Perceived Adequacy of Assistive Technology by Special Needs Users in Public Libraries in South-East, Nigeria.

by

[1]Chimauche Mary Emmasiegbu
cm.emmasiegbu@unizik.edu.ng

[2]Prof. Ifeka Okeke
eo.ifeka@unizik.edu.ng

and

[3]Dr. Emmanuel Chidubem Asiegbu
ec.asiegbu@unizik.edu.ng

[1&2]Department of Library and Information Science,
[3]Department of Educational Management and Policy
Nnamdi Azikiwe University, Awka

Abstract.
This study seeks to ascertain the perceived adequacy of assistive technology by special needs users in public libraries in South-East, Nigeria. two research questions and one null-hypothesis guided the study. A descriptive survey research design was adopted for the study. A census sampling technique which sampled the entire population of 449 respondents in the five public library headquarters in South East Nigeria (Anambra, Abia, Imo, Enugu and Ebonyi) was adopted for the study. Instrument for data collection was an interview schedule, validated by three experts, and having a reliability coefficient value of 0.83. Descriptive statistics of percentage was used to answer research questions 1 & 2. The researcher and 5 research assistants interviewed the respondents (librarians and special needs users)of the five public library headquarters in South East Nigeria. The null hypothesis was tested at 0.5 level of significance; with the aid of chi-square (χ^2). The findings of the study indicated that public libraries in south-east are perceived to be adequate more on non-electronic assistive technologies than electronic assistive technologies. Furthermore, public libraries in Anambra, Abia and Imo states seems to be better-off with regards to adequacy of assistive technology for special needs users. Based on the findings, it was recommended among others, that the findings of the study was useful in guiding the librarians and ministry of education personnel, with the intention of promoting adequacy of assistive technologies for special needs users in south-east, Nigeria.

Keywords: Adequacy, Assistive Technology, Special Needs Users, Public Libraries

Introduction

Library is a collection of printed and electronic resources organized by information professionals and other experts in a physical and virtual space to enable users conveniently access information. A library is a place/source of making information resources available to users to satisfy their information needs. The library, according to Igwela and Opara (2020) is the collection of information resources that are selected, acquired, organized for easy access and use. While some agree on the definition of a library as an institution of books collected, processed, stored, retrieved, and used to disseminate knowledge, others prefer the definition that summarizes a library to represent a place (physical) where books and non-book materials are preserved for the purpose of spreading knowledge (Nwachukwu, Abdulsalami and Salami, 2014). Moreover, most of what constitute components of a library's definition depends on the type of library in question. There are different types of libraries with different operational definitions based on the categories of users served. The major types of libraries are; academic library, special library, national library and public library which is the focus of this study.

Public library according to lshaya and Auku (2015) is establish under state enabling laws or regulatory to serve a community, district, region, and provides at least the following; an organized collection of printed or other library materials, or a combination thereof, paid staff, an establish

schedule in which services of the staff are available to the public, the facilities necessary to support such a collection, staff, and schedule, and is supported in whole or in part with public funds. Public libraries exist in many countries of the world. They are often considered an essential part of having an educated and literate population.

The public library unlike other types of libraries (e.g, academic, national, special) is not restricted to any group of users. It is more or less a universal library. It is expected to serve all kinds of people, they are generally managed, financed and supported by government, local communities and occasionally non-government organizations. It provides access to information, knowledge, works of the imagination through a range of resources and services and is equally available to all members of the community at state level regardless of race, age, language, religion, nationality, gender, disability, economic and employment status, and educational attainment (Dhiman, 2012) as cited by Obuezie, Babayi and Nwosu (2022). The public library is usually regarded as the library that serves the different library users including those with special needs but it is necessary to know that the other libraries in one way or the other serve those with special needs also.

Ananya (2013) identified those with special needs to include those who have long term physical, mental, intellectual or sensory impairments which may hinder their full and effective participation in society on an equal basis with other able bodied persons, hence, they need special attention. The common disabilities include blindness, deafness, deformity, loss of limbs, mental illness, mental retardation, muscular nervous and sensory disorders. Those with special needs are broadly categorized into four, namely: physical disability, visual impairment, hearing impairment and mental retardation. Although, this study focuses on the first three, however, they have latent abilities, aspirations, visions and dreams that can be harnessed if proper attention is given to them (Atabor, 2015). Information resources are needed to achieve the goals of special needs users. Information resources also include collections such as e-books, electronic reference titles, audio materials, video collections, periodicals and other print volumes of information-carrying resources (Ayiah, 2017). Information resources according to Shuaibu as cited by Obuezie, and Echedom, (2023), are materials containing records of existing knowledge. They are the totality of acquired library resources gathered together by the library for its users.

People with special needs do not have equal access to information resources in print and other formats as with the non-disabled. In order not to deprive them totally of library resources and services, efforts are made to ensure they have access to these resources. The number one purpose of the revised guidelines for accessible libraries and services for everyone, prepared by the IFLA (International Federation of Library Association, 2023) for people with special needs, is "to provide basic ideas and strategies on how to make libraries accessible - such as universal design, assistive technology and physical and information accessibility". With advancement in technology, some facilities in the library have been developed to help special need users make the most use of the information they need. These facilities are called Assistive Technology or Adaptive technology.

Adaptive Technology or Assistive technology ATs) is an effective tool in establishing an independent and better learning environment for intellectually disabled students (Kalyani and Taj, 2021). Assistive Technology is seen as Computer related aids like; magnifiers and magnification software, electronic readers, optical character recognition software, speech output and hearing input systems, electronic braille devices, rail and accessible entrances, all provide a solution for a particular individual with a disability. These computer-related aids (electronics) and some equipment (non-electronics) like; wheelchair, scooters, ramp, walkers, canes etc, according to Shriver (2018), are commonly referred to with the terms "Assistive", "Adaptive", or "enabling technology" denoted as ATs.

It is worthy to note that assistive technology should not only be available but should also be adequate for use by special needs users. Adequacy refers to the sufficiency and suitability of assistive technology in meeting the needs of special needs users. It involves ensuring that the technology is appropriate and effective in addressing the specific challenges faced by individuals with disabilities. It is said that a good standard education is impossible without a good quality library and the quality of a library can be measured by the caliber and adequacy of information resources found in it. Adequacy in itself is the quality of being sufficient to meet needs. In order for library and assistive technology to be gauged adequate, they have to be able to meet the individual and collective needs of library patrons, in this case special needs users.

The International Federation of Library Associations and Institutions released a guideline for library facilities to people with special needs (IFLA, 2005) – Specifically on Access to libraries for persons with disabilities – CHECKLIST. It was stated in No. 89, pg 3, that "Because libraries and buildings are very different around the world, this checklist does not include quantitative measurements. Therefore, its was recommended that library staff apply the pertinent laws and regulations in each country or test with their disadvantaged customers".

People with special needs are the most vulnerable group among users of the public library. Often times, they are marginalized in the society because of their disability. In the library, they are faced with the issue of accessibility to the library building, accesses to library shelve, and other resources, and in most cases, the available resources are not adequate for their use. Many public libraries especially in Nigeria were not designed with these group of persons in mind. For public library to live up to the expectation, there is need for adequate provision of assistive technology for special needs users to fully utilize resources in the library. Unfortunately, Literature has shown that many public libraries are in a poor state, without adequate funding. This also includes inadequate staffing, irrelevant information resources and none/inadequate vital assistive facilities/technology (Igwela and Opara,2020).

Looking at the document of Librarians Registration Council of Nigeria Standards and Guidelines for Public Libraries in Nigeria (2015), the list of Basic Public Library Furniture and Equipment required covers for only; shelves, study carrels, chairs, computer tables, children chairs and tables. The guidelines are applicable to few facilities, allocating different values as criteria for minimum, intermediate and excellent number to be addressed as adequate. In measuring the adequacy of assistive technology, there is no known criteria or document available to the researcher. It is on this bases that the researcher deemed it fit to consider the perception of librarians and special needs users on the adequacy of assistive technology available to them for use.

Purpose of the Study

1. Determine the perceived adequacy of the available electronic assistive technology for special needs users in Public libraries in South-East Nigeria.
2. Determine the perceived adequacy of the available non-electronic assistive technology for special needs users in Public libraries in South-East Nigeria.

Research questions

The following research questions guided the study:

1. What is your perception on the adequacy of the available electronic assistive technology for special needs users in Public libraries in South-East Nigeria?
2. What is your perception on the adequacy of the available non-electronic assistive technology for special needs users in Public libraries in South-East Nigeria?

Research Hypothesis

1. There is no significant difference in the percentage ratings on the perceived adequacy of the available assistive technology for special needs users in Public libraries in South-East Nigeria, based on the five locations.

Methods

This study which sets to ascertain the adequacy of assistive technology by special needs users in public libraries in South-East, Nigeria adopted a descriptive survey research design. The population of the study was 499 respondents of the five public library headquarters in South East Nigeria (Anambra, Abia, Imo, Enugu and Ebonyi). Using a census sampling technique, the entire 449 respondents of 5 public libraries were used for the study. The instruments that was used for data collection is an interview schedule for Special Need Users, validated by three experts, and having a reliability coefficient values of 0.83. The researcher and 5 research assistants interviewed the respondents of the 5 public libraries in south-east Nigeria. During the interview proper, only 35 respondents (2 librarians and 5 special needs users from each of the 5 library centers) were available for interview and were interviewed and used for the study. Descriptive statistics of percentage was used to answer the research questions, while the null hypothesis was tested at 0.5 level of significance;

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with the aid of chi-square (χ^2).

Results

Research Question 1

What is your perception on the adequacy of the available electronic assistive technology for special needs users in Public libraries in South-East Nigeria?

Table 1: The adequacy of the available electronic assistive technology for special needs users in Public libraries in South-East Nigeria are:

S/N	Items	N	Ad	N/Ad	% Ad	Remarks
Visual Impaired						
1	Information on audio tape, CD/DVD	35	30	5	85.7%	Adequate
2	Magnifying glass, illuminated magnifier, electronic reader or closed-circuit television (CC)	35	14	21	40%	Not Adequate
3	Information on the library's accessible website (audio information should also be available as text)	35	16	19	45.7%	Not Adequate
4	Screen readers Suffice e.g. JAWS	35	0	35	0%	Not Adequate
5	Video/DVD books with subtitles and/or sign language	35	14	21	40%	Not Adequate
6	Electronic glass doors marked to warn visually impaired persons	35	0	35	0%	Not Adequate
7	Visible and audible fire alarm indicator	35	29	6	82.9%	Adequate
8	Tactile online picture books	35	0	35	0%	Not Adequate
9	Braille Scanning software e.g. Optical Braille Recognition(OBR)	35	11	24	31.4%	Not Adequate
10	Designated computers equipped with screen reading programs, enlargement, and synthetic speech	35	14	21	40%	Not Adequate
11	Well lighted elevators with buttons and signs in Braille and synthetic speech	35	0	35	0%	Not Adequate
12	Digital handrail on steps	35	16	19	45.7%	Not Adequate
13	Braille translator	35	14	21	40%	Not Adequate
14	DAISY, a digital talking book system used by many libraries for the blind.	35	10	25	28.6%	Not Adequate
15	Specialized Alerting device	35	11	24	31.4%	Not Adequate
16	Technical support for computers (on-site, if possible)	35	25	10	71.4%	Adequate
Hearing Impaired						
17	Specialized Alerting device	35	10	25	28.6%	Not Adequate
18	Information on audio tape, CD/DVD	35	31	4	88.6%	Adequate
19	Information on the library's accessible website (audio information should also be available as text)	35	15	20	42.9%	Not Adequate
20	Video/DVD books with subtitles and/or sign language	35	7	28	20%	Not Adequate
21	Digital handrail on steps	35	14	21	40%	Not Adequate
22	Computer assisted real-time Captioning/ Close captioned decoder	35	0	35	0%	Not Adequate
23	Captioning Television	35	20	15	57.1%	Adequate
24	Visible and audible fire alarm indicator	35	21	14	60%	Adequate
25	Hearing loop system/ induction loop	35	0	35	0%	Not Adequate
26	Magnifying glass, illuminated magnifier, electronic reader or closed-circuit television (CC)	35	7	28	20%	Not Adequate
27	Infrared Systems	35	0	35	0%	Not Adequate
28	Hearing Aids /Cochlear implant	35	0	35	0%	Not Adequate
29	Technological communication aids e.g. Speech test software	35	0	35	0%	Not Adequate
30	Technical support for computers (on-site, if possible)	35	30	5	85.7%	Adequate
Physically Challenges						
31	Specialized Alerting device	35	0	35	0%	Not Adequate
32	Information on audio tape, CD/DVD	35	35	0	100%	Adequate
33	Information on the library's accessible website (audio information should also be available as text)	35	14	21	40%	Not Adequate
34	Electric wheelchair	35	0	35	0%	Not Adequate
35	Digital handrail on steps	35	0	35	0%	Not Adequate
36	Automatic door opener reachable by a person in a wheelchair	35	0	35	0%	Not Adequate
37	Technical support for computers (on-site, if possible)	35	21	14	60%	Adequate

38	Elevator buttons reachable from a wheelchair	35	0	35	0%	Not Adequate
39	Alarm button reachable for persons in a wheelchairs	35	10	25	28.6%	Not Adequate
40	Adaptive keyboards or keyboard overlays for users with motor impairments	35	0	35	0%	Not Adequate
41	Visible and audible fire alarm indicator	35	21	14	60%	Adequate

The result in the Table 1 indicated that; for visually impaired, only 3 out of the 16 identified items were rated above 50% which means that librarians and special needs users perceived these items (1, 7 & 16) as adequate electronic assistive technology for special needs users in public libraries in South-East Nigeria. Under Hearing Impaired, 4 out of the 14 identified items were rated above 50% which means that librarians and special needs users perceived these items (18, 23, 24 & 30) as adequate electronic assistive technology for special needs users in public libraries in South-East Nigeria. For Physically Challenged, only 3 out of the 11 identified items were rated above 50% which means that librarians and special needs users perceived these items (32, 37 & 41) as adequate electronic assistive technology for special needs users in public libraries in South-East Nigeria. The Other items were rated below 50% as not adequate. Meanwhile, the 15 items that recorded zero percent (0%) had earlier been rated not available in the previous section.

Research Question 2

What is your perception on the adequacy of the available non-electronic assistive technology for special needs users in Public libraries in South-East Nigeria?

Table 2: The adequacy of the available non-electronic assistive technology for special needs users in Public libraries in South-East Nigeria are;

S/N	Items	N	Ad	N/Ad	% Ad	Remarks
Visually Impaired						
1	Chairs with sturdy armrests	35	29	6	82.9%	Adequate
2	Canes or walkers	35	14	21	40%	Not Adequate
3	Handrails and grab bars	35	24	11	68.6%	Adequate
4	Staff trained to assist patrons in case of emergency	35	13	22	37.1%	Not Adequate
5	Reading and computer tables of varying heights throughout the library	35	29	6	82.9%	Adequate
6	Unobstructed aisles between bookcases	35	26	9	74.3%	Adequate
7	Smooth and non-slip surface at the entrance	35	35	0	100%	Adequate
8	Unobstructed and well lighted access paths to the entrance	35	30	5	85.7%	Adequate
9	Stairs and steps marked with a contrasting color	35	31	4	88.6%	Adequate
10	Braille books	35	15	20	42.9%	Not Adequate
11	Wide aisles and clear pathway	35	30	5	85.7%	Adequate
12	Tactile maps Markers	35	14	21	40%	Not Adequate
13	Large print books	35	21	14	60%	Adequate
14	A non-slip and not too steep ramp with railings next to the stairs	35	20	15	57.1%	Adequate
15	Washbasin, mirror at the appropriate height	35	24	11	68.6%	Adequate
16	Clear and easy to read signposting	35	19	16	54.3%	Adequate
17	Visual alarms	35	24	11	68.6%	Adequate
18	Pictogram signs leading to elevators	35	16	19	45.7%	Not Adequate
19	Clear signs with pictogram indicating the location of the toilets	35	24	11	68.6%	Adequate
Hearing Impaired						
20	Chairs with sturdy armrests	35	29	6	82.9%	Adequate
21	Washbasin, mirror at the appropriate height	35	13	22	37.1%	Not Adequate
22	Wall Maps	35	19	16	54.3%	Adequate
23	Clear signs with pictogram indicating the location of the toilets	35	20	15	57.1%	Adequate
24	Clear and easy to read signposting	35	24	11	68.6%	Adequate
25	Visual alarms	35	19	16	54.3%	Adequate
26	Stairs and steps marked with a contrasting color	35	29	6	82.9%	Adequate
27	Sign language books	35	25	10	71.4%	Adequate
28	Large print books	35	27	8	77.1%	Adequate
29	Written Communication	35	14	21	40%	Not Adequate

30	Clear and easy-to-read signs with pictograms	35	24	11	68.6%	Adequate
31	Unobstructed aisles between bookcases	35	19	16	54.3%	Adequate
32	Pictogram signs leading to elevators	35	15	20	42.9%	Not Adequate
33	Unobstructed and well lighted access paths to the entrance	35	21	14	60%	Adequate
34	Smooth and non-slip surface at the entrance	35	35	0	100%	Adequate
35	Wide aisles and clear pathway	35	30	5	85.7%	Adequate
36	Staff trained to assist patrons in case of emergency	35	23	12	65.7%	Adequate
37	Reading and computer tables of varying heights throughout the library	35	21	14	60%	Adequate
Physically Challenged						
38	Unobstructed and well lighted access paths to the entrance	35	31	4	88.6%	Adequate
39	Entrance door wide enough to allow a wheelchair to enter	35	35	0	100%	Adequate
40	Shelves reachable from a wheelchair	35	13	22	37.1%	Not Adequate
41	Railings at both sides of ramp	35	22	13	62.9%	Adequate
42	Wide aisles and clear pathway	35	30	5	85.7%	Adequate
43	A non-slip and not too steep ramp with railings next to the stairs	35	30	5	85.7%	Adequate
44	Pictogram signs leading to elevators	35	14	21	40%	Not Adequate
45	Handrails and grab bars	35	33	2	94.3%	Adequate
46	Sufficient space in front of the door to allow a wheelchair to turn around	35	35	0	100%	Adequate
47	Adjustable desk	35	21	14	60%	Adequate
48	Chairs with sturdy armrests	35	20	15	57.1%	Adequate
49	Clear signs with pictogram indicating the location of the toilets	35	24	11	68.6%	Adequate
50	Stairs and steps marked with a contrasting color	35	19	16	54.3%	Adequate
51	Parking close to the library entrance	35	35	0	100%	Adequate
52	Manual wheelchairs	35	20	15	57.1%	Adequate
53	Written Communication	35	13	22	37.1%	Not Adequate
54	Washbasin, mirror at the appropriate height	35	29	6	82.9%	Adequate
55	Clear and easy to read signposting	35	25	10	71.4%	Adequate
56	Visual alarms	35	27	8	77.1%	Adequate
57	Smooth and non-slip surface at the entrance	35	35	0	100%	Adequate
58	Toilet with handles and flushing lever reachable for persons in wheelchairs	35	29	6	82.9%	Adequate
59	Staff trained to assist patrons in case of emergency	35	21	14	60%	Adequate
60	Reading and computer tables of varying heights throughout the library	35	26	9	74.3%	Adequate
61	Unobstructed aisles between bookcases	35	31	4	88.6%	Adequate

The result in the Table 2 indicated that; for visually impaired, only 5 out of the 19 identified items were rated below 50% which means that librarians and special needs users perceived these items (2, 4, 10, 12 & 18) as not adequate non-electronic assistive technology for special needs users in public libraries in South-East Nigeria. Under Hearing Impaired, 3 out of the 18 identified items were rated below 50% which means that librarians and special needs users perceived these items (21, 29 & 32) as not adequate non-electronic assistive technology for special needs users in public libraries in South-East Nigeria. For Physically Challenged, only 3 out of the 25 identified items were rated below 50% which means that librarians and special needs users perceived these items (40, 44 & 53) as not adequate non-electronic assistive technology for special needs users in public libraries in South-East Nigeria. The Other items were rated above 50% as adequate. Meanwhile, the 5 items that recorded one-hundred percent (100%) had earlier been rated 100% availability in the previous section.

Hypothesis: There is no significant difference in the percentage ratings on the perceived adequacy of the available assistive technology for special needs users in Public libraries in South-East Nigeria, based on the five locations.

Table 3
chi-square (χ^2) output of significant difference in the percentage ratings on the perceived adequacy of the available assistive technology for special needs users in Public libraries in South-East Nigeria, based on the five locations

Variable	Status	Number Expected	Number Observed	Calculated Value (χ^2)	Critical Value (χ^2)	**Decision**
Perceived Adequacy of Available Assistive Technology for Special Needs Users in Public Libraries	Anambra	102	60	148.68	6.179	Significant
	Abia	102	58			
	Ebonyi	102	71			
	Enugu	102	67			
	Imo	102	50			

S- Significant @ ∞ 0,05

As shown in Table 3, the calculated (χ^2) value of 148.68 is greater than the critical (table) value of (χ^2) (6.179). The null hypothesis is therefore rejected while the alternative hypothesis stands, which means: There is significant difference in the percentage ratings on the perceived adequacy of the available assistive technology for special needs users in Public libraries in South-East Nigeria, based on the five locations.

Summary of Findings

1. The available electronic assistive technologies perceived as adequate for special needs users in public libraries in south-east include; Information on audio tape, CD/DVD, Visible and audible fire alarm indicator and Technical support for computers (on-site, if possible).
2. The available non-electronic assistive technologies perceived as adequate for special needs users in public libraries in south-east rated 100% include; Smooth and non-slip surface at the entrance, Entrance door wide enough to allow a wheelchair to enter, Sufficient space in front of the door to allow a wheelchair to turn around, and Parking close to the library entrance.
3. The null hypothesis on perceived adequacy of (electronic and non-electronic) Assistive Technology was significant.

Discussions of Findings:

Perception of librarians and special needs users on the adequacy of the available electronic assistive technology for special needs users in Public libraries in South-East Nigeria.

The finding in research question three revealed that; for visually impaired, only 3 out of the 16 identified items were rated above 50% which means that librarians and special needs users perceived these items (1, 7 & 16) as adequate electronic assistive technology for special needs users in public libraries in South-East Nigeria. These adequate electronic assistive technologies include; Information on audio tape, CD/DVD, Visible and audible fire alarm indicator and Technical support for computers (on-site, if possible). Under Hearing Impaired, 4 out of the 14 identified items were rated above 50% which means that librarians and special needs users perceived these items (18, 23, 24 & 30) as adequate electronic assistive technology for special needs users in public libraries in South-East Nigeria. These adequate electronic assistive technologies include; Information on audio tape, CD/DVD, Captioning Television, Visible and audible fire alarm indicator and Technical support for computers (on-site, if possible). For Physically Challenged, only 3 out of the 11 identified items were rated above 50% which means that librarians and special needs users perceived these items (32, 37 & 41) as adequate electronic assistive technology for special needs users in public libraries in South-East Nigeria. These adequate electronic assistive technologies include; Information on audio tape, CD/DVD, Technical support for computers (on-site, if possible,) and Visible and audible fire alarm indicator. The Other items were rated below 50% as not adequate. Meanwhile, the 15 items that recorded zero percent (0%) had earlier been rated not available in the previous section. This brings us to the definition of adequacy of assistive technology in the library as the extent with which available

technologies in the library are sufficient to effectively satisfy the information need of the special need users it is provided for (Edet, 2014). This means that the technology must first be available before checking if they are sufficient. In support of this, the findings from the study of Samaila, Chukwuemeka and Babatunde (2020) showed that 56% of the high-tech assistive resources necessary for quality teaching and learning in special education schools were not available. It was also observed that 44% of high-tech assistive resources found available were grossly inadequate to guarantee better special education service delivery for students with disabilities.

Perception of librarians and special needs user on the adequacy of the available non-electronic assistive technology for special needs users in Public libraries in South-East Nigeria

The findings from research question four shows that; for visually impaired, only 5 out of the 19 identified items were rated below 50% which means that librarians and special needs users perceived these items (2, 4, 10, 12 & 18) as not-adequate non-electronic assistive technology for special needs users in public libraries in South-East Nigeria. These not-adequate non-electronic assistive technologies include; Canes or walkers, Staff trained to assist patrons in case of emergency, Braille books, Tactile maps Markers and Pictogram signs leading to elevators. Under Hearing Impaired, 3 out of the 18 identified items were rated below 50% which means that librarians and special needs users perceived these items (21, 29 & 32) as not adequate non-electronic assistive technology for special needs users in public libraries in South-East Nigeria. These not-adequate non-electronic assistive technologies include; Washbasin, mirror at the appropriate height, Written Communication and Pictogram signs leading to elevators. For Physically Challenged, only 3 out of the 25 identified items were rated below 50% which means that librarians and special needs users perceived these items (40, 44 & 53) as not adequate non-electronic assistive technology for special needs users in public libraries in South-East Nigeria. These not-adequate non-electronic assistive technologies include; Shelves reachable from a wheelchair, Pictogram signs leading to elevators and Written Communication.

The Other items were rated above 50% as adequate. Meanwhile, the 5 items that recorded one-hundred percent (100%) had earlier been rated 100% availability in the previous section. The Items are; Smooth and non-slip surface at the entrance, Entrance door wide enough to allow a wheelchair to enter, Sufficient space in front of the door to allow a wheelchair to turn around, and Parking close to the library entrance. These items are among the non-electronic assistive technologies identified by Abdelrahman (2016) as readily available and enough for use by special needs users in public libraries in south-east Nigeria.

Result of the null hypothesis.

Based on the result of the null hypothesis tested using Chi-Square (χ^2), it was rejected (not accepted) haven obtained calculated (χ^2) values (148.86) greater than the critical (χ^2) values (6.179). This shows that; Ho-"There is significant difference in the percentage ratings on the perceived adequacy of the available assistive technology for special needs users in Public libraries in South-East Nigeria, based on the five locations". This may be as a result of the fact that some of the state public libraries seems to be rated more, in terms of adequacy of assistive technologies for special needs users, than other state. This is observed from the response of the returned instruments distributed for this study. Anambra, Abia and Imo states public libraries recorded more of the items/technologies as adequate compared to Enugu and Ebonyi states public libraries. The results of the hypotheses are in-line with the thoughts of many researchers who are of the view that variables like; discipline, location and ownership may have effect on the provision of library resources (technologies). That is why Authors like Chukwuemeka and Samaila, (2020) indicated that factors such as awareness and skills are the determining factors that may influence librarians' decision to provide adequate assistive technologies in Public Libraries in South-East, Nigeria.

Conclusion

From the results obtained from the analyzed data, the researcher concluded that public libraries in south-east makes adequate provision more on non-electronic assistive technologies than electronic

assistive technology. Furthermore, public libraries in Anambra, Abia and Imo states seems to be better-off with regards to adequacy of assistive technology for special needs users.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The findings of the study was useful in guiding librarians and ministry of education personnel, with the intention of promoting adequacy of assistive technologies for special needs users in south-east, Nigeria.
2. In order to create a working environment that encourages librarians effectiveness, the Government in charge of providing funds should be up to their task in equipping the library to standard.

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