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April 2016

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Adoption of Software Packages in University Libraries in Nigeria

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Abstract

This study used a survey design to investigate the adoption of software packages in Nigerian university libraries. The study was guided by seven research questions. The population included all the 127 University Librarians in Nigerian university libraries; while the sample used for the study included 58 university librarians cutting across the six geopolitical zones in the country and reflecting the ownership status of federal, state and private universities. An instrument called Software Adoption Questionnaire (SAQ) was developed by the researcher for this study. This SAQ was validated by three librarians from the University of Calabar. The data gathered and collated was analysed using percentages, pie chart and bar chart. The findings of the study indicated the software packages adopted in Nigerian university libraries. The findings also indicated that KOHA is the most widely adopted software package and the most widely used presently; and that the level of automation of university libraries in Nigeria is very low. The findings also indicated the level of automation of the core library modules; how the different levels of automation of the core library modules differ amongst the different modules; how the level of automation of the university libraries in Nigeria differ amongst the private, state and federal universities in Nigeria, amongst others. Recommendations were made to the different stakeholders on the adoption of software packages in libraries in Nigerian universities.

Keywords: software, libraries, automation, library modules

Introduction

Globally, the nature of human beings is that of constantly looking for ways of making things easier and making life comfortable. This underlying universal factor, which drives inventions, innovations and strategies, is also applicable in the library setting where deliberate steps are taken to make the use of the library easier and more comfortable for both the library staff and the users. Automation of the library is a step that is in sync with this global craving for ease and comfort.

Software packages are relevant in a library that is automated. According to Nwalo (2002), automation of the library refers to the use of computers in rendering library services which were hitherto executed manually. Sharma (2007) sees library automation as the use of computers, associated peripheral media such as magnetic tapes, disks, optical media etc and utilization of computer based products and services in the performance of all types of library functions and operations. Giving an operational definition to the concept, the author of this paper defines automation of the library as the application of Information and Communication Technology (ICT) in the operation of the different processes and functions of the library to attain efficiency, accurate reporting and improved services. Core services of the library like circulation, cataloguing, acquisition, serials management, reference services and special collection readily benefit from automation.

A computer system which is the core component of ICT runs on software, which can be system software or application software. Software is a generic term for the various programmes used to operate computer systems and related devices. While the system software provides the platform for the computer to function and communicate effectively with the application software, application software on its part is a computer programme designed to use a computer system to perform specific functions (Wikipedia Encyclopedia). There is a vast array of application software packages as a result of the assortment of tasks and functions executed using a computer system. However, what determines the choice of software is the relevance, user-friendliness, adaptability, inter-operability, general efficiency, amongst other considerations (Ukachi, Nwachukwu and Onuoha, 2014).

There is an avalanche of software available for use in the library. These range from the proprietary software, which are subscription based, to the Open Source Software (OSS). The software available for selection also includes foreign brands and indigenously developed brands. In India for example, some library software of foreign origin that are well known include ALICE for Windows, Virtua, Techlib Plus etc, while the Libsys ranks high amongst the indigenous packages. Other software packages indigenously developed and used in India include Granthalaya, Maitreyi, Sanjay, DELMS, DELDO, TLMS etc (Husain and Ansari, 2007). Some of the software packages adopted by libraries in Nepal include CDS/ISIS, Lib Info, WINISIS, LMS, ALICE for Windows, SOUL etc (Sharma, 2007).

The concept of library automation is also embraced by university libraries in Nigeria. University of Lagos and Covenant University are reported to have achieved full automation of their libraries, while University of Agriculture, Abeokuta and Lagos State University attained partial automation (Okewale and Adetimirin, 2011). This gives a picture of the possibility of having some libraries that are not automated at all. This picture justifies the need to conduct a study to ascertain the level of automation of the core library modules of the universities in Nigeria, which is one of the objectives of the current study.

Researchers have conducted studies on the use of software packages in some universities in Nigeria. Some of the software packages used in libraries in universities in Nigeria include TINLIB, ALICE, X-LIB, GLAS, CDS/ISIS, KOHA, SLAM, Liberty 3, Docuware etc (Adogbeji, Onohwakpor and Sylvester, n.d; Okewale and Adetimirin, 2011; Udoh-Ilomechine and Idiegbeyan-ose, 2011; Obajemu, Osagie, Akinade and Ekere, 2013). These studies were however

limited in scope as they involved a fewer number of sampled universities. The current study sought to fill this gap by expanding the sample size to establish the software packages adopted in university libraries in Nigeria.

Furthermore, Obajemu et al (2013) conducted a study on the use of library software products in Nigeria. The study covered 50 libraries in Nigeria including 22 federal, state and private universities; 11 polytechnic libraries; 3 colleges of education libraries, and 14 research institutions' libraries. The researchers reported in their findings that "some of the respondents are quite aware of the various types of software being paraded in Nigerian markets." This study did not establish the specific software packages adopted by these 50 libraries as it merely established whether or not the librarians were aware of the existence of such software packages. The present study focused on the universities and sought to identify the specific software packages adopted by university libraries in Nigeria.

In a study on library automation and virtual library development in four academic Libraries in Oyo State, Gbadamosi (2011) reported that none of the four libraries investigated was fully automated. The academic libraries used for the study included those of Emmanuel Alayande College of Education, Oyo; Federal College of Education (Special), Oyo; Federal School of Surveying, Oyo; and Ajayi Crowther University, Oyo. This finding presents yet another justification for a similar study to be conducted to establish the status of automation of the libraries in universities in Nigeria.

More so, demographic variables, like ownership and location etc, have been established to have influence on dependent variables being studied (Horowitz and Spector, 2005; Maliki and Uche, 2007; Awolaye, Siyanbola and Oladipo, 2008). The present study also considered the demographic variables, such as ownership of the university and location, on the adoption of software packages in libraries in universities in Nigeria.

Research questions:

- i. What are the software packages adopted in libraries in universities in Nigeria?
- ii. What is the level of automation of university libraries in Nigeria?
- iii. What is the level of automation of the core library modules of the universities in Nigeria?
- iv. How do the different levels of automation of the core library modules of universities in Nigeria differ amongst the different modules?
- v. How does the level of automation of the university libraries in Nigeria differ amongst the private, state and federal universities in Nigeria?
- vi. How does the level of automation of the core library modules differ amongst the private, state and federal universities in Nigeria?
- vii. How does the level of automation of the core library modules differ amongst universities based on geopolitical zones?

Research method

This study adopted survey design; it was situated in the Federal Republic of Nigeria. There are 41 federal universities, 25 state universities and 61 private universities in Nigeria (National Universities Commission (a); National Universities Commission (b); National Universities

Commission (c)). This implies a total of 127 universities in Nigeria. The population of the study included the 127 University Librarians in all the universities in Nigeria. The study adopted purposeful random sampling to choose 64 university librarians as the sample for the study; but 58 copies of the questionnaire from 58 university librarians were retrieved and found usable. The 58 university librarians cut across universities in the six geopolitical zones in the country while also reflecting the ownership status of federal, state and private universities. The sample of the study was therefore 58 university librarians. The tables 1 and 2 below indicate the segmentation based on geopolitical zones and ownership status of the universities whose librarians were used as the sample; and the names of the universities whose librarians were used as the sample for the study respectively.

The instrument used for data collection was a questionnaire called Software Adoption Questionnaire (SAQ). This instrument, which was developed by the researcher, had two parts labelled parts I and II. Part I sought to gather demographic information including name of the university, state of location, geopolitical zone, ownership etc; while the part II sought to elicit data on the level of automation of the library, the level of automation of the different modules in the library, the software that had ever been used in the library, the software that was being used as at the time of the study, amongst others. The instrument was validated by three librarians from the University of Calabar.

Copies of the questionnaire were administered to the University Librarians during a meeting of Committee of University Librarians of Nigerian Universities (CULNU) which held at the University of Benin in April, 2015. While all the respondents were encouraged to return the

questionnaire during the meeting, the researcher also attached to the questionnaire self-addressed stamped envelope for the respondents to send the questionnaire by post if they could not fill in and return the instrument during the meeting. Copies of the questionnaire with self-addressed stamped envelope were also sent to the sample respondents that could not attend the meeting. The data gathered and collated was analysed using percentages, pie chart and bar chart.

Table 1: Table showing the segmentation based on geopolitical zones and ownership status of the sampled universities

Geopolitical zones	Federal	State	Private
North West	6	3	1
North East	3	2	2
North Central	5	1	2
South West	4	4	6
South East	2	2	3
South South	5	4	3

Table 2: Table showing all the 58 universities used as the sample for the study

S/N	Universities	State	Geopolitical zone	ownership
1	Ahmadu Bello University, Zaria	Kaduna	North West	Federal
2	Nigerian Defence Academy	Kaduna	North West	Federal
3	Sokoto State University	Sokoto	North West	State
4	Kebbi State University of Science and Technology, Aliero	Kebbi	North West	State
5	Federal University, Dutsin-Ma	Katsina	North West	Federal
6	Federal University, Dutse	Jigawa	North West	Federal
7	Alqalam University, Katsina	Katsina	North West	Private
8	Kaduna State University	Kaduna	North West	State
9	Bayero University, Kano	Kano	North West	Federal
10	Usman Dan Fodio University	Sokoto	North West	Federal
11	University of Lagos	Lagos	South West	Federal
12	Anonymous		South West	Private
13	University of Ibadan	Oyo	South West	Federal
14	Adekunle Ajasin University	Ondo	South West	State
15	Modibbo Adama University of Technology, Yola	Adamawa	North East	Federal
16	Yobe State University	Yobe	North East	State
17	Abubakar Tafawa Balewa University, Bauchi	Bauchi	North East	Federal
18	Federal University, Kashere	Gombe	North East	Federal
19	Gombe State University	Gombe	North East	State
20	Kwararafa University, Wukari	Taraba	North East	Private
21	American University of Nigeria	Adamawa	North East	Private
22	University of Ilorin	Kwara	North Central	Federal
23	Federal University, Lokoja	Kogi	North Central	Federal
24	University of Abuja	FCT, Abuja	North Central	Federal
25	Benue State University, Markudi	Benue	North Central	State
26	University of Jos	Plateau	North Central	Federal
27	Kwara State University, Malete	Kwara	North Central	State
28	Federal University of Technology, Minna	Niger	North Central	Federal
29	Salem University, Lokoja	Kogi	North Central	Private
30	Federal University of Agriculture, Abeokuta	Ogun	South West	Federal
31	Crawford University, Igbesa	Ogun	South West	Private
32	Olabisi Onabanjo University, Ago-Iwoye	Ogun	South West	State
33	Redeemer's University, Ede	Osun	South West	Private
34	Bowen University, Iwo	Osun	South West	Private
35	Ajayi Crowther University, Ibadan	Oyo	South West	Private
36	Pan Atlantic University	Lagos	South West	Private
37	Tai Solarin University of Education, Ijebu Ode	Ogun	South West	State

Table 2 contd.

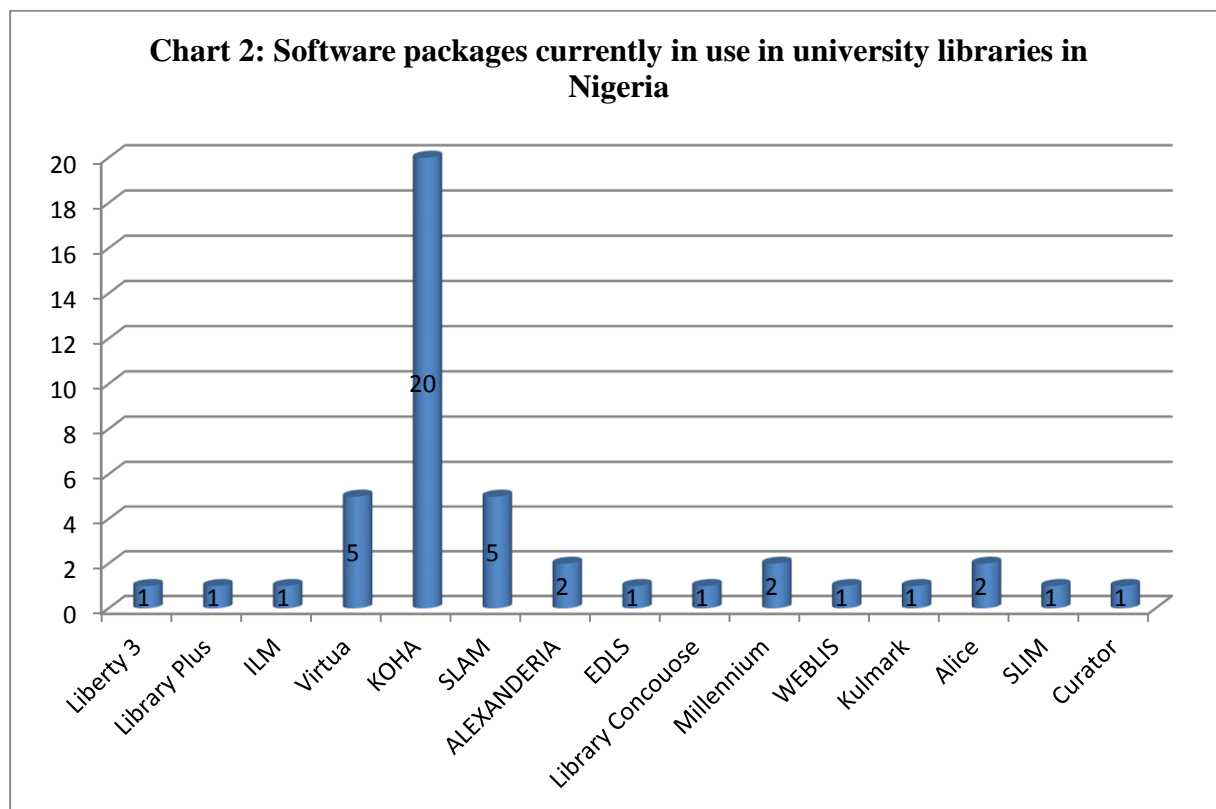
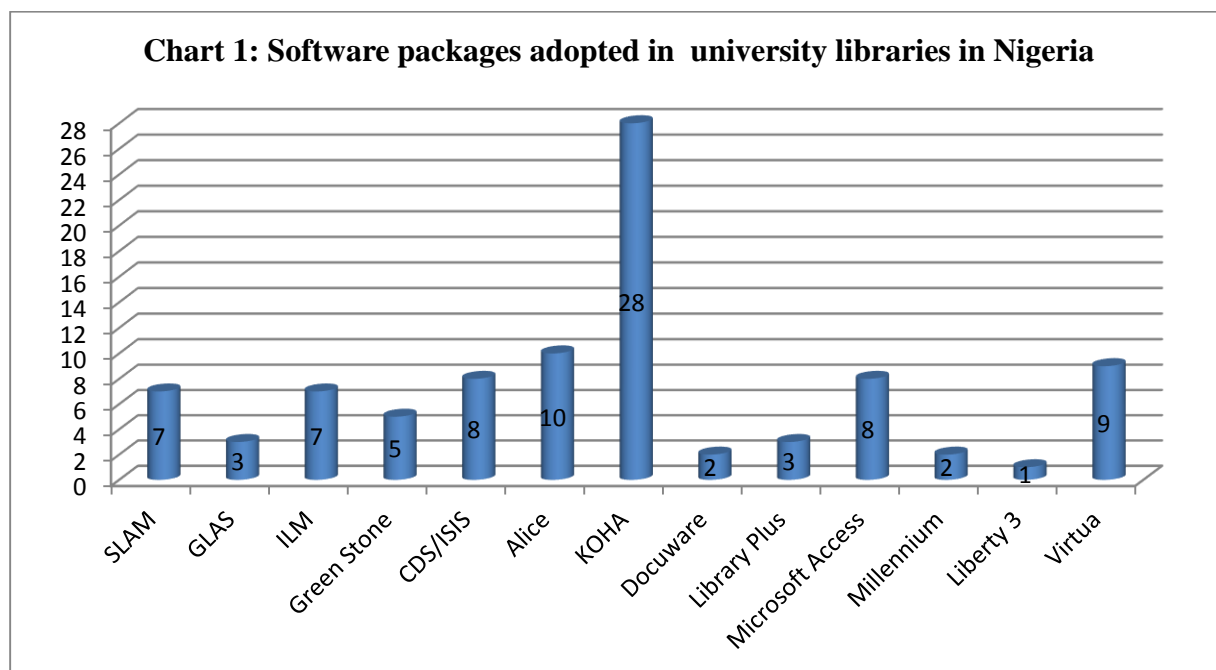
S/N	Universities	State	Geopolitical zone	ownership
38	Obafemi Awolowo University	Osun	South West	Federal
39	Ekiti State University, Ado-Ekiti	Ekiti	South West	State
40	Federal University of Technology, Owerri	Imo	South East	Federal
41	Madonna University, Okija	Anambra	South East	Private
42	Chukwuemeka Odumegwu Ojukwu University	Anambra	South East	State
43	University of Nigeria, Nsukka	Enugu	South East	Federal
44	Tansian University, Umuaya	Anambra	South East	Private
45	Abia State University, Uturu	Abia	South East	State
46	Renaissance University, Enugu	Enugu	South East	Private
47	Rivers State University of Science and Technology, Port Harcourt	Rivers	South South	State
48	University of Calabar	Cross River	South South	Federal
49	Federal University of Petroleum Resources, Effurun	Delta	South South	Federal
50	Ambrose Alli University, Ekpoma	Edo	South South	State
51	Ignatius Ajuru University of Education, Port Harcourt	Rivers	South South	State
52	University of Benin	Edo	South South	Federal
53	Samuel Adegboyega University, Ogwa.	Edo	South South	Private
54	Novena University, Ogume	Delta	South South	Private
55	University of Port Harcourt	Rivers	South South	Federal
56	Benson Idahosa University, Benin City	Edo	South South	Private
57	Niger Delta University, Wilberforce Island	Bayelsa	South South	State
58	University of Uyo	Akwa Ibom	South South	Federal

Results and discussion

Research question one: What are the software packages adopted in libraries in universities in Nigeria?

Chart 1 indicates the number of university libraries that have ever used the indicated software packages. KOHA has the highest level of adoption as it has been used by a majority of university libraries in Nigeria. Chart 2 confirms KOHA as not only being the most widely adopted, but also

the most widely used currently, as the chart 2 indicates the software packages that are currently being used by the libraries in Nigerian universities.



Research question two: What is the level of automation of university libraries in Nigeria?

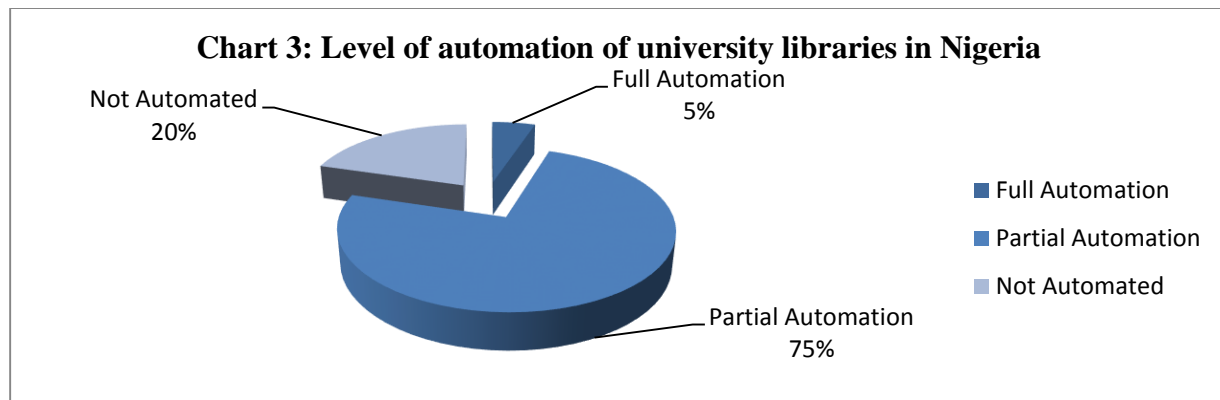
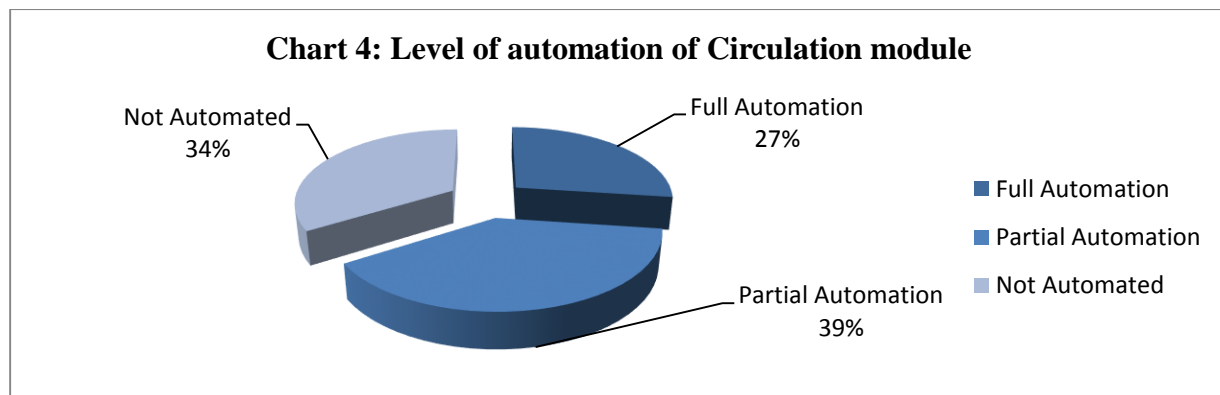


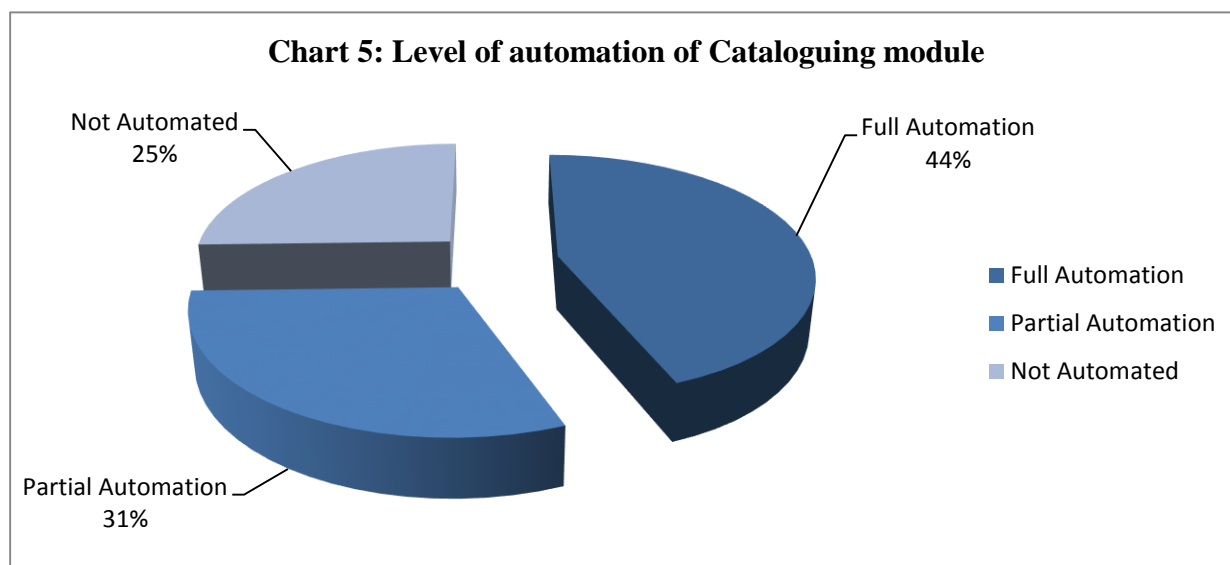
Chart 3 indicates that 75% of university libraries in Nigeria are partially automated, 20% are not automated at all, while a paltry 5% are fully automated. This does not present a good picture of adoption of software packages in Nigerian universities, as the implication is that 95% of libraries in Nigerian universities are either not automated or partially automated. 5% full automation represents a very low level of automation of libraries in Nigerian universities.

Research question three: What is the level of automation of the core library modules of the universities in Nigeria?

Charts 4 to 9 indicate the level of automation of each of the six modules in libraries in Nigerian universities.



In chart 4, only 27% of circulation module of libraries in Nigerian universities is fully automated; leaving 73% as being either not automated or partially automated. Chart 5 shows that 56% of cataloguing module in libraries in Nigerian universities is either not automated or partially automated as only 44% of this module has full automation.



The status of acquisition module is even gloomier as only 14% of this module is fully automated as shown in chart 6. This leaves 86% as being partially automated or not automated. The status of automation of the other modules is as indicated in their respective charts.

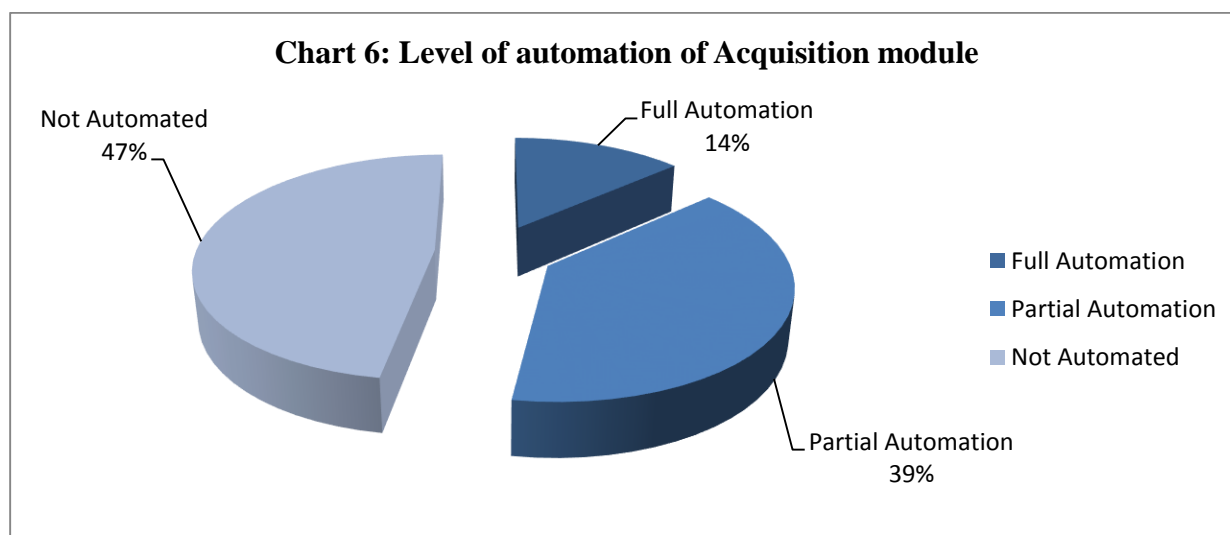


Chart 7: Level of automation of Serials Management module

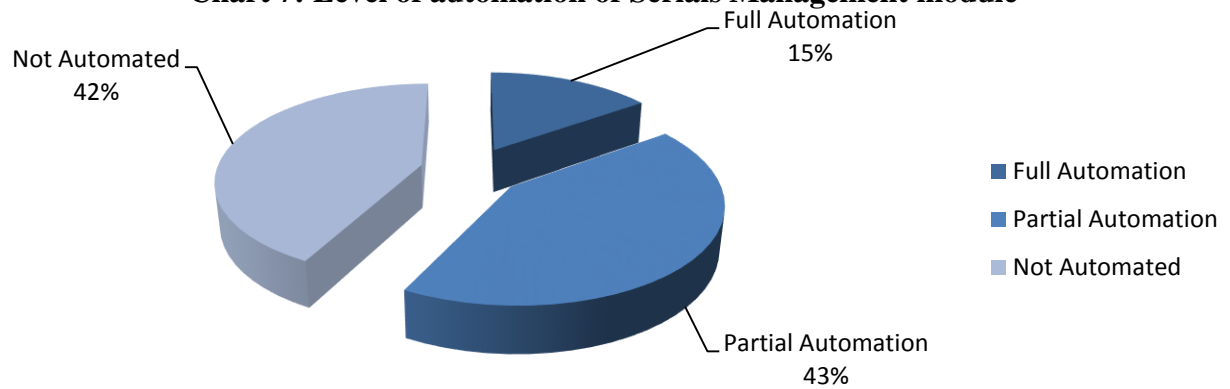


Chart 8: Level of automation of Reference Services module

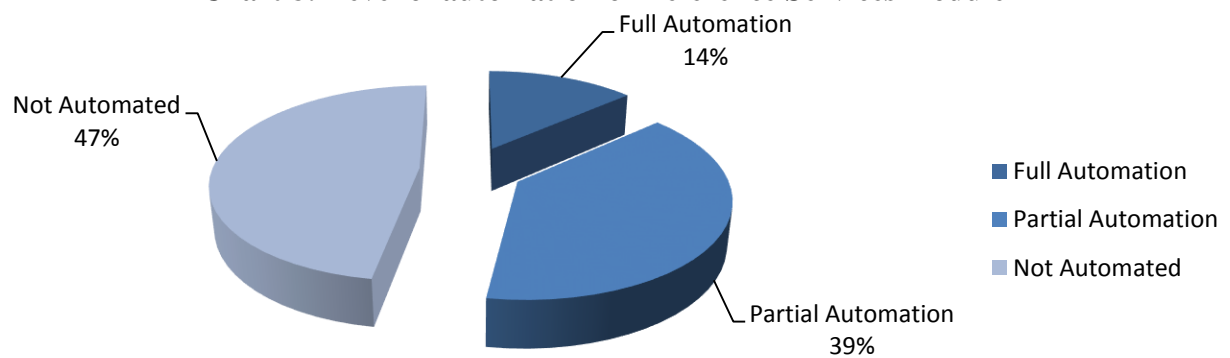
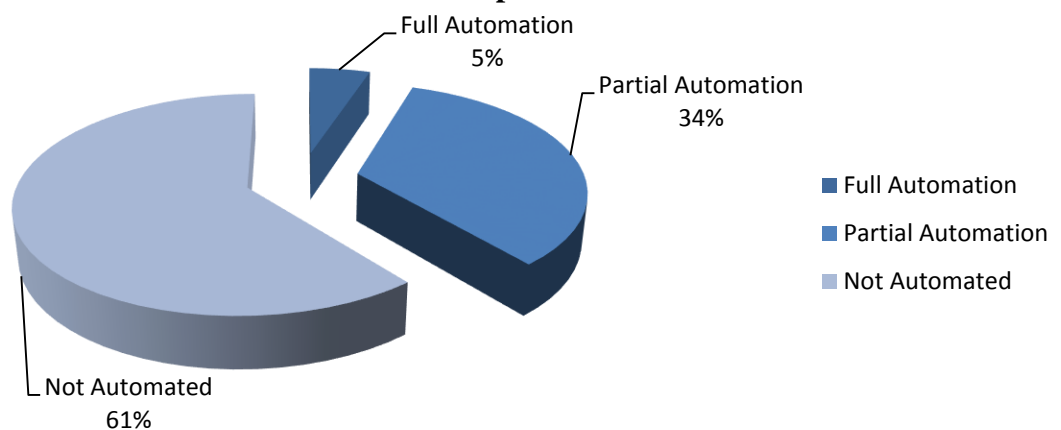
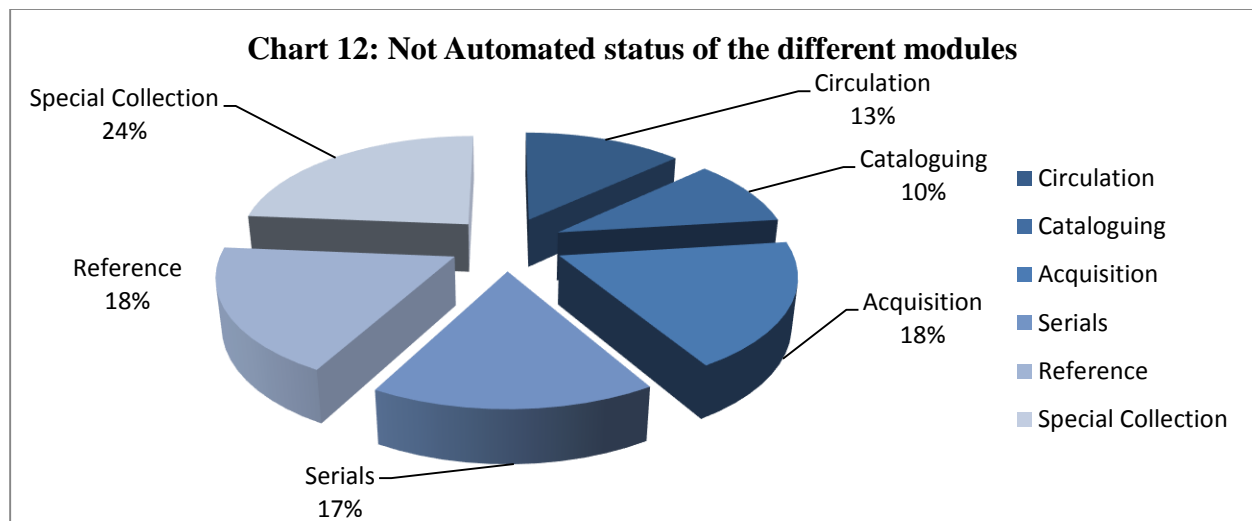
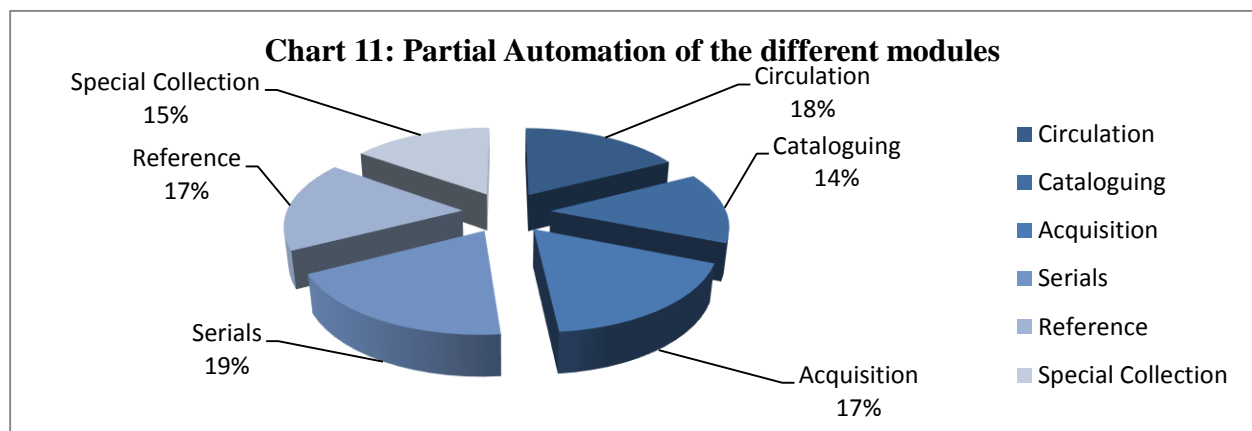
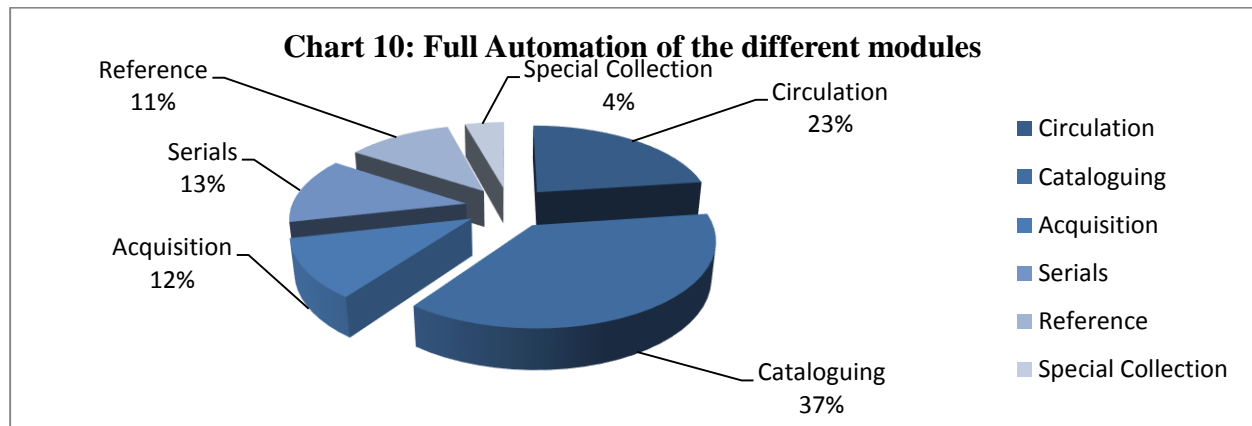


Chart 9: Level of automation of Special Collection module



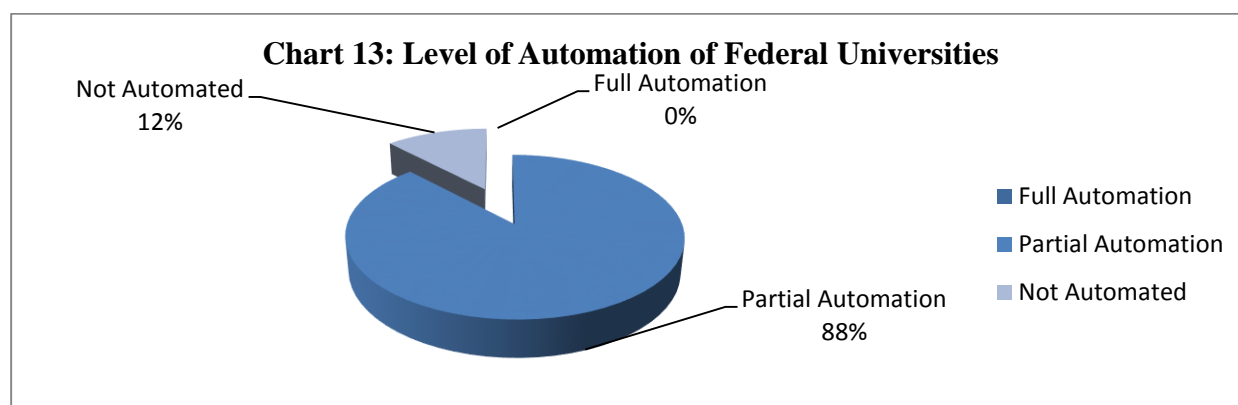
Research question four: How do the different levels of automation of the core library modules of universities in Nigeria differ amongst the different modules?

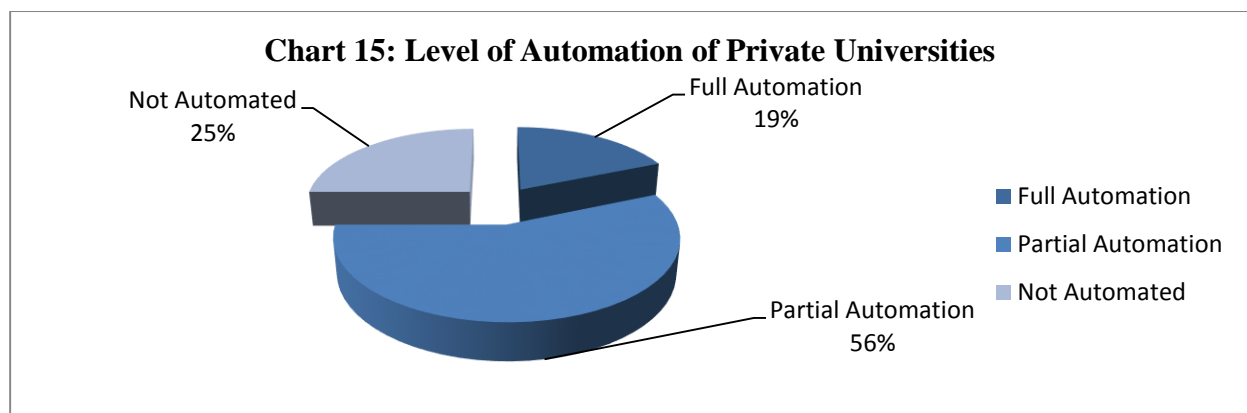
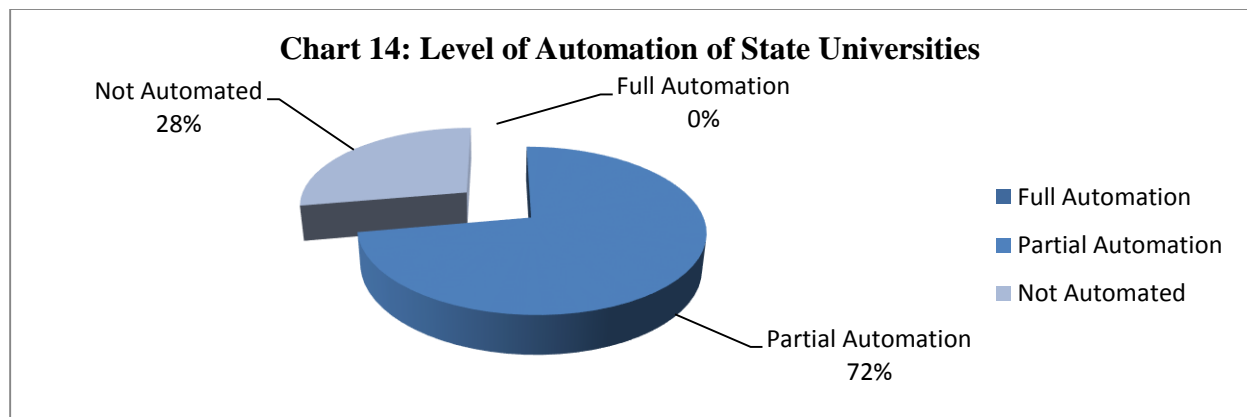


This research question compared the different modules based on their level of automation. Chart 10 indicates that out of all the different modules with full automation, cataloguing module has the highest level of full automation in Nigerian university libraries with 37% of all the modules with full automation. This is followed by circulation, serials, acquisition, reference and special collection, in that order. Similarly, chart 11 shows that serials management module is the module with the highest amongst modules with partial level of automation. This is followed by circulation, reference and acquisition, special collection and cataloguing. In the category of not automated modules, Special collection comes top, followed by reference and acquisition, serials, circulation and cataloguing, in that order.

Research question five: How does the level of automation of the university libraries in Nigeria differ amongst the private, state and federal universities in Nigeria?

This research question considered the level of automation of the entire university libraries in Nigeria based on the ownership status of the universities. The results are as presented in charts 13 to 15. It can be seen from the charts that while 19% of private university libraries have full automation, no federal and state university libraries have full automation.

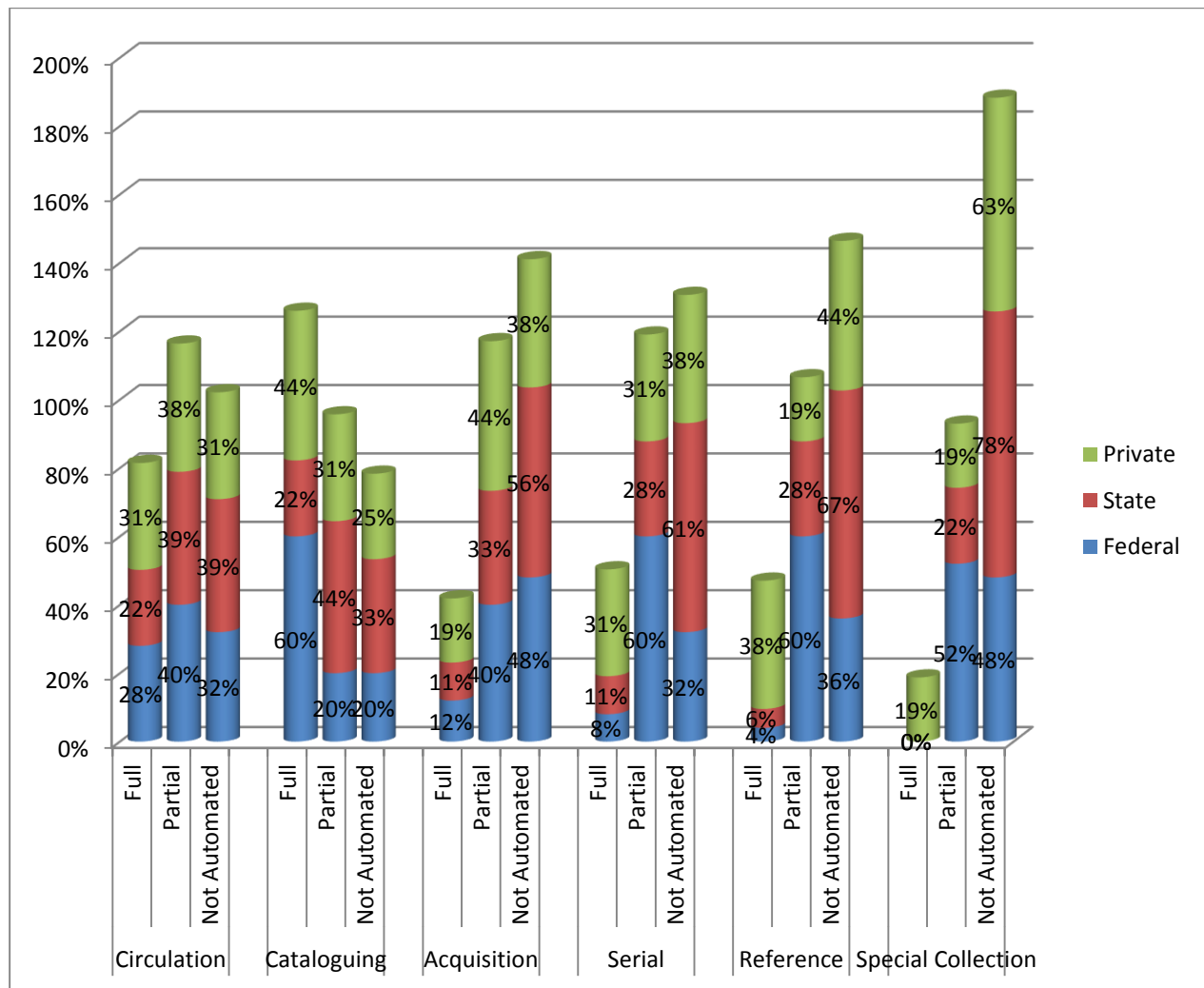




Research question six: How does the level of automation of the core library modules differ amongst the private, state and federal universities in Nigeria?

Chart 16 presents the results of the levels of automation of the different modules and based on the ownership of the universities. Chart 16 indicates that out of the entire circulation module with full automation, 31% are in private university libraries, 22% from state and 28% from federal university libraries.

Chart 16



Research question seven: How does the level of automation of the core library modules differ amongst universities based on geopolitical zones?

Table 3 summarizes the results in respect of this research question. It is evident from the table that of all the university libraries in Nigeria with full automation of the circulation module, 50%

are from the North Central, followed by 40% from the North West while the South East has no circulation module with full automation.

Table 3: Table showing the level of automation of the core library modules differ amongst universities based on geopolitical zones

		North West	North East	North Central	South West	South East	South South
Circulation	Full	40%	29%	50%	21%	0%	23%
	Partial	40%	14%	25%	50%	43%	46%
	Not Automated	20%	57%	25%	29%	57%	31%
Cataloguing	Full	50%	29%	63%	57%	29%	31%
	Partial	40%	14%	13%	29%	43%	38%
	Not Automated	10%	57%	25%	14%	29%	31%
Acquisition	Full	20%	0%	13%	21%	0%	15%
	Partial	40%	14%	25%	50%	57%	38%
	Not Automated	40%	86%	63%	29%	43%	46%
Serials	Full	20%	0%	25%	21%	0%	15%
	Partial	50%	43%	38%	50%	57%	23%
	Not Automated	30%	57%	38%	29%	43%	62%
Reference	Full	20%	14%	13%	14%	14%	8%
	Partial	40%	14%	63%	43%	57%	23%
	Not Automated	40%	71%	25%	43%	29%	69%
Special Collection	Full	0%	0%	0%	14%	0%	8%
	Partial	40%	14%	63%	36%	29%	23%
	Not Automated	60%	86%	38%	50%	71%	69%

Conclusion and recommendations

This study has established the status of automation of university libraries in Nigeria. The findings of the study have also established the level of automation of six major modules of Nigerian university libraries, and have also segmented this status of automation of the different modules into federal, state and private universities, and based on geopolitical zones. Though only 20% of university libraries in Nigeria are not automated at all, it is thought provoking that only 5% of university libraries in Nigeria are fully automated. This leaves those with partial automation at 75%. This implies that 95% of libraries in Nigerian universities are either not

automated or partially automated. Going by the percentage of libraries in Nigerian universities with full automation, it can be concluded that the level of adoption of software packages in university libraries in Nigeria, cutting across federal, state and private universities, is very low.

Based on the findings of the study, it is recommended that:

1. Management of the different universities should embrace the concept of automation of university libraries and give moral, financial and political support to the implementation of this innovation.
2. The government, especially the National Universities Commission (NUC) in liaison with the National Information Technology Development Agency (NITDA), should ensure the enactment and implementation of policies and guidelines on automation of Nigerian university libraries.
3. University librarians should update their Information and Communication Technology (ICT) skills and adopt the policies that facilitate the utilization of ICT in rendering library services to the clients.
4. Library staff should be trained on ICT to enhance their embracing the deployment of ICT in the library and thus improving the overall efficiency of the library.
5. University libraries should aim at full automation of the libraries to reap the benefits of such level of automation.

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