

Relationship among awareness, commitment, cooperation, policies, practices and future planning for environmental sustainability in libraries: A survey of librarians of Azad Jammu and Kashmir

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### Abstract

*As concerns about environmental sustainability and climate change continue to grow, various institutions are seeking ways to minimize their carbon footprint and promote friendly environment behaviors. Libraries as vital community hubs can play a significant role in this effort. The current study explores the adoption and implementation of Environment Friendly Policies & Practices (EFP&P) in libraries located in the region of Azad Jammu Kashmir (AJK). This research focuses on the role that libraries in AJK can play in combating environmental issues through their operational strategies. By implementing environment friendly measures, libraries have the potential to significantly contribute to sustainability. The study highlights concrete approaches that can be applied to reduce adverse environmental impact and by encouraging libraries to become champions of green practices.*

*The quantitative approach was used to explore the status of awareness library professionals towards a friendly environment and library professional's behavior at work place. Data collection was done by using a questionnaire. The Libraries of AJK were the study's target. Data was acquired from the librarian professionals of AJK. On hundred librarians affiliated with academic, public and special libraries provided the information.*

*The results show that the majority of professional librarians agreed that the Sustainable Development Goals (SDGs) enunciated by UN are significant and relevant to libraries. Further, majority of the respondents knew about the SDGs and agreed that user friendly environment in the libraries can secure the future of libraries. Moreover, this study showed that majority of the libraries have written policies on how to achieve environmental goal and opined that their senior management supported them towards the*

*implementation of environment friendly policies. Furthermore, this study highlights that majority of participants are of the view that library building design supports and promotes in achieving friendly environment in the libraries. The study also highlights that the implementation of friendly policies is an expensive option and lack of support from the senior management is another barrier to implement environment friendly practices.*

**Keywords;** Environment Friendly Libraries, Green Libraries, AJK Libraries, Environment Sustainability

## 1. Background of study

The beginning of environmental friendly policies and practices can be traced back to ancient civilizations where people to some extent recognized the importance of preserving the natural environment for their own well-being. For example, ancient societies such as the Mesopotamians and the Indus Valley civilization practiced sustainable agriculture and water management to ensure their survival. However, the modern environmental movement as we understand it today began to take shape in the 19<sup>th</sup> and 20<sup>th</sup> centuries with the rise of industrialization and the increased impact of human activities on environment. Recognizing the importance of addressing diverse global challenges, the United Nations (UN) unveiled 17 Sustainable Development Goals (SDGs) in 2015. These goals aim to enhance the planet's well-being and improve the quality of life for people worldwide by the year 2030.

Antonelli (2008) traced and reviewed the history of library literature on sustainability since the early 1990s. Literature related to environment has experienced a gradual rapid growth. Libraries are recognized as educational institutions in the UN Agenda 2030 (United Nations, 2015), which calls on them to contribute significantly to SDGs. "The green library is a multifaceted concept, some components such as green buildings green operations and practices, environmental programs and services, environmental information systems and environmental collection" (Kurbanog˘lu & Boustany, 2014). The American Library Association's (ALA) Task Force on Environment and other prominent international library associations, such as the International Federation of Library Associations and institutions (IFLA) Special Interest Group on the Environment, Sustainability, and Libraries reflect the topic's growing popularity.

There is a potential situation where librarians may be or not aware and engage in environment friendly activities. It is possible that addressing global warming is not explicitly outlined in the library's mission statement of policies. Given the global trend of budget reductions for libraries, librarians as professionals have to adapt and align with current situations and changing circumstances. Actions validate the adjustments made in response to the evolving environment. Librarians should demonstrate adaptability and willingness to embrace change and a commitment to providing innovative services including environmentally sustainable practices within libraries.

Environmental sustainability can be defined as any effort or action aimed at conserving a particular resource. It encompasses three interconnected dimensions: Social, environmental (ecological) and financial. These three aspects often known as the triple bottom line form the foundation of sustainability principles (Elkington, 1997). Everyone should have the primary responsibility for preserving the environment and its ecology. Future generations might benefit from conservation of our natural resources. The improvement of human living conditions without harming the environment and ecosystems is possible through environmental sustainability. This implies that

environmental deterioration should not be a cost of global development. Instead, a responsible and environmentally friendly way of life might result in environmental preservation. To prevent unintentional resource depletion, every effort must be done. Since then environment friendly policies and practices have continued to evolve encompassing areas such as renewable energy, waste management, sustainable development and climate change mitigation. Government, Organization and individuals worldwide are now actively involved in promoting environmentally responsible actions and policies to safeguard the planet for future generations.

Libraries are vital institutions that grant people access to information, resources and educational opportunities. However the conventional library model can be environmentally demanding with substantial energy usage, paper waste and dependence on non-renewable materials. To address this numerous libraries have adopted eco-friendly practices to support environmental goals and decrease their impact on the planet. These sustainable initiatives aim to conserve resources, promote energy efficiency and encourage sustainability within the library environment. Libraries like any other institution have an ecological footprint from energy consumption and waste generation to paper usage and resource management libraries can have a considerable impact on the environment Recognizing this impact libraries worldwide are increasingly embracing sustainable practices to minimize their ecological footprint.

Libraries have always been important places for learning, sharing knowledge and connecting with the community. When libraries embrace environmental sustainability practices they can become role models and drivers of positive change. By promoting eco-friendly actions libraries can inspire both library users and the larger community to adopt environmentally conscious behaviors. American Library Association (2019) initiated that the (ALA) and Global Learning of New Jersey partnered together to address the need for sustainability in libraries through the “Libraries Build Sustainable Communities”. Aldrich (2018) introduced the concept of the three Es of sustainability in libraries. Empower, engage, and energize. This framework emphasizes empowering Stakeholders, fostering engagement and collaboration and promoting enthusiasm about the library’s mission for a sustainable future. For enhancing environmental sustainability, it is important to study the best practices in green library research (Beutelspacher & Meschede, 2020).

Gupta (2020) argued green library advocates promote community awareness of sustainability, climate change and environmental issues and emphasized the construction of green libraries which incorporate sustainable energy efficient design and operations practices. Libraries are implementing sustainable practices in their operations such as introducing recycling policies encouraging double-sided printing, prioritizing digital resources and using automated maintenance systems to manage lighting, heating and utilities more efficiently. Smart technology plays a crucial role in enabling energy-efficient automation of various systems including lights, heating fans, ventilation, air quality filters, IT equipment and appliances. By incorporating environment-friendly policies and practices within their own operations, libraries can set an example and create awareness among visitors and the community about the importance of sustainable living and environmental stewardship. Implementing these environmental friendly practices as policies libraries can serve as models of sustainability, educate their communities and contribute to a greener and more sustainable future.

The creation of green environment in libraries is increasingly recognized as essential for promoting sustainability and mitigating the impact of climate change. However, there is a

lack of comprehensive research and understanding regarding the specific challenges, opportunities and outcomes associated with adopting and implementing these practices and policies in libraries. Recent years have seen a notable increase in research on environment and sustainability. This study aims to examine awareness, commitment, policies and future planning of libraries for environment friendly practices. The current study also intends to establish a comprehensive body of evidence demonstrating the correlation among awareness, commitment, policies, practices and future planning in order to inform deliberate decision-making that can impact the overall environment of libraries.

## **2 . O b j e c t i v e s o f t h e S t u d y**

The present study provides a guideline on the current status of environment friendly practices in libraries and librarian's green behaviors. There is no literature on sustainable or green library operations in the context Azad Jammu and Kashmir. Libraries are facing budget issues like many in advanced countries. This study is also very significant because it established the need to create awareness that large amounts of money spent on papers, energy and water bills can be saved in libraries. The present study also looks at the status of ICT used in libraries. This study generated some ideas on how libraries could adopt Environment Friendly practices to save energy, water and natural resources such as a paper. This study provided a baseline for further research in the field of sustainable development in (AJK). The findings of this study might also encourage librarians to collaborate more in their efforts to promote environment friendly practices in libraries. The following the objectives of the study:

1. The main objective of the present study is to explore the status of awareness, commitment, and cooperation among library professionals towards environmental sustainability.
2. To find out policies, practices and future planning in libraries for environmental sustainability.
3. To explore the barriers faced by libraries for implementation of practices.
4. To examine the relationship of awareness, commitment, cooperation, policies, practices and future planning for environmental sustainability.

## **2 . R e v i e w o f l i t e r a t u r e**

Analyzing literature is a crucial step in any research endeavor, as it involves a comprehensive evaluation of existing literature within a specific research field. This process aids in obtaining a deeper understanding of the current knowledge encompassing both theoretical and methodological contributions, as well as substantial discoveries pertaining to a particular subject. Numerous global studies have been conducted to investigate various facets of environmental sustainability in libraries. These studies encompass assessments of the current status of environmental sustainability, key features and barriers of adopting practices. A review article critically analyzing the existing literature in a specific research area, identifying theories, methods and research gaps to set a future research agenda. They provided experience- based insights and guidelines for developing impactful literature review articles (Paul & Criado (2020).

Niess (2021) argued that libraries world are adopting sustainable design practices by repurposing old buildings, creating new and modern facilities while preserving the built environment and reducing energy consumption. By converting historic structures into updated libraries, these institutions demonstrate their commitment to sustainability, achieve cost savings and minimize environmental impacts.

Latimer (2021) explained that modern libraries are leading the way in implementing successful reuse projects that prioritize sustainable design concepts, innovative urban planning principles and adherence to historic preservation guidelines. These initiatives enable libraries to promote environmentally –friendly design while effectively repurposing existing structures.

Premaradne & Bandara (2019). Argued Sri Lankan libraries are actively engaged in grassroots initiatives to combat climate change. They conduct green building audits and community awareness campaigns, promoting sustainability. Librarians advocate for the green library movement, implementing measures like reducing water consumption, utilizing energy efficient windows and incorporating renewable energy sources. Their efforts align with LEED buildings concepts and demonstrate a commitment to environmentally friendly practices.

Shukla et al (2020) explained that green libraries in India are proactively addressing the challenges of global warming. The Perma Karpo library utilizes sustainable design elements such as locally sourced materials, mud roofing, timber paneling and solar panels. The Madras University Library optimizes natural lighting while the LEED certified Anna Centenary Library incorporates innovative features like a rainwater harvesting system. These initiatives showcase the commitment of Indian libraries to sustainability and environmental conservation.

## **2 . 1   A w a r e n e s s   o f   L i b r a r i a n s   t o w a r d s F r i e n d l y   E n v i r o n m e n t**

Tribelhorn (2023) conducted a survey and found that sustainability is a core value in the ALA, not all libraries have fully embraced it due to limited understanding of leadership prioritization. Libraries primarily focus on environmental aspects, with few using assessments or data to measure progress. Sustainability in academic libraries should be prioritized to support scholarship and institutional missions. Regular assessment and holistic implementation are essential, utilizing comparable metrics for improvement.

Khalid, Farid and Mahmood (2021) analyzed that sustainable challenges exist within libraries, and there is a need to raise awareness and improve preparedness among both users and librarians, particularly in academic libraries, to address these challenges effectively.

Sarkar (2020) argued that librarians should be knowledgeable about environment labeling and provide information to their communities. The goal is to create an environmentally sustainable society for future generations. Green libraries play a vital role in achieving this objective.

According to Gupta (2020), librarians are becoming leaders in social responsibility, particularly in environmental sustainability. They are shifting towards digital and social roles, with a focus on green libraries.

Asim and Ahmad (2020) has peer-reviewed the scholarly literature and explored awareness among Pakistani university librarians about green librarianship. While some practices are being adopted, implementation is still in the early stages. Challenges include the need for electronic communication systems and greater participation from all university libraries. More comprehensive studies and initiatives, involving library associations and training programs, are necessary. Librarians play a crucial role in promoting green practices and securing budgets for sustainable initiatives. Shukla, Sharma and Singh (2020) explained in their study that librarians in the Philippines and Indian are overcoming funding challenges to raise climate change awareness.

Warnasooriya (2019) argued the need to apply the green library concept in Sri Lanka, starting with academic and special libraries. Collaboration with relevant stakeholders, spreading awareness through various means, and taking individual responsibility are highlighted as essential steps to achieve success in making libraries and the world more sustainable.

Singh and Mishra (2019) explained that librarians as information specialists, should have a solid understanding of environmental labeling and serve as a valuable resource for their communities. They should be aware of the meaning and significance of environmental labels and certification. By staying informed and sharing relevant information, librarians can empower their communities to make informed choices and promote environmentally responsible practices.

Benson, Anyanwu, Onuoha and Nwauwa (2019) argued the priorities for library professionals included several specific SDGs and viable strategies were highlighted, such as awareness creation, equipment libraries, providing educational information, and securing funding.

Premarathne and Bandara (2019) argued that library professionals play a role in protecting the environment and using resources efficiently. They should be involved in the planning of new libraries to ensure green building practices are followed. They can also educate the community about the importance of green libraries and encourage environmentally friendly behavior among library users.

Ejechi (2018) explained that library personnel in Edo state were aware of the sustainable development Goals (SDGs) through social media, but their perception hinders the SDGs.

### **2.3 Environment Friendly Practices at Libraries**

Sindhu, Gaffar and Kumar (2021) argued that Green libraries aim is to minimize environmental impact and improve indoor quality. They employ strategies such as sustainable materials, resource conservation, and responsible waste management. In India, specific standards and initiatives exist to promote greening efforts in libraries.

Due to massive amount of scholarly literature within Australian libraries, a bibliometric study is conducted to determine how the concept of “Green Library” is being promoted and what strategies library leaders are opting (Garner et al., 2021).

Gupta (2020) found that Green libraries have expanded beyond buildings to include practices like recycling and conservation. This involves green building designs, sustainable operations, eco-literacy programs, and green technologies. Successful

implementation saves costs and resources. However, they are not promoting environmental sustainability.

Kruszewska (2020) analyzed literature review and many other studies affirm that sustainable development is now a key aspect of librarianship. Environmental goals are pursued through environmental education encompassing library services, green collections, collaboration with environmentally engaged librarians, eco-friendly infrastructure, sustainable management and cooperation with the natural environment.

Many studies and research exist on Europe, USA and West. Through formal media and through theme events, German libraries have promoted their book collections on the topics on environmental sustainability for the users with different education levels (Beutelspacher & Meschede, 2020).

Pradnya and Arvind (2019) explained that libraries face problems like space, funding and manpower. Green libraries offer an innovative solution by maintaining environmental balance. They discuss in their study different methods to create green libraries emphasizing equipment and practices for environmental conservation. Green libraries send a positive message to students and society about saving the environment.

Patil (2018) explained that a green library aims to minimize electricity consumption and use renewable energy sources. Libraries can promote the green concept through displays, publications and programs. National and international bodies support green libraries, and the government should encourage and guide them. Some Indian libraries have successfully implemented green practices. Environmental literacy, nature preservation and energy conservation are important.

Afacan (2017) analyzed that enhancing the sustainability of special collections in libraries improves energy efficiency and creates a more comfortable and aesthetically pleasing environment. However, special collections present unique challenges due to their exceptional nature and requirements. Ensuring comfort security, accessibility and sustainability is crucial for the safe handling and preservation of these valuable materials.

According to Jones (2016), Chinese University of Hong Kong Library need more data to measure sustainability practices and evaluate the impact of digital library and green computing. The library launched a digital scholarship Lab and are considering a cloud-based library system without sufficient evidence of its environmental benefits. Further reducing electricity consumption will be challenging, but they plan to improve waste management through a project involving staff, students and student organizations.

Wong (2016) has explained that “green buildings” are now globally adopted practices and there are many countries specific standards, such as in the United Kingdom BREEAM (Building Research Establishment Environmental Assessment Method); LEED (Leadership in Energy and Environmental Design) in the United States.

Nikam (2017) there is no unique definition for the green library, further he stressed that the green library building must be built by reducing the negative and enhancing the positive impacts while concerning the usage of natural and renewable energy sources.

Wong (2016) explained that ‘green buildings’ are now globally adopted practices and there are many countries specific standards, such as in the United Kingdom BREEAM (Building Research Establishment Environmental Assessment Method); LEED (Leadership in Energy and Environmental Design) in the United States and similar standards in many Asian countries. Analysis of such scholarly literature confirms the point that environmental sustainability is no longer a feel-good idea. Instead, many professions, businesses and organizations worldwide have implemented it. In view of

such studies, it becomes a logical expectation what is the uptake and situation in the Pakistan context. Making environment friendly policies is the responsibility of every service within multiple sectors.

The concept of environmental sustainability has been explored, analyzed and practiced in many shapes and forms within libraries. For example, Brodie (2012) has analyzed a case study of Macquarie University Australia, where a brand-new library had been developed after opting a green building design, housing environment friendly collections display and then delivering green friendly library services. It is also obvious that environment friendly work is not about the buildings alone, it is about day-to-day life and leaving less carbon consumption within daily life.

Stark argued (2011) that information literacy should be a fundamental component of academic librarianship. Included in discussions about academic libraries and sustainability.

Kruse (2011) has explained that printers, photocopiers, faxes, network printers and other technology equipment also have a direct impact on the environment. Hence libraries should educate, encourage, and promote the concept of 'absolute need of the print', where printing is done only when it is required essentially. And, even when printing is done, it can be done smartly, such as double side printing etc. Existence of such research articles explains that concept of green acts and environmental sustainability exist in the libraries and the library professionals have analyzed this concept in different angles from building design to printing. This remains a challenging question who in the library has responsibility to achieve environment friendly practices.

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Marcum (2009) has debated that a clear vision, sound understanding and effective communication skills are required to introduce, develop, implement and achieve environment friendly practices within academic libraries. As libraries are service oriented units, hence these serve a large community of users. Boydon and Weiner (2000) have suggested that libraries have an important role in promoting education on environment sustainability within its community of users. This can be achieved by a variety of steps such as applying green policies within the library, conducting seminars, workshops and talks on the topic within the library; as well as developing a marketing campaign around the environment. 'The green library is many concepts with several components, such as green buildings, green operations and practices, green programs and services, green information systems and green collections' (Kurbanoglu and Boustany, 2014: 49).

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Antonelli (2008) reviewed the scholarly literature on green movement within libraries from 1979 to 2007; and highlighted in what shape and form the concept of green library has been established over the decades. Review of such literature clearly reflected that environment friendly practices have been in place for many years within the library sector. The concept of environmental sustainability has been explored, analyzed and practiced in many shapes and forms within libraries.

Choudhury (2007) argued that information services contribute towards a great carbon footprint hence why green policies must also be adopted within premises, service delivery models of the modern services. Antonelli (2008) has reviewed the scholarly literature on green movement within libraries from 1979 to 2007; and has highlighted in what shape and form the concept of green library has been established over the decades. Review of such literature clearly reflects that environment friendly practices have been in place for many years within the library sector. It is somehow surprising that higher education libraries of Pakistan in general and AJK in particular haven't produced any scholarly work on this area.

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The evidence of climate system warming has become increasingly clear since the middle of the 20<sup>th</sup> century. Level of awareness on the topics of environmental awareness within library Professional of sixteen libraries is highlighted in Indian LIS literature (Datta, Chaudhuri, & Kumar, 2019).

Numerous Asian countries, such as Japan, South Korea, China, Taiwan, Singapore, Malaysia and India have established comprehensive rating systems for assessing the (ES) of buildings and communities. Interestingly, Azad Kashmir currently lacks its own distinct set of environmental standards explicitly tailored to its unique context and needs (Mehmood, 2017).

In their research Robins, Clover, and Sarawanan (2010) identified the heightened end endeavors to enhance the environmental sustainability of significant developing nations like the Republic of Korea, China and India

In Egbukole's work from (2008) it is emphasized that fostering public awareness represents a fundamental approach to addressing and resolving environmental challenges. Nigerian libraries possess the potential to make a substantial impact by coordinating various initiatives aimed at public consciousness concerning environmental matters. These initiatives encompass organizing campaigns, workshops, meetings, forums, lectures, exhibitions, rallies and utilizing media platforms for this purpose.

"In Malcolm Gladwell's book 'The Tipping Point', published in 2000 he introduces the concept of the power of context as one of the three key principles underlying epidemics and agents of change. This principle underscores the idea that human behavior is highly responsive to and significantly shaped by the surrounding environment." Less research is conducted in Africa, Asia and less-developed countries.

### **3 . R e s e a r c h A p p r o a c h a n d M e t h o d**

Johnson and Onwuegbuzie (2004) articulated that the choice of research approach should invariably align with the research questions to provide the most effective and appropriate solution to the research problem. The study employed a quantitative research methodology to achieve its objectives. According to Muijs (2010) quantitative research entails the gathering and quantification of data from a broad population followed by its analysis through statistical techniques. Survey technique is as it is a fitting and pertinent approach for conducting research within the realm of librarianship (Powell, 2006). The existing body of literature suggests that prior investigations such as those conducted by Nagaraju (2015) and Tella & Oyedokun (2014) have successfully employed survey methodology and a quantitative research approach to accomplish their research aims.

In the current study, the target population encompasses librarians employed within the libraries of Azad Jammu and Kashmir. Data collection from the target population was conducted using convenience sampling a non-probabilistic method. As elucidated by Sheble and Wildemuth (2009), non-probabilistic sampling methods do not afford every member of the population an equal chance of being chosen. In this case the researcher opted for this sampling approach due to the dispersed nature of the population in Azad Jammu and Kashmir.

The researchers opted for the questionnaire as the instrument of choice. Blaxter (2010) highlighted the questionnaire as the most suitable tool for collecting data from large and dispersed populations. Rea and Parker (2005) pointed out a significant advantage of the questionnaire method, which is its potential for administration in other communities or within the same population even after several years. They also emphasized that questionnaires are commonly employed by researchers when dealing with substantial population sizes. As a result, a meticulously structured questionnaire was adapted in alignment with the research objectives. The construction of the questionnaire drew upon a comprehensive review of literature. To ensure the content validity of the questionnaire, it was imperative to undergo expert review. Valuable insights were sought by soliciting feedback from experts with substantial experience, well-established professional standing and active involvement in public university library projects and colleges. A preliminary investigation was conducted on a limited scale to pinpoint any issues or shortcomings in the data collection instrument. To enhance the trustworthiness of this tool within a controlled environment, it was shared with librarians from AJK. A total of ten librarians provided their feedback through the questionnaire. To establish the tool's reliability, Cronbach's alpha coefficient was employed across the entire questionnaire. The Cronbach's alpha value ranges between 0.85 to 0.972, indicating a high level of reliability.

The first phase of data collection consisted of sending out questionnaires to librarians working at different libraries in AJK. This phase was also monitored regularly. The collected data was entered into SPSS Version 22 software. Various codes and numbers were assigned to the questions. The frequency and mean were calculated to measure different variables. Descriptive and inferential statistics were applied to analyze data.

## **4 . R e s u l t s**

### **4 . 1 D e m o g r a p h i c I n f o r m a t i o n**

These demographics are the features of the population, their gender, experience qualification who participated in the research. The results of Table 1 present that 56 (56%) of total 100 (100%) participants were male and 44 (44%) were female. The findings of Table 4.1.2 uncover that majority 37 of total 100 (100%) participants were Librarians, while 30 were senior librarians, 29 were assistant librarians, 4 were chief librarians. Majority of respondents (51 of total 100) had qualification MLISc, while 31 had BS and 12 had M.Phil. while 6 had PhD qualification.

The greater part of the respondents 32 were working from 11-15 years and 22 have 16-20 years' experience, while 20 participants have over 20 years' experience, 17 have 6-10 years' experience and 9 have 1-5 years' experience in the field of Library & Information Science (LIS).

Dominant majority of respondents (92%) belong to academic library, 7% from public library while only 1% from special library.

**Table 1: Demographic Information**

Gender	Frequency	Percentage
Male	56	56%
Female	44	44%
<b>Designation</b>		
Chief Librarian-04/ Senior Librarian-30	34	34%
Librarian	37	37%
Assistant Librarian	29	29%
<b>Qualifications</b>		
Ph.D-6	06	06%
M.Phil.-12	12	12%
MLISc/ BLS	82	82%
<b>Professional experience</b>		
Over 20	20	20%
11-20	54	54%
1-10	26	26%
<b>Type of Library</b>		
Academic	92	92%
Public-07/Special-01	08	08%
<b>Total</b>	<b>100</b>	<b>100.0</b>

#### 4.2 Awareness and commitment for friendly environment

The objective of this section comprising of four items was to answer the first research question which asked the respondents awareness and commitment towards friendly environment. The statistical data shows that mean for awareness about Sustainable Development Goals is lower as compared to mean for commitment for these goals..

**Table 2: Awareness and commitment for friendly environment**

<i>Statements</i>	<i>Mean</i>	<i>Sd.</i>
<b>Awareness with SDG and environment</b>		
Do you know Sustainable Development Goals (SDGs) enunciated by the UN?	3.34	1.139
Do you know how to achieve friendly environment at the libraries?	2.88	1.066
<b>Commitment with SDG and environment</b>		
Do you agree that the (SDGs) are significant and relevant to libraries?	4.55	.609
Do you agree that achieving friendly environment can secure the future of Academic libraries?	3.24	.996

#### 4.3 Environment friendly policies and support from organization

The results showed that respondents agreed that their libraries have written policies on how to achieve environmental goal. Implementation of environmental friendly policies has higher rate of agreement among respondents as compared to availability of written policy. Respondents agree that they will implement environmental friendly steps without any written policy but did not agree that written policy is necessary for environmental sustainability.

The respondents agreed for taking action despite lack of existing written policies Respondents agreed that their senior management will support them towards the environment friendly policies. Level of agreement among library professionals about the cooperation of students, staff and other stakeholders was lower.

**Table 3: Existence of environment friendly policies and support of stakeholders**

<i>Policy and its implementation</i>	<i>Mean</i>	<i>S.d.</i>
Do you think that library staff have adopted environment friendly policies?	4.64	.732
Does your library has written policy on how to achieve environmental goals?	4.47	1.11
In absence of written policy, would you be willing to implement at least one practical step to reduce carbon footprint in your library?	3.57	1.233
Do you think that having a written policy will improve and promote environmental awareness?	2.57	1.12
<b>Support of stakeholders</b>	<b>Mean</b>	<b>S.d.</b>
In your opinion, does senior management in your organization will support the environment friendly policies?	3.91	1.14
In your view, will students, staff and other stakeholders change	2.99	0.71

behaviors towards environment due to awareness by the library?		
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#### 4.4 Action plan and environment friendly practices at libraries

Respondents were of the view that they have plans for rooftop and backyard gardening, library automation, increased virtual and online service in their libraries environment friendly policies.

The results showed that library professionals agreed that library building design supports and promotes in achieving friendly environment. Librarians pay attention to purchase environmental friendly library materials. They regularly review the figures and performance of practices

**Table 4: Action plan and prevalence of environment friendly practices**

<i>Action Plan</i>	<i>Mean</i>	<i>S.d.</i>
Do you have any plans of Rooftop & backyard gardening?	3.61	1.25
Do you have any plans of Library automation, increased virtual & online services	3.56	0.96
Do you have any current or the future plans of reducing carbon footprint reduction through less paper use?	3.23	1.17
Has your library currently any action plan to achieve a friendly environment?	3.15	1.15
<b>Practices</b>		
Does your Library building design support and promote friendly environment?	4.16	1.11
During purchase of library material, do you consider purchasing environment friendly materials?	3.28	1.17
Do you regularly review figures and performance on achieving energy efficiency within library building?	3.14	1.25

#### 4.5 Impact of gender on environmental sustainability constructs

To understand the impact of gender on views of respondents, Independent Sample t-test was applied (Table 5). The results showed that awareness about environmental awareness is higher among female as compared to male. Mean values show that female has higher score for all construct as compared to male.

**Table 5: Impact of gender on environmental sustainability constructs**

<b>Environmental sustainability constructs</b>	<b>Female Mean</b>	<b>Male Mean</b>	<b>t</b>	<b>Sig</b>
Awareness of librarians	6.63	5.89	<b>-2.11</b>	<b>.038</b>
Commitment of librarians	7.93	7.67	-1.128	.262
Policies	7.27	6.85	-1.689	.094

Support of stakeholders	7.11	6.73	-1.020	.310
Plans of action	15.00	13.94	-1,522	.131
Practices for environmental sustainability	10.95	10.28	-1.326	.189

#### 4.6 Effects of Designation, qualification and experience of respondents on environmental sustainability constructs

Pearson correlation was used to examine the relationship of designation, qualification and work experience. The values of correlation coefficient show that no relationship exists among environmental sustainability constructs demographic variables (Table 6).

**Table 6: Effects of qualification, age, and experience of respondents on green library constructs**

	Designation	Qualifications	Experience
<b>Green library constructs</b>			
Awareness (AWA)			
Commitment (COM)			
Policies (POL)			
Support of stakeholders			
Plans of action (PLA)			
Practices (PRA)			

#### 4.7 Relationships among environmental sustainability constructs

Pearson correlation was applied to examine the relationships of different constructs of environmental sustainability. The values of correlation coefficient (Table 7) show that all the constructs have positive significant correlation. The highest correlation exists between plan of actions and environmental practices (.709\*\*) followed by existence of policy and availability of support from users, staff and administration (.445\*\*).

**Table 7: Relationships among environmental sustainability constructs**

Types of constructs	AWA	COM	POL	SUP	PLA	PRA
Awareness (AWA)		.397**	.314**	.279**	.226*	.233*
Commitment (COM)			.404**	.335**	.215*	.202*
Policies (POL)				.445**	.284**	.301**
Support of stakeholders					.350**	.322**
Plans of action (PLA)						.709**
Practices (PRA)						

## 5. Discussion

The finding of this research will contribute to the understanding of how libraries in (AJK) can play a proactive role in addressing global warming through their work practices.

The executive bodies of libraries must arrange some training workshops for library professionals to become aware with Sustainable Development Goals (SDGs) enunciated by UN and encourage them to implement the same in their libraries. The administration of the respective libraries should increase budget allocations for preparation, implementation of environment friendly policies and practices and related to allied expenditure. The public sector universities where library science is being offered may revise its curriculum according to market need and may add a course related to SDGs. In order to enhance the implementation / development of environment friendly policies & practices group/practice base activities need to be structured in universities curriculum. The management of libraries should enhance their infrastructure to facilitate the accessibility of digital content, thereby creating a supportive and amicable learning environment with speedy internet connections. Libraries should develop policies regarding environment friendly facilities to their end uses. Awareness campaign may be launched by all library schools/departments and professional bodies regarding development of written environment friendly policy in the all types of libraries. Senior management of the libraries should be supportive and provide maximum assistant to their libraries administrations. Senior management of the libraries should arrange training workshops and refresher courses for the capacity building, personal grooming and professional development of the library staff. Libraries management should conduct a pilot project/study to determine that how they reduce the usage of paper, plastics and other avoidable material to promote environment friendly policies and practices. High ups of the libraries institution may take regularly review of figures and performance on achieving energy efficiency within library building. In this digital era of information, Libraries should have current or the future plans of reducing carbon footprint reduction through less paper use in the libraries.

## 6. Conclusions

The main aim of this research was to examine the status, adoption and implementation of environmentally friendly policies and practices in libraries located in the region of Azad Jammu and Kashmir. The study objectives were achieved using a quantitative research methodology. The target population of the study was library professionals of academic, special and public libraries in AJK. In order to collect the data, questionnaire was disseminated through email whatsapp among the respondents. The study explored that majority of library professionals agreed that the Sustainable Development Goals (SDGs) enunciated by UN are significant and relevant to libraries. Further, majority of the respondents knew about the SDGs and agreed that user friendly environment in the libraries can secure the future of libraries. Moreover, this study showed that majority of the library professionals agreed that their libraries have written policies on how to achieve environmental goal and opined that their senior management supported them towards the implementation of environment friendly policies. Furthermore, this study highlight that majority of participants were of the view that library building design supports and promotes in achieving friendly environment in the libraries. The study also

highlights barriers which faced by majority of respondents i.e. “friendly policies are expensive option” for AJK libraries, “adoption of environment friendly policies & practices by the library staff” and “lack of support from the senior management”.

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