Availability and Extent of Application of Automation Facilities for Reference Services in Federal University Libraries in South-East Nigeria

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Abstract

Technologies in libraries are tools for improving and enhancing the efficiency of library services and resources. As new technologies evolve, library services are expected to change accordingly through acquisition and deployments for more efficient performance of tasks and activities including reference services. The paper examined the Availability and extent of application of library automation facilities for reference services in Federal university libraries in South-East Nigeria. A descriptive study design was adopted. A sample size of 137 librarians was used. A structured observation checklist and questionnaire were used for data collection. Frequency counts and percentages were used to analyze research question one, while mean scores were used for research question two. ANOVA was used to test the null hypotheses, and Scheffe post-hoc test was conducted to identify the source of observed significant differences. The findings revealed that seven automation facilities were available in the libraries, whereas Electronic Resource Management System, Discovery Systems, and Bibliography databases were not available in majority of the libraries. The extent of application of automation to reference services were low in almost all areas including: email referencing services, mobile phone call reference services, AI chatbots in library websites, information literacy training / tutorials among others. Significant difference was observed in the extent of application of automation for reference services based on the generation of institutions, particularly between first and third generation, and second and third generation universities. 1st and 2nd generation of institutional libraries has higher application of automation facilities for reference services than the 3rd generation. The study recommends that library automation facilities should be adequately provided by library management and librarians should increase the deployment of available reference tools for efficient reference service delivery in academic libraries in South East, Nigeria.

Keywords: Library automation, automation facilities, library technology application, Reference services, Digital reference services.

Introduction

The traditional methods of library processes have given way to modern techniques through the application of information and communication technologies in library operations. This could be referred to as automation. Automation is the new trend for libraries, highly essential, and has a wide range of activities. An automated library operates as a comprehensive software suite designed to manage various library routines functions and services efficiently. It highly encompasses reference services. Utilizing this system, librarians can efficiently input, store, and retrieve and disseminate information, enhancing the overall user experience. Gushit, Agada and Uganneya (2024) viewed Library automation as the utilization of computer and other information communication technologies for provision of a better, wider, immediate and relevant information resources and services to users at the right time in order to sustain and manage different library resources and operation such as reference. In other words, library automation refers to the use of computers and other innovative technologies to minimize human intervention in the daily operation of a library.

The aim of every library no matter the type is to provide effective and efficient services to its users without problems associated with traditional library services. Technologies in libraries are tools for improving and enhancing the efficiency of library services and resources. As new technologies evolve, library services will equally be changing rapidly and library personnel need to adapt to new plans, tasks and activities. Reference Librarians need to upgrade their technology and skills to remain relevant in the information era. The existence of this new technology in the library is prominent for effective and efficient service in the library by ensuring that the technological facilities are available for use.

Availability is seen as the existence of something that can be operated or use on demand Amiaya (2014) defined availability as a general characteristic of a resources that is committable, operable or usable upon demand to perform its designated or required function. The availability of automation facilities is a way of proving the readiness of library to embrace automation in their services for efficient production and provision of services to library users. Availability of automation facilities is very essential for efficient handling of library services. Library automation facilities involve the use of hardware and software systems to manage needed reference services. Nyambeki (2016) pointed out that some of the automation facilities are: computers, scanners, photocopying machines, tape recorders, projectors, ICT trained librarians, slides and film strips, electronic notice boards, and effective internet services. Ram (2018) also mentioned RFID, barcode scanner, chat room etc. as facilities needed for automation. The application of these facilities for reference services will enhance effectiveness of services delivery. Okiy, (2018) in his study stated that the application of computer technology to university libraries has transformed the pattern of information handling, provision of services and the perception in library service worldwide.

The application of automation for reference services entails helping library users locate the information that they need electronically. It can be inside the library or outside the library. Automation is a system that is designed to assist librarians provide more efficient services for better satisfaction of users' information needs. According to Egbunu (2020) disseminating information has become a lot easier and more satisfactory with the use of ICT facilities.

Reference service is key area in library activities. Traditionally reference librarian acts as an additional type of resources, who can be counted upon to provide expertise in making sense of library system and research tools and to offer a helping hand along that slippery path known as the research process (Ram, 2018). Automated reference service now allows reference librarian to reach out to library user using network instead of waiting at the reference desk in the library for users to come. Automated reference service also known as 'Ask-An-Expert' or Ask-A-Librarian' services are internet-based question and answer service that connect users with individuals who possessed specialized subject knowledge and skill in conducting precision searches (Ram,2018). It is assumed that availability of automation facilities and adequate application to reference services will enhance the effectiveness and efficiency of reference service.

It is presumed that there is variation in availability and extent of application of automation facilities for reference services based on generation of universities. It has been observed over the years that the factors like age, ownership and type of institution influence resource situation in Nigeria universities (Ajayi and Abiodun-Oyebanj 2010). According to him, age refers to the years of establishment of a particular university. Nigeria universities have been classified into first, second and third generation. The first-generation universities are those universities established in their 40s and 60s. The second generation are those universities established in their 70s and 80s while the third generation are the ones established in 90s (Okebukola, 1998). The economy of the generations defers from one another. This will automatically affect the resources and facilities availability and use. When these automation facilities are available and adequately applied for reference services will save both librarians as well as users' time. This supports number four rule of the library laws by Ranganathan (1931) which says save the time of the reader is actualized with automation. However, while the law stresses efficient library services and organization to minimize readers' effort in getting the information they need, automation added the perspective of saving the librarians' time too. The availability and application of automation for reference services will go a long way in easing access to resources and ensuring quick service delivery in the library. It is assumed that libraries with more automation facilities will apply automation more to their reference services than those with less automation facilities. However, this important project seems to have not been applied across board in all libraries.

Notwithstanding all the benefits automation had brought to libraries, some libraries are still struggling with the implementation of automation processes while some are not even considering it at all. (Okeoma and Egbe,2018). Suffice it to note here that the rate to which the automation

processes is applied varies between the developed and developing countries and, from one institution to another and this affects the performance of libraries both in information resources processing and service provision in university libraries. Library automation activities began during the 1950 s and 1960 s in the United States of America and United Kingdom, respectively (Mutula,2004). Developing countries did not begin automation until the 1980s.A lot of university libraries are in different phases of automating their reference services (Ajai and Adenike, 2018). Most Nigerian university libraries have not been able to automate all the operations due to varying factors like insufficient fund, lack of technical known how, epileptic power supply etc. Even those that had automated theirs are encountering difficulties in frequently using the automated system because of one challenge or the other. These factors range from individual to management and other socio-economic issues. Otunla (2016) said that some academic libraries in Nigeria are partially or totally automated. The state of library automation in our university is more or less the same. For university libraries to maintain a prominent position in their institutions, they must move from limited or local access to universal access.

Reference librarians are librarians that work in reference unit of the university library. They collaborate with faculty, students, and researchers to assist in locating relevant resources, conducting research and navigating complex database for achievement of library goal. Reference librarians in the digital society must be aware of important changes and use their technical knowledge and intellectual mastery to maintain the leading role of university libraries in supporting education, learning and research. This means that the reference librarians must have specialized skills that enhance the delivery of effective reference services to meet the changing needs of client because they may lose interest in the use of the library for their information needs if they are not satisfied with resources and services provided in the library.

Hence this study aimed at investigating availability and extent of application of automation facilities for reference services in federal university libraries in South East Nigeria have become necessary. This may help to ensure that libraries achieve the goal of providing efficient and effective resources and reference services to their users. This can be facilitated by availability and application of automation facilities for reference services in university libraries.

Statement of problem

Availability of automation facilities is a critical bedrock for actualization of automation for reference services. Despite the benefit of application of automation facilities for reference service some of the university libraries are in different stages of automating their reference services. Even those that automated theirs because of one challenge or the other still find it difficult to frequently use the automated system. The result is that reference librarians and users are still unable to experience the ease and seamless services expected through application of automation for reference services. It thus becomes necessary to carry out a study on the availability of automation facilities and extent of application for reference services of some of these university libraries in South-East, Nigeria.

Purpose of the study

The objectives of the study were to:

1. Find out the available automation facilities for reference services in Federal University Libraries in South-East Nigeria.
2. Investigate the extent of application of automation facilities for reference services in Federal University Libraries in South-East Nigeria
3. Determine the extent of application of automation facilities for reference services in Federal University Libraries in South-East Nigeria based on generation of institutions.

Research questions.

The following research questions guided the study:

1. What are the available automation facilities in federal university libraries for reference services in South-East Nigeria?
2. What is the extent of application of automation facilities for reference services in federal university libraries in South-East Nigeria?
3. To what extent are automation facilities applied to reference services in Federal University Libraries in South-East Nigeria based on generation of institutions.

Hypothesis

There is no significant difference in the extent of application of automation facilities for reference services in federal university libraries in South-East Nigeria based on generation of institution.

Literature review

University Libraries have to step up on the automation of reference services so as to sustain the interest of users on the use of library. Before advent of technology, users of university libraries undergo rigorous procedure in accessing their information needs. But in this digital age, reference services are computerized and automated for quick and stream less access to information. Sindhav and Patel (2014) affirmed that the mechanization of traditional library activities, such as reference service is called automation. Embracing automation in librarianship is the need of this information era. Automation is the process of using the library software and hardware for easy and speedy service delivery, while library automation is the general term for Information Communication Technologies that are used to replace manual system in the library (Boateng, Agyemang, and Dzandu, 2014). With the advent of technology, university libraries have embraced automation to streamline their services, enhance efficiency, and provide seamless access to a vast array of resources. The main purpose of library automation is to free the librarians and library staff and to allow them to contribute more meaningfully to the spread of knowledge and information. (Pandya

and Darbar, 2017) opined that library automation implies a high degree of mechanization of various routine and repetitive tasks to be performed by human beings. Library automation reduces the drudgery of repeated manual efforts in library routine. Quick services of the library are possible after introducing automation in the library. Effective and efficient handling of huge quantum of information is only possible by using computers, which have the added advantage of being highly accurate, and timely that adds value to information.

Availability is the presence or existence of things that can be used when needed. Amiaya (2014) defined availability as a general characteristic of a resources that is committable, operable or usable upon demand to perform its designated or required function. Availability of automation facilities simply means the presence of those software and hardware needed for library automation. It is the use of computer systems and other technologies to manage and enhance reference services. Library Automation facilities streamline task, improve access to information and optimize overall reference management. Automation facilities are very essential for the effectiveness of automation reference services. They are the work tool for automation realization. Without availability of these facilities, there will be nothing like automation. Nwana, Ofoegbu and Egbe (2017) defined availability of ICT resources needed for library automation as follows: Computer, printer, scanner, internet, e-mail, e-readers, e-books, videophone and teleconferencing devices. Okeoma and Egbe (2018) in their own study revealed that automation of library services is not effective in Nigeria because most university libraries do not have adequate technological facilities such as computers to support effective automation of library services. Accordingly, they suggested that computers, internet services, finance and some other necessary facilities should be given adequate attention to enhance automation and effectiveness of library services.

Application of automation facilities for reference services entails helping library users locate the information that they need. It can be inside the library or even outside the library provided they are satisfied with their information needs. Reference services are also key area in library activities. Automated reference service now allows reference librarian to reach out to library user using network instead of waiting at the reference desk in the library for users to come. Automated reference service also known as 'Ask-An-Expert' or Ask-A-Librarian' services are internet-based question and answer service that connect users with individuals who possessed specialized subject knowledge and skill in conducting precision searches (Ram,2018). The term reference service in library according to Akor and Alhassan (2015) is a direct personal assistant to library users seeking for information in the library. With evolution in information and technology, reference services gained upgrade by providing these services to users without barrier of distance. Once the user has internet on their system and has the library web address, they can access this service from any location they find themselves. Afolabi in Olubiyo and Jamogha (2022) distinguished the emerging services of a reference librarian in a digital age to include: The selection of electronic resources and the evaluation of their qualities, The evolvement of quick and effective locator tools to make the complex web of resources more readily accessible to both sophisticated and naïve users, The production of value-added components and indexing to the web

of resources that will continue to build-up, Teaching of novices how to locate resources. Reference librarian can also teach specialists in various fields how to find relevant resources in their discipline and even outside their own fields, functioning as a bridge between system designers and users, by having sufficient credibility with programmers and by understanding users'needs and Reference librarians can serve as the user's advocate with the system designer while also interpreting to the user what may or may not be technically feasible. Bhoi. (2017) showed that the following communication technology can be used in an automated reference service; voice mail, video conference, telephone, fax, internet. Fadiro (2019) in his study states that automation of reference section gives room for decentralized access to records. He is of the view that a reference librarian in a branch can verify the availability of material without maintaining duplicate file or going to other department to brief them on their work. Users can equally ascertain availability of material without being physically present in the library.

Quadri, Ganiyu, Quadri and Oluwasina (2015) carried *an* investigative study on the ICT application in libraries services: a comparative study of two Nigerian University libraries. Descriptive survey design was adopted for the study and the population consisted of 100 undergraduate students who used the ICT facilities in the library from University of Ibadan and University of Lagos respectively. Simple random sampling technique was employed to select 50 respondents each from University of Ibadan and University of Lagos. The questionnaire and interview checklist was the main instruments used for data collection. Data was analyzed using single percentage. The findings revealed that Internet 33.0%, computers 40.0%, printers 20.0% were some of the ICT facilities available in both university libraries.

Kuri (2022) carried an Investigation study on Library Automation Status in Private Aided Colleges of Belagavi, Karnataka. The paper unfolds the status and problems of library automation in aided degree colleges of Belagavi district, Karnataka. A descriptive survey research design was used to carry out the study. The primary data was collected through the structured questionnaire and informal personal interviews. The structured questionnaire was distributed to all 32 Private-aided college librarians, and out of which 24 were responded back with the response rate of 75%. The questionnaire consists of 3 sections which describes demographic information, library user, strength, collection, and library automation. The raw data was analyzed with the SPSS version 23 by adopting Chi square test to find data significance and to prove the research hypotheses. Further, the tables, charts, and figures were used to make the presentation clear, simple, and lucid. The study reveals that barcode scanner, UPS, printer, scanner and computers were the available automation facilities in the libraries.

Abba (2020) assessed ICT usage in library automation of the Federal Colleges of Education libraries North-West Nigeria. the overall objective of the study was to examine the extent of ICT usage in library functions and services of the Federal Colleges of Education libraries North-West Nigeria. The population of the study involved a sample of 62 professional library staff and 1887 students across the relevancy colleges. A descriptive survey method was used, and a questionnaire for data collection. Before the survey, questionnaire items were validated by lecturers in the

Department of Library and Information Science, University of Gezira Sudan. And a reliability test (alpha level 0.05) results in library automation, and 0.873 on the relevancy of library automation to student information needs. Data collected were analyzed using simple frequency count and mean scores, and ANOVA on ranks for hypothesis. However, 62 (100%) staff questionnaires and 1757 (93.1%) student questionnaires were retrieved for data analysis. And findings revealed that, the general level of ICT facilities available for automation in the libraries was very low.

Madukoma (2015) investigated users' perception of electronic reference services at Babcock University Library. The survey research design was used for the study. The population includes 250 registered library users. A questionnaire was used to gather data from the respondents. Out of 250 copies of the questionnaire distributed, 179(70%) were duly completed and returned. findings shows that majority of the respondents slightly utilize internet, printer, e-mail, cellphone, SMS, and scanner for their reference services while Android, I-pod, CD-ROM, video conferencing and facsimile were not utilized. Findings show that Babcock University Library users have a limited level of awareness of electronic reference services.

Okeoma and Egbe(2018) Carried out an evaluative study on automation in the University of Uyo and Covenant University libraries. The structured questionnaire was used to collect data from all Library and Information Science (LIS) professionals working in these academic libraries. Data obtained was analysed using SPSS 15.0. The findings revealed that LIS professionals have a high degree of awareness of library automation in academic libraries. It was also discovered that reference services are yet to be automated in university of Uyo but were nearly completed in center for learning resources.

Olagoke and Kolawole(2019) studied the effect of library automation on the performance of librarians in South-West, Nigeria. The survey research design was used. The population of the study was 349 librarians from 22 private university libraries in South-West Nigeria. 272 copies of the questionnaire were returned giving a return rate of 80.1%. Data collected were analyzed using descriptive statistics and Pearson's Product Moment Correlation Coefficient. Findings revealed that out of the six library services identified in this study, five were fully automated (reference service inclusive) and 90% of the private university libraries have automated their services.

Ajayi and Abiodun- Oyebanji (2010) examined the influence of age, ownership and type of university on resource situation in Nigerian universities. A descriptive survey design was used in the study. Data were collected from 900 academic staff using stratified, purposive and simple random sampling techniques. The data were analyzed using frequency counts, percentages, means, standard deviation and t-test statistics. The three hypotheses generated were tested at 0.5 significance. Findings showed that first generation universities had better resource situations than third generation universities.

Library users and librarians need to experience the ease associated with automated reference services. Thus, availability of automation facilities will enhance the extent of application of automation facilities for reference services for effective and efficient service production and delivery in reference unit. Hence, this study would bridge the said knowledge gap of availability

and extent of application of automation facilities for reference services in federal university libraries in South-East Nigeria.

Methods

This study adopted descriptive survey design. The descriptive survey design according to Robertson(2024) is one of the research designs that involves collecting data from a representative sample of a population through questionnaire or interview aims to provide a snapshot of current state of affairs within a population. The choice for the design is relevant and appropriate because it is to establish the extent of application of automation facilities for reference services in federal university libraries in South-East Nigeria.

The study was carried out in three automated federal university libraries in south – East Nigeria. The population of the study is 137 librarians based on preliminary investigations as at the time of the study. The researcher chose academic librarians because they are more conversant with automation processes in the library. Due to the number of the population, the researcher used census sampling because the size of the population of the study was small and was managed by the researcher. Therefore, the entire population of 137 became the sample size.

Data were collected using structured checklist and questionnaire. The study used a four-point Likert scale of strongly agree- 4; agree-3; disagree – 2 and strongly disagree-1. The reliability of the instrument was established using Pearson correlation and Cronbach's alpha method. This involved single administration of instrument. To achieve this, copies of the instruments were administered on 20 librarians randomly selected in Federal University libraries outside the study area. The reliability coefficient of .91 and .86 were obtained respectively. The researcher administered one hundred and thirty-seven copies of the validated instruments to the respondents in three (3) university libraries in South-East, Nigeria. Out of the one hundred and thirty-seven (137) copies of the instrument administered, one hundred and twenty-three(123) were properly completed and found usable for data analysis. This produced response rate of 92%.

Frequency counts and percentages were used to analyze research question one, while mean scores were used for research questions two. ANOVA was used to test the null hypotheses, and Scheffe post-hoc tests was conducted to identify the sources of observed significant differences. All analyses were done using Statistical Package for Social Sciences (SPSS) version 2021.

Results

Automation facilities available in Federal University Libraries in South-East Nigeria

Table 1: Frequency and Percentages on the automation facilities available in Federal University Libraries in South-East Nigeria

	Available		Not Available		
	Freq	%	Freq	%	Decision

1	Computers	123	100	0	0	Available
2	Library Cloud servers	114	92.7	9	7.3	Available
3	Library Local server	117	95.1	6	4.9	Available
4	Internet facilities	123	100	0	0	Available
5	Integrated Library Management System (ILMS)	105	85.4	18	14.6	Available
6	Electronic Resource Management System	18	14.6	105	85.4	Not Available
7	Library website	117	95.1	6	4.9	Available
8	Discovery Systems	18	14.6	105	85.4	Not Available
9	Digital Institutional Repository	120	97.6	3	2.4	Available
10	Bibliography database subscription	42	34.1	81	65.9	Not Available

The analysis indicates that out of the 10 listed automation facilities, 7 are available and 3 are not available in Federal University Libraries in South-East Nigeria. This was shown by over 50% of the librarians that affirmed the availability of the 7 facilities and non-availability of 3facilities. The 7 available facilities include: Computers (100%), Library Cloud servers (92.7%), Library Local server (95.1%), Internet facilities (100%), Integrated Library Management System (ILMS) (85.4%), Library website and Digital Institutional Repository (95.1%). The remaining three facilities which are: Electronic Resource Management System (14.6%), Discovery Tools (14.6%) and Bibliography database subscription (34.1%) are not available in Federal University Libraries in South-East Nigeria.

Extent of application of automation facilities for reference services in Federal University Libraries in South-East Nigeria.

Table 2: Mean Ratings of Respondents on the Extent Application of Automation facilities for Reference Services in Federal University Libraries in South-East Nigeria

S/N Items	$\bar{X}$	SD	Remark
1. Email Referencing services	2.32	.84	Low Extent
2. Video Reference services	1.78	.93	Low Extent
3. Mobile phone Call reference services	2.32	.81	Low Extent
4. SMS reference services	2.29	.89	Low Extent
5. Library guide	2.29	.11	Low Extent
6. AI Chatbots in Library website	1.80	.97	Low Extent

7. Notification of new acquisition	2.17	.96	Low Extent
8. Bibliographic Database provision	1.95	.23	Low Extent
9. Preservation and archiving of library materials	2.00	.15	Low Extent
10. Library Event announcements	2.54	.32	High Extent
11. Information literacy training / tutorials	2.29	.35	Low Extent
Cluster Mean	**2.15**	**.59**	**Low Extent**

Table 2 shows the cluster mean score of 2.15 and standard deviation of .59 indicating that the respondents to a low extent apply automation to reference services in Federal University Libraries in South-East Nigeria. The item-by-item analysis shows that the respondents rated 10 of the 11 items as being applied to a low extent with their mean ranging from 1.78 to 2.32. The remaining item (item, 10) was rated high extent with mean 2.54. The standard deviation scores for the 11 items ranged from .11 to .96 indicating that the respondents' mean ratings for the items were close together.

Table 3: Analysis of variance on the Application of Automation for Reference Services by Generation of Federal Universities in South-East Nigeria.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	50.23	2	25.11	58.57	.00
Within Groups	51.45	120	.429		
Total	101.69	122			

As shown in table 3, the F-ratio (df: 2/120) is 58.57 and the p-value (.00) is less than the stipulated 0.05 level of significance. It was therefore decided that the mean ratings of librarians on the application of automation to reference services differ significantly across 1st, 2nd and 3rd generation of Federal Universities in South-East Nigeria. The null hypothesis was therefore rejected.

Since the ANOVA test was significant, a Scheffer Post Hoc test was carried out to identify where the significant difference existed. This is presented in Table 4 below.

Table 4: Scheffe Post-Hoc on the Application of Automation for **Reference Services by Generation of Federal Universities in South-East Nigeria**

(I) Generation of Institution	(J) Generation of Institution	Mean Difference (I-J)	Sig.
1st Generation	3rd Generation	1.26	.00
	2nd Generation	.07	.88
2nd Generation	3rd Generation	1.34	.00

	1st Generation	079	.88
	1st Generation	1.26	.00
3rd Generation	2nd Generation	1.34	.00

As indicated by the Post-Hoc test (Scheffe test) in Table 4, there is a significant difference in the application of automation to reference services among librarians in 1st(.88) and 3rd(.00) generation of universities and those in 2nd and 3rd generation of universities. There is however no significant difference in the application of automation to reference services among librarians in 1st(.88) and 2nd(.88) generation of universities.

Discussion of the Findings

The findings relating to availability of automation facilities shows that Computers, Library Cloud servers, Library Local server, Internet facilities, Integrated Library Management System (ILMS), Library website and Digital Institutional Repository were available while the remaining three: Electronic Resource Management System, Discovery Tools and Bibliography database subscription were not available. The findings is contrary to the discoveries of Abba (2020) which shows that general level of ICT facilities for automation in Federal College of Education libraries in North-West Nigeria was very low as the following were not available: Radio-frequency identification, Smart Bookshelf, Book Drop and Sorting Unit, Library website, Wide Format Scanner Digital Cameras, Smart Self-Collection Box, Book Dispenser, Mobile Stock Take Trolley, Recommender System, Wikis, Blogs, Pod and Video casting, Cloud Computing, Social Networking, Real Simple Syndication feeds, and Intelligent Monitoring System. Therefore, Availability of automation facilities is very essential for their application to reference services. The existence of automation facilities is the number one step to readiness of the library to automate their reference services.

The findings revealed low extent of application of automation facilities for reference services in federal university libraries in South East, Nigeria. This was indicated by the cluster mean score of 2.16. The findings are in line with the results of Okeoma and Egbe (2018) that revealed the application of automation facilities to reference services to be low, though the study of Olagoke and Kolawole (2019) objected with their findings that application of automation to reference services are high in South West, Nigeria. Reference services need to be highly automated. These services are needed by library users to sort their information needs. The high application of automation to reference service saves time of librarians in repetition of instructions and answers to users. Users on the other hand will get information they need without barrier of location or time limit.

Likewise, hypothesis showed that there was significant different in the application of automation facilities for reference services in federal university libraries in South-East Nigeria based on

generation of institution. The calculated F-ratio (df: 2/120) is 58.57 and the p-value (.00) is less than the stipulated 0.05 level of significance; the null hypothesis was therefore rejected. Therefore, the Post-Hoc test (Scheffe test) was taken and it indicated there is a significant difference in the application of automation to reference services among librarians in 1st and 3rd generation of universities and those in 2nd and 3rd generation of universities. There is however no significant difference in the application of automation to reference services among librarians in 1st and 2nd generation of universities. The findings are in agreement with the study of Ajayi and Abiodun-Oyebanji (2010) that first generation institution has more resources and use them than the third-generation institution. The difference emphasis the need for third generation universities and their managements to ensure that automation facilities are available in their libraries. More so, those automation facilities should be highly applied to reference services. This will help to ensure that they compete with the first and second university generation in application of automation to circulation services.

Conclusion

The present study concludes that the seven available automation facilities in federal university libraries in South-East Nigeria are computers, library cloud servers, library local server, internet facilities, Integrated Library Management System (ILMS), Library website and Digital Institutional Repository were available while the remaining three: Electronic Resource Management System, Discovery Tools and Bibliography database subscription were not available. There was low extent of application of automation facilities for reference services. There was significant difference in the application of automation facilities for reference across 1st, 2nd and 3rd generation of institution with the 3rd generation institutions deploying automation facilities to reference services lesser than their counterparts. With the low extent of application of reference facilities, reference librarians and users are not fully experiencing the ease associated with the use of automated reference services. Library management should provide adequate library automation facilities and librarians should increase the deployment of available reference tools for efficient reference service delivery in academic libraries in South East, Nigeria.

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