.50-3.49 = Agree; 3.50-4.00 = Strongly Disagree**

Answer to research question 2 on the prevailing challenges militating against effective green practices in public university libraries in Oyo State, Nigeria is presented in table 3. the table revealed that the respondents submitted with following responses: Lack of sufficient funding limits the implementation of green culture practices in the library (Mean = 3.65); Inadequate awareness and understanding of green culture practices among library staff hinder their adoption (Mean = 3.59); Absence of clear policies and guidelines for implementing green practices is a significant challenge (Mean = 3.53); Insufficient training programmes on green culture practices for library personnel create obstacles (Mean = 3.62); High costs associated with green technologies discourage their adoption in libraries (Mean = 3.57); Resistance to change among library staff

affects the successful implementation of green practices (Mean = 3.54); Limited access to environmentally friendly resources poses a challenge to green practices (Mean = 3.55); Lack of institutional support affects the library's ability to implement green culture practices (Mean = 3.61); Poor infrastructure and outdated facilities hinder green culture initiatives (Mean = 3.55); Inadequate power supply discourages the use of energy-efficient technologies in libraries (Mean = 3.63); Insufficient incentives for library staff to engage in green practices contribute to their low adoption (Mean = 3.57); Limited awareness programmes for users and staff on green practices hinder their success (Mean = 3.60); Difficulty in acquiring green certified materials impacts green initiatives (Mean = 3.53); Lack of proper waste management systems in libraries poses a challenge to sustainability (Mean = 3.48); Absence of collaboration with environmental organisations limits the effectiveness of green practices (Mean = 3.62); Limited availability of solar and other renewable energy solutions creates barriers (Mean = 3.56); Over-reliance on non-renewable resources prevents the library from adopting greener alternatives (Mean = 3.54); Environmental sustainability is not prioritized in the library's overall goals and objectives (Mean = 3.47); Zero policies on sustainability within the university affect green initiatives in the library (Mean = 3.51); Inconsistent enforcement and monitoring of green policies hinder long-term sustainability efforts (Mean = 3.53). The weighted mean of the table is 3.56, which is greater than 2.50 threshold implies that the respondent's average response is that the prevailing challenges militating against effective green practices in public university libraries in Oyo State, Nigeria is high.

**Research Question 3:** What are the prospects for green practices in public university libraries in Oyo State, Nigeria?

**Table 4: Prospects for Green Practices in Public University Libraries in Oyo State, Nigeria**

Items	SA	A	D	SD	Mean	Std.D
Availability of energy-efficient lighting in library can reduce energy consumption	53 56.4%	39 41.5%	1 1.1%	1 1.1%	3.52	0.583
Recycling programmes can promote environmental sustainability	51 54.3%	42 44.7%	0 0%	0 0%	3.55	0.500
Green building design can create healthy environment in library premises	58 61.7%	35 37.2%	0 0%	0 0%	3.62	0.487
Sustainable collection development promotes environmental awareness	46 48.9%	44 46.8%	3 3.2%	0 0%	3.46	0.563
Water conservation practices facilitates environmental awareness and literacy among library users	51 54.3%	40 42.6%	2 2.1%	0 0%	3.53	0.544
Waste reduction practices enhance reduction of waste in library premises thereby promoting healthy living	45 47.9%	44 46.8%	4 4.3%	0 0%	3.44	0.580
Provision of green spaces such as gardens, green roofs create more sustainable environment	46 48.9%	46 48.9%	1 1.1%	0 0%	3.48	0.524
Community engagement on environmental issues can foster a sense of community and promote sustainability	52 55.3%	41 43.6%	0 0%	0 0%	3.56	0.499
<b>N= 94: Weighted Mean= 3.52</b>						

*Note: Mean Value ranges from 00-1.49 = Strongly Disagree; 1.50-2.49 = Disagree; 2.50-3.49 = Agree; 3.50-4.00 = Strongly Disagree*



Answer to research question 3 on the prospects for green practices in public university libraries in Oyo State, Nigeria is presented in table 4. It revealed that the prospect for green practices in public university libraries in Oyo State is high with the weighted mean of 3.52 against the threshold of 2.50.

### **Discussion**

The study revealed a high green practices among library staff in public universities in Oyo State. This is contrary to submissions of some scholars. This finding contradicts, Tariq and Khalid (2023) that revealed that university librarians have suboptimal awareness and adoption of green computing practices, which are crucial for environmental sustainability in libraries. Similarly, the finding is at variance with the submission of Dada (2021), that Nigerian university libraries, in particular, lack necessary manpower and tools to implement green library requirements. The finding indicates existence of manpower not a lack of manpower as claimed by Dada. Furthermore, it could be inferred from the finding that libraries buildings are green complaint to some extent as against the position of Okpidi-Urhibo (2023), who found that university libraries' buildings are not green initiative compliant. This position may not be entirely true of all buildings in library investigated. Some buildings made provision for skylight, which is an element of green infrastructure

The finding on this study aligns with the submissions of previous scholars that financial constraints, lack of budgetary allocations for infrastructure upgrades, digital resource development, and eco-friendly materials (Onuoha, 2018). Similarly, Aina and Dike (2017), noted that university libraries in Nigeria operate under financial pressures that prevent them from investing in sustainable building designs or green technologies such as solar panels, energy-efficient lighting, and HVAC systems. The finding also corroborates James (2020), who notes that even in advanced academic libraries; staff may lack proper training on sustainability practices, leading to underutilization of available green technologies. This implies that training is very essential in adoption of green practices. Thus, lack of

training or its inadequacy of training of library staff could be an impediment to effective green practices.

The findings of this study indicate prospects in green practices in university libraries. The green practices have potential of accelerated access to information and reduces cost (Eze and Nwachukwu 2022), reduction of waste and promotion of environmental sustainability (Adeniran and Akinlolu, 2019), reduction of operational costs of libraries through water-saving initiatives (Iloh, 2020). Green practices could facilitate attraction of funding because of commitment to sustainability (Oluwadare and Olatunji, 2017).

### **Conclusion**

The world at large has acknowledged the importance of environmental sustainability, hence, it was made a priority in the Sustainable Development Goals. Green practices are essential in enhancing environmental sustainability, especially in university libraries. This study concluded that green practices are high among staff in public libraries. However, there are a number of challenges that could limit the maximisation of green practices. These include inadequate funding, inadequate awareness and understanding of green culture practices, absence of clear policies and guidelines for implementing green practices, insufficient training programmes on green culture practices for library personnel, high costs associated with green technologies, resistance to change among library staff, lack of institutional support, inadequate infrastructure, insufficient incentives for library staff and absence of collaboration with environmental organisations. Nevertheless, there are prospects for green practices in university library which include reduction in energy consumption, promotion of environmental sustainability, creation of healthy environment and environmental sustainability

### **Recommendations**

Based on the findings of this study, following recommendations are made;

- i. *Adequate funding*: The management of each university should ensure that library is funded to facilitate acquisition of green infrastructure.
- ii. *Continuously training and awareness creation on green*: Effort should be made by library management to train library personnel regularly on green related matters. This will minimise ignorance and unnecessary resistance.
- iii. *Formulation of policy and guideline on green implementation*: Formulation of green policy in university library is very key. Policy on green would facilitate implementation of green initiatives and practices.
- iv. *Provision of incentives to library staff*: Library staff should be motivated through different incentives by the management. This would encourage their commitment to best green practice.
- v. *Encouragement of collaboration with environmental organisations*: University libraries are encouraged to collaborate with environmental organisations that can support green initiatives, green funding and green infrastructures. This could facilitate effective green practices among library personnel.

### **References**

- Adeniran, P. S., and Akinlolu, A. A. (2019). Waste management practices in Nigerian academic libraries: Challenges and prospects. *Journal of Library and Information Science*, 35(3), 74-85
- Aina, L. O., and Dike, V. W. (2017). *Challenges of implementing green library practices in Nigerian universities: An overview*. *International Journal of Information Management*, 37(3), 207-213.
- Aina, L. O., and Dike, V. W. (2017). *Green Libraries in Nigeria: A Conceptual Framework for Implementation*. *Library Philosophy and Practice*, 15(2), 87-103.
- Akinbile, A. A., and Akinyemi, J. O. (2018). Energy efficiency and renewable energy adoption in Nigeria's universities: A review. *Renewable and Sustainable Energy Reviews*, 81, 2709- 2719

- Anderson, D., Brown, M., and Williams, L. (2018). *Digital Libraries and Environmental Impact: A Sustainable Approach to Library Operations*. Journal of Sustainable Library Services, 12(3), 44-57.
- Bounford, B., Houghton, S., and Tan, D. (2020). *Libraries and Environmental Education: A Study of Public Library Initiatives*. International Journal of Library and Information Science, 48(1), 22-34.
- Dada, K. S. J. (2021). Green library: Reducing carbon footprints towards Sustainable Development in libraries: a Case Study of Federal College of Education Library, Zaria, Nigeria. *Ciência da Informação em Revista*, 8(2).
- Eze, P. N., and Nwachukwu, I. (2022). The impact of digitization on the sustainability of academic libraries in Nigeria. *Library Management*, 43(1/2), 91-106.
- Iloh, C. (2020). Water management and conservation in Nigerian university campuses: A study of the University of Lagos. *African Journal of Environmental Science and Technology*, 14(8), 283-290.
- James, L. (2020). *Barriers to sustainability in academic libraries: An analysis of the UK context*. Library Management, 41(7/8), 553-567.
- Keane, R., and Brigham, A. (2019). *Greening public libraries: Sustainable practices in U.S. libraries*. Sustainability in Libraries, 9(2), 112-130.
- Miller, K., and Johnston, E. (2017). *Greening the library: A case study of Vancouver Public Library's environmental initiatives*. Journal of Sustainable Library Design, 5(3), 67-80.
- New York Public Library. (2020). *Bronx Library Center: Green Building Features*. Retrieved from <https://www.nypl.org/locations/bronx-library-center>
- Okafor, F. O., and Ezech, A. (2021). Sustainable building practices for Nigerian universities: A case study approach. *Sustainable Cities and Society*, 65, 102581.
- Okpidi-Urhibo, E. (2023). Green library initiative in Nigeria: Insights and levels of implementation in academic libraries. *Library Philosophy and Practice (e-journal)*. 7802.
- Oluwadare, A. B., and Olatunji, M. (2017). The adoption of green building certification systems in Nigerian universities: Opportunities and challenges. *International Journal of Sustainable Built Environment*, 6(2), 469-476.

- Onuoha, U. O. (2018). *Sustainability and Libraries in Nigeria: Challenges and Prospects*. *Journal of African Library and Information Studies*, 28(1), 1-13.
- Tariq, M. S., and Khalid, A. (2023). Placing Green IT awareness and practices among universities' librarians: A NAT perspective. *The Journal of Academic Librarianship*, 49(5), 102770.
- Thompson, A. (2019). *Green libraries: Challenges and opportunities in the UK academic sector*. *Journal of Library Administration*, 59(5), 546-563.
- Toronto Public Library. (2021). *Sustainability Programmes and Resources*. Retrieved from <https://www.torontopubliclibrary.ca>
- University of Edinburgh. (2021). *Main Library Digital Resources*. Retrieved from <https://www.ed.ac.uk/library>
- Wood, L., and Wyatt, M. (2017). *Libraries and Climate Change Advocacy: Role of Libraries in Promoting Climate Action*. *Library Trends*, 65(2), 231-244