

## Use of Open Access Resources and Library Personnel Service Delivery in Federal Polytechnics in Edo and Delta States, Nigeria

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### Abstract

*The 21<sup>st</sup> century library service delivery is increasingly resting upon effective use of open access resources (OARs) due to the increasing cost of digital information resources in proprietary databases. Unfortunately, reports of service delivery issues in relation to OARs use among library personnel in tertiary institutions in Nigeria abound in available literature. Thus, this paper examines the relationship between the use of open access resources and library personnel's service delivery in federal polytechnics in Edo and Delta States, Nigeria. The descriptive research design was employed through the use of an online questionnaire administered to 38 library personnel at Auchi Polytechnic, National Institute of Construction Technology, Uromi, Edo State; Federal Polytechnic Orogun; and Petroleum Training Institute, Effurun, Delta State, using the total enumeration sampling technique. The data gathered were analyzed using descriptive and inferential statistics. Major findings emanating from the study reveals that: library personnel level of service delivery is moderately high ( $\bar{x} = 2.63$ ); but their usage of open access resources for service delivery was at low extent ( $\bar{x} = 2.14$ ); and the library personnel' usage of open access resources has no significant relationship with their service delivery (i.e. very weak positive relationship at  $r = 0.12$ ;  $p < 0.05$ ). Several challenges were also found to confront library personnel's use of open access resources and service delivery ( $\bar{x} = 2.99$ ). These include poor infrastructure and a low level of technological readiness among library personnel. The study, therefore, concludes that an increase in library personnel's use of open access resources would have a significant positive effect on their service delivery, and recommendations were made.*

**Keywords:** Open Access Resources Usage, Library Personnel Service Delivery, Federal Polytechnics.

## Introduction

Open-access resources play essential roles in today's service delivery of libraries. Open access resources usage has been spurring an increase in library personnel's service delivery across the globe. They are online portals that provide access to libraries and end users to browse and download e-books and journal articles freely or free of charge (Ogunleye, 2020). They help in promoting the service delivery of libraries and librarians alike in support of teaching, research, and learning among staff and students in tertiary institutions all over the world. Indeed, library service delivery of the 21<sup>st</sup> century is increasingly contingent on effective use of open access resources.

Open access resources use is no doubt stimulating an increase in library personnel service delivery capabilities across the globe in recent times. They are becoming the saving grace or escape route for libraries, students, and scholars from online vendors' extortion tendencies. Open access resources (OARs) are the only means through which libraries and researchers circumvent the continuously rising subscription fees paid for scholarly information resources emanating from intellectuals in tertiary institutions domiciled in online databases. Today, the digital information landscape is saturated with open-access resources. They are sometimes underutilized by librarians, thereby having adverse effects on their service delivery capabilities to the modern generation of users whose quest for 24/7 information service delivery is continually skyrocketing (George, 2024; Ogunleye, 2020). There is no doubt that sustainable information service delivery of the 21<sup>st</sup> century information landscape is increasingly dependent on OARs use. It is dramatically reshaping the service delivery responsibilities of modern libraries across the globe.

Service delivery is the way or manner in which organizational or institutional personnel attend to the needs of their customers or clients. It is defined as the place, time, and manner in which service products are provided to clients (Akintola, 2021; Martins & Ledino, 2015). The practice or process of supporting information seekers in their information search efforts can be regarded as service delivery in libraries. Thus, service delivery simply implies how librarians attend or meet the information needs of their patrons (George, 2024). Service delivery of librarians determines the value accorded to libraries by their users, depending on users' satisfaction level or status in meeting their information expectations for the enhancement of their occupational productivity or performance. It leads to greater value for library personnel through users' confidence, trust, dependability and reliability, as well as users' willingness to patronize library



information products such as textbooks, journals and other periodicals, reference sources and archival materials in print format or electronic format (Ekere, et al., 2019). Open access resources play an essential role in this regard, especially in our 21<sup>st</sup> century information landscape, where information services are mostly preferred in digital formats. In essence, today's service delivery in libraries is increasingly dependent on the use of open access resources which are basically in electronic or digital forms.

Open access resources are “scientific publications that can be read over the internet, printed out, and can further be distributed for non-commercial purposes without any payment or restriction (Ogunleye, 2020). It connotes scientific articles or information resources online that are accessible to libraries and users free of charge. Thus, Suber (2016) stated that emphasis on the use of open access resources would help libraries and users to cut down on financial, technical, and legal barriers that are designed to limit access to scientific research outcomes domiciled in journal articles, books, and other information resources online, such as Institutional Repositories (IRs), among others.

Open access resources or materials are therefore digital, free of charges, and also free from most copyright and licensing restrictions (Ogunleye, 2020). What makes it possible is the consent of the author(s) or copyright holder(s) and the availability of the internet and related information infrastructure. Open access resources (OARs) therefore have the potential to increase libraries and librarians' productivity and service delivery outputs in higher institutions of learning. It is fast becoming the fulcrum point upon which quality library information service delivery revolves in our 21<sup>st</sup> century information system, especially in support of teaching, research and learning activities in tertiary institutions. It is also fast becoming the pivotal point upon which libraries success or failure assessment would depend due to the increasing pressure on open access initiatives and increasing quest for digital information access. Unfortunately, studies have revealed users' dissatisfaction and serious patronage decline in many academic libraries in Nigeria, including those in polytechnics. This could be due to poor or low level usage of open access resources by library personnel in their information service delivery obligations. Put differently, the relationship that exists between use of open access resources and service delivery of libraries in polytechnics in the southern part of Nigeria have not been measured. Thus, this paper investigates “use of open access resources and library personnel service delivery in federal polytechnics in Edo and Delta States, Nigeria”.



## Statement of the Problem

Library service delivery in the 21<sup>st</sup> century largely depends on the effective use of open access resources. Today, the digital information landscape is saturated with open access resources that are sometimes unused by many libraries in their service delivery obligations, thereby affecting their service delivery capabilities or potentials, even though they help in promoting or increasing the service delivery of libraries and their workforce in support of teaching, research, and learning among staff and students in tertiary institutions across the globe. Unfortunately, it was reported that the service delivery of library personnel in higher institutions in Nigeria is becoming questionable in relation to their non-compliance with ICT or digital resources demands of the 21<sup>st</sup> century information service's needs (Allison et al, 2023; Amaechi et al, 2018). This is obviously evident in observable poor patronage issues resulting from users' dissatisfaction, leading to a sharp decrease in library resources patronage in many academic libraries in the country in recent times. Indeed, reports and personal observations have shown that despite the fact that open access resources offer free and unprecedented access to scientific information, inadequate access and poor attitude towards their use have persisted among libraries in developing countries such as Nigeria, where government and library management currently struggle to fund education and library development. This scenario often leads to poor service delivery incidence among librarians, with the implications of a sharp decline in library resource patronage and its consequences in the development of the country in recent times (Akintola, 2021; Allison et al, 2023; Arowosola, 2020; Ogunleye, 2020). Thus, this paper examines the “use of open access resources and library services delivery in federal polytechnics in Edo and Delta States, Nigeria”. The choice of the two states follows their developmental trend bond as sister states from the defunct Bendel State and their unique economic roles in the development of Nigeria.

## Objectives of the Study

The main objective of this study is to ascertain the relationship that exists between the use of open access resources and library personnel service delivery in polytechnics in Edo and Delta States. The specific objectives are to:

- I. ascertain the level of service delivery of library personnel in Polytechnics in Edo and Delta States.



- II. identify the extent of use of open access resources in the service delivery of library personnel in Polytechnics in Edo and Delta States.
- III. find out the challenges confronting library personnel in the use of open access resources in their service delivery in Polytechnics in Edo and Delta States.
- IV. establish the relationship that exists between the use of open access resources and library personnel's service delivery in polytechnics in Edo and Delta states.

### **Research Questions**

- I. What is the level of service delivery of library personnel in Polytechnics in Edo and Delta State?
- II. What is the extent of use of open access resources in the service delivery of library personnel in Polytechnics in Edo and Delta State?
- III. What are the challenges confronting library personnel in the use of open access resources in their service delivery in Polytechnics in Edo and Delta State?

### **Hypothesis**

**H0<sub>1</sub>:** There is no significant relationship between the use of open access resources and service delivery of library personnel in Polytechnics in Edo and Delta States.

### **Literature Review**

Service delivery in modern-day libraries is dramatically dependent on the use of open access resources (Ogunleye, 2020). Thus, in Nigeria, the empirical study of Ogunleye (2020) on the use of open access resources in two polytechnics in Lagos State shows that academic staff have high use of open access resources, even though they exhibited a skeptical attitude towards their usage. Similarly, the survey study of Dutta and Paul (2014) on the use of OARs by science and technology academic staff at Calcutta University, India, found that academic staff, including librarians, generally had high and positive use of OARs. Moreover, in Ethiopia, the study of Mammo and Ngulube (2015) on faculty members' use of OARs in selected tertiary institutions revealed that faculty members agreed that they would like to have repeated use of open access resources. This is also an indication of high use of open access resources among academic staff, including librarians in tertiary institutions in other parts of the world. However, Rowley et al (2017) study



on faculty members' attitude towards the use of OARs revealed a more positive attitude, but they were negative and skeptical about open access resources.

Meanwhile, Ogunleye (2020) iterated that OARs use involves the utilization of different categories of open access information resources that cut across e-books and e-journals, among others, usually domiciled in several online databases. She also enumerated the databases to include: Directory of Open Access Books (DOAB) and Directory of Open Access Journals (DOAJ), such as PLOS, BioMed & PubMed Centrals including Turkish Online Journal for Distance Education, among others, often used by libraries to boost their service delivery responsibilities to users. She revealed that the primary aim of these Open Access Resources (OARs) is to increase access and use of valuable and free scholarly materials online by libraries for the enhancement of their service delivery obligations to users. To this end, Publishers of online books and journals in academic fields are usually invited to provide metadata (access points or links) of their open-access books and journals to DOAB and DOAJ, respectively. Similarly, George (2024) disclosed that such metadata are harvested or usually explored by libraries for the maximization of their information services to users, and also helps to bring about visibility of authors for greater productivity impact in the academic community. According to him, aggregators are usually influenced to integrate the open access links into their commercial services, while the smartest or modern libraries across the globe smartly integrate the directories into their online databases or catalogues, which eventually helps library personnel in recording improved service delivery to users for the discovery of new knowledge. Meanwhile, Ogunleye (2020) emphasized that such directories are usually open to all authors and publishers who publish academic or peer-reviewed books and journals in open access that usually contain as many scholarly books and journals as possible. She further disclosed that these materials usually help libraries in meeting staff and students' information needs satisfactorily for increased academic activities outcomes.

In effect, some scholarly works have shown that open access resources are helping to improve the service delivery capabilities of librarians in tertiary institutions all over the world. However, some other studies, such as Akintola (2021), found that the service delivery status of librarians in Southwest universities is poor. He, however, attributed this anomaly to library personnel's deficiencies in the use of electronic-based information resources, wherein OARs play significant roles in recent times. In a related development, it was discovered that even



though Open Access Journals (OAJs) offer free and ubiquitous access to scientific information, the poor attitude of scholars and librarians alike toward their usage persists in developing countries, thereby having an adverse effect on their service delivery functions and capabilities (Ogunleye, 2020). To this end, some scholarly works in some African countries such as Tanzania revealed negligible use of Open Access Books (OABs) and Open Access Journals (OAJs) compared to those in developed countries of the world (Ogunleye, 2020).

Meanwhile, Francescon (2017) work earlier emphasized that “most developing countries are lagging behind in harnessing the fruits of Open Access Books (OABs) and Open Access Journals (OAJs) as well as related online databases that are freely available online. They include: Institutional Repositories (IRs) such as Harvard DASH, MIT DSpace, University of Cambridge Apollo Repository, Open Educational Resources (OER) such as OER Commons, MERLOT, Openstax, World Bank Open Knowledge Repository, and UN library, among others, when compared to developed countries of the world. Thus, some earlier works, such as Palmer et al (2006) found that most librarians in academic institutions not only have positive attitudes towards Open Access (OA) materials principles and usage, but also focus on advocating their use among academics. In Nigeria, a similar study that was carried out among college librarians in the private sector revealed that academic librarians not only have a positive perception towards Open Access information resources usage, but also recorded a high level of use of resources in open-access databases. In a related development, it was disclosed that librarians in Colleges of Education in Southeastern Nigeria had positive perception and high use of OA materials in the delivery of their services to users (Ugwuanyi, 2013). In effect, the increasing availability of emerging e-resources such as OA materials helps to increase the service delivery capabilities of libraries and librarians to users through the use of digital devices such as laptops and smartphones (Sahabi & Otobo, 2021).

In spite of the relevance of OARs use in modern information service delivery of libraries, their usage in developing countries such as Nigeria is saddled with a lot of challenges. In other words, several challenges associated with librarians’ service delivery functions while using OARs have been reported in existing literature across the globe, most especially those in developing countries such as Nigeria. Prominent ones in recent times include that of Akintola (2021), who found poor service delivery issues among librarians in Nigerian universities, and attributed the





reasons to low participation in Capacity Building Programmes (CBP), inadequate ICT infrastructural development, and related usage skills problems among library personnel. He also mentioned that most of the common challenges faced by academic libraries in Nigeria are related to inadequate funding, low internet bandwidth, and irregular power supply, as well as poor personnel capacity building by academic library management. Relatively, Allison et al (2023) identified irregular power supply problems, inadequate infrastructural facilities development issues, and poor funding as basic problems militating against the effective use of OARs and other digital information resources in Nigeria and thereby affecting the service delivery functions of librarians in the country. Similarly, Ogunleye (2020) revealed low quality of publications, lack of search skills, and slow network access, among others, as challenges confronting effective access and use of open access resources in tertiary institutions in Nigeria, with their consequent effects on the service delivery of librarians in the country.

## **Methodology**

The descriptive research survey design was employed using the instrument of an online questionnaire. A total of 38 library personnel (Professional & Para-professional library personnel) at Auchi Polytechnic (18), National Institute of Construction Technology, Uromi, Edo State (5), Federal Polytechnic Orogun (7), and Petroleum Training Institute Effurun, Delta State (8) formed the population of the study. The total enumeration sampling technique was employed in the study. Complete data gathered from a total of 33 respondents, representing an approximate of 87% response rate, was analyzed using descriptive statistics (frequency count, simple percentages, mean, and std. deviation) as well as inferential statistics (PPMC) as subsets of SPSS to arrive at the following major findings reported below.

## **Results and Discussion of Findings**

The study results and discussion are presented to reflect the study research questions and formulated hypothesis as follows:

**Research Question One:** What is the level of service delivery of library personnel in Federal Polytechnics in Edo and Delta State?

**Table 1: Library Personnel Service Delivery Level in Federal Polytechnics in Edo and Delta States, Nigeria**





S/N	Level of Library Personnel Service Delivery	VLL (%)	LL (%)	HL (%)	VHL (%)	Mean (SD)
1.	Satisfactory Response to Users' Query	5 (15.2)	5 (15.2)	20 (60.6)	3 (9.1)	2.64 (0.86)
2.	Current Awareness Services (CAS) to Users	5 (15.2)	4 (12.1)	20 60.6)	4 (12.1)	2.70 (0.88)
3.	Selective Dissemination of Information (SDI) services to users	2 (6.1)	7 (21.2)	20 (60.6)	4 (12.1)	2.79 (0.74)
4.	Circulation Services such as Users' Registration, New Arrival & Lending Services	1 (3.0)	4 (12.1)	23 (69.7)	5 (15.1)	2.97 (0.64)
5.	Library marketing/ User education services	6 (18.2)	6 (18.2)	20 (60.6)	1 (3.0)	2.48 (0.83)
6.	Research and Reference Services	3 (9.1)	7 (21.2)	22 (66.7)	1 (3.0)	2.64 (0.70)
7.	Digital Library Access & Literacy Services	4 (12.1)	4 (12.1)	20 (60.6)	5 (15.2)	2.79 (0.86)
8.	Photocopying services	6 (18.2)	11 (33.3)	12 (36.4)	4 (12.1)	2.42 (0.94)
9.	Bindery services	4 (12.1)	12 (36.4)	14 (42.4)	3 (9.1)	2.48 (0.83)
10.	Partnership with schools & local organizations for services	3 (9.1)	9 (27.3)	16 (48.5)	5 (15.2)	2.70 (0.85)
11.	Programme & Events Services such as Book clubs & authors talk	7 (21.2)	13 (39.4)	8 (24.2)	5 (15.2)	2.33 (0.99)
-	<b>Overall Average Mean (<math>\bar{x}</math>) Score =</b>	-	-	-	-	<b>2.63</b>

**Key:** Very Low Level (VLL), Low Level (LL), High Level (HL), Very High Level (VHL).

Table 1: shows Library personnel's service delivery level or status in federal polytechnics in Edo and Delta States, Nigeria. It reveals the overall mean value of 2.63, which is greater than the criterion's mean value of 2.50, being a four-point Likert Scale type measurement. This typically shows that the library personnel's service delivery is relatively high level. The table specifically shows that 69.7% of the respondents (representing 2.64 mean score) had a high level or very high level of satisfactory responses to users' query, while 72.7% of them (with the mean score of 2.70) also had high level of current awareness services (CAS) delivered to users as well as 72.7% of the respondents (representing 2.79 mean score) had a high level of SDI (selective dissemination of information) services delivered to users. Also, the table clearly shows that 84.8% of the respondents having the mean score of 2.97, had a high level or very high level of circulation services (such as users' registration, new arrival & lending services) delivered to users. Moreover, the table also shows that 63.6% of the respondents (representing a 2.48 mean score) had a relatively



high level of library marketing/ user education services delivered to users; and 69.7% of them (with a mean score of 2.64) delivered high-level or very high-level research and reference services to users or patrons.

Furthermore, the table shows that 75.8% of the respondents with the mean score of 2.79 had a high level or very high level of digital library access & literacy services delivered to users; as well as 48.5% of them (representing 2.42 mean score) had low level of photocopying services delivered to users; while 51.5% of the respondents with the mean score of 2.48 delivered low level of bindery services to users.

Lastly, the table shows that 63.7% of the respondents (representing a 2.70 mean score) rendered a high level or very high level of partnership work with schools & local organizations, and 39.4% of them with a 2.33 mean score, had a very low level of programme & events services such as book clubs & authors' talk delivered to users or patrons. In effect, the overall average mean ( $\bar{x}$ ) score of 2.63 as earlier reported above, implies that library personnel in federal polytechnics in Edo and Delta States have a high level of service delivery outcome. This finding is in line with the study outcome of Sokoya et al (2022), who found a high level of service delivery among academic librarians in tertiary institutions in Lagos State, Nigeria.

**Research Question Two:** What is the extent of use of open access resources in the service delivery of library personnel in Polytechnics in Edo and Delta States?

**Table 2: Extent of Use of Open Access Resources in Service Delivery of Library Personnel in Polytechnics in Edo and Delta State, Nigeria**

S/N	Statements on Use of Open Access Resources	VHE (%)	HE (%)	LE (%)	VLE (%)	Mean (SD)
1.	Open Access e-books (freely available e-books)	3 (9.1)	18 (54.5)	9 (27.3)	3 (9.1)	2.36 (0.78)
2.	Open Access e-journals such as DOAJ, PLOS, BioMed & PubMed Central, Turkish Online Journal for Distance Education etc.	4 (12.1)	18 (54.5)	10 (30.3)	1 (3.0)	2.24 (0.71)
3.	Institutional Repositories (freely available) IRs such as Harvard DASH, MIT DSpace, University of Cambridge Apollo Repository, etc.	10 (30.3)	14 (42.4)	8 (24.2)	1 (3.0)	2.00 (0.83)

4.	Open Courseware Online (freely available) Courseware such as OpenCourseWare & OpenLearn Platforms	12 (36.4)	11 (33.3)	10 (30.3)	-	1.94 (0.83)
5.	Electronic Theses & Dissertations (freely available online) – Digital Archives	2 (6.1)	24 (72.7)	4 (12.1)	3 (9.1)	2.24 (0.71)
6.	Digital Libraries Open Access Resources	4 (12.1)	13 (39.4)	14 (42.4)	2 (6.1)	2.42 (0.79)
7.	Open Access Reference Tools Online	7 (21.2)	14 (42.4)	11 (33.3)	1 (3.0)	2.18 (0.81)
8.	Open Archives (freely available Archives online)	9 (27.3)	15 (45.5)	8 (24.2)	1 (3.0)	2.03 (0.81)
9.	Open Educational Resources (OER) such as OER Commons, MERLOT, Openstax etc.	9 (27.3)	14 (42.4)	9 (27.2)	1 (3.1)	2.06 (0.83)
10.	Government and Legal Resources e.g. World Bank Open Knowledge Repository, UN ilibrary etc.	6 (18.2)	23 (69.7)	3 (9.1)	1 (3.0)	1.97 (0.64)
-	<b>Overall Average Mean (<math>\bar{x}</math>) Score =</b>	-	-	-	-	<b>2.14</b>

**Key:** *Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE).*

Table 2 shows the extent of use of open access resources (OAR) in the service delivery of library personnel in Polytechnics in Edo and Delta States, Nigeria. It reveals the overall mean value of 2.14 which is less than the criteria mean value of 2.50, being a four-point Likert Scale type measurement. This basically shows that the extent of use of open access resources (OAR) in the service delivery of library personnel in Polytechnics in Edo and Delta State is low. Moreover, the table specifically reveals that 36.4% of the respondents (representing 2.36 mean score) had low extent of use of open access (OA) e-books (i.e. freely available e-books), and 33.3% of them with 2.24 mean score had a similar low extent use of open access e-journals from databases such as DOAJ, PLOS, BioMed & PubMed Centrals, Turkish Online Journal for Distance Education etc; while 27.2% of the respondents with the mean score of 2.00 had very low extent use of institutional repositories – IRs (freely available) such as Harvard DASH, MIT DSpace, University of Cambridge Apollo Repository etc. The table also shows that 30.3% of the respondents representing 1.94 mean score, had a low extent use of open courseware online (freely available) courseware such as OpenCourseWare & Openlearn platforms, while 21.2% of them with 2.24 mean score also had very low extent use of electronic theses & dissertations (freely available online – digital archives), and 48.5% of them with 2.42 mean score relatively had a low extent use of digital libraries' open access resources.

Furthermore, the table reveals that 36.3% of the respondents (representing a 2.18 mean score) also recorded a low extent use of open access reference tools online, likewise 27.2% of the respondents with 2.03 mean score had a very low extent use of open archives (freely available Archives online).

Lastly, it shows that 30.3% of the respondents with 2.06 mean score also had a low extent use of Open Educational Resources (OER) such as OER Commons, MERLOT, Openstax etc; while 11.1% of them with the mean score of 1.97 similarly had a very low extent use of government and legal resources such as the World Bank Open Knowledge Repository, and UN library among others. In effect, the overall average mean ( $\bar{x}$ ) score of 2.14 as earlier reported above, implies that library personnel in federal polytechnics in Edo and Delta States have a low extent of use of open access resources (OARs) freely available online in their service delivery functions. This finding is also in relative agreement with the study outcome of Ogunleye (2020) who found that academic staff attitude towards the use of open access resources is negative in nature in higher institutions in Lagos State, Nigeria; however contradicts the earlier study outcome of Ugwuanyi (2013) who found positive perception and high use of OARs among librarians in Colleges of Education in Southeastern Nigeria. This very low-level use of OARs discovered in this current study could be due to ill feelings among scholars that open-access resources are sometimes substandard compared to subscribed information resources. This could also be the reason why NUC and NBTE personnel usually refuse to accept the open-access resources databases as viable e-resources possessed by libraries during course accreditation exercises in higher institutions of learning in Nigeria.

**Research Question Three:** What are the challenges confronting library personnel in the use of open access resources in their service delivery in Polytechnics in Edo and Delta State?

**Table 3: Challenges Confronting Library Personnel's Use of Open Access Resources in Service Delivery in Federal Polytechnics in Edo and Delta States, Nigeria**

S/N	Types of Challenges	SA (%)	A (%)	D (%)	SD (%)	Mean (SD)
1.	Inadequate digital literacy skills among library personnel (poor technological readiness)	17 (51.5)	13 (39.4)	3 (9.1)	-	3.42 (0.66)
2.	Library leadership's insensitivity to staff training needs for effective e-resources use in service delivery.	11 (33.3)	18 (54.5)	2 (6.1)	2 (6.1)	3.15 (0.79)

3.	Library personnel's reluctance to embrace emerging digital resources usage in service delivery.	9 (27.2)	18 (54.5)	3 (9.1)	3 (9.1)	3.00 (0.87)
4.	Inadequate manpower development in modern library service delivery.	3 (9.1)	26 (78.8)	3 (9.1)	1 (3.0)	2.94 (0.56)
5.	Lack of skilled reference service library personnel to answer users' queries online.	8 (24.2)	15 (45.5)	8 (24.2)	2 (6.1)	2.88 (0.86)
6.	Inadequate modern infrastructure to cope with evolving digital library resources, such as irregular power supply and poor public internet access facilities.	5 (15.2)	20 (60.6)	4 (12.1)	4 (12.1)	2.79 (0.86)
7.	Refusal to approve and encourage the use of open access resources in academic libraries by supervisory bodies such as NUC and NBTE, as demonstrated during accreditation exercises.	7 (21.2)	13 (39.4)	11 (33.3)	2 (6.1)	2.76 (0.87)
-	<b>Overall Average Mean (<math>\bar{x}</math>) Score =</b>	-	-	-	-	<b>2.99</b>

**Key:** *Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)*

Table 3 shows the challenges confronting library personnel's use of open access resources in service delivery in Federal Polytechnics in Edo and Delta States, Nigeria. The table reveals the overall mean value of 2.99, which is greater than the criterion's mean value of 2.50, being a four-point Likert Scale type measurement. In general terms, it fundamentally shows that the challenges confronting library personnel's use of open access resources (OARs) in their service delivery functions is very high, i.e., there are many. In specific terms an item-by-item basis in ranking order, it reveals that 90.9% of the respondents (representing a 3.42 mean score value) agreed or strongly agreed that inadequate digital literacy skills among library personnel (poor technological readiness) is a big challenge. This is followed by 87.9% of them (with a 3.15 mean score value) who agreed that library leadership's insensitivity to staff training needs for effective e-resources use in service delivery is a challenge. This is closely followed by library personnel's reluctance to embrace emerging digital resources usage in service delivery (with a 3.00 mean score); while inadequate manpower development on modern library service delivery followed closely as a challenge, with a 2.94 mean score. Similarly, lack of skilled reference service library personnel to answer users' queries online is another form of challenge, with the next mean score of 2.88. Other challenges faced by the respondents include inadequate modern infrastructure to cope with evolving digital library resources such as irregular power supply and poor public internet access/facilities with the next high mean score of 2.79; as well as the refusal of NUC



and NBTE as supervisory bodies to approve and encourage the use of open access resources in academic libraries as demonstrated during course or programme accreditation exercises (with the last mean score of 2.76). In effect, the overall average mean ( $\bar{x}$ ) score of 2.99 as previously reported above implies that library personnel in federal polytechnics in Edo and Delta States are confronted with a lot of challenges. This finding, therefore, contradicts the study outcome of George (2024), who found few challenges associated with librarians' service delivery in university libraries in Southwest, Nigeria. This could be due to notable differentials in working conditions that exist between the university and polytechnic education development in the country.

### Hypothesis Testing

The hypothesis stated in this study was analyzed using correlation and regression analysis at a 0.05 level of significance.

H<sub>0</sub>: A significant relationship does not exist between the use of open access resources and the service delivery of library personnel in Polytechnics in Edo and Delta States.

**Table 4: Measure of relationship between the use of open access resources and service delivery of library personnel in Polytechnics in Edo and Delta States, Nigeria**

Variables	Mean	Std. Deviation	N	r	P	Remarks
Level of Service Delivery of Library Personnel	54.36	13.25	33	0.120	0.252	Not Sig.
Extent of Use of Open Access Resources in Service Delivery	38.18	12.64				

Table 4 shows that the level of service delivery of Library personnel stood at a mean value of 54.36 while its standard deviation stood at 13.25. The table also reveals the extent of use of open access resources in the service delivery of library personnel, with a mean value of 38.18, while its standard deviation stood at 12.64. The correlation coefficient of the relationship between the use of open access resources and service delivery of library personnel in Polytechnics in Edo and Delta State is at 0.120, which implies that there is a positive weak linear relation between them since the relationship is not significant ( $r = 0.12$ ;  $p > 0.05$ ). This shows that library personnel's use of open access resources in federal polytechnics in Edo and Delta States is quite limited. Thus, its impact on their service delivery is negligible or minimal at (12%), but holds the potential for positive growth necessary for the enhancement of their service delivery if improved upon.



## Conclusion and Recommendations

From the foregoing, the paper concludes that library personnel in the surveyed federal polytechnic libraries neglect the use of open access resources in their service delivery functions, thereby having minimal impact on their service delivery status. This is simply a violation of the first law of library science as propounded by S.R. Ranganathan in 1937, which stipulates that books (information resources, including OARs) are for use. However, irrespective of the very low level use of OARs among library personnel in their service delivery responsibilities, it has the potential of increasing library personnel's service delivery, even though its impact on the service delivery of the surveyed polytechnic libraries appears weak at 12% impact level only. This is due to several identified challenges found militating against the library personnel's job responsibilities, which range from poor infrastructural facilities, low level of technological readiness, inadequate digital literacy skills among library personnel, and insensitivity of management to the training needs of library personnel, among others, necessary for increased use of open access resources in our 21<sup>st</sup> century information landscape. In view of the above findings, the study recommends that:

- Library personnel should make additional efforts to improve their service delivery continually, irrespective of the fact that a high level of service delivery was found among them.
- Institutions' management should do well to encourage their library personnel to use OARs to boost their service delivery to library users in Polytechnics in Edo and Delta States.
- Management should find avenues not only to overcome the identified challenges faced by library personnel, but to vigorously integrate and explore the benefits associated with open access resources use for the enhancement of their service delivery functions to their user community. In other words, library management of the polytechnics should also make efforts to make open access resources links/databases available on their e-portals and as well encourage their usage by library personnel for improved service delivery.

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