

**EFFECTS OF AUTOMATION ON THE SERVICES ON ACADEMIC LIBRARIES IN
NIGERIA: A CASE STUDY OF THE FEDERAL UNIVERSITY OF TECHNOLOGY,
AKURE, ONDO STATE**

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ABSTRACT

Automation is very much pivotal to effectiveness of services being rendered by academic libraries in Nigeria. It is a technological device that makes operations of the library faster, more orderly and more effective. It is against this background that the study investigated the impact that automation exerted on the services of the Federal University of Technology Library. A purposive sampling technique was adopted to select all the library officers and professional librarians totaling 27 to whom 27 questionnaires titled “Library Automation Questionnaire for Professionals and Paraprofessionals” (LAQPP) were distributed. The questionnaire collected data on automation and library services as presented by the mentioned categories of staff. A descriptive survey method was employed to analyse the data collected and the result revealed that only 30% of the services of the library had been automated and it was concluded that the rate of automation was stagnated thereby affecting negatively the services of the library. Recommendations for improved automation of the library services, therefore, made based on the results.

Keywords: Automation Academic library, Services, Library Services

Introduction

The introduction of automation to library services in Nigeria has become very popular due to its attendant benefits. Libraries, particularly, academic ones, realizing the importance of automation in library operations, have acquired information communication resources like computers, printers, library softwares, CD, CD-ROM and other automation facilities to automate their services.

Nigerian libraries can only live up to expectations of their information users only if their services are effective and reliable in meeting users' information needs. There is, therefore, the need for academic libraries to enhance their services and improve their quality to be able to adequately satisfy the needs of their patrons. This can only be achieved through effective implementation of automation programme designed for the organization and dissemination of information in order to increase knowledge and improve scholarship. Librarians and documentalists should be conversant with Information Communication Technologies (ICT) for library operations to become more relevant in the 21st century information age.

The use of Integrated Online System helps the libraries to harness their resources and project their services effectively in an organized and widely accessible way to deserving patrons. It also particularly helps to harmonise and present the activities of the libraries in meaningful ways. The automation system brings together library operations and services like acquisition, serials control, circulation, the public catalogue, documentation, research publication and bindery in one system with the application of common command and sharing common patrons and item record based on a uniform platform (Kabrin Dahini Abbas, 2014).

Historical Background of the Federal University of Technology, Akure, Nigeria

The Federal University of Technology, Akure was established in 1981 under advice by the government of Nigeria to create universities that are preoccupied with the production of graduate manpower with practical as well as theory based knowledge in the areas of technology. The efforts to implement education policies emanating from the thrust to improve the standard of education gave rise to the establishment of universities of Technologies by the then administration of President Shehu Shagari. Those universities established then, were the Federal University of Technology, Owerri, the Federal University of Technology, Abeokuta which later became the present Federal University of Agriculture, Abeokuta (FUNAAB), the Federal University of Technology, Yola, the Federal University of

Technology, Minna, the Federal University of Technology, Bauchi and of course, the Federal University of Technology, Akure.

The establishment of the universities was in line with the National Policy on Education (NPE) which recommended technical and scientific training for the Nigerian citizenry. The training, according to the National Policy on Education reflects development at every stage of education system characterized by scientific and technological attitude in preparation for the nation's technological advancement.

The library is presently stocked with about eighty thousand (80,000.00) books and about one thousand two hundred (1,200) print journals coupled with more than twenty – eight (28) interdisciplinary databases. The library also admit two thousand five hundred (2,500) students as patrons for readership. A newly established School of Health Sciences (SHSC) has been added to already existing six schools namely: School of Science (SOS), School of Engineering and Engineering Technology (SEET), School of Environmental Technology (SET), School of Agriculture and Agricultural Technology (SAAT), School of Management Technology (SMAT) and the School of Earth and Mineral Sciences (SEMS). The library has the following sections which operate mutually and collectively by providing information services to meet the varied information needs of its patrons. These services are: Cataloguing Services, Serials Services, Readers' services, photocopying services , borrowing services, Current Awareness Services (CAS), selective Dissemination of Information Services (SDI), exhibition services, ICT services which include but not limited to access to databases, download of databases, internet browsing, printing, OPAC services (On-line Public Access Catalogue), reserved collections, education support services through the provision of audiovisual collections, virtual library services, reference services and access to publication and documentation services.

Statement of the Problem

The inability of academic libraries in Nigeria to provide efficient and effective library services to meet the varying needs of their patrons has been a source of concern to both patrons and the library communities. This has been attributed to many problems but the most challenging of them is the failure to provide potent ICT based operation that can help to project the library services to fairly well for users' accessibility and utilization. This, therefore, makes it very pertinent for libraries to acquire modern ICT facilities effectiveness and efficiency. It is against this background that this study intends to investigate the impact of application of ICT facilities to library operations on library services. The study also tries to find out whether introduction of ICT (automation) can contribute significantly and positively to effective discharge of library services to its deserving patrons.

Objectives of the Study

The general objective of the study is to investigate the level of contribution of automation to effective library services in academic libraries in Nigeria using the Federal University of Technology, as a case study. The specific objectives are to:

- (i) Determine the availability of automation/ICT for academic libraries
- (ii) Determine the services that are automated in academic libraries
- (iii) Find out in which ways automation has contributed to effectiveness of academic library services.
- (iv) Identify challenges militating against effective automation in academic libraries
- (v) Identify the automation/ICT maintenance for academic library services.

Research Questions

The study attempted to answer the following research questions:

- (1) What is the level of availability of automation for academic library services?
- (2) To which extent has automation contributed to effective services in FUTA library?
- (3) What are the challenges that militate against effective application of automation to library services in FUTA?
- (4) What are the measures employed for automation facilities maintenance in FUTA library?

Literature Review

Diso (2005) explained that the use of computer is applicable to a wide range of operations in library services and its application, according to him, has brought maximum efficiency to services of libraries through increased reduction of mistakes, increase in convenience, adequate statistical data keeping, control of literature growth, labour saving and easy exchange of documentation. He further explained thus:

“We no longer type cards, the system supplies them, patrons do not need to copy down call numbers before going to the shelves, the online catalogues system prints them out, patrons don’t sign for books, a light pen reads their identification cards and the system charges the book out to them”.

According to Advanced Learners Dictionary (2004), automation can be taken to mean the act or process of converting the controlling of a machine or device to a more automatic system such as computer or electronic controls. This definition is application to virtually all the areas of human endeavours not excluding library and information system. Chukwudi (2008) posited that the concept of automation as electronic based combination of computer and telecommunications which includes, computers, global system for mobile communications, internet and satellite communication. This according to him, improve productivity and efficiency.

In addition, Ojedokun (2000) described automation as a device that holds more useful, up-to-date and relevant information and contains a wealth of simple information of direct applicability to every subjects. He explained that such device offer a number of advantages one of which is obliquity. According to him, users can simultaneously access them from different locations and single electronic copy can also be delivered with electronic speed. It is a technological device that aids error free operations and helps to preserve information and data for a relatively long period of time with reliable and electronic back up devices. The introduction of automation and its attendant technologies to library operations is not without emerging opportunities and challenges in the present digital age. The device provides opportunities for the acquisition, organization and bibliographic control of the annullable vast knowledge.

Implications of Automation for Academic Library Services

Specialized Information Technologies are adopted by libraries, particularly, academic ones, to achieve efficiency in organization, preservation, retrieval and dissemination of library information in and information resources. Ehikhamenor (1993) believed that Information Technology was adopted because of its relevance to library operations. He listed the following as some of the advantages of IT in academic libraries.

- (i) Speedy and easy access to information
- (ii) Provision of round the clock access to users
- (iii) Access to unlimited information from different resources

In a study conducted by Zhang and Alexander (2007) on how academic library services had impacted on the success of university undergraduate students, the result indicated that largest percentage of respondents, both in aggregate and in the six study groups, identified the library web site and electronic periodicals and databases as most significant over and above the physical print collections. This shows the important of automation in academic library services.

Afolabi and Abidoye (2012) identified core areas which can be significantly affected by automation as follows:

- (i) Ordering/acquisition
- (ii) Circulation
- (iii) Library Database
- (iv) Later library loan by two or many libraries that are concerned
- (v) Documentation and Administration
- (vi) Desktop publishing
- (vii) Budgeting
- (viii) Cataloguing and classification
- (ix) Serial management

According to them, application of CIT to library works and services could be seen as the best way that could be used to assist researchers to adequately solve their literature need for effective research activities.

Neankwo (2006) explained that automation of academic library services helps in the provision of efficient reference and information services, the utilization of network operations such as cataloguing, authority control, inter library loans and cooperation and in the participation of international bibliographic project.

According to Uwaifo (2010), automation application has greatly impacted on the services of academic library in numerous ways. These are:

- (1) Access to electronic information resources which are internet based such as e-books, electronic reference sources, electronic journals, databases, etc.
- (2) Online Public Access Catalogue (OPAC) which is a form of catalogue through which the library collections can be accessed online.
- (3) Document Delivery System which involves sending documents to users through e-mail, fax, etc
- (4) Inter library loan that is concerned with the exchange of materials with the shortest time.

- (5) Lack of physical boundary which implies that users need not visit the physical library before they can access and utilize the library resources once connected with the internet.
- (6) Storage capacity that is concerned with the storage of much bigger information without wasting space.
- (7) Preservation and conservation which relates to duplication of original document without any degeneration in quality.
- (8) Indexing and Abstracting Services are services that concern creation and indexing of databases for users to make use of in their search for information materials.
- (9) Library Retrieval System which involves the use of compact Disc Read Only Memory (CDROM) for acquisition of specialized CD-ROM databases in different subject areas. Examples are AGRINDEX in Agriculture, MEDLINE as LEXIS and NEXIS in law.

Challenges for Academic Library Services

There are challenges that militate against effective library automation and these challenges include but are not limited to the following:

- Epileptic Power Supply: No success can be recorded in automation programme without a stable supply of power on which automation infrastructure largely depends.
- Insufficient ICT manpower: This affects automation to a very large extent because maintenance and sustainability of ICT facilities is anchored on dependable technical ICT staff.
- Lack of policies on Automation: Most libraries particularly academic ones do not have any concrete policy that drives their automation programme. This hampers automation of library services.
- Funding: This is an important factor that is notable in African libraries. Many host institutions do not see the need to allocate much to libraries to cater for their services.
- Deficient computer use skill: Reports show that many librarians, mostly old ones, find it difficult to use the emerging ICT technologies
- Change in Technology: Change in library softwares due to deficiency affects already existing ones by a way of overhaul.

- **Poor Maintenance:** This poses a great setback to effective automation programme due to inability of libraries to maintain properly acquired automation infrastructure.

Methodology

A descriptive research design of survey type was employed for the conduct of the study. A purposive sampling technique was adopted to select all the library professionals (academic librarians) and library officers totaling 27 from the total population of 98 staff members of the main library of the Federal University of Technology, Akure. The two categories of staff were selected because they interact more regularly with the automation resources like computers, OPAC (online Public Access Catalogue), Databases and library based internet facilities than other members of library staff. The data gathering instrument designed for the study was a questionnaire titled (LAQPP) which made up of six sections validated and subjected to test and pre-test with reality scores of 0.71, 0.69, 0.55, 0.81, 0.72 and 0.63 respectively.

The questionnaires were distributed personally by the researcher. The respondents were given two weeks to fill the questionnaire to afford sufficient time for accurate return. The researcher personally collected the questionnaires to avoid loss. All the questionnaires distributed, were filled, returned and found useful.

Results

Research Question 1: What is the level of availability of automation for academic library services?

Table 1: Level of Automation Availability for Academic Library Services

S/N	Automation for Academic	Response	Percentage (%)
1	Web Based Interface	06	22.2
2	MARC21 and UNIMARC	03	11.1
3	Online and offline resources	07	25.9
4	Print Barcodes	25	92.6
5	E-mail for patrons overdue and other notices	04	14.8
6	Serials management module	20	74.1
7	Web based OPAC system	21	77.8
8	Simple search interface for users	20	74.1
9	Simple acquisition options	03	11.1
10	Multi tasking, for circulation cataloguing and acquisition updates	15	55.6

Table 1 indicates that printing of barcodes (92.6), serials management module (74.1%), web based OPAC (77.8%) and simple search interface for users ranked highest on the list of automation services for FUTA library while MARC 201 and UNIMARC (11.1%), web based interface (22%), e-mail for patrons' notices ranked lowest. This implies that the library does not have full automation programme on ground for most of her operations. This also has far reaching implications for most of her services since only a small segment of the community may have access to the library information resources from their different locations. The library may therefore find it a bit difficult meeting information needs of members of the community because of lack of open access.

Research Question 2: To which extent has automation contributed to effective services in FUTA library?

Table II: Contribution of Automation to effective library services

S/N	Contributions	Response	Percentage (%)
1	Document Delivery	01	3.7
2	Access to electronic information research that are internet based	09	33.3
3	Online Public Access Catalogue	25	92.6
4	Inter library loan	02	7.4
5	Access to electronic databases	21	77.8
6	Access to electronic references	02	7.4
7	Online book loan and overdues	01	3.7
8	Selective dissemination of information that is web based	01	3.7
9	Online Current Awareness system for varied categories of patrons	01	3.7
10	Online cataloguing through MARC 21 and UNIMARC	01	3.7
11	Indexing and Abstracting Services for Users' Search	01	3.7

Table II indicates that OPAC (92.6%) is the only library services that is affected by automation programme in the main library of the Federal University of Technology, Akure. Other services like document delivery (3.7%), access to electronic information resources, access to electronic references (7.4%) and indexing and abstracting services (3.7%) have not be integrated into the automation programme of the library. It was also discovered that electronic databases (77.8%) for users' access were installed on the library systems for merely for accreditation purposes. The implication is that full automation is yet to take up in the institution library.

Research Question 3: What are the challenges that militate against effective application of automation to library services in FUTA?

Table III: Challenges militating against adoption of automation for library services

S/N	Challenges	Response	Percentage (%)
1	Epileptic power supply	17	63
2	Insufficient ICT manpower	03	11.1
3	Lack of Automation Policy	04	14.8
4	High cost of ICT resources	19	70.4
5	Slow and unreliable network	17	63
6	Lack of awareness	02	7.4
7	Access difficulty	14	51.9
8	Inadequate automation resources	19	70.4
9	Poor maintenance	20	74.1
10	Lack of ICT use skill	22	81.5

Table III indicates that lack of ICT use skill (81.5%), poor maintenance (74.1%), high cost of ICT resources (70.4%), and epileptic power supply are the most prominent on the list of challenges that militate against effective automation programme in the main library of the Federal University of Technology while challenges like insufficient ICT manpower (11.1) lack of automation policy (14.8%) and lack of awareness (7.4%) are the least challenges that respondents felt could hinder automation programme implementation. This means that the library and institution management should focus more on the problem of maintenance, ICT training for staff, provision of automation facilities and fund automation and programme adequately.

Research Question IV: What are the measures employed for automation facilities maintenance in FUTA library?

Table IV: Measures employed for maintenance of automation facilities

S/N	Maintenance measures	Response	Percentage (%)
1	Regular supply of electricity	24	88.9
2	Periodical Servicing	21	77.8
3	Expert advice	02	7.4
4	Air conditioning	03	11.1
5	Cleaning of the facilities	06	22.2
6	Repairs of warn out parts	21	77.8
7	Replacement of worn out parts	22	81.5
8	Provision of well ventilated space	05	18.5
9	Proper handling of automation in facilities	05	18.5
10	Installation of strong antivirus software	20	74.1
11	Provision of back up and reliable storage device	02	7.4

Table IV shows that most applied maintenance measures adopted for automation are: regular supply of electricity (88.9%), replacement of worn out parts (81.5%), repairs of worn out parts (77.8%), periodic servicing (77.8%), and installation of strong antivirus software (74.1%). Provision of backup (7.4%), expert advice (7.4%) and ventilated space (18.5%) and air conditioning (11.1%) ranked least on the list of maintenance measures. This might be due to the fact that some of the provisions mentioned were already in existence before automation programme take-off.

Discussion of Findings

The study revealed that automation programme is in place but most of the library services are yet to be integrated and little conversion of records has been done. The study also revealed that automation covers only OPAC and electronic databases that are accessible only within the library. Regular supply of electricity, periodic servicing and installation of strong antivirus are the regular maintenance measures employed to preserve and sustain the automation facilities though other facilities in the library have been supportive to maintenance of the automation facilities. However, the most challenging problem militating against automation in the library are lack of CIT use skill, poor maintenance, inadequate automation resources and high cost of ICT resources.

Conclusion

In conclusion, FUTA library has automation programme for her services though most of the services are yet to be integrated into automation programmed adopted by the library to facilitate her information services. On-line Public Access Catalogue, Databases and electronic journals are captured by automation though accessible only within the library because of lack of standard network. Funding, lack of appropriate IT skills and high cost of ICT resources are the major militating factors.

Recommendations

The following recommendations are hereby made:

- Standing automation policy should be put in place to ensure automation readiness of Nigerian academic libraries, particularly, FUTA.
- Adequate fund should be provided for the proper management of automation programme
- Regular supply of power should be encouraged to ensure effective automated library services.
- Regular maintenance of automation facilities should be carried out to ensure longevity of automation service,
- Support from the host institution should be given. This encourages the library to embrace automation in a holistic by fully carrying out information services.

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