

LIBRARY ENVIRONMENT CONDUCTIVENESS AND USAGE OF POLYTECHNIC LIBRARIES AMONG STUDENTS IN DELTA AND EDO STATES

By

GLORIA NGOZI MORDI (CLN)

PROF. B. E. IWHIWHU

and

DR. ONOME N. EKOKO

Abstract

This study investigated library environment conduciveness and usage of polytechnic libraries among students in Delta and Edo States, Nigeria. The research adopted the survey research design. The population of the study is 9,531 students from six Federal and State Polytechnics across Delta and Edo States. The sample of 336 respondents was drawn from the total population using simple random sampling techniques. Questionnaire was the instrument used to collect data from the respondents. The data obtained from the questionnaire were analyzed using descriptive (percentages, mean and standard deviation) with mean placed at 3.0 and inferential statistics. The study found that various environmental factors, including lighting, atmospheric conditions such as, temperature and humidity, reading space, cleanliness, resource deterioration, internet connectivity, and operational issues, significantly affect the usage of library resources in polytechnics. The study also found that students in polytechnics perceived that the extent of their polytechnic library environment conduciveness is high. The study further found that extent of the use of library in polytechnics in Delta and Edo States is high and that library environment conduciveness significantly predict students' use of library resources in polytechnics. Consequently, the study recommends that polytechnic authorities should prioritize improving environmental factors such as lighting, atmosphere, temperature, and cleanliness within library spaces and that polytechnics should continue to foster information literacy among students through targeted programmes and workshops among others.

Keywords: Library Environment, Conduciveness, Library Usage, Polytechnics, Polytechnic Libraries.

Introduction

Books, non-books, and electronic information resources are examples of information-bearing materials that are library assets that are thought to be essential components for students' academic achievement and knowledge acquisition in post-secondary institutions. This is due to the fact that access to and utilization of necessary information resources are the only ways in which genuine knowledge may be gained in a teaching and learning setting (Oyedum, 2012). Known as academic libraries, libraries affiliated with higher education institutions (e.g., universities, polytechnics, colleges of education, etc.) provide a variety of information resources

and services to meet the information needs of the institution's staff, students, and other researchers. The creation of academic libraries ensures that the various information requirements of the academic community, which includes staff, instructors, administrators, and students are satisfied. As a result, the library is regarded as a social institution dedicated to upholding the duty of educating the knowledgeable and the uneducated.

Students at all levels of the polytechnic use the library and its information resources for a variety of reasons. According to Ukih (2012), the utilization of library resources is the overall amount of information sources that patrons—who may include researchers, lecturers, or students—consume within the library. When discussing library usage, factors including how often people visit the library, how often they check out books, and what types and ages of information sources they utilize (Fajonyomi et al., 2021). Students at polytechnics might utilize their libraries' resources for a variety of things, including studying for tests, writing assignments, seminars, and projects, as well as for enjoyment. Students may also use information resources solely for academic objectives. This entails library patrons reading books and magazines, using the internet, and obtaining answers to reference queries, among other things. Accordingly, people who employ information resources do productive research (Ogechi-Nkechinyere & Akanwa, 2018).

However, the library must establish a calm and comfortable reading and study space for patrons to improve proper access, utilization, and assimilation of the embedded information in the resources and services offered by the library in order to provide satisfactory services and for students to use their polytechnic library efficiently. A well-equipped and conducive library environment can influence students' utilization of library resources, thereby enhancing their academic performance and overall learning experience. A conducive environment characterized by adequate lighting, proper ventilation, comfortable seating, and minimal noise, creates an atmosphere that encourages focused study and prolonged library use. How well undergraduates use library materials is largely determined by how conducive the library spaces are. Students are more likely to spend more time in the library when the physical space is well-designed and welcoming. Conversely, an unconducive environment with poor infrastructure, inadequate facilities, and disruptive conditions can discourage students from utilizing library resources effectively (Olatunji,

2023). Several essential components define a favorable library environment, such as a calm setting, easy access to materials, and suitable areas designed to meet a range of learning requirements. The library's physical design and atmosphere are essential for encouraging focus and concentration, which enables students to become fully involved in their studies (Oyerinde & Mayowa-Adebara, 2019). An environment that is conducive to learning can be created by elements like well-ventilated areas, ergonomic seating, and adequate lighting.

Furthermore, collaborative spaces facilitate group study and debates, promoting academic engagement, while silent study places enable students to concentrate without interruptions (Zheng et al., 2024). Additionally, by accommodating different study preferences and styles, the availability of technology-equipped rooms, designated silent places, and collaborative spaces can greatly improve the learning experience and foster a more productive learning environment. It is undeniable that the library's social atmosphere affects how conducive it is. Peer interactions, staff attitudes, and noise levels all affect how friendly the library feels. Positive experiences are produced by libraries with helpful employees on hand to help students navigate resources and get answers to their inquiries (Okorie & Okere, 2018). Similarly, well-organized shelves, obvious signage, and print and digital resources make it easier for students to find the information they need and encourage them to do more research.

Therefore, it is interesting to observe that the environment of the library and its accommodating nature play a significant role in the efficient use of the library, its resources, and its services. Poor library patronage can therefore be caused by a lack of favorable conditions and amenities, such as enough lighting, ventilation, comfortable furniture (such as reading tables and chairs), enough reading areas, etc. In light of this, this study examined how students in Delta and Edo states used polytechnic libraries and how conducive the library environment was.

Statement of the Problem

The availability of high-quality print and digital library materials, which improve learning and knowledge acquisition, is a major factor in the quality of polytechnic education. Libraries are made to help people succeed academically by encouraging reading, critical thinking, assignment completion, and research. Nonetheless, the low student usage of polytechnic libraries is causing librarians and

library administration to become increasingly concerned. Potnis et al. (2018) confirmed a gradual decline in library usage among undergraduates in higher institutions.

Despite the potential benefits of library use, research, such as Fajonyomi et al. (2021), indicates that students in tertiary institutions underutilize library resources for academic improvement. Preliminary observations suggest that many polytechnic students prefer accessing information online from the comfort of their homes using mobile devices. Additionally, poor library facilities such as inadequate lighting, broken chairs, and non-functional air conditioning often discourage usage. A lack of maintenance further exacerbates these issues, creating an uncondusive environment that drives users away. These concerns raise critical questions: could the low patronage of polytechnic libraries be linked to poor uncondusive library environment? Is the library environment sufficiently conducive for effective use of resources? An attempt to provide answers to these questions necessitated this study.

Research Questions

The following research questions were answered in the study:

- 1) What are the environmental factors affecting student's usage of library resources in polytechnic libraries?
- 2) To what extent do students perceive that the library environment is conducive in polytechnics in Delta and Edo states?
- 3) To what extent do undergraduate utilize library resources in polytechnics in Delta and Edo states?
- 4) What is the relationship between the library environment conduciveness and students' usage of library resources in the Polytechnics in Delta and Edo states?

Literature Review

Literature reviewed in this study were done in-line with the research questions guiding the study.

Environmental Factors Affecting Student's Usage of Library Resources in Polytechnic Libraries

In the twenty-first century, the value of libraries to students in higher education cannot be understated. Students place a high value on library and information services because they help them acquire more knowledge and develop their academic skills, which makes learning more purposeful. However, the

environment whether physical or human must be favorable or conducive to users in order for students in postsecondary institutions to make meaningful and successful use of library resources and information services (Gojeh et al., 2013). The environment is further defined by Gojeh et al. (2013) as any influence that a person encounters after receiving the genetic pattern through germ plasma.

Academic libraries function in two main contexts, the internal and external ones, just like other commercial businesses (Folorunso & Njoku, 2016). Building design, reading areas, temperature, humidity, water, light, air pollution, smoking, dust, furniture, and other harmful substances are the primary internal environmental variables of academic libraries. However, Okorie (2018) asserts that the external variables are made up of a variety of external factors that have an impact on living things. They are usually found outside the library's walls, and librarians usually have little control over them. The non-living elements that can influence patrons' desire in using the library's services are known as environmental factors in the polytechnic context. They include: sister libraries, bookstalls, cyber cafes, social activities, lecture rooms, relaxation centers and lecturers teaching methods.

However, Udo and Ben (2020) claimed that there are many environmental elements that influence how students in postsecondary institutions use the library's resources and services. According to the authors, the most significant and obvious ones are, among other things, landscape, architecture, aesthetics, lighting, air quality and temperatures, library space, and tranquility. Amusa and Iyoro (2013) studied the effects of library environments, instructional programs, and user-librarian partnerships on library use by undergraduate students in Nigeria while discussing the environmental elements influencing library utilization. For the study, the survey approach is used. The instrument used to gather data is a questionnaire. It was revealed that majority (1,926; 72%) of the undergraduates strongly agree with the statements that library environments such as conducive reading atmosphere, location of the library, seating arrangement, shelve guidance and arrangement, etc., affect the use of the library.

Additionally, at the College of Education in Warri, Nigeria, Ejiroghene (2020) studied how the library environment and user education affected the library usage of undergraduate students. Using a random sampling technique, a sample size of 400 respondents was chosen from the population of 10,000 regular undergraduates across

five faculties, which comprised the study's survey research design. A self-created questionnaire served as the study tool for gathering data, and frequency distribution and percentages were utilized to assess the results. According to the study's findings, environmental factors that can influence students' use of libraries in higher education institutions include the building's condition, seating arrangements, the availability of library information resources, library furniture, Internet and Wi-Fi connectivity, and the availability of electricity. It is glaring from literature that environmental factors that is capable of affecting students' use of the resources and services of the library are extensive. The range from factors such as the physical design of the library i.e., the architectural design of the library building, the interior/exterior aesthetic of the library, the library space, ventilation, lighting, library hall temperature, signages, availability of rest rooms, cleanliness of the library environment, library furniture, seating arrangement, shelf guidance and arrangement, etc. can affect the use of the library.

In a similar vein, Oyewumi et al. (2017) investigated the aesthetics and environmental aspects of libraries as reading motivators at a Nigerian public institution. The survey research approach was employed in the study. Three hundred postgraduate students from the university were chosen using a stratified random sampling procedure. A questionnaire was employed as a tool to gather data from respondents regarding the environmental and aesthetic state of the library. Descriptive statistics including simple percentages, frequency counts, tables, pie charts, and bar charts were used to compile and analyze the data. The study found that the aesthetic interior environment of the library, aesthetic beauty of the furniture and shelves, natural lighting of the library when there is no power supply, cleanliness of the library building, adequacy of the conveniences (rest rooms) provided, architectural design or physical structure of the library, convenient entrance and exit, adequate parking space and beautiful external environment as environmental factors capable of motivating students to use the library.

Extent of Library Environment Conduciveness in Polytechnics

Effective libraries serve the dual purposes of fostering reading environments and advancing literacy by providing engaging and pertinent reading materials for

people of all ages in the community. Encouraging patrons to make efficient use of library resources depends on how conducive the library atmosphere is. According to Amusa et al. (2014), referenced in Oyerinde and Mayowa-Adebara (2019), in addition to the impact on students' academic performance, the unfavorable conditions of the library, which serve as librarians' workplaces, cause occupational dissatisfaction, which in turn makes library staff ineffective. According to Awadh (2012), referenced in Omehia (2018), a comfortable reading space in a library might help students focus better during study sessions and perform better overall.

The conduciveness of academic libraries has been the subject of numerous studies. Another study on the work environment as a factor influencing librarians' job performance at the National Library of Nigeria was carried out by Madukoma and Sangosanya (2022). For this study, the survey method's descriptive research design was used. One hundred thirty-five National Library employees make up the study's population. The Federal Capital Territory, Abuja, and 34 state capitals are home to National Library branches. Total enumeration is used in the investigation. The 135 employees of the National Library served as the study's sample size. The staff of the National Library State branches that will be participating in the study were asked to complete a questionnaire. For analysis of data, The International Business Machine Statistical Package and Service Solutions (SPSS) version 23 was used. The findings revealed that the level of conducive work environment of the library staff of the National Library can be described a high (grand mean=2.58, SD=.627). This implies that the work environment is favourable to a high extent.

Folorunso and Njoku (2016) conducted a study to examine the impact of user education and library environment on undergraduates' usage of the University central library at the University of Ibadan, Nigeria, while also adding to the conversation on how conducive the library environment is. 18,034 regular undergraduate students from ten faculties made up the population of the study, which used a survey research design. A proportionate, random sampling technique was used to choose a sample size of 360 respondents. A self-created questionnaire served as the study tool for gathering data, and regression and correlation analysis, as well as frequency distribution, percentages, mean, and standard deviation, were utilized to analyze the data. The finding of the study revealed that library environment at the University of Ibadan was characterised by good library building (mean=3.75), seating arrangement

(mean=3.59), availability of information resources (mean=3.54), and fair electricity supply. This means that to a high extent, the library environment is conducive.

In Delta State, Nigeria, Eserada (2022), conducted research on the patronage of public university libraries by undergraduate students and the environmental conditions of these libraries. A descriptive survey design of the correlational type was used in the investigation. There were 2,727 undergraduate library users in the study's sample. The study's sample consists of 272 undergraduate students, or 10% of the total population. In the poll, the incidental sampling technique was used. A questionnaire was the instrument used to collect the data. Frequency counts were utilized to assess the data for research questions 1 and 3. Mean/standard deviation was utilized to analyze research questions 2 and 4. The hypothesis was assessed at the 0.05 alpha-level using the Pearson's product moment correlation coefficient. Findings revealed that undergraduates expressed a high level of satisfaction with the design and surroundings of their university libraries.

Additionally, Amusa et al. (2013) conducted research on the work conditions and job performance of librarians in South-West Nigerian public universities. For the investigation, a descriptive survey design was chosen. 189 academic librarians employed by federal and state-owned university libraries in South-West Nigeria comprise the study's population. With the use of a questionnaire given to all academic librarians in the impacted libraries, the total enumeration technique was determined to be appropriate for this study. Although there are 189 librarians in total, only 153 of them or 81% of the population returned their completed questionnaire. The findings revealed that the work environment of librarians in terms of physical facilities, open communication, motivation etc., are fairly favourable. This means that to a high extent, the library work environment is conducive. It can be deduced from the literature reviewed in this sections that library environment in academic libraries in Nigeria is considered conducive and that supportive physical conditions, availability of resources, and favourable work environments positively impact both user satisfaction and library usage.

Extent of the Use of Library Resources by Students

As long as the teaching strategy used involves more than just students taking notes and repeating what their lecturers have said during class or exams, library use is

crucial to students' academic success. When used effectively, the academic library's information resources are essential to students' academic achievement. Students' academic performance in higher education is largely determined by how often they visit the library and how much they use its services. Anunobi and Nwankwo (2020) echoed this, claiming that children in schools with full-time librarians and adequate library resources outperform those with little or no library information resources in terms of academic performance.

Over time, research on the utilization of academic libraries has changed. The issue of underuse of library information resources has existed on a global scale. Researchers like Kumar (2017) and Oriogu et al. (2018) have examined the attitudes of users in addition to the characteristics of usage, the reasons people visit libraries, and the elements that influence how they use the various kinds of library items. The development and spread of ICT in the twenty-first century has made it easier to use the library effectively. Students may no longer need to physically visit their institution's library because they can now access its materials from a distance (Adeeko&Adetimirin, 2021). The amount to which academic libraries' resources are used has been the subject of numerous studies.

The amount of use of the Faculty of Law Library at Nnamdi Azikiwe University in Awka, Nigeria, was assessed by Onwudinjo et al. (2015). The findings demonstrated thorough understanding of how to use the law library's holdings. While a small percentage of students visit the library rarely, the majority use it three times per week. Similarly, Nkamnebe et al. (2014) assessed how the students at Paul University in Awka, Anambra, Nigeria, used the library's resources. They found that students' daily library use was very low, with only 6.5% of respondents saying they regularly used the university library. The highest number of the students (22.8%) indicated that they visit the library three times in one week, while about (19.6%) visit the library once in a week. In contrast, about (22.1%) of the students barely use the library.

Additionally, a study of undergraduates' usage of library resources and services at Nigerian universities was carried out by Adeeko and Adetimirin (2021). A correlational descriptive survey research design was used. Purposively chosen were six departments (Chemistry, Microbiology, Political Science, Economics, English, and History) and three homogeneous faculties (Science, Social Science, and Art). Out

of 14,547 total undergraduates, 797 students, or 5% of the 200–400 level, were chosen. For this study, a questionnaire was employed as the data gathering tool. The data was analyzed using the statistical package for social science (SPSS). The research topics were analyzed using descriptive statistics like standard deviation and percentage mean. Findings revealed that the frequency of use of library resources and services by undergraduates in federal universities in North-central, Nigeria is not high as expected. The frequency of use of library resources and services is on the average; however, the findings revealed that books were mostly used by the undergraduates compared to other resources available in the university libraries in the federal universities in North-central, Nigeria.

Olorunfemi and Ipadeola (2021) conducted a study on the use of library and information resources by undergraduate students at Federal University of Technology Akure, which provides additional insight into the scope of library resource use in higher education. The research design used in the study was survey-based. A questionnaire was the tool used to gather information from the respondents. All 200 and 300 level undergraduate students from the eight (8) Schools of Federal University of Technology, Akure (FUTA) make up the study's target group. To ensure that every study participant had an equal chance of being included in the sample, the respondents were chosen for the study using a random sampling procedure. Simple percentages, frequency counts, and descriptive statistics were used to assess the data gathered for the study. Finding showed that textbooks, Reference Materials, newspapers, and Online Databases were the most utilized information resources by ($X=3.26$), ($X=3.07$), ($X=3.23$), ($X=3.06$) and ($X=2.69$) respectively, while the least utilized library information resources were journals, theses and dissertations CD-ROM, card catalogue and Online Public Access Catalogue (OPAC) with mean of ($X=2.24$), ($X=2.42$), ($X=2.24$), ($X=2.35$) and ($X=2.33$) respectively.

The implication of this finding is that despite the availability, accessibility and awareness of library information resources, some resources were less utilized such as journals, theses and dissertations, CD-ROM, card catalogue and Online Public Access Catalogue (OPAC). The literature reviewed in this section has revealed that despite the availability of information resources in academic libraries, the level of usage by students is considered low and not encouraging. It can be deduced from the literature that while library resources are generally available and accessible, efforts are needed

to encourage wider utilization, particularly of specialized resources, through better awareness and integration of technology to meet students' evolving research needs.

Relationship Between Library Environment Conduciveness and Students' Usage of Library Resources

The environment of an academic library includes all the situations, people, objects, and activities that surround the library and may have an impact on how often people use it, either positively or negatively. According to Ejiroghene (2020), a library's layout and organization have an impact on patron behavior and satisfaction just as much as the library's actual design. The attitudes of library staff are also important since they will determine how comfortable or uncomfortable library services are for patrons. Udo-Anyanwu et al. (2023) assert that the library's environment's suitability and conduciveness have a significant impact on patrons' use of the facility and level of satisfaction with its resources. A library that is conducive to meaningful study is one that is visually appealing, noise-free, has comfortable and long-lasting furniture, is well-ventilated, has adequate lighting and illumination, etc. Undergraduate students may use a library less frequently if these amenities are not appropriately offered.

According to McVey and Nock, who were quoted by Oyedum (2011), if elements like light, temperature, and sound are not appropriately included in library design, they may have a detrimental impact on people and hinder learning. For instance, if the library environment is favorable, undergraduate students will be encouraged to use its resources for academic work of any kind or for other purposes. According to Udo-Anyanwu et al. (2023), environmental elements including lighting, ventilation, and noise levels are characteristics that are likely to affect the clients' ability to receive high-quality information services.

Oyibo (2016) examined the human and environmental factors influencing undergraduates in Niger-Delta, Nigeria, when examining the relationship between library environment conduciveness and usage. The results showed that the Pearson product correlation coefficient r is $(.581 \times 100)$ 58.1 and above average. Thus, the study came to the conclusion that environmental conditions and undergraduates' use of medical libraries are significantly correlated. Additionally, the results showed a significant value of .000, which is less than 0.05. This suggests that a change in one of

the values (environmental conditions) causes a commensurate change in the other value (medical library use).

Additionally, the results of a study by Folorunso and Njoku (2016) on how the environment of the library and user education affect undergraduates' library use at the University of Ibadan in Nigeria. 18,034 regular undergraduate students from ten faculties made up the population of the study, which used a survey research design. A proportionate, random sampling technique was used to choose a sample size of 360 respondents. A self-created questionnaire served as the study tool for gathering data, and regression and correlation analysis, as well as frequency distribution, percentages, mean, and standard deviation, were utilized to examine the data. The results of the study showed a substantial correlation between library use and the library environment ($r = .342$, $N = 322$, $P < .01$). Hence, library environment had influenced the use of library by the students. These studies have shown a great deal of variation in the relationship between environmental factors and the use of libraries in academic libraries. In order to provide additional support for these discrepancies, Okorie and Okere (2018) studied library factors as predictors of information resource use in public university libraries in Imo and Abia State, Nigeria. The results showed that there is a moderate relationship between library factors and use at federal universities and a low correlation coefficient at state universities. This indicates that federal colleges experience a greater impact from library factors than do state universities.

Additionally, a study on the quality of the physical environment and the use of information resources in the library at Akwa Ibom State University was carried out by Akwang and Okon (2018). Since the study entails examining an actual occurrence, a survey design was chosen. Staff and students in AKSU's six academic faculties were the study's primary focus. The researchers arrived at a sample size of 390 (280 final-year students and 110 academic and non-academic staff) out of the 1948 total population using the stratified random sampling approach and the Borg and Gall percentage (20% of the population) formula. Data was gathered using the "Library Physical Environment and Utilization of Information Resources Questionnaire," a three-part tool created by the researcher. The data obtained were analyzed using descriptive and inferential statistics guided by research questions and hypothesis. The study found that physical environmental factors such as poor design of library building, noisy environment, lack of cafeteria, lack of enough space among others

contributed to the underutilization of information resources in Akwa Ibom state university library.

Research Methodology

The study adopted the survey research design of the descriptive method. The population of the study is made up of 9,531 students from six Federal and State Polytechnics across Delta and Edo States, Nigeria. This consists of the registered library users in the 2023/2024 academic session in the Polytechnic libraries understudy. The sample size for this study is 336 students. This number consists of registered library users (students) in the 2022/2023 academic session who were carefully selected. For the fact that the student population of this study is very large, the use of a sample becomes very necessary. As Ekeh (2003) puts it, a researcher cannot use as a subject, every member of a large population for reasons of limitations in financial resources, time, effort, and scope. Krejcie and Morgan (1970) reported that for a study that has a population of up to 10,000 and below, the minimum sample size should be at least 370. In this light, the researcher selected respondents from the total number of registered library users in each of the Polytechnic libraries using a simple random sampling technique for the students. Hence, a sample size of 336 respondents was drawn from the total population. The instrument that was used for data collection in this study is a structured questionnaire. A total of 336 copies of questionnaires were administered to the respondents from the six Polytechnic libraries under study in Delta and Edo states and 291 were duly completed and found usable. There was therefore a 79% response rate. The data obtained from the questionnaire were analyzed using descriptive and inferential statistics such as simple percentages, mean, and standard deviation.

Findings and Discussion

Research Question 1: What are the environmental factors affecting usage of library in polytechnics?

S/N	Statements	SA	A	U	D	SD	\bar{x}	Std. Dev.
1	The Landscape	88	67	30	90	16	3.19	1.31
2	The Location	45	95	28	101	22	2.81	1.11

3	Architectural design	53	70	28	101	39	2.71	1.24
4	Aesthetics	53	89	37	92	20	2.91	1.14
5	Lighting and library brightness	73	68	28	97	25	3	1.3
6	Library Atmosphere (cross ventilation)	95	60	17	101	18	3.18	1.37
7	Temperature quality (air conditioners)/fans	87	64	32	94	14	3.18	1.3
8	Reading space	89	53	25	110	14	3.14	1.33
9	Serenity	69	71	34	95	22	3	1.26
10	Inconvenient furniture	62	84	23	93	29	2.9	1.25
11	Haphazard seating arrangements	52	78	48	84	29	2.87	1.18
12	Untidy environment (cleanliness / neatness)	64	73	32	88	34	2.9	1.28
13	Deteriorated information resources	63	71	33	92	32	2.9	1.27
14	Time lag for shelving library materials after use	60	70	35	107	19	2.91	1.2
15	Poor Internet connectivity to access online/web resources	75	66	27	91	32	2.98	1.34
16	Opening and closing time	78	55	40	89	29	3.03	1.33
17	Leaking Roofs destroying library materials	88	50	26	76	51	3	1.47
18	Bad tap heads leading to water leakages that causes damage to library materials	62	54	41	70	64	2.75	1.38

19	Inadequate care of conveniences thereby polluting the library environment	73	75	27	72	44	2.95	1.36
20	Poor ventilation	69	87	16	77	42	2.92	1.34
21	Improper organization of library materials thereby inhibiting access	63	66	20	101	41	2.8	1.32
22	Inadequate shelf guidance to locate library materials	81	54	22	94	40	2.96	1.41
Aggregate Mean							2.95	0.09
Criterion Mean							3.00	

From table 1 above, the following items whose mean values are up to the criterion mean of 3.00 are the major environmental factors affecting usage of library in polytechnics. They are: landscape, lighting and library brightness, library atmosphere, temperature quality, reading space, serenity, opening and closing time, and leaking roofs destroying library materials. Other items such as location, architectural designs etc., have mean values below the criterion mean of 3.00 and hence do not affect usage of library in polytechnics.

Research Question 2: To what extent do students perceive that the library environment is conducive in polytechnics?

Note that VHE: Very High Extent, HE: High Extent, ME: Moderate Extent, LE: Low Extent, VLE: Very Low Extent.

The data in Table 2 provide the answer to this question.

Table 2: Extent of the Conduciveness of Library Environment in Polytechnics.

S/N	Statements	VHE	HE	ME	LE	VLE	\bar{x}	Std. Dev.
1	The library provides a quiet and comfortable space conducive to studying and learning.	201	60	28	1	1	4.58	0.71
2	The seating arrangement in the library is adequate for the number of students using the facility.	198	72	16	3	2	4.58	0.71
3	The library is well-lit, ensuring a comfortable reading and study	232	40	12	4	3	4.70	0.71

	environment.								
4	The library's ventilation and air conditioning systems provide a comfortable atmosphere for users.	135	101	30	20	5	4.17	0.99	
5	Library staff are approachable and provide timely assistance to users.	240	38	11	1	1	4.77	0.56	
6	The library provides sufficient internet access and digital resources to support students' academic needs.	80	45	51	60	58	3.12	1.49	
7	The library has an adequate number of computers and other electronic devices available for student use.	107	81	30	66	7	3.74	1.24	
8	The library's opening hours are convenient for students' study schedules.	232	45	9	2	3	4.72	0.66	
9	The library's furniture (chairs, desks, etc.) is comfortable and appropriate for prolonged study sessions.	228	55	5	1	2	4.74	0.58	
10	The cleanliness and maintenance of the library environment are regularly addressed.	251	35	3	1	1	4.84	0.47	
11	The library is adequately stocked with up-to-date books, journals, and other academic resources.	170	81	32	5	3	4.41	0.83	
12	The arrangement of books and resources in the library makes them easy to locate.	247	33	7	3	1	4.79	0.56	
13	Noise levels in the library are effectively managed to maintain a conducive learning environment.	203	51	30	4	3	4.54	0.81	
14	The library provides a variety of study spaces (e.g., group study areas, individual study carrels) that cater to different learning needs.	192	49	40	7	3	4.44	0.89	
15	The library environment is inclusive and accessible to students with disabilities or special needs.	24	47	30	83	107	2.31	1.33	
Aggregate Mean							4.30	.074	
Criterion Mean							3.00		

Table 2 shows that with an aggregate mean of 4.30 (Std. = 0.74), which is greater than the criterion mean of 3.00, it can be concluded that the students in polytechnics perceived that extent of their polytechnic library environment conduciveness is high. The indices of conduciveness were greater than the criterion mean, except for 'The library environment is inclusive and accessible to students with disabilities or special needs' ($\bar{x} = 2.31$). This finding implies that, overall, students perceived that polytechnic libraries provide a highly conducive environment for study and learning, as evidenced by the high aggregate mean. This favourable environment may likely enhance students' academic experiences, promoting concentration, comfort, and satisfaction in using library facilities. This finding agrees with the one by Folorunso and Njoku (2016) who found that library environment at the University of Ibadan was characterised by good library building (mean=3.75), seating arrangement (mean=3.59), availability of information resources (mean=3.54), and fair electricity supply. To further corroborate this finding, the findings of Madukoma & Sangosanya (2022) found that the level of conducive work environment of the library staff of the National Library can be described a high.

However, the low score for accessibility for students with disabilities ($\bar{x} = 2.31$) suggests an area needing attention. Libraries may need to invest in infrastructure modifications, assistive technologies, and inclusive practices to ensure that all students, including those with disabilities, can fully access and benefit from library services.

Research Question 3: What is the extent of students usage of library resources in polytechnics?

The data in Table 3 provide the answer to this question

Table 3: Extent of Students Use of Library Resources

S/N	Extent of your usage of library resources	VHE	HE	ME	LE	VLE	\bar{x}	Std.
1	I utilize books for my exams and test preparations	150	82	21	17	21	4.11	1.21
2	I utilize my library journals for research and project writing	120	94	45	24	8	4.01	1.07
3	I consult newspapers in my library to get current news.	100	76	30	59	26	3.57	1.37
4	I utilize magazines in my library to know	76	83	41	62	29	3.40	1.34

S/N	Extent of your usage of library resources	VHE	HE	ME	LE	VLE	\bar{x}	Std.
5	I make use of reference resources to get specific academic information.	125	78	67	16	5	4.04	1.02
6	I use electronic books to prepare for exams and develop my lecture notes	83	97	50	33	28	3.60	1.27
7	I consult electronic journals for current ideas and innovations in my field of study.	97	69	50	30	45	3.49	1.43
8	I utilize theses, projects and dissertations in my library to complement my projects and research.	45	95	101	22	28	3.37	1.13
9	I utilize my library computers for Internet/web resources to get current information and scholarship opportunities.	116	53	51	31	40	3.60	1.44
10	I use the CD-ROMS in my library for academic and recreational purposes.	92	72	26	44	57	3.34	1.53
11	I consult my library databases for current electronic resources.	90	77	37	47	40	3.45	1.42
12	I use the videotapes in my library for leisure.	66	61	50	38	76	3.01	1.52
13	I access the Online Public Access Catalogue (OPAC) of my library to access the available online collections.	72	67	51	66	35	3.26	1.37
14	I utilize audio-books for academic purposes	54	92	55	50	40	3.24	1.32
15	I utilize audio-books for leisure purposes.	62	89	59	35	46	3.30	1.35
Aggregate Mean							3.94	0.94
Criterion Mean							3.00	

Table 3 shows that with an aggregate mean of 3.94 (Std. = 0.94), which is greater than the criterion mean of 3.00, it can be deduced that there is high usage of library resources among the students. All indices of use of information resources such as utilizing books for exams and test preparations (4.11); utilizing the library journals for research and project writing (4.01); consulting newspapers in the library to get current news (3.57); utilizing magazines in the library to know about current trends and fashions (3.40); making use of reference resources to get specific academic information (4.04); using the CD-ROMS in the library for academic and recreational purposes (3.34); consulting the library databases for current electronic resources (3.45) and accessing the Online Public Access Catalogue (OPAC) of the library to access

the available online collections (3.26) among others were greater than the criterion mean of 3.0.

This finding contradicts the one by Adeeko and Adetimirin (2021) who found that the frequency of use of library resources and services by undergraduates in federal universities in North-central, Nigeria is not high as expected. The finding is also in sharp contrast to that of Olorunfemi and Ipadeola (2021) who uncovered that despite the availability, accessibility and awareness of library information resources, some resources such as journals, theses and dissertations, CD-ROM, card catalogue and Online Public Access Catalogue (OPAC) were less utilized in Federal University of Technology, Akure (FUTA).

Research Question 4: What is the the relationship between the library environment conduciveness and students' usage of library resources in the Polytechnics in Delta and Edo states?

The data in Table 4 provide the answer to this question

Table 4: Relationship Between Library Environment Conduciveness and Students' Use of Library Resources

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.176 ^a	.031	.028	.93080

a. Predictors: (Constant), Library Environmental Conduciveness

ANOVA ^a					
Model		Sum of Squares	Df	Mean Square	Sig.
1	Regression	7.972	1	7.972	.003 ^b
	Residual	250.388	289	.866	
	Total	258.360	290		

a. Dependent Variable: Students use library resources

b. Predictors: (Constant), Library Environmental Conduciveness

Coefficients ^a						
Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	2.877	.224		12.858	.000
	Library Environmental Conduciveness	.193	.064	.176	3.033	.003

a. Dependent Variable: Students use library resources

An R-value of 0.176 indicates a statistically significant but weak positive correlation between library environmental conduciveness and students' use of library resources, as presented in Table 4.8. The R-squared value ($R^2 = 0.031$) suggests that approximately 3.1% of the variance in the use of library resources can be explained by library environmental conduciveness. The ANOVA details confirm that the regression model significantly predicts the use of library resources ($F(1, 289) = 9.201$, $p < 0.003$), indicating a statistically significant model fit.

The regression coefficients further support this conclusion. The unstandardised coefficient (B) for library environmental conduciveness is 0.193 with a standard error of 0.064, and the standardised coefficient (Beta) is 0.176. The t-value of 3.033, with a p-value < 0.003 , indicates a significant effect. Therefore, the null hypothesis is rejected, indicating that library environmental conduciveness significantly predict students' use of library resources in polytechnics. This finding agrees with the one by Oyibo (2016) that there is a significant relationship between the library environmental factors and use of medical library by undergraduates. To further corroborate the finding, Folorunso and Njoku (2016) discovered that there was a significant relationship between the library environment and use of library and concluded that library environment had influence on the use of library by the students. This is a clear indication, that a beautiful, conducive and serene library environment can encourage high patronage of the resources and services of the library by undergraduates who are the major users of any academic library.

Recommendations

Based on the discoveries in this study, the following have been recommended:

1. Polytechnic authorities should prioritize improving environmental factors such as lighting, atmosphere, temperature, and cleanliness within library spaces. This can be achieved through regular maintenance, upgrades in infrastructure, and implementing ergonomic designs to create a conducive study environment.
2. Polytechnics should implement regular monitoring and evaluation frameworks to assess library usage trends and environmental conditions of the library. This will enable timely adjustments and improvements based on feedback and evolving needs.

3. Polytechnics should foster partnerships with relevant stakeholders, including students, faculty members, alumni, and industry partners. Collaborations can contribute to resource acquisition, funding opportunities for library improvements, and promoting library services that meet the diverse needs of the academic community.
4. Libraries should incorporate user-friendly layouts with adequate seating arrangements, soundproof study areas, and dedicated spaces for group discussions. These modifications will enhance students' comfort, encourage library usage, and create an inclusive environment for diverse learning needs.
5. Polytechnic management should invest in improving internet connectivity, Wi-Fi availability, and access to digital resources within the library. This will ensure an increase in students' patronage of their library and also ensure that students can effectively utilize online databases, e-books, and other electronic resources essential for academic research and learning.

Conclusion

This study has provided valuable insights into the dynamics of library resource usage and effect of library environment on usage of polytechnic libraries in Delta and Edo states, Nigeria. It is clear from this study that there is a high level of library resource utilization among students, despite significant environmental challenges such as lighting, atmospheric conditions, temperature, and humidity, which affects library resource deterioration. It is also glaring from this study that the conduciveness of library environment emerged as significant predictors of library resource usage, underscoring the importance of conducive physical environments in enhancing student engagement with library resources. The study emphasizes the need for ongoing attention to environmental conditions to sustain high levels of resource utilization. Overall, the study has showcased the interplay between library environment conduciveness and impact on library resource usage in polytechnic settings. The insights gleaned from this research are instrumental for policy makers, administrators, and practitioners in shaping future strategies aimed at optimizing library resources and services usage thereby enhancing student learning experiences.

References

- Adeeko, C. O. & Adetimirin, A. (2021). Use of library resources and services among undergraduates in Nigerian Universities. *Library Philosophy and Practice (e-journal)*, 6122. <https://digitalcommons.unl.edu/libphilprac/6122>
- Akwang, N. E. & Okon, I. H. (2018). Physical Environment Quality and Utilization of Information Resources in Akwa Ibom State University Library. *International Journal of Library Science*, 7 (2), 21-27. doi: 10.5923/j.library.20180702.01
- Amusa, O. I., Iyoro, A. O., & Olabisi, A. F. (2013). Work environments and job performance of librarians in the public universities in South-west Nigeria. *International Journal of Library and Information Science*, 5(11), 457-461.
- Amusa, O. I. & Iyoro, A.O. (2013). Influence of library environments, instructional programmes and user librarian collaborations on library use by undergraduate students in Nigeria. *Chinese Librarianship: An International Electronic Journal*, 35, 72-86. URL: www.iclc.us/cliej/c135AI.pdf
- Anunobi, C. V. & Nwankwo, N. G. (2020). Awareness and extent of use of library information resources by university undergraduates in Anambra State. *International Journal of Library and Information Studies*, 10 (3), 136-145.
- Ejiroghene, E. R. (2020). Influence of library environment and user education on undergraduates' use of library at college of education Warri, Nigeria. *Library Philosophy and Practice (e-journal)*, 4627. <https://digitalcommons.unl.edu/libphilprac/4627>
- Ekeh, F. I. (2003). *Research methodology and statistics in education*. Nsukka: Madol Press.
- Eserada, R. E. (2022). Library environmental conditions and undergraduates' patronage of public university libraries in Delta State, Nigeria. *Indian Journal of Information Sources and Services*, 12(2), 50-58.
- Fajonyomi, O. L., Bukar, S. S. & Ambali, Z. O. (2021). Information literacy skills and use of library resources by postgraduate students in university of Ilorin. *International Journal of Library and Information Technology (IJLIT)*, 1 (1), 66-77.
- Folorunso, O. & Njoku, E. (2016). Influence of library environment and user education on undergraduates' use of library at the University of Ibadan, Nigeria. *European Scientific Journal*, 12 (19), 288-304.
- Gojeh, L. A., Dutse, L. I. & Daudu, H. (2013). Human and physical environmental factors affecting students' utilization of library and information services in Colleges of Education Libraries in Nigeria. *American International Journal of Research in Humanities, Arts and Social Sciences*, 3 (1), 8-16.

- Krejcie, R. V. & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.
- Kumar, G. K. (2017). Use of information resources and services available in the library by the postgraduate students and research scholars of University of Agricultural Sciences, Dharwad: A study. *International Journal of Digital Library Services (IJODLS)*, 7 (3).
- Madukoma, E., & Sangosanya, A. K. (2022). Work environment as determinants of job performance of librarians in the National Library of Nigeria. *International Journal of Social Sciences and Humanities Reviews*, 12(1), 59-70.
- Nkamnebe, E. C, Udem, O. K. & Nkamnebe, C. B. (2014). Evaluation of the use of university library resources and services by the students of Paul University, Awka, Anambra State, Nigeria. *Library Philosophy and Practice (e-journal). Paper 1147*. <http://digitalcommons.unl.edu/libphilprac/1147>
- Ogechi-Nkechinyere, O. & Akanwa, P. C. (2018). Environmental factors as correlate of use of information resources in public university libraries in Imo and Abia States, Nigeria. *Library Philosophy and Practice (e-journal)*. 1872. <http://digitalcommons.unl.edu/libphilprac/1872>
- Okorie, O. N. & Okere, C. (2018). Library factors as correlates of use of information resources in public university libraries in Imo and Abia States, Nigeria. *Journal of Applied Information Science and Technology*, 11 (2), 195-206.
- Okorie, O. N. (2018). Environmental factors as correlates of use of information resources in public university libraries in Imo and Abia States, Nigeria. *Library Philosophy and Practice (e-journal)*. 1872. <http://digitalcommons.unl.edu/libphilprac/1872>
- Olatunji, A. B. (2023). Adequacy of information resources and library staff attitude as correlates of information service provision to students in Federal Polytechnics in North Central State, Nigeria. *International Journal of Research Publication and Reviews*, 4(12), 4496-4504.
- Olorunfemi, M. & Ipadeola, D. A. (2021). Library and information resources Use by undergraduate students of Federal University of Technology, Akure. *Library Philosophy and Practice (e-journal)*. 5525. <https://digitalcommons.unl.edu/libphilprac/5525>
- Omheia, A. E. (2018). Librarian perspective of library user's attitude towards maintaining conducive reading environment in tertiary institution libraries. *Information and Knowledge Management*, 8(8), 19-26.
- Onwudinjo, O. T., Ogbonna, U. A. & Nwadiogwa, O. J. (2015). Utilization of law library collections for improving academic performance by undergraduate law students of Nnamdi Azikiwe University, Awka. *Library Philosophy and Practice (e-journal)*. 1223. <http://digitalcommons.unl.edu/libphilprac/1223>

- Oriogu, C.D., Chukwuemeka, A.O. & Oriogu-Ogbuiyi, D.C. (2018). Faculty awareness, perception and use of information resources and services in a private university in Nigeria. *Covenant Journal of Library & Information Science (CJLIS)*, 1 (2).
- Oyedum, G. U. (2012). Relative effect of environmental factors, information literacy, courses of study and resources availability to students' use of university libraries in Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 3 (1&2), 1-19.
- Oyerinde, O. F. & Mayowa-Adebara, O. (2019). Work Environment and Institutional Effectiveness of Polytechnic Libraries in South-West, Nigeria. *Unizik Journal of Research in Library and Information Science (Ujolis)*, 4(1), 50-67.
- Oyewumi, O. O., Olatunji, E. T. & Adegun, A. I. (2017). Library aesthetic and environmental condition as motivating factors for reading in a State University in Nigeria. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 7 (4), 51-58.
- Oyibo, F. O. (2016). *Human and environmental factors affecting the usage of medical library by undergraduates in Niger-Delta, Nigeria*. <https://delsu.edu.ng/clt/HUMAN%20AND%20ENVIRONMENTAL%20FACTORS%20AFFECTING%20THE%20USAGE%20OF%20MEDICAL%20LIBRARY%20BY%20UNDERGRADUATES%20IN%20NIGER-DELTA,%20NIGERIA.pdf>
- Potnis, D., Deosthali, K., Zhu, X. & McCusker, R. (2018). Factors influencing undergraduate use of e-books: A mixed methods study. *Science Research*, 40 (2), 106-117. <https://doi.org/10.1016/j.lisr.2018.06.001>.
- Udo, C. & Ben, E. N. (2022). Library environment and students' patronage of library services in the university of Uyo main library. *Library Philosophy and Practice (e-journal)*. 7091. <https://digitalcommons.unl.edu/libphilprac/7091>
- Udo-Anyanwu, A. J., Kalu, D. C., & Ibegbulem, K. (2023). Influence of library environment, internet connectivity, institutional repositories on utilization of information resources by students of federal universities in South-South, Nigeria. *Communicate: Journal of Library and Information Science*, 25(1), 145–156. Retrieved from <https://www.cjolis.org/index.php/cjolis/article/view/30>
- Ukih, M. M. O. (2012). *Utilization of library resources by lecturers in university of Agriculture, Markurdi*. <http://www.unn.edu.ng/publications/files/images/UKIH,%20M.M.pdf>
- Zheng, Z., Zeng, M., Huang, W., & Sun, N. (2024). The influence of university library environment on student interactions and college students' learning

engagement. *Humanit Soc Sci Commun* 11, 385.
<https://doi.org/10.1057/s41599-024-02892-y>