The study investigated the effect of library automation on effective library services delivery in academic libraries in Plateau State, Nigeria. The study looked at the impact of KOHA software. Internet, CD-ROM, Mobile Technology and OPAC on effective library service delivery. Five specific objectives with corresponding research questions guided the study and five hypotheses were formulated and tested at 0.05 level of significance. The study adopted a survey research design. The target population for the study was the entire 321 library staff made up on professional and non-professional library staff in the academic libraries in Plateau State. Since the population was not large, the study made use of all the 321 library staff in the three institutions – University of Jos, Plateau State University and Federal College of Education, Pankshin. The instrument for data collection was a self developed structured questionnaire titled “Impact of Library Automation on Effective Library Service Delivery Questionnaire (ILAELSDQ). The reliability of the questionnaire was established using Cronbach Alpha method and a reliability coefficient of 0.86 was obtained. Data collected was analyzed using Means and Standard Deviation to answer the research question and Chi-Square Statistic to test the null hypotheses at 0.05 level of significance. Findings of the study revealed that, Koha software, Internet and Compact Disc Read-Only Access Memory (CD-ROM) significantly impacts positively, effective library service delivery in academic libraries in Plateau State. Further, the findings revealed a positive impact of Mobile technology and Online Public access (Catalogue on effective library service delivery in academic libraries in Plateau State. The study concluded that automation of library operations in academic libraries in Plateau State has greatly impact effective library service delivery among the staff. Recommendations were made among other that academic libraries yet to adopt Koha software to library operation should take drastic efforts in doing so as this can reduce work load on library staff this enhancing their effective service delivery, acquisition and installation of academic library’s own internet server to ensure that the library has absolute control over its activities to deliver effective library service should be adopted in libraries as this may facilitate resource sharing by library staff thus enhancing their delivery of library services and since the use of OPAC has been found to greatly impact effective service delivery in academic libraries, libraries which has not subscribed to its use in cataloguing of library resources should endeavor to do as this can reduce the work of the cataloguing staff to address promptly any challenges that they may encounter in operating the system.

**Keywords:** Effect, Library Automation, Effective Service Delivery and Academic Libraries
Introduction

Library as the heart of any institution is established to provide information resources and services to support academic activities of their patrons, such as students, teachers and other stakeholders in education development. Libraries are the lighthouses of information dissemination, an important component of any educational institution, and hub of learning activities where students, researchers, and teachers can explore the vast amount of information resources. As the world is growing technologically, library operations in various locations in the world are no longer the way how they used to be. Libraries in developing countries like Nigeria since the beginning of the 21st century have started making efforts to metamorphose from being institutions driven by manual processes into modern ones where operations are in part or wholly dependent on Information and Communication Technology applications. An endless supply of information is continuously generated in academic libraries and anyone can readily access it regardless of time and space, thanks to the rapid advancement of Information and Communication Technology in contemporary society.

Information and Communication Technology (ICT) is the application of computers and other technologies to the acquisition, organization, storage, retrieval and dissemination of information. Qiang as cited by Onwubiko (2011) perceives ICT as the application of communication technologies consisting of "hardware, software, networks and media for the collection, storage, processing, transmission and presentation of information, via voice, data, text or images." According to Grace, Kemy and King, as cited in Eyo, Nkanu and Nkebem (2011), ICT are tools that facilitate the production, transmission and processing of information. Information and communication technologies (ICT) facilitate the process of identification, collection, storing, processing and disseminating of information. The library and information science professionals are utilizing ICT to keep pace with the problem of information explosion (Anisur, Hanif and Ragina 2014). In the library, ICT is of tremendous assistance either in easing the arduous task of manual processing or in time saving in the retrieval of information. ICTs have made it possible for libraries to access a wealth of up-to-date resources worldwide, give quicker access to specialist in a number of disciplines and allow librarians to reach each other and users with messages and documents (Onwih, 2017). ICTs have also enabled effective library service delivery in academic libraries.

Academic libraries encompass an enormous range of libraries found in tertiary institutions such as Universities, Polytechnics and Colleges of Education. They are libraries that are attached to post secondary institutions. According to Ezekwe and Muokebe (2012), academic libraries are those libraries designed to provide and accumulate recorded knowledge (published or unpublished), book and non-book materials relevant to prescribed academic institutions. The main purpose of academic libraries according to the authors is to support the objectives of teaching, learning, research and services of the parent institution, provision of information sources for the purpose of extra-mural students, recreation, entertainment and general knowledge. They are as varied and distinctive as the institutions they are established to serve providing information services to faculty members, students, researchers and other scholarly inclined persons.

Academic libraries are increasingly embracing ICT and it behooves on the librarian and other library staff to acquire the necessary skills including technology literacy that would enable them function much more effectively in the provision of library services with a view to serving the clientele better in the emerging digital environment. Academic libraries are at the forefront of providing information services to respective communities in order to support their teaching, learning and research needs. The versatility of ICT driven library operations that would adequately and efficiently meet the information needs of patrons in academic libraries has been widely acknowledged in extant literature to the extent that most academic libraries in Nigeria and particularly, Plateau State are positively inclined towards computerizing their operations. The computerization of library operations is known as library automation.

Library automation refers to use of computers, associated peripheral media such as magnetic tapes, disks and optical media among a host of others and utilization of computer based products and services in the performance of all types of library functions and operation. Library automation according to Shabana, Saleem and Batcha (2013) means the application of machines to perform the different routines, repetitive and clerical jobs involved in Functions and services of the libraries. Any library work that has been done with help of automatic machine like computer without any human interface is called automation (Mishra, Thakur & Singh, 2015). Lam as cited in Owusu-Ansah, Mprah and Kumah (2014) defines library automation as the use of computer and networking technologies in the library. Library automation responds in a great measure to the requirements placed on the academic library by effectively harnessing the power of technology in computerizing its operations, with an intention to strengthen the intellectual mission of its parent organization. Kofi and Opare-Adzobu (2010) add that these systems reduce the time and energy of the staff in the overall management of the library systems, operations and services on one hand, and that of the users for accessing information and services on the other
hand, at their convenience regardless of location and time of use. In the view of the authors, automation of the library helps take some of the workload off of librarians and other staff members in the areas of acquisitions, cataloging and circulation, which in turn allows them to better serve their patrons. This extra time can lead to more programs being facilitated in the library and make library staff available to answer reference questions and help people who are having trouble researching or finding the right information.

Library automation as used in the context of this work connotes the use of machines or ICT facilities to deliver library services that were previously performed manually by library staff. In academic libraries, the library staffs deliver services such as selection and acquisition, cataloging, circulation, reference services and serial control among others. Effective delivery of these information services that meet the needs and aspirations of citizens, decision-makers and life-long learners is a long-standing goal of the information profession. Researches have shown that the work of the library staffs in automated library is lessened. For instance, Mishra, Thakur and Singh (2015) posit that automated library avoids or reduces human actions and thus save labour; increases library staffs accuracy and quality of work; increases efficiency and speed up the operations and carry out processes automatically. This in turn enhances effective library service delivery by the library staff. Library services are undergoing transformation. The definition of library automation is that it may improve library services and increases productivity, efficiency and accuracy in performing a variety of library operations.

Automated library facilities or tools are categorized to include computer facilities (computers, scanners, printers, UPS and power point projectors); computer software resources (online databases, CD-ROMs, library application software, Open Public Access Catalogue, Internet and storage media); audio-visual media/equipment (satellite connection, digital cameras, video compact disk (VCD), digital video disk (DVD), radio, television, audio tapes, video tapes and photocopiers; and communication media (telephone-intercom and global system of mobile communication (GSM)). Gama (2007) also categorized these facilities by medium into five groups as follows: computing facilities and services; film/tape-based facilities-microfiche reader, micro card-reader, microprint reader, slide projector, reel to reel recorder, tape recorder and video machine: reproduction facilities - photocopier machine and duplicating machine among others; telecommunication facilities - telephone, GSM, telex, telegram, fax machine, and satellite among others; broadcasting facilities – radio, television, cable transmission (CNN, BBC, Al-Jazeera). Islam and Islam cited by Mamman (2015) gave another concise classification of ICTs by usage as follows: ICT-based resources, including computers connected to Internet, CD-ROM, audio cassettes, video-cassettes, photocopiers, printers, software used by libraries; ICT-based activities, including data processing, circulation, cataloguing, bibliography, serial control, in-house database; and ICT-based library service including CD-ROM searching, online information service, news clipping, scanning service and online reservation services among others. For the purpose of this research, the focus is on automated facilities such as KOHA internet, Compact Disc-Read-Only Memory (CD-ROM), mobile technology (telephones) and Open Public Access Catalogue. The researcher observed the existence of these facilities in the academic libraries in the study area and seeks to ascertain their impact on effective service delivery. An attempt is made to discuss each of these variables and their impacts on library services delivery in this study.

Koha is open source web based library management software that is used in carrying out all library operations. The use of Koha in the library can help solve the problem of manual processing and untimely statistics generation. Breeding (2012) itemized different standard modules in Koha software use in the library that address specific functional areas. Such standard modules include cataloguing for creating bibliographic records that represent works in the library’s collection and circulation that automates tasks related to loaning items to patrons, serials control for managing periodicals and serials, acquisitions to handle the procurement process for new items added to the collection, and the online public access catalogue to allow library users to search or browse through the library’s collection. Uzomba, Oyebola and Izuchukwu (2015) observed that users can use Koha to search for books and library materials, staff can use Koha to do cataloguing and classification of books, charge & discharge books and library materials to users, register users or patrons, calculate date due for books and library materials, access its Web based OPAC system and take library stock management. However, it was observed that staff cannot maximally utilize Koha to order for library materials, email and/or text patron’s overdue and other notices and print barcodes. The use of Koha software in the library seems to have become a burning issue amongst academic libraries in Nigeria. Hence, the use of Koha in the library may be extremely necessary to achieve or implement library automation concept to deliver services effectively.

Internet is a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols. The internet is a mechanism for information dissemination and a medium for collaboration and interaction between individuals and
their computer without regard for geographical location (Sinha 2009). Stuart (2009) asserted that “for most information users today, the internet is the first place they look for information. These days the academic community depends largely on the internet for its information needs, resulting in drastically changed information searching behaviour among library users (Kumar, 2012). The author asserts that the internet has had a significant impact on the attainment of the information needs of the academic community. The internet, by making a variety of information easily accessible, is providing libraries with powerful new tools to effectively deliver services to meet their patrons’ information needs beyond their traditional printed materials (Baro and Asubiojo, 2013). In the opinion of the authors, with internet connectivity, university libraries can reach beyond their walls to provide patrons with resources available in other libraries; with the availability of internet connectivity, university libraries can download current journal articles for the learning, teaching, and research needs of the academic staff and students. It behooves on this study therefore to investigate the impact of internet on effective library service delivery in academic libraries in Plateau State. Another automated facility observed is the CD-ROM.

Compact Disc-Read-Only Memory (CD-ROM) is used for the permanent storage of data or audio or video recordings. This document covers discs (or disks in the case of computer disks) that contain data. The discovery of CD-ROM provided a major change in the process of the storage, retrieval and dissemination of information (Anisur, Hanif and Ragina (2014). Libraries have already reported substantial increases in the use of journal collections, inter-library loan services, and microfiche collections, all tied to CD-ROM availability. According to Ogusola(2017) CD-ROM is found to be a more efficient medium of storage for publishing large amount of information. Its use offers unlimited access to databases at a fixed cost, interactive searching in comparison to hard copy or microfiche (Ramlalah, 2015). According to Michalak (2010), the widespread use of CD-ROM in academic libraries has improved access to information while creating new challenges for users and librarians. The author asserted that CD-ROM has significantly changed the way in which library users access information; patrons have quickly and enthusiastically adopted the technology as an exciting alternative to print and online appreciating the convenience, ease of use, and greater degree of control over the search process that the medium offers. Libraries have already reported substantial increases in the use of journal collections, inter-library loan services, and microfiche collections all tied to CD-ROM availability. However extant literature have demonstrated how the CD-ROM impact library services, its impact on library service delivery in Academic Libraries in Plateau State remains unknown which will be investigated by this study. Mobile technology is also one of these automated facilities observed.

Mobile technology is a form of technology that is mostly used in cellular communication and other related aspects. It uses a form of platform where by many transmitters have the ability to send data at the same time on a single channel. Mobile technology devices used in academic libraries includes, PDAs (Personal Digital Assistant), Smart Phones, Cell Phones, iPods and MP3 players Tablet. Mobile technology has made communication and information access in the library very convenient and timely to users from the comfort of their own homes and offices and from wherever they are while on the move with their cellular phone units or PDAs (personal digital assistants (Saxena and Yadav, 2013). According to the author, Mobile Technology helps both novice and experienced librarians to stay relevant in an increasingly mobile society for better service delivery. Lippincott (2008) asserts that with mobile technology, libraries provide alerts on latest news, events and notices via SMS and MMS to users wherever they might be go; the users can get notified instantly with notice alerts such as alerts on bringing new books to the notice of users for suggestion, intimation of arrival of indented documents by users, informing availability of reserved documents for collection, appraising about overdue books, outstanding lines, reminders to return library items, renew books, library circulars, e-journals subscribed, change in timings, information about important events, loan request. Similarly, Neupane (2012) states that Libraries can better serve their users by embracing the growing capabilities of mobile technology; they can promote and expand their existing services by offering mobile access to their websites and online public access catalogs; by supplying on-the-go mobile reference services; and by providing mobile access to e-books, journals, video, audio books, and multimedia content. Evidence from literature showed that mobile devices and services offer tremendous flexibility for those who want to take advantage of library services and its impact on service delivery in academic libraries in Plateau State is one of the concerns of this study.

Online Public Access Catalogue (OPAC) is a computerized library catalogue that is available to the public which provides bibliographic information about information resources in the library. It is an interface of information retrieval system which assists information searchers to access resources of libraries using several access points. It is concerned with searching for and retrieving bibliographic records of information items instead of full-text of the content of resources. According to Fabunmi and Asubiojo (2013), OPAC is designed to be accessible via terminals, so that library users may directly and effectively search and retrieve bibliographic records without the assistance of a human intermediary. The
authors asserts that OPAC has made searching and retrieval of bibliographic records of materials in libraries easier and faster. In the view of Senni and Idoi in Asaikpe (2016), the OPAC has enhanced catalogue procedures in libraries, thereby making its retrieval more effective. With OPAC, libraries have moved on from information resources delivery through manual catalogue thus enhancing information dissemination service to the users. With the introduction of OPAC in academic libraries. Ansari (2008) reveals that a high percentage of library users use OPAC as a search tool for retrieving documents. Similarly, a study conducted by Yusuf and lwu (2010) reveals that a high percentage of students use OPAC to access library materials and attributed the positive development to the result of compulsory orientation programmes organized by the library for the first year students of Covenant University, Ota, Nigeria. Literature reviewed that OPAC has been found to impact service delivery to users in academic libraries in other geographical areas other than Plateau State, its impact on effective library service delivery is another concern of this study. Hence, its impact on library services delivery in academic libraries in Plateau State will be investigated.

II. Purpose of the Study

Library service delivery refers to the activity of a librarian in an academic library within and outside available resources to provide answers to users' queries and meet their information needs. According to Madu (2010), "service delivery in libraries is the sum total of all library assistance to a user in search of information in a library. As used in the context of this study, it refers to the provision of information through the use of automation facilities in anticipation which hopes to keep the users well informed and up to date in their field of specialization and in related subjects.

Library automation has had a great impact on the world’s libraries in the past decades. It has changed the functioning of libraries of institutions of higher education the world over. Academic libraries’ operations and functions have been automated by ICT. Library automation is now a common phenomenon in some Academic Libraries in Nigeria and Plateau State is not an exception. Housekeeping operations in the library like circulation, cataloguing, acquisition and serials have been automated. The automation project has been launched and the academic library's online catalogue is accessible to the academic community and the general public. A lot of excitement characterized the prospects of moving away from the manual methods of performing routine jobs by library staff to computerized step by step online approach to achieving better results. In anticipation of the automation, staffs were trained in the various modules with several follow-up training opportunities in Plateau State and abroad for selected stall. This training is targeted at enhancing the delivery of library services. In view to ascertain the impact of library automation on service delivery in academic libraries in Plateau state, this study was necessitated.

Statement of the Problem

Academic libraries are established in tertiary institution in Nigeria to render quality and efficient information and communication services in the academic milieu. The librarians in these libraries are the engines that are saddled with the herculean task of rendering these high quality and efficient information services. Academic Libraries as centers for learning, teaching and research are moving on from traditional methods of information provision to automation which have dramatically enhanced information provision.

From the researchers’ observation, academic libraries nowadays have witnessed important changes; in particular, automation has brought a revolution in every aspect of the library in Plateau State. Through automation, libraries have not only observed remarkable changes in their daily operations and services but also identified a new and active role for librarians (Mairaj and El-Hadi, 2012).

Despite the prevalence of Library automation in some Academic Libraries in Plateau State, Nigeria, its impact on effective library service delivery remains unknown as there are no empirical backups from the researchers' observation and search. However, extant literature have indicated that automation of library routines/services such as administration, acquisitions, and classification, circulation, information retrieval and serials control among others effective and efficient library service delivery, its impact on library service delivery in Plateau State remains unknown as there are no empirical backups. This study therefore intends to investigate the impact of library automation on effective library services delivery in academic libraries in Plateau State.

Purpose of the Study

The purpose of this study was to investigate the effect of library automation on effective library services delivery in academic libraries in Plateau State, Nigeria. Specifically, the study sought to achieve the following objectives:

i. Ascertain the effect of Koha software on effective library service delivery in academic libraries in Plateau State.

ii. Determine the impact of internet on effective library service delivery in academic libraries in Plateau State.

iii. Investigate the effect of Compact Disc Read-Only Access Memory (CD-ROM) on effective library service delivery in academic Libraries in Plateau State.
iv. Determine the effect of mobile technology on effective library service delivery in academic libraries in Plateau State.

v. Find out the effect of Online Public Access Catalogue (OPAC) on effective library service delivery in academic libraries in Plateau State.

Research Questions

The following research questions in consonant with the specific objective were raised to guide the study:

i. What is the effect of Koha software on effective library service delivery in academic libraries in Plateau State?

ii. What is the effect of internet on effective library service delivery in academic libraries in Plateau State?

iii. What is the effect of Compact Disc Read-Only Access Memory (CD-ROM) on effective library service delivery in academic Libraries in Plateau State?

iv. What is the effect of mobile technology on effective library service delivery in academic libraries in Plateau State?

v. What is the effect of Online Public Access Catalogue (OPAC) on effective library service delivery in academic libraries in Plateau State?

Statement of Hypotheses

The following null hypotheses were formulated to guide the study:

i. Koha software has no significant effect on effective library service delivery in academic libraries in Plateau State.

ii. Internet has no significant impact on effective library service delivery in academic libraries in Plateau State.

iii. Compact Disc Read-Only Access Memory (CD-ROM) has no significant effect on effective library service delivery in academic Libraries in Plateau State.

iv. Mobile technology has no significant effect on effective library service delivery in academic libraries in Plateau State.

v. Online Public Access Catalogue (OPAC) has no significant effect on effective library service delivery in academic libraries in Plateau State.

METHODOLOGY

This section presents the procedure that was used in carrying out this study. This was presented under the following sub-headings: research design, area of study, population of study, sample and sampling techniques, instrument for data collection, validation of the instrument, reliability of the instrument, methods of data collection and data analysis techniques.

Research Design

The design for this study was a survey research design. Survey design is one in which a group of people or items is studied by collecting and analyzing data from few people considered to be a representative sample of the entire population. One of its distinguishing features is that it primarily employs questionnaire as one of the tools for data gathering. This study employed the use of questionnaire as the sole instrument for data collection. The design was therefore considered essential for this study since data was collected on the population of the library staff with questionnaire as the major instrument and findings were generalized to their entire population.

Area of the Study

The Area of study is Plateau State, Nigeria. Plateau is the twelfth largest state in Nigeria. Approximately in the centre of the country, it is geographically unique in Nigeria due to its boundaries of elevated hills surrounding the Jos Plateau its capital, and the entire plateau itself. Plateau State is located in Nigeria's middle belt. The State is situated almost in the middle of the country. To its North are Kaduna and Bauchi states while Benue state is at its Southern border. It is flanked in the east by Taraba State and in the west by Nassarawa state. Plateau State is celebrated as "The Home of Peace and Tourism". With natural formations of rocks, hills and waterfalls, it derives its name from the Jos Plateau and has a population of around 3.5 million people (Wikipedia.org).

Plateau State has higher institutions such as University of Jos, Plateau State University, Police Staff College, Bukuru, St. Augustine Major Seminary, Jos and the Theological College of Northern Nigeria. The State boasts of many institutions of research and learning such as the National Institute of Policy and Strategic Studies, Kuru, the National Veterinary Research Institute, Vom and NDLEA Command College. The justification for the use Plateau State is that some of the academic libraries in the state have embraced library automation as a way of meeting the needs of their users hence the study of the impact of the library automation on effective service delivery is necessitated.
Population of the Study

The target population for this study is the entire 321 library staff made up of professional and non-professional library staff in the academic libraries in Plateau State which include: University of Jos (118), Plateau State University (108) and Federal College of Education Pankshin (95), (Office of the Librarians, Uni Jos, PSU and FCOE, 2018). The choice of these three institutions is that their academic libraries are automated with ICT facilities.

Sample and Sampling Technique

Since the population is not large, the study made use of all the 321 library staff in the three institutions. Hence, the entire Library Staff constitute the subjects for the study. Nworgu (2006) asserts that when a population is relatively small, the entire population can be used for the study.

Instrument for Data Collection

The instrument for data collection for this study was a structured questionnaire titled “Effect of Library Automation on Effective Library Service Delivery Questionnaire” (ILAELSDQ). The questionnaire was designed for this study by the researcher in line with the research questions guiding the study. The questionnaire was divided into five clusters: A, B, C, D and E. Cluster A had 7 items and sought to elicit information from the respondents on the impact of koha on effective library service delivery in academic libraries in Plateau State. Cluster I3 had 13 items and sought to elicit information from the respondents on the impact of internet on effective library service delivery in academic libraries in Plateau State; Cluster C with 10 items sought to elicit information from the respondents on the impact of CD-ROM on effective library service delivery in academic libraries in Plateau State; cluster D with 12 items sought to obtain information on the impact of mobile technology on effective library service delivery in academic libraries in Plateau State. Finally, cluster E had 10 items and sought to elicit information on the impact of OPAC on effective library service delivery in academic libraries in Plateau State. On the whole, the questionnaire has a total of 52 items. The questionnaire had a response format in the form of a continuum of Strongly Agree (SA). Agree (A). Disagree (D) and Strongly Disagree (SD). The questionnaire was scored thus, SA =4, A=3, D=2 and SD =1.

Method of Data Collection

Data for the study was collected by personal administration of instruments to respondents by the researcher with the aid of three research assistants who are library staff in the sampled institutions. The researcher contacted the research assistants and solicited for their help in administration of the instrument. The research assistants were briefed by the researcher on how to administer and retrieve the questionnaire. The instrument administered was retrieved immediately to ensure high percentage return. All the 321 copies of the questionnaire were administered and 315 were retrieved representing 98% questionnaire return rate.

Methods of Data Analysis

Data collected was analyzed using descriptive statistics of Mean and Standard Deviation to answer the research questions and a non parametric statistic of Chi-square to test the hypothesis at 0.05 level of significance. The instrument which take the form of a continuum of StronglyAgree SA, Agree A, Disagree D, and Strongly Disagree SA was scored thus: SA =4, A =3, D =2 and SD =1. The Mean benchmark for the impact was calculated thus:

\[ \frac{4 + 3 + 2 + 1}{4} = 2.50 \]

Therefore any research question with a Mean value of 2.50 and above was considered agreed while those below 2.50 were considered disagreed. For the Chi-square test of hypotheses, the decision was based on P-values and Alpha values. When P< .05, it was considered “Significant Impact” and P>.05 was considered “No Significant Impact”.

RESULTS AND DISCUSSION

This section is concerned with data presentation, analysis, interpretation and discussion of findings. The presentation follows the sequence of the research questions answered and the hypotheses tested.
Results

Research Question One

What is the effect of Koha software on effective library service delivery in academic libraries in Plateau State?

To answer this research question, data on the impact of Koha software on effective library service delivery in academic libraries in Plateau State were collected and analyzed as presented on Table 1.

Table 1. Mean and Standard Deviation Analysis of the effect of Koha software on effective library service delivery in academic libraries in Plateau State.

<table>
<thead>
<tr>
<th>S/No</th>
<th>Item Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Koha helps librarians to register users of the library thus enhancing service delivery</td>
<td>3.31</td>
<td>.97</td>
<td>Agree</td>
</tr>
<tr>
<td>2.</td>
<td>Koha helps librarians in cataloguing and classification of library materials for effective service delivery</td>
<td>3.38</td>
<td>.92</td>
<td>Agree</td>
</tr>
<tr>
<td>3.</td>
<td>Koha helps librarians in charge and discharging of library resources for effective services delivery</td>
<td>3.51</td>
<td>1.10</td>
<td>Agree</td>
</tr>
<tr>
<td>4.</td>
<td>Koha helps librarians in printing barcodes enhance effective service delivery in the library</td>
<td>3.18</td>
<td>.99</td>
<td>Agree</td>
</tr>
<tr>
<td>5.</td>
<td>Koha helps librarians to easily access online public access catalogue in order to enhance their service delivery in the library</td>
<td>3.17</td>
<td>.88</td>
<td>Agree</td>
</tr>
<tr>
<td>6.</td>
<td>Koha software helps librarians generate statistics data for research purpose to enable them deliver effective services to users</td>
<td>3.42</td>
<td>.91</td>
<td>Agree</td>
</tr>
<tr>
<td>7.</td>
<td>Koha facilitates stock management for enhanced service delivery</td>
<td>2.75</td>
<td>.97</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Cluster Mean 3.25 .96 Agree

Source: Field Work 2017

Table 1 shows the mean responses of the respondents on the on the effect of Koha software on effective library service delivery in academic libraries in Plateau State with corresponding Standard Deviations values. From the table as presented the respondents agreed to all the items(Items I-7) with Mean values ranging from 2.75 – 3.51 which are above the benchmark of 2.50. The table also revealed close standard deviation values ranging from .91 – 1.10 which showed the homogeneity of the responses of the respondents. The table further revealed a cluster mean of 3.25 and SD = .96. With this cluster mean (3.25) which is above the benchmark of 2.50, it means that,Koha software has a positive impact on effective library service delivery in academic libraries in Plateau State.

Research Question Two:

What is the effect of internet on effective library service delivery in academic libraries in Plateau State?

To answer this research question, data on the impact of internet on effective library service delivery in academic libraries in Plateau State were collected and analyzed as presented on Table2.

Table 2. Mean and Standard Deviation Analysis of the effect of internet on effective library service delivery in academic libraries in Plateau State.

<table>
<thead>
<tr>
<th>S/No</th>
<th>Item Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>Internet facilitate resources sharing in the library thus impact service delivery</td>
<td>3.19</td>
<td>1.02</td>
<td>Agree</td>
</tr>
<tr>
<td>9.</td>
<td>Internet facilitates the role of the librarians for delivery of cataloguing services to library users</td>
<td>3.27</td>
<td>.87</td>
<td>Agree</td>
</tr>
<tr>
<td>10.</td>
<td>Internet makes library management efficient thus impact service delivery</td>
<td>3.41</td>
<td>.87</td>
<td>Agree</td>
</tr>
</tbody>
</table>
11. Internet helps the library staff to provide library patrons with available library resources  
   Mean: 3.67, SD: .79, Decision: Agree

12. Internet helps library staff to download current journal articles for the learning  
   Mean: 3.26, SD: .97, Decision: Agree

13. Internet helps the library staffs to provides a wealth of new material resources for its patrons thus enhancing service delivery  
   Mean: 3.49, SD: .88, Decision: Agree

14. Internet facilitates electronic communication between library staff and its patrons  
   Mean: 3.38, SD: .83, Decision: Agree

15. Internet helps librarians in teleconferencing thus providing guidance to patrons  
   Mean: 3.52, SD: .96, Decision: Agree

16. Internet enables the library staff reach both local and distant users much more easily  
   Mean: 3.38, SD: .92, Decision: Agree

17. Internet facilitates the role of the librarians for delivery of acquisition services  
   Mean: 3.61, SD: 1.10, Decision: Agree

18. Ready reference service are provided with greater speed with the aid of internet  
   Mean: 3.18, SD: .99, Decision: Agree

19. Internet increases technical processing efficiency over a manual system in the library  
   Mean: 3.42, SD: .91, Decision: Agree

20. Internet offers e-mails services used for delivering information to the users  
   Mean: 3.74, SD: .97, Decision: Agree

Cluster Mean: 3.42, SD: .93

Source: Field Work 2017

Table 2 shows the mean response of the respondents on the effect of internet on effective library service delivery in academic libraries in Plateau State with corresponding Standard Deviations values. From the table as presented, the respondents agreed to all the items (items 8-20) with Mean values ranging from 3.19 – 3.74 which are above the benchmark of 2.50. The table also revealed close standard deviation values ranging from .79 – 1.10 which showed the homogeneity of the responses of the respondents. The table further revealed a cluster Mean of 3.42 and SD = .93. With this cluster mean (3.42) which is above the benchmark of 2.50, it means that, internet has a positive impact on effective library service delivery in academic libraries in Plateau State.

Research Question Three:

What is the effect of Compact Disc Read-Only Access Memory (CD-ROM) on effective library service delivery in academic Libraries in Plateau State?

To answer this research question, data on the effect of Compact Disc Read-Only Access Memory (CD-ROM) on effective library service delivery in academic Libraries in Plateau State were collected and analyzed as presented on Table 3

Table 3. Mean and Standard Deviation Analysis of the effect of Compact Disc Read-Only Access Memory (CD-ROM) on effective library service delivery in academic Libraries in Plateau State

<table>
<thead>
<tr>
<th>S/No</th>
<th>Item Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>CD-ROM helps the librarians in Journal collection thus enhancing their service delivery to user</td>
<td>3.01</td>
<td>.81</td>
<td>Agree</td>
</tr>
<tr>
<td>22.</td>
<td>CD-ROM enables the librarians on inter-library loan services thus impacting service delivery</td>
<td>3.17</td>
<td>.83</td>
<td>Agree</td>
</tr>
<tr>
<td>23.</td>
<td>It helps the librarians in providing instantaneous information services to the readers</td>
<td>3.21</td>
<td>.89</td>
<td>Agree</td>
</tr>
<tr>
<td>24.</td>
<td>The usage of CD-ROM makes it easy access to information at a low cost thus enhancing quick delivery of information to users.</td>
<td>3.33</td>
<td>.91</td>
<td>Agree</td>
</tr>
</tbody>
</table>
Table 3. continuation

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>The use of CD-ROM is an efficient medium of storage for publishing large amount of information for users thus impacting service delivery</td>
<td>3.41</td>
<td>.84</td>
<td>Agree</td>
</tr>
<tr>
<td>26</td>
<td>CD-ROM has made it easy to transport information to users</td>
<td>3.21</td>
<td>.87</td>
<td>Agree</td>
</tr>
<tr>
<td>27</td>
<td>CD-ROM has made it possible to search for information to meet users’ needs</td>
<td>3.22</td>
<td>.83</td>
<td>Agree</td>
</tr>
<tr>
<td>28</td>
<td>CD-ROM has no telephone/internet service costs thus enhancing fast delivery of library services</td>
<td>3.47</td>
<td>.99</td>
<td>Agree</td>
</tr>
<tr>
<td>29</td>
<td>CD-ROM Databases play the vital role for upgrading information for users facilities</td>
<td>3.39</td>
<td>.96</td>
<td>Agree</td>
</tr>
<tr>
<td>30</td>
<td>The use of CD-ROM offers users unlimited access to databases at a fixed cost and this impact service delivery</td>
<td>3.47</td>
<td>.90</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Cluster Mean 3.29 .91 Agree

Source: Field Work 2017

Table 3 shows the mean responses of the respondents on the effect of Compact Disc Read-Only Access Memory (CD-ROM) on effective library service delivery in academic Libraries in Plateau State with corresponding Standard Deviations values. From the table as presented, the respondents agreed to all the items (Items 21-30) with Mean values ranging from 3.01 – 3.47 which are above the benchmark of 2.50.2 The table also revealed close standard deviation values ranging from .81 ~ .99 which showed the homogeneity of the responses of the respondents. The table further revealed a cluster Mean of 3.29 and SD = .91. With this cluster mean (3.29) which is above the benchmark of 2.50, it means that, Compact Disc Read-Only Access Memory (CD-ROM) has a positive impact on effective library service delivery in academic Libraries in Plateau State.

Research Question Four:
What is the effect of mobile technology on effective library service delivery in academic libraries in Plateau State? To answer this research question, data on the impact of mobile technology on effective library service delivery in academic libraries in Plateau State were collected and analyzed as presented on Table 4.

Table 4. Mean and Standard Deviation Analysis of the effect of Mobile Technology on effective library service delivery in academic libraries in Plateau State

<table>
<thead>
<tr>
<th>S/No</th>
<th>Item Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>MT impacts timely information delivery by library staff to users from the comfort of their home and offices</td>
<td>3.12</td>
<td>.83</td>
<td>Agree</td>
</tr>
<tr>
<td>32</td>
<td>MT impact both novice and experience librarians to stay relevant in an increasingly mobile society for better service delivery</td>
<td>3.27</td>
<td>.88</td>
<td>Agree</td>
</tr>
<tr>
<td>33</td>
<td>With mobile technology, users can get notified instantly with notice alerts such as alerts on bringing new books to the notice of users for suggestion</td>
<td>3.28</td>
<td>.80</td>
<td>Agree</td>
</tr>
<tr>
<td>34</td>
<td>MT intimate users on the arrival of indented documents</td>
<td>3.35</td>
<td>.95</td>
<td>Agree</td>
</tr>
<tr>
<td>35</td>
<td>MT inform users on the availability of reserved documents for collection</td>
<td>3.21</td>
<td>.87</td>
<td>Agree</td>
</tr>
<tr>
<td>36</td>
<td>MT remind users to return borrowed library items</td>
<td>3.43</td>
<td>.87</td>
<td>Agree</td>
</tr>
<tr>
<td>37</td>
<td>MT provide users with information about loan requests</td>
<td>2.96</td>
<td>.92</td>
<td>Agree</td>
</tr>
<tr>
<td>38</td>
<td>MT impacts library staff by supplying on-the-go mobile references services to users</td>
<td>3.29</td>
<td>.96</td>
<td>Agree</td>
</tr>
<tr>
<td>39</td>
<td>MT helps the users to access library services from their handheld devices</td>
<td>3.30</td>
<td>.89</td>
<td>Agree</td>
</tr>
<tr>
<td>40</td>
<td>MT offers users ability to interact with library services virtually and not necessarily consulting staff</td>
<td>3.35</td>
<td>.91</td>
<td>Agree</td>
</tr>
</tbody>
</table>
Table 4. continuation

<table>
<thead>
<tr>
<th>Item Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>41. MT facilitates librarians access to digital resources thus enhancing their service delivery</td>
<td>3.31</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>42. MT enables the library staff to offer preview and reservation services</td>
<td>2.93</td>
<td>.90</td>
<td></td>
</tr>
</tbody>
</table>

Cluster Mean 3.23 .89 Agree

Source: Field work, 2017

Table 4 shows the mean responses of the respondents on the impact of mobile technology on effective library service delivery in academic libraries in Plateau State with corresponding Standard Deviations values. From the table as presented, the respondents agreed to all the items (Items 31-42) with Mean values ranging from 2.93- 3.43 which are above the benchmark of 2.50. The table also revealed close standard deviation values ranging from .80 - .96 which showed the homogeneity of the responses of the respondents. The table further revealed a cluster mean of 3.23 and SD = .89. With this cluster mean (3.23) which is above the benchmark of 2.50, it means that, mobile technology has positive impact on effective library service delivery in academic libraries in Plateau State.

Research Question Five:

What is the effect of Online Public Access Catalogue (OPAC) on effective library service delivery in academic libraries in Plateau State?

To answer this research question, data on the effect of Online Public Access Catalogue (OPAC) on effective library service delivery in academic libraries in Plateau State were collected and analyzed as presented on Table 5.

Table 5. Mean and Standard Deviation Analysis of the effect of Online Public Access Catalogue on effective library service delivery in academic libraries in Plateau State

<table>
<thead>
<tr>
<th>S/No</th>
<th>Item Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>43.</td>
<td>OPAC saves the users time in accessing library materials thus enhancing service delivery</td>
<td>3.00</td>
<td>1.11</td>
<td>Agree</td>
</tr>
<tr>
<td>44.</td>
<td>OPAC helps to provide information to users on the availability of requisite documents</td>
<td>3.44</td>
<td>.84</td>
<td>Agree</td>
</tr>
<tr>
<td>45.</td>
<td>OPAC supports new means of information retrieval by introducing patrons to global information thus enhancing service delivery</td>
<td>3.36</td>
<td>.81</td>
<td>Agree</td>
</tr>
<tr>
<td>46.</td>
<td>OPAC allows patrons to use search strategies that exceed those that can be used with card catalogues for effective service delivery</td>
<td>3.58</td>
<td>.80</td>
<td>Agree</td>
</tr>
<tr>
<td>47.</td>
<td>OPAC allows users to search the library’s collection from locations outside the library walls thus enhancing service delivery</td>
<td>3.35</td>
<td>.96</td>
<td>Agree</td>
</tr>
<tr>
<td>48.</td>
<td>OPAC encourages cooperative collection development and resources sharing for effective service delivery (e.g. inter library loan).</td>
<td>3.39</td>
<td>.81</td>
<td>Agree</td>
</tr>
<tr>
<td>49.</td>
<td>OPAC motivates patrons and equips them with problem solving and information retrieval skills necessary for service delivery</td>
<td>3.48</td>
<td>.81</td>
<td>Agree</td>
</tr>
<tr>
<td>50.</td>
<td>Information about all books published by an author can be accessed at a time with the use of OPAC thus enhancing service delivery to users</td>
<td>3.63</td>
<td>.96</td>
<td>Agree</td>
</tr>
<tr>
<td>51.</td>
<td>OPAC place a request on a book that is currently on loan to other borrowers thus enhancing service delivery</td>
<td>3.08</td>
<td>1.00</td>
<td>Agree</td>
</tr>
<tr>
<td>52.</td>
<td>OPAC helps to check the borrower’s account to get information about number of items on loan, amount of overdue fines (if any) thus impacting service delivery</td>
<td>3.53</td>
<td>.89</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Cluster Mean 3.38 .90 Agree

Table 5 shows the mean responses of the respondents on the effect of Online Public Access Catalogue (OPAC) on effective library service delivery in academic libraries in Plateau State with corresponding Standard Deviations values. From the table as presented, the respondents agreed to all the items (Items 43-52) with Mean values ranging from 3.00 – 3.63 which are above the benchmark of 2.50. The table also revealed close standard deviation values ranging from .80 – 1.11 which showed the homogeneity of the responses of the respondents. The table further revealed a cluster Mean of 3.38 and SD = .90. With this cluster mean (3.38) which is above the benchmark of 2.50, it means that, Online Public Access Catalogue (OPAC) has a positive impact on effective library service delivery in academic libraries in Plateau State.

Hypothesis One:
Koha software has no significant effect on effective library service delivery in academic libraries in Plateau State.

Table 6. Chi-Square Test of Significant of the Impact of Koha Software on effective library service delivery in academic libraries in Plateau State

<table>
<thead>
<tr>
<th>Df</th>
<th>x²cal</th>
<th>Sign</th>
<th>Alpha Level</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>18</td>
<td>1001.193</td>
<td>.000</td>
<td>.05</td>
</tr>
<tr>
<td>Number of Valid Cases</td>
<td>315</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Df = Degree of Freedom; x²cal = Chi-Square Calculated Value; Sig = P-Value

Table 6 above shows the chi-square calculated value of 1001.193, degree of freedom df = 18 and a sig (P-value = 0.00) which is less than the alpha value (α = .05). Since P < .05, the result is significant, therefore the null hypothesis is rejected. This implied that, Koha software has significant impact on effective library service delivery in academic libraries in Plateau State.

Hypothesis Two: Internet has no significant impact on effective library service delivery in academic libraries in Plateau State.

Table 7: Chi-Square Test of Significance of the effect of Internet software on effective library service delivery in academic libraries in Plateau State.

<table>
<thead>
<tr>
<th>Df</th>
<th>x²cal</th>
<th>Sign</th>
<th>Alpha Level</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>36</td>
<td>1517.221</td>
<td>.000</td>
<td>.05</td>
</tr>
<tr>
<td>Number of Valid Cases</td>
<td>315</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Df = Degree of Freedom; x²cal = Chi-Square Calculated Value; Sig = P-Value

Table 7 above shows the Chi-square calculated value of 1517.221, degree of freedom df = 36 and a sign (P-value = 0.00) which is less than the alpha value (α = .05), the result is significant, therefore the null hypothesis is rejected. This implies that, internet has significant impact on effective library service delivery in academic libraries in Plateau State.

Hypothesis Three: Compact Disc Read-Only Access Memory (CD-ROM) has no significant impact on effective library service delivery in academic Libraries in Plateau State.

Table 8. Chi-Square Test of Significance of the Impact of Compact Disc Read-Only Access Memory (CD-ROM) on effective library service delivery in academic libraries in Plateau State

<table>
<thead>
<tr>
<th>Df</th>
<th>x²cal</th>
<th>Sign</th>
<th>Alpha Level</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>27</td>
<td>1299.443</td>
<td>.000</td>
<td>.05</td>
</tr>
<tr>
<td>Number of Valid Cases</td>
<td>315</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Df = Degree of Freedom; x²cal = Chi-Square Calculated Value; Sig = P-Value

Table 8 above shows the Chi-square calculated value of 1299.443, degree of freedom df= 27 and a sig (P-value=.00) which is less than the alpha value (α =.05). Since P< .05, the result is significant, therefore the null hypothesis is rejected. This implied that, Compact Disc Read-Only Access Memory (CD-ROM) has significant impact on effective library service delivery in academic libraries in Plateau State.
**Hypothesis Four**: Mobile technology has no significant effect on effective library service delivery in academic libraries in Plateau State.

<table>
<thead>
<tr>
<th>Table 9.</th>
<th>Chi-Square Test of Significance of Mobile Technology on effective library service delivery in academic libraries in Plateau State.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>Df</td>
</tr>
<tr>
<td>33</td>
<td>997.844</td>
</tr>
<tr>
<td>Number of Valid Cases</td>
<td>315</td>
</tr>
</tbody>
</table>

Df = Degree of Freedom; $\chi^2$ \text{cal} = Chi-Square Calculated Value; Sig = P-Value

Table 9 above the Chi-Square calculated value of 997.844, degree of freedom df = 33 and a sig (P-value = 0.00) which is less than the alpha value ($\alpha = .05$). Since $P < .05$, the result is significant, therefore the null hypothesis is rejected. This implies that, mobile technology has significant impact on effective library service delivery in academic libraries in Plateau State.

**Hypothesis Five**: Online Public Access Catalogue (OPAC) has no significant impact on effective library service delivery in academic libraries in Plateau State.

<table>
<thead>
<tr>
<th>Table 10.</th>
<th>Chi-Square Test of Significance of the effect of Online Public Access Catalogue (OPAC) on effective library service delivery in academic libraries in Plateau State.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>Df</td>
</tr>
<tr>
<td>27</td>
<td>1397.840</td>
</tr>
<tr>
<td>Number of Valid Cases</td>
<td>315</td>
</tr>
</tbody>
</table>

Df = Degree of Freedom; $\chi^2$ \text{cal} = Chi-Square Calculated Value; Sig = P-Value

Table 10 above shows the Chi-square calculated value of 1397.840, degree of freedom df = 27 and a sig (P-value=0.00) which is less than the alpha value ($\alpha = .05$). Since $P < .05$, the result is significant, therefore the null hypothesis is rejected. This implied that, Online Public Access Catalogue (OPAC) has significant impact on effective library service delivery in academic libraries in Plateau State.

**Discussion of Findings**

Based on the findings derived from the results of the study, the following were discussed. Findings of the study as shown on Table 1 revealed that, Koha software impacts positively effective library service delivery in academic libraries in Plateau State. As revealed from the findings of the study, the library staff agreed that, Koha helps librarians to register users of the library thus enhancing service delivery; helps librarians in cataloguing and classification of library materials for effective service delivery and in charging and discharging of library resources for effective service delivery; helps in printing barcodes to enhance effective service delivery in the library; helps to easily access online public access catalogue in order to enhance their service delivery in the library; helps to generate statistics data for research purpose to enable them deliver effective services to users; helps to generate statistics data for research purpose to enable them deliver effective services to users and facilitates stock management for enhanced service delivery. Similarly, a related test of hypotheses as shown on table 6 revealed that Koha software significantly impacts effective library service delivery in academic libraries in Plateau State. This finding corroborates with that study on assessment of Koha for Online Library Management in Nigerian Academic Library reported that Koha helps library staff for users’ registration, cataloguing, charging and discharging of library materials, printing barcodes, access web based OPAC system. Generating statistics data for research purpose and library stock management. The finding is also in consonant with the observation of Uzomba, et al (2015) that Koha users can search for books and library materials; staff can use KOHA to do cataloguing and classification of books, charge &discharge books and library materials to users, register users or patrons, calculate date due for books and library materials, access its Web based OPAC system and take library stock management. The finding however did not corroborate with that of Issa, Ayodele Abubakar and Aliyu (2011) whose study on application of Information Technology to Library Services reported that the application of information technology (library automation) to services delivery still has room for improvement, thereby making its impact limited. It is worthy of note therefore that, this finding as observed could be that the adoption and use of Koha software in academic libraries in Plateau State has done a great deal in enhancing effective library service delivery among academic staff of the libraries. Hence
Koha adoption in the libraries stand to provide an integrated library management tool, covering all major functions in a library, such as Acquisitions, bibliographic database management, user management, transactions, serial control, online end-user searching on local and external bibliographic databases, and library portal, thus enhancing library service delivery.

The second finding of the study revealed that, Internet impacts positively, effective library service delivery in academic libraries in Plateau State. From this finding, the library staff agreed that; Internet facilitate resource sharing in the library thus impact service delivery, Internet facilitates the role of the librarians for delivery of cataloguing services to library users and makes library management efficient thus impact service delivery. They were also in agreement that, Internet helps the library staff to provide library patrons with available library resources, helps library staff to download current journal articles for the learning, helps the library staffs to provides a wealth of new material resources for its patrons thus enhancing service delivery, facilitates electronic communication between library staff and its patrons, enables the library staff reach both local and distant users much more easily, facilitates the role of the librarians for delivery of acquisition services, increases technical processing efficiency over a manual system in the library and offers e-mails services used for delivering information to the users. Similarly, a related test of hypotheses as shown on table 7 revealed that Internet significantly impacts effective library service delivery in academic libraries in Plateau State. This finding conforms to that study on the application of internet for service delivery in some selected special libraries in Kaduna State reported that librarians derive satisfaction in the application of Internet in their library services because it helps for effective services delivery. The finding is also in line with that of Asogwa, Ugwu and Idoko (2015) who reported that internet use in the Nigerian university has greatly affected conventional services in the library. This finding as observed could be why Hamidu and Hauwa (2015) asserts that the use of Internet facilities in libraries ideally enhance operations and services such as cataloguing, collection development, Serials, Circulation, Reference Services, Inter-Library Loan/Cooperation, to simplified challenging and time consuming task disseminate information to users efficiently and effectively as well as manage large amount of information. This finding as observed implies that the use of internet tools and services by the libraries is changing the overall development of libraries particularly in service delivery.

The third finding of the study revealed that, Compact Disc Read-Only Access Memory (CD-ROM) has positive impact on effective library service delivery in academic libraries in Plateau State. This was evident in that, the library staff agreed to the items such as: C D-Rom helps the librarians in journal collection thus enhancing their service delivery to users; enables the librarians on inter-library loan services thus impacting service delivery; helps the librarians in providing instantaneous information services to the readers; makes it easy access to information at a low cost thus enhancing quick delivery of information to users; is an efficient medium of storage for publishing large amount of information for users thus impacting service delivery: makes it easy to transport information to users; has no telephone/internet service costs thus enhancing fast delivery of library services; play the vital role for upgrading information for users facilities and offers users unlimited access to databases at a fixed cost and this impact service delivery. To support this finding, a related test of hypothesis revealed that Compact Disc Read-Only Access Memory (CD-ROM) significantly impacts effective library service delivery in academic libraries in Plateau State. This finding is in tandem with that of Gama (2013) whose study on application of information and communication Technology (ICT) facilities to reference and information Service (RIS) provision in university libraries reported that libraries apply variety of ICT facilities like Compact Disc Read-Only Access Memory (CD-ROM) to provide various kinds of reference information service. This finding corroborate with the assertion of According to Michalak (2010) that the widespread use of CD-ROM in academic libraries has improved access to information while creating new challenges for users and librarians and has significantly changed the way in which library users access information; patrons have quickly and enthusiastically adopted the technology as an exciting alternative to print and online, appreciating the convenience, ease of use, and greater degree of control over the search process that the medium offers. This finding as observed could be that the usage of CD-ROM databases in academic libraries in Plateau State plays a vital role for upgrading facilities and improving services to effectively meet the information needs of users.

Findings of the study as shown on table 4 revealed that. Mobile technology has positive impact on effective library service delivery in academic libraries in Plateau State. This was evident in that, the library staff agreed to the items such as: Mobile technology impacts timely information delivery by library staff to users from the comfort of their homes and offices; impact both novice and experienced librarians to stay relevant in an increasingly mobile society for better service delivery; notifies instantly with notice alerts such as-alerts on bringing new books to the notice of users for suggestion; intimate users on the arrival of indented documents; inform users on the availability of reserved documents for collection; remind users to return borrowed library items: provide users with information about loan requests; impacts library staff by supplying on-the-go mobile reference services to users; helps the users to access library services from their handheld devices; offers users
ability to interact with library services virtually and not necessarily consulting staff; facilitates librarians’ access to digital resources thus enhancing their service delivery and enables the library staff to offer preview and reservation services. Similarly, a related test of hypothesis as shown on table 9 revealed that mobile technology significantly impacts effective library service delivery in academic libraries in Plateau State. This finding agrees with that of This finding corroborate with that of Nor, Siti and Ramlah (2006) whose study on Mobile phone applications in academic library services revealed that, the perceptions on the application of wireless hand services (mobile phones) in the context of library and information services were found to be very positive. This could be why Azubuike and Madu(2017) submitted that, in delivering library services, librarians should ensure the adoption of mobile technology for improvement dimension which emphasizes; user friendliness; concise and short instruction; clear instruction on routine library services and more understandable interface among others. Hence, libraries can serve its clients better by adapting the growing mobile technology offering mobile access to their websites. Academic libraries in Plateau State, Nigeria can improve the quality of their services and widen their horizon by integrating mobile devices in their systems especially, because mobile access to the university resources makes good sense for both on-ground students, distance education population and students enrolled online.

Finally, the findings of the study revealed that, Online Public Access Catalogue (OPAC) has positive impact on effective library service delivery in academic libraries in Plateau State. The finding as witnessed was evident in that, the library staff agreed to items such as: OPAC saves the users time in accessing library materials thus enhancing service delivery; helps to provide information to users on the availability of requisite documents; supports new means of information retrieval by introducing patrons to global information thus enhancing service delivery; allows patrons to use search strategies that exceed those that can be used with card catalogues, allows users to search the library’s collection from locations outside the library walls, supports new means of information retrieval by introducing patrons to global information and provides users with timely access to library materials among others. This findings as observed could be that, OPAC usage among library staff in academic libraries in plateau State has added a great advantage to service delivery.

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